SAN JOAQUIN CORRIDOR PROGRAM ENVIRONMENTAL IMPACT REPORT

Oakland and Sacramento to Bakersfield and then Los Angeles Union Station

VOLUME 1 (DRAFT PEIR)

California Department of Transportation

2014

Caltrans

SCH #2012111039

Improve Rail Infrastructure throughout the San Joaquin Rail Corridor from Bakersfield to Sacramento and Oakland over a 20-Year Period

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

Submitted Pursuant to: (State) Division 13, Public Resources Code

State of California
Department of Transportation

April 14, 2014
Date

Ronald Kosinski
Deputy District Director
Division of Environmental Planning, District 7
California Department of Transportation

The following person may be contacted for additional information concerning this document:

Dawn Kukla
Senior Environmental Planner, Division of Environmental Planning
California Department of Transportation
100 S. Main Street
Los Angeles, CA 90012
dawn.kukla@dot.ca.gov

Table of Contents

Volume 1 – PROGRAM ENVIRONMENTAL IMPACT REPORT

List of Acronyms and Abbreviations xii

Chapter 1 EXECUTIVE SUMMARY 1-1

1.1 Project Background 1-1
1.2 Intended Use of this Environmental Impact Report 1-1
1.3 Project Objectives 1-2
1.4 Project Approvals 1-3
1.5 Impacts 1-3
1.6 Alternatives 1-4

Chapter 2 INTRODUCTION 2-1

2.1 Background 2-1
2.2 Purpose and Use of an EIR 2-2
2.2.1 Summary of Responses to the NOP Comment Letters and Scoping Meeting Comments 2-3
2.2.2 List of Issues Found to be Less Than Significant, or Less Than Significant With Mitigation Incorporated 2-24
2.2.3 Areas Remaining Significant 2-24
2.3 Scope and Content of this EIR 2-25
2.4 Draft PEIR Format and Organization 2-26
2.5 Available of the San Joaquin Corridor Draft Program EIR 2-27
2.6 Review Process 2-28

Chapter 3 PROJECT DESCRIPTION 3-1

3.1 Project Objectives 3-2
3.1.1 Specific Objectives 3-2
3.2 Project Characteristics 3-3
3.2.1 Program / Project Approach 3-3
3.2.2 Construction Scenarios 3-11
3.2.3 Expanded Program Elements 3-14
3.2.4 Facility Construction Activities 3-20
3.3 Alternatives 3-23
3.3.1 No Project Alternative 3-23
3.3.2 Proposed Project 3-24
3.3.3 Proposed Project with a Secondary Segment from Fresno to Visalia (San Joaquin Valley Rail – SJVR) 3-25
3.3.4 Proposed Project with a Secondary Segment from Bakersfield to Los Angeles (UPRR and SCRRA) 3-26
3.3.5 Proposed Project BNSF Track Alignment from Port Chicago to Richmond, California 3-28
3.3.6 Proposed Project Combined with California High Speed Train System 3-28
3.3.7 Service to Wheeler Ridge 3-30
3.4 Related Projects 3-31
3.5 Use of the Environmental Impact Report 3-31

Table of Contents

Chapter 4 ENVIRONMENTAL IMPACT EVALUATIONS 4-1

4.1 Introduction 4-1
4.1.1 Specific Objectives of the Proposed Project 4-1
4.2 Air Quality 4-5
4.2.1 Introduction 4-5
4.2.2 Regulatory Setting 4-6
4.2.2.1 California Air Basins 4-6
4.2.2.2 Ambient Air Quality Standards 4-7
4.2.3 Affected Environment 4-10
4.2.3.1 Meteorology and Climate 4-10
4.2.3.2 Baseline Air Quality 4-11
4.2.3.3 Air Quality Planning 4-12
4.2.3.4 Impact Evaluation Criteria 4-15
4.2.4 Environmental Consequences 4-18
4.2.4.1 Passenger Transportation Energy Efficient and Emissions 4-19
4.2.4.2 Construction Activity Impacts 4-21
4.2.4.3 Cumulative Impacts 4-26
4.2.4.4 Significance of Forecast Impacts 4-26
4.2.5 Avoidance, Minimization and Mitigation Measures 4-26
4.3 Biological Resources 4-29
4.3.1 Introduction 4-29
4.3.2 Regulatory Setting 4-29
4.3.2.1 Federal 4-29
4.3.2.2 State 4-32
4.3.2.3 Local 4-34
4.3.3 Affected Environmental 4-34
4.3.3.1 Existing Biological and Physical Condition of the BAA 4-34
4.3.3.2 Investigative Methodology 4-35
4.3.3.3 Impact Evaluation Criteria 4-36
4.3.4 Environmental Consequences 4-37
4.3.4.1 Cumulative Impacts 4-44
4.3.4.2 Unavoidable Significant Adverse Impacts 4-44
4.3.5 Avoidance, Minimization and Mitigation Measures 4-45
4.4 Cultural Resources 4-51
4.4.1 Introduction 4-51
4.4.2 Regulatory Setting 4-53
4.4.3 Affected Environmental 4-53
4.4.3.1 Prehistoric Period 4-53
4.4.3.2 Historic Period 4-54
4.4.3.3 Paleontological Resources 4-54
4.4.3.4 Impact Evaluation Criteria 4-54
4.4.4 Environmental Consequences 4-56
4.4.4.1 Cumulative Impacts 4-68
4.4.4.2 Unavoidable Adverse Impacts 4-68
4.4.5 Avoidance, Minimization and Mitigation Measures 4-69
4.5 Greenhouse Gases / Global Climate Change 4-73
4.5.1 Introduction 4-73
4.5.2 Regulatory Setting 4-74
4.5.2.1 Climate Change and Global Warming 4-74
4.5.2.2 Primary Greenhouse Gas Emissions 4-74
4.5.2.3 Regulatory Framework 4-75
4.5.2.4 Impact Evaluation Criteria 4-78

Table of Contents

4.5.3 Affected Environment 4-79
4.5.4 Environmental Consequences 4-81
4.5.4.1 Operational GHG Emission Impact 4-81
4.5.4.2 Construction GHG Emission Impact 4-82
4.5.4.3 Cumulative Impacts 4-82
4.5.4.4 Significance of GHG Impacts 4-83
4.5.5 Avoidance, Minimization and Mitigation Measures 4-83
4.6 Hydrology and Utilities / Service Systems 4-85
4.6.1 Introduction 4-85
4.6.2 Regulatory Setting 4-85
4.6.3 Affected Environment 4-86
4.6.3.1 FEMA FIRM Panels 4-86
4.6.3.2 County Flood Hazard Areas 4-87
4.6.3.3 Bus System Modifications 4-95
4.6.3.4 New Stationary Facilities 4-95
4.6.3.5 Significance Criteria 4-95
4.6.4 Environmental Consequences 4-96
4.6.4.1 Potential Hydrology Impacts Proposed Project 4-96
4.6.4.2 Cumulative Impacts 4-98
4.6.4.3 Unavoidable Adverse Impacts 4-98
4.6.5 Avoidance, Minimization and Mitigation Measures 4-98
4.7 Noise 4-113
4.7.1 Introduction 4-113
4.7.2 Regulatory Setting 4-114
4.7.2.1 Noise and Vibration Terminology 4-114
4.7.2.2 Noise Scales 4-114
4.7.2.3 Vibration Technology 4-116
4.7.2.4 Noise Standards 4-117
4.7.3 Affected Environment 4-119
4.7.3.1 Noise Impact Criteria (Thresholds) 4-122
4.7.4 Environmental Consequences 4-123
4.7.4.1 Short-term, Construction Activity Impact 4-124
4.7.4.2 Long-term, Operational Activity Impact 4-124
4.7.4.3 Physical Support Facilities 4-127
4.7.4.4 Vibration Assessment 4-128
4.7.4.5 Cumulative Impacts 4-131
4.7.4.6 Unavoidable Significant Adverse Impact 4-132
4.7.5 Avoidance, Minimization and Mitigation Measures 4-132
4.8 Traffic / Transportation 4-135
4.8.1 Introduction 4-135
4.8.2 Regulatory Setting 4-135
4.8.2.1 Significance Criteria 4-135
4.8.3 Affected Environment 4-136
4.8.3.1 Potential Traffic and Transportation Impacts from At-Grade Crossings and Pertinent Regulatory Setting 4-136
4.8.3.2 Potential Traffic and Transportation Impacts from Station and Layover Facilities 4-145
4.8.4 Environmental Consequences 4-155
4.8.4.1 Cumulative Impacts 4-155
4.8.4.2 Unavoidable Adverse Impacts 4-156
4.8.5 Avoidance, Minimization and Mitigation Measures 4-156

Table of Contents

Chapter 5 ALTERNATIVES 5-1

5.1 Introduction 5-1
5.2 No Project 5-2
5.2.1 Overview of No Project Alternative 5-2
5.2.2 Summary of No Project Alternative 5-7
5.3 California High Speed Train System Feeder Service Project Alternative 5-7
5.3.1 Description of CHSTS Feeder Service Alternative 5-7
5.3.2 Summary of CHSTS Feeder Service Alternative 5-14
5.4 Proposed Project BNSF Track Alignment from Port Chicago to Richmond, CA 5-15
5.5 Proposed Project With a Secondary Segment from Bakersfield to Los Angeles (UPRR and Metrolink) 5-16
5.6 Stockton Station Alternative Sites 5-19
5.7 Discussion of Alternatives to the Proposed Project 5-21

Chapter 6 TOPICAL ISSUES 6-1

6.1 Growth-Inducing Impacts 6-1
6.2 Cumulative Impacts 6-4
6.3 Significant Irreversible and/or Unavoidable Environmental Impacts 6-8

Chapter 7 PREPARATION RESOURCES 7-1

7.1 Preparers / Caltrans Document Reviewers 7-1
7.2 References 7-5

Chapter 8 APPENDICES 8-1

8.1 Initial Study
8.2 Notice of Preparation / NOP Comments and Responses
8.3 Control of Emissions from Locomotives
8.4 Passenger Demand Forecast
8.5 Emails from BNSF & UPRR Regarding Passenger Rail Service
8.6 Comparative Evaluation of Five Alternatives from SDP
8.7 NOP Distribution List, Stakeholder Meetings & Public Notices

Table of Contents

Volume 2 – PEIR TECHNICAL APPENDICES *(under separate cover)*

Appendix 1	Emission Requirements
Appendix 2	Air Quality and GHG Impact Analyses
Appendix 3	Program Natural Environmental Study
Appendix 4	Critical Habitat Maps
Appendix 5a	Preliminary Historical/Archaeological Resources Study for the San Joaquin Corridor Amtrak California Service Programmatic Environmental Impact Report
Appendix 5b	Historic Property Survey Report for the Proposed Railway Station in the City of Elk Grove Sacramento County, California
Appendix 5c	Letter Report Re: Identification of Historic Properties for the Proposed Railway Station in the City of Hercules in Contra Costa County, California
Appendix 5d	Historic Property Survey Report for the San Joaquin Corridor Amtrak California Service Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno in San Joaquin, Merced, and Fresno Counties, California
Appendix 5e	Letter Report Re: Paleontological Sensitivity Assessment for the San Joaquin Corridor Amtrak California Service Programmatic EIR in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California
Appendix 6	FEMA FIRM Panels
Appendix 7	Noise and Vibration Impact Analyses
Appendix 8	At-Grade Crossings

This page left intentionally blank for pagination purposes.

Table of Contents

TABLES

Table 1.5-1 Summary of Impacts and Avoidance, Minimization and Mitigation Measures Discussed in this Draft PEIR 1-11

Table 2.3-1 Required EIR Contents 2-26

Table 3-1 Forecast Results for San Joaquin Corridor Service 3-6
Table 3-2 Future Equipment Forecast 3-21
Table 3-3 Permits and Approvals 3-31

Table 4.2-1 Ambient Air Quality Standards 4-8
Table 4.2-2 Health Effects of Major Criteria Pollutants 4-9
Table 4.2-3 Air Quality Standards Attainment Status 4-13
Table 4.2-4 Program Alignment Emissions Forecasts 4-14
Table 4.2-5 Transportation Emission Factors 4-20
Table 4.2-6 Intercity Travel Emission Comparison 4-20
Table 4.2-7a Construction Activity Air Pollution Emissions 4-22
Table 4.2-7b CalEEMod2013.2.2 Results, Construction Activity Air Pollutant Emissions – 2035 Fleet 4-22

Table 4.4-1 Known Historic Properties / Historical Resources in the APE 4-57

Table 4.6-1 FEMA FIRM Panel Detail 4-88

Table 4.7-1 BNSF Noise Monitoring Summary South of Escalon 4-121
Table 4.7-2 BNSF Noise Monitoring Summary Shafter-Corcoran 4-122

This page left intentionally blank for pagination purposes.

Table of Contents

FIGURES

(All Chapter 3 figures located at end of Chapter 3)

Figure 3-1 San Joaquin Corridor Intercity Route
Figure 3-2a Proposed Track Upgrades – BNSF Bakersfield to Fresno
Figure 3-2b Proposed Track Upgrades – BNSF Fresno to Stockton
Figure 3-2c Proposed Track Upgrades – UPRR Antioch to Oakland
Figure 3-2d Proposed Track Upgrades – UPRR Stockton to Sacramento
Figure 3-3a Current BNSF Track Structure
Figure 3-3b Proposed BNSF 5 / 10-Year (79 mph) Plan
Figure 3-3c Proposed BNSF 25-Year (79 mph) Plan
Figure 3-3d Proposed BNSF 5 / 10-Year (90 mph) Plan
Figure 3-3e Proposed BNSF 25-Year (90 mph) Plan
Figure 3-3f Proposed UPRR 25-Year (90 mph) Plan, Niles – Tracy Subdivision
Figure 3-3g Proposed UPRR 25-Year (90 mph) Plan, Fresno Subdivision
Figure 3-4 Proposed Visalia to Hanford Route
Figure 3-5 Alternative Project – Los Angeles Route, Los Angeles to Bakersfield (includes Tehachapi)
Figure 3-6 Alternative Project – Port Chicago to Richmond on BNSF
Figure 3-7 California Intercity Passenger Service System Map
Figure 3-8 Railroad Standard Bridge Structure
Figure 3-9 Typical At-Grade Railroad Crossing Design
Figure 3-10 Typical Railroad Equalizer Culvert
Figure 3-11 Proposed Stockton Station Alternative Sites
Figure 3-12 Alternative #1 – Stockton Amtrak Station Relocation Site
Figure 3-13 Alternative #2 – Stockton Amtrak Station Relocation Site (ACE Station)
Figure 3-14 Alternative #3 – Stockton Amtrak Station Relocation Site
Figure 3-15 Alternative #4 – Stockton Amtrak Station Relocation Site “The Interlock”
Figure 3-16 Alternative #5 – Existing Stockton Amtrak Station Site
Figure 3-17 Hercules Station Area on USGS Map
Figure 3-18 Hercules Intermodal Transit Facility
Figure 3-19 Hercules ITC Station Building
Figure 3-20 Elk Grove Potential Station Site Location
Figure 3-21 Elk Grove Potential Site Aerial Photo
Figure 3-22 Elk Grove Station Access Road Plan
Figure 3-23 Potential Fresno Layover Facility Site (USGS Map)
Figure 3-24 Potential Fresno Layover Facility Site
Figure 3-25 Potential Merced Layover Facility Site (USGS Map)
Figure 3-26 Potential Merced Layover Facility Site
Figure 3-27 Sacramento Amtrak Station – Future Track Relocation
Figure 3-28 Build Alternative B Service Scenario

Table of Contents

Figure 4.6-1 Alameda County Flood Hazard Areas 4-101
Figure 4.6-2 Contra Costa County Flood Hazard Areas 4-102
Figure 4.6-3 San Joaquin County 100-Year Flood Areas 4-103
Figure 4.6-4 Delta Island Flooded Since 1930 4-104
Figure 4.6-5 Sacramento County 100-Year Floodplain Areas 4-105
Figure 4.6-6 Stanislaus County Designation Flood Ways 4-106
Figure 4.6-7 Merced Streams Group Flood Project Status Map 4-107
Figure 4.6-8 Madera County 100-Year Floodplain Map 4-108
Figure 4.6-9 Fresno County 100-Year Floodplain Inundation Map 4-109
Figure 4.6-10 Kings County Flood Hazard Areas 4-110
Figure 4.6-11 Tulare County Hazards Map 4-111
Figure 4.6-12 Kern County Flooding and Shallow Groundwater Map 4-112

Figure 4.7-1 Sound Levels and Human Response 4-115
Figure 4.7-2 Land Use Compatibility for Community Noise Environments 4-120
Figure 4.7-3 Typical Construction Equipment Noise Generation Levels 4-125

Table of Contents

ACROYNMS AND ABBREVIATIONS

AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ACE	Altamont Commuter Express
AIR	Association of Irritated Residents
Amtrak	National Railroad Passenger Corporation
APCD	Air Pollution Control District
APE	Area of Potential Effect
APS	Alternative Planning Strategy
AQMD	Air Quality Management District
ARB	Air Resource Board
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASR	Archaeological Survey Report
BAAB	Bay Area Air Basin
BAAQMD	Bay Area Air Quality Management District
BMPs	Best Management Practices
BNSF	BNSF Railway Company
BPS	Best Performance Standards
CAAA	Clean Act Air Amendment
Caltrans	California Department of Transportation, Division of Rail
CAP	Clean Air Plans
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCIC	Central California Information Center
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQ	Council of Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulation
CHSRA	California High Speed Rail Authority
CHSTS	California High Speed Train System
CNEL	Community Noise Equivalent Level
Corps	U.S. Army Corps of Engineers
CPUC	California Public Utilities Commission
CSLC	California State Lands Commission
CTC	California Transportation Commission
CWR	continuously welded
db	decibel
dB(A)	A-weighted decibel
DNL	Day/Night Average Sound Level
DOT	Department of Transportation

DPM	diesel particulate matter
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
EOC	Emergency Operation Center
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FCS	First Construction Segment
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GHG	Greenhouse Gas
GO	General Order
GWP	global warming potential
HUD	Department of Housing and Urban Development
HPSR	Historic Property Survey Report
ICR	Intercity Passenger Rail
IOS	Initial Operation Section
IPCC	Intergovernmental Panel on Climate Change
ITC	Intermodal Transit Center
LAUS	Los Angeles Union Station
LEQ	equivalent energy level
LOSSAN	Los Angeles–San Diego–San Luis Obispo Rail Corridor
LST	Local Significance Threshold
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MEI	maximally exposed individual
MMT	million metric ton
MP	Mile Post
mph	miles per hour
MPOs	Metropolitan Planning Organizations
MSAT	mobile source air toxic
MT	Main Track
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NOA	naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
OAL	Office of Administrative Law
OPR	Office of Planning and Research

PEIR	Program Environmental Impact Report
POAQC	projects of air quality concern
PPV	peak particle velocity
ROW	Right-of-Way
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAFETA-LU	Safe, Accountable, Flexible, Efficient, Transportation, Equity Act: A Legacy for Users
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCRRA	Southern California Regional Rail Authority
SCS	Sustainable Communities Strategy
SDP	Service Development Plan
SFHAs	Special Flood Hazard Areas
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVR	San Joaquin Valley Rail
SoCAB	South Coast Air Basin
SSJVIC	South San Joaquin Valley Information Center
SVAB	Sacramento Valley Air Basin (Sacramento Metro Area)
SWPPP	Storm Water Pollution Prevention Plan
TLM	Track Laying Machine
TOD	Transit Oriented Development
UPRR	Union Pacific Railroad
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

This page left intentionally blank for pagination purposes.

Chapter 1 Executive Summary

This Executive Summary for the San Joaquin Corridor Amtrak California Service Project (proposed Project) Draft Program Environmental Impact Report (DPEIR) summarizes the environmental effects that are forecast to occur from implementation of the proposed Project. It also contains a summary of the Project background, Project objectives, and Project description. A table summarizing environmental impacts, mitigation measures, and mitigation responsibility is included at the end of this Executive Summary.

1.1 PROJECT BACKGROUND

The California Department of Transportation, Division of Rail (Caltrans), in cooperation with multiple local agencies located within 12 California counties, proposes to fund expansion of the existing rail system within the BNSF Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along three segments of passenger rail corridor in the San Joaquin Valley and portions of the San Francisco Bay area in support of intercity passenger rail service. The map in Figure 1-1 shows the existing San Joaquin Corridor Intercity Passenger Rail route, operated by the National Railroad Passenger Corporation (Amtrak) as a service of Caltrans San Joaquin Corridor Amtrak California Service. Some of the proposed alternatives would utilize rights-of-way through Tehachapi Pass and the Southern California Regional Rail Authority, also known as Metrolink.

Caltrans is serving as the Lead Agency for compliance with the California Environmental Quality Act (CEQA) based on its responsibility as a funding and planning agency for the proposed Project. Caltrans prepared and circulated a Notice of Preparation (NOP) on November 9, 2012 for the project. Based on the findings of the Initial Study, it was concluded that a Program Environmental Impact Report (PEIR) must be prepared to address the proposed passenger train system operations and infrastructure improvements proposed by the San Joaquin Corridor program. The decision to prepare an EIR is documented in the Initial Study and Notice of Preparation, which is provided in this document as Subchapter 8.1. The decision to prepare an EIR was based on the finding that the proposed Project may have one or more significant effects on the Project environment and surrounding environment.

Caltrans has prepared a program-level, first tier, environmental document for the corridor-wide project as envisioned. This PEIR (San Joaquin Corridor DRAFT PEIR) evaluates the potential environmental impacts of the proposed operational modifications and supporting infrastructure improvements required to support intercity passenger train operations within the San Joaquin Corridor through the 2035 planning period. Conceptual and site specific impact evaluations are presented, depending upon the level of detail available for the rail infrastructure improvements required to support projected operations. Proposed near-term capital improvements are evaluated with more detailed, site-specific information, while long-term capital improvements are evaluated at a programmatic level.

1.2 INTENDED USE OF THIS ENVIRONMENTAL IMPACT REPORT

This DPEIR has been prepared in accordance with the CEQA Statutes and Guidelines, 2013, pursuant to Section 21151 of CEQA. Caltrans is the Lead Agency for the Project and has supervised the preparation of this DPEIR. This DPEIR is an information document which will inform and assist public agency decision makers and the general public of the potential

environmental effects from implementing the Project, including any significant effects that will be caused by implementing the proposed Project. Possible ways to minimize significant effects of the Project and reasonable alternatives to the Project are also identified in this DPEIR.

This document assesses the impacts, including unavoidable adverse impacts and cumulative impacts, related to the construction and operation of the proposed Project. This DPEIR is also intended to support the permitting process of all agencies from which discretionary approvals must be obtained for particular elements of this Project. Other agency approvals (if required) for which this environmental document may be utilized include:

- California Department of Fish and Wildlife
- U.S. Fish and Wildlife Service
- United States Army Corps of Engineers
- Regional Water Boards
- Local jurisdictions Encroachment Permits
- Local jurisdictions Land Use Entitlements
- Central Valley Flood Protection Board
- California State Lands Commission

1.3 PROJECT OBJECTIVES

The purpose of the proposed rail improvements to the San Joaquin Corridor is to accommodate existing and future California intercity passenger rail demand and projected increases in ridership through 2035. The proposed Project would also serve to improve rail safety and operation and provide increased availability of public transportation, which would, in turn, help to reduce emissions from vehicular travel and achieve the goals of State and local plans.

The Project's objectives are as follows:

- Install a second or third main track along:

  » 188.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  » 22.11 miles of the Port Chicago to Oakland segment of UP track; and
  » 43.61 miles of the Stockton to Sacramento segment (Fresno Subdivision) of UP track.

  Figures 3-2a through 3-2d depict where the installation of second or third track is proposed. Figure 3-3a reflects the current BNSF track structure. Figures 3-3b through 3-3g depict the proposed track structure for BNSF and UP in order to improve the efficiency of train movements and ensure that passenger train service can operate on a reliable schedule.

- Install new sidings, or passing track, in order to facilitate train flow on both tracks.

- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations.

- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures.

- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems.

- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas.

- Increase the maximum operating speed of passenger trains in all existing segments of the San Joaquin Corridor from 79 miles per hour (mph) to 90 mph.

- Obtain additional operating equipment (rolling stock i.e., locomotives and passenger cars) to meet the forecasted customer demand for passenger trains.

- Install or update passenger train infrastructure, such as layover or station facilities, to support expansion of future train operations.

These Project objectives are discussed in more detail in Chapter 3 of this DPEIR.

1.4 PROJECT APPROVALS

Although local communities do not have jurisdiction or direct approval over the implementation of the proposed Project, certain components of the Project may be subject to review and approval by other agencies. This includes encroachment permits from local jurisdictions where construction activities may occur outside of the BNSF, UPRR, and under certain conditions Metrolink rights-of-way; filing of a Notice of Intent with the State for a Construction Activity General Permit; and regulatory permits from the U.S. Army Corps of Engineers (Corps), California Regional Water Board and the California Department of Fish and Wildlife. Central Valley Flood Protection Board, California State Lands Commission both sent comments about their jurisdiction and where future infrastructure improvements are proposed within their jurisdiction they may require agency permits or approvals. These permits are discussed in the pertinent Subchapters of Chapter 4 of this DPEIR, including Subchapter 4.4 Hydrology and Utilities/Service Systems and Subchapter 4.2 Biological Resources. For example, where drainage channels must be modified, the permits must be obtained from the referenced regulatory agencies before construction activities can proceed in such areas. It is these collective approvals that will also allow proposed Project development to proceed and cause the corresponding changes to the physical environment.

This DPEIR will be used as the information source and CEQA compliance document for the following discretionary actions or approvals by the CEQA lead agency, Caltrans: funding and implementation of infrastructure improvements; modifying future Amtrak operations by increasing daily passenger trains or speed up to 90 miles per hour; acquiring new rolling stock; and approving planning document for the Corridor.

1.5 IMPACTS

Based on the information in the Initial Study, it is concluded that the proposed Project might cause significant impacts to the following issues that would require further analysis in an EIR: air quality; biological resources (including habitat conservation and natural community conservation plans); cultural resources; noise; greenhouse gases/climate change; stormwater drainage; and hydrology and water quality. Certain conflicts with the circulation system and congestion management programs were also identified for further evaluation.

The Initial Study found that there would be no significant impacts without implementation of mitigation for the issues of Agriculture, Mineral Resources, and Population and Housing. No further analysis of these issues was required, and these issues are not addressed in this DPEIR. The issues of Public Services were found to have no significant impacts without implementation of mitigation except for the issues of impacts on police and fire services, which were found to be less than significant with the implementation of mitigation measures. The issue of Recreation was found to have no significant impacts without implementation of mitigation except for in association with the proposed Sacramento Maintenance Facility, which has been removed from further consideration as part of the proposed Project in the DPEIR. All of the Aesthetics issues were found to be less than significant with implementation of mitigation measures. All of the Geology and Soils issues were found to be less than significant with implementation of mitigation measures, except for the issue regarding the capability of soils to support septic tanks or alternative wastewater treatment, which was found to be less than significant without mitigation because all wastewater treatment will occur through existing wastewater treatment or reclamation facilities. All of the Hazards and Hazardous Materials issues were found to be less than significant without the implementation of mitigation except for issues regarding impacts in the vicinity of private and public airports with the potential to result in a safety hazards, the potential for the project to be located on sites with current or historic hazardous material contamination and the potential for hazards created by the routine transport, use or disposal of hazardous materials, all of which required mitigation to reduce potential impacts to below a level of significance. These issues are not addressed in this DPEIR.

Based on data provided in this DPEIR, it is concluded the proposed Project could result in significant impacts to the following environmental issues: air quality, biological resource and noise. All other potential impacts were determined to be less than significant without mitigation or can be reduced to a less than significant level with implementation of the mitigation measures identified in this DPEIR. Note that the cumulative significant impacts are identified in this document based on findings that the Project's contributions to such impacts are considered to be cumulatively considerable which is the threshold identified in Section 15130 of the State CEQA Guidelines. Table 1.5-1 summarizes all of the environmental impacts and proposed mitigation and monitoring measures. A separate mitigation monitoring and reporting program will be prepared for those measures identified in the Initial Study and provided to the decision-makers prior to finalizing the PEIR.

The following issues evaluated in the DPEIR have been determined to experience less than significant impacts based on the facts, analysis and findings in this DPEIR.

Cultural Resources: Based on the information contained in the technical documents prepared by CRM Tech (provided in Volume 2: Technical Appendices 5a-e), implementation of the proposed Project will not result in cultural resource impacts that will exceed the established thresholds of significance. Significant cultural resource impacts would only occur if such resources were not avoided or were not recovered, evaluated and their data value placed in the broader context of such resources. Mitigation measures have been identified within Subchapter 4.3 Cultural Resources that will be implemented to control potential cultural and paleontological resource impacts for the proposed Project. Based on the requirements designed to ensure that such resources are avoided or otherwise protected and evaluated, implementation of the proposed Project is not forecast to cause or contribute to cultural resource impacts that will exceed the established thresholds of significance.

Greenhouse Gases: Based on the information contained in the technical document titled "Air Quality and GHG Impact Analyses, San Joaquin Corridor Project, Central Valley and Bay Area,

California" prepared by Giroux & Associates dated December 23, 2013 (provided as Appendix 2 of Volume 2 of this DRAFT PEIR), implementation of the proposed Project will not result in Greenhouse Gas (GHG) emission impacts that will exceed the established thresholds of significance. As a result of forecast increased ridership on the San Joaquin Corridor passenger trains, GHG emissions were forecast to be less than the comparable automobile traffic that would result from not implementing the proposed Project, i.e., the proposed Project would result in a reduction in cumulative GHG emissions relative to business as usual. Regarding construction emissions, most jurisdictions do not consider such emissions to be permanent and significant. However, based on the more stringent GHG threshold established by the Bay Area Air Quality Management District (BAAQMD) of 1,100 metric tons of CO_2e per year for project operations and implementation of mitigation measure 4.5-1, the potential construction GHG emissions can be controlled to a less than significant impact level and project-related GHG emissions will not result in a significant impact on global climate change.

Hydrology and Utilities/Service Systems: Based on data and analysis provided in this DPEIR, the proposed Project will result in unavoidable short-term and long-term changes in the hydrology and water quality, but identified mitigation measures will reduce these impacts to a less than significant level. Some drainages that cross the track alignments will be altered, but these changes will not cause significant adverse impacts to drainage flows or to the downstream drainage facilities or flood hazards with implementation of the identified mitigation measures designed to reduce impacts to a less than significant level. Within each County there exists a fairly sophisticated review process when any project has a potential to alter either the volume or floodplain of a 100-year flood hazard zone. These planning tools help to ensure that future development does not result in exposure to significant flood hazards or a significant contribution to areas designated as 100-year flood hazard zones. These institutional protections, along with the mitigation measures identified in Subchapter 4.6, are deemed sufficient to prevent significant impacts to the identified 100-year flood hazard areas along the proposed Project alignment.

Transportation/Circulation: Based on data and analysis provided in this DPEIR, the proposed Project would result in the creation of short-term construction-related circulation system impacts and construction-related generation of additional short-term traffic which could adversely affect local circulation systems. After development, the San Joaquin Corridor Amtrak California Service project would result in localized traffic impacts where new or upgraded stations or facilities require access and parking for passengers and employees. The projected increase in ridership has the potential to impact parking and roadway access infrastructure at existing stations. Because ridership growth at existing stations is expected to occur slowly and incrementally, and because existing conditions and capacity vary from station to station, the majority of infrastructure improvements will be addressed in follow-on environmental documents tiered from this Program EIR.

The proposed Project would serve to improve rail safety and operations and provide increased availability of public transportation, which would, in turn, help to reduce automobile trips and achieve the goals of State and local plans. Within each City and County there exists a review process when any project has a potential to impact local circulation levels of service. These institutional protections, along with the mitigation measures identified in this Subchapter, are deemed sufficient to prevent significant adverse impacts to traffic and transportation systems along the proposed Project alignment.

The proposed Project could result in significant impacts to the following environmental issues: air quality, biological resource and noise based on the facts, analysis and findings in this DPEIR.

Air Quality: Based on the information contained in the technical document titled "Air Quality and GHG Impact Analyses, San Joaquin Corridor Project, Central Valley and Bay Area, California" prepared by Giroux & Associates dated December 23, 2013 (provided as Appendix 2 of Volume 2 of this DRAFT PEIR), implementation of the proposed Project has the potential to result in significant construction-related air emissions even with mitigation identified to reduce potential impacts to the lowest level achievable. Air emission significance thresholds established for each air basin are based on cumulative emissions within each air basin. By controlling construction emissions to a level below the established significance thresholds, project-related construction emissions are not forecast to be cumulatively considerable. However, there could be circumstances in any given year when construction emissions would exceed thresholds, for example, if more than two miles of track are constructed simultaneously in the Bay Area or if construction of both a mile of track and a new passenger station occurred simultaneously in the City of Elk Grove. In addition, there are other large construction projects that could occur during the next 20 years, including the High Speed Rail track and possible new tunnels associated with a Delta bypass. Given these background conditions, the possibility exists for the proposed Project to contribute to cumulatively considerable significant air emissions from project-related construction activities.

Funding for rail infrastructure improvements is typically provided through State funding from the California Transportation Commission and occasionally provided from the FRA. To be conservative, the option of conducting more than one project within an air basin at a time will be retained in order to take advantage of future funding opportunities. Therefore, based on the construction activity emission forecasts provided in Subchapter 4.2 Air Quality of this PEIR, it is found that potential short-term air quality impacts can result in an unavoidable significant adverse air quality impact. All efforts will be made to control construction activity emissions below the thresholds applicable for each air basin, but under plausible future funding scenarios, such emissions may exceed thresholds of significance after application of all construction mitigation measures. Construction-related air quality impacts would not be irreversible, because after completion of the construction activities construction emissions would cease and would no longer contribute to air quality conditions.

The proposed Project operations are not projected to result in significant adverse air quality impacts. Amtrak is forecast to carry approximately two million additional passengers by 2035 within the San Joaquin Corridor (forecast total of 3.2 million passengers per year). The Amtrak San Joaquin Corridor operations extend and connect residents throughout California and into portions of Nevada, providing residents with an alternative means of transportation throughout the State. As discussed in detail in Subchapter 4.2 Air Quality, passenger train emissions per passenger mile depend upon the number of passengers on the train as well on the efficiency rating of the train engine. The projected increase in ridership on passenger trains would reduce the per person emissions of train travel. Based on projections in Subchapter 4.2, Amtrak passenger trains within the Corridor would be substantially more efficient (up to 1,620 BTU/passenger mile) than automobiles (~2,740 BTU/passenger mile) by 2035. If half of the future San Joaquin Corridor passengers take the train instead of driving their automobiles an average of 100 miles (with two people in the car), then 100,000,000 automobile miles on California roads would be eliminated with a corresponding reduced energy consumption of about 40% per passenger mile. New train engines that will be phased in over the next several

years will have much more efficient engines and will produce fewer emissions, increasing the air quality benefit from passenger train travel.

Biological Resources: Based on the information contained in the technical document titled "A Program Natural Environmental Study (PNES)" prepared by Lisa M. Patterson of J.L. Patterson & Associates, there are certain areas within the overall project area of potential impact where the resource impacts from constructing new infrastructure may cause significant adverse impacts on biological resources. These areas are: within the UPRR segment between Oakland and Martinez where extensive fill into San Pablo Bay may be required to install a third main track; within the UPRR Fresno Subdivision segment between Stockton and Sacramento where the construction of a second track could cause direct or indirect loss of the Consumnes River Preserve area; within the BNSF track segment between Port Chicago to Oakley where the Dow Chemical Mitigation area occurs and at the Nichols curve location where substantial loss of wetlands may occur (dependent upon the final design) that cannot be reasonably or feasibly offset; and within other critical habitat areas for specific species identified in the PNES.

The ultimate design of these referenced improvements must be based on sound track engineering, but it may be possible to avoid certain impacts by designs that avoid such impacts. For example, in UPRR's segment between Oakland and Martinez it may be possible to avoid fill into San Pablo Bay by placing the third track inland against the existing bluff. Alternatively, additional modeling can be conducted to determine if it may be possible to expand other segments of the track in less sensitive locations and avoid impacts to highly sensitive areas by leaving particular track segments in the current configuration (single or double track). Final determination of impacts can only occur after new track engineering and design are completed and avoidance measures are incorporated. Where avoidance cannot be achieved, the residual impact may be unavoidable.

The mitigation requirements outlined in Section 4.3.4 of this PEIR are identified to ensure that biological resources are avoided or otherwise protected or mitigated, such that no cumulatively considerable impacts to significant biological resources are forecast to occur if the proposed Project is implemented as analyzed in this document. These impacts may include direct impacts such as the removal or modification of local hydrology, the redirection of flow, and the placement of fill material. Potential indirect impacts on jurisdictional waters include a number of water-quality-related impacts such as erosion and transport of fine sediments or fill downstream of construction, or unintentional release of contaminants into jurisdictional waters that are outside of the project footprint. Temporary impacts to jurisdictional waters include the placement of temporary fill during construction in both man-made and natural jurisdictional waters. Temporary fill could be placed during the construction of access roads and staging/equipment storage areas. The temporary fill would result in a temporary loss of jurisdictional waters and could potentially increase erosion and sediment transport into adjacent areas.

In the case of man-made features, these impacts would remove or disrupt the limited biological functions that these features provide. In natural areas, these activities would remove or disrupt the hydrology, vegetation, wildlife use, water quality conditions, and other biological functions provided by the resources. Therefore these impacts should be quantified and analyzed in a subsequent tier document.

Regardless, until these designs are brought forth and the ultimate impacts are quantified and analyzed, it is concluded that adverse biological resources impact will occur from implementing the proposed Project.

Noise: Based on the information contained in the technical document titled "Noise and Vibration Impact Analyses San Joaquin Corridor Project Central Valley and Bay Area, California," prepared by Giroux & Associates January 2014 (Appendix 7 of Volume 2 of this DRAFT PEIR), the addition of ten additional passenger trains within the San Joaquin Corridor is not forecast to cause any project specific significant noise impacts during future construction or operations. However, the background noise level of 77-83 dBA CNEL along the corridor based on the current volume of train traffic (46 freight trains and 12 passenger trains) already exceeds acceptable noise levels for most uses except agriculture and industrial activities. A substantial portion of the existing noise impact within the Corridor is caused by night time freight train activities which incur substantial penalties in CNEL calculations for noise contributions between 7 pm and 7 am. The addition of ten passenger trains to the Corridor would add approximately 0.5 dBA to the existing background noise levels in the Corridor. The actual contribution of the proposed 10 additional passenger trains would be small, but in the context of the existing noise levels that exceed thresholds for most uses, the addition of more noise by the Project is considered to be a significant impact on sensitive noise uses adjacent to the Corridor. Therefore, it is concluded that the small increment added by the proposed Project must be considered a significant adverse impact. The impact is not irreversible, because future technology may allow for quieter trains or less intrusive noise reduction, and because noise would stop if the proposed additional trains were stopped.

Since the contribution of the proposed Project to the significant noise levels within the Corridor is minimal, no "feasible or reasonable" mitigation has been identified that the project can implement within the whole Corridor. However, it may be possible to address noise levels at site specific noise sensitive land uses, such as existing hospitals or other similar existing uses. Mitigation measure 4.7-10 will be implemented on a case-by-case basis in the future where new infrastructure will be constructed adjacent to existing sensitive uses. Such limited mitigation may be feasible and may reduce noise impacts at specific locations, but the Corridor-wide noise remains an unavoidable significant adverse impact within the Corridor.

1.6 ALTERNATIVES

The California Environmental Quality Act (CEQA) and the State CEQA Guidelines require an evaluation of alternatives to the proposed action. Section 15126 of the State CEQA Guidelines indicates that the "discussion of alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of not significant...." The State Guidelines also state that "a range of reasonable alternatives to the project....which could feasibly attain the basic objectives of the project" and "The range of alternatives required in an EIR is governed by "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice."

Five (5) alternatives are compared to the proposed Project as evaluated in this DPEIR. One of the alternatives that must be evaluated in an EIR is the "no project alternative," regardless of whether it is a feasible alternative to the proposed Project, i.e. would meet the project objectives or requirements. Under this alternative, the environmental impacts that would occur if the proposed Project is not approved and implemented are identified. In addition to the no project alternative, there is one comprehensive alternative to the proposed Project, to serve as a feeder and connector system for High Speed Rail, and two partial route alternatives to the proposed San Joaquin Corridor Route, including an express train that would shift to the BNSF track in Richmond, instead of passing through Martinez, and a single train per day from Bakersfield to Los Angeles Union Station through Tehachapi, Mojave and Lancaster. There are also three alternative station locations in the City of Stockton. No other alternatives to the proposed

Project are given consideration or evaluated in this chapter due to the relatively fixed Corridor Route and the lack of any other practical or feasible alternatives to the service provided by San Joaquin Corridor Amtrak passenger trains. Thus, the alternatives considered in this chapter include:

1. No Project Alternative
2. California High Speed Train System (CHSTS) Feeder Service
3. One Amtrak train per day on BNSF tracks from Richmond to Port Chicago
4. One Amtrak Train per day from Bakersfield to Los Angeles on UPRR and Metrolink tracks
5. Stockton Station Alternative Sites

The only full scope alternative identified to the proposed Project is the No Project Alternative (NPA). The other alternatives discussed are limited route option alternatives and alternative Stockton Station sites. Based on the analysis presented in Chapter 5 of this DPEIR, the NPA is considered to be the overall environmentally superior alternative. The NPA impact that cannot be fully evaluated is the impact from eliminating passenger train capacity and shifting up to 1,000,000 additional annual automobile trips. Since this equates to an average of about 3,000 additional automobile trips per day, the impact on regional and local circulation systems may require new roadway infrastructure or it may not. Regardless, by eliminating all construction and future train operations, the NPA is environmentally superior to the proposed Project.

Section 15126.6(e)(2) indicates that where the NPA is environmentally superior, “the DEIR shall also identify an environmentally superior alternative among the other alternatives.” This guidance is provided because the NPA does not meet any of the project objectives, purpose or need, and is, therefore, not a feasible alternative. Under this guidance the proposed Project is the environmentally superior alternative.

The CHSTS Feeder Service alternative was not considered a comprehensive alternative like the NPA because it will not provide a San Joaquin Corridor-wide transportation alternative. It is only when the CHSTS is considered in conjunction with San Joaquin Corridor Amtrak passenger train operations that this system can provide a Corridor-wide mass transit alternative. The CHSTS alternative was evaluated as causing greater adverse environmental impact than the proposed Project alone, primarily because it would require construction of all the San Joaquin Corridor infrastructure improvements over a period of eight years instead of 21 years. Also, assuming that the CHSTS becomes operational in 2022, the San Joaquin Corridor Amtrak operations will shift from a corridor-wide mass transit operation to a feeder and collector system to support the CHSTS operations. This may result in a fundamental change in the purpose and need for San Joaquin Corridor Amtrak operations. Only as these two systems, CHSTS and San Joaquin Corridor Amtrak, evolve over the next eight years will the specific purpose and need for Amtrak operations be defined and any adjustments in the infrastructure and operational aspects of the Amtrak program become clear.

From the analysis presented in the Draft PEIR, the alternative route from Richmond to Port Chicago on the BNSF track can be implemented without causing significant adverse environmental impacts, compared to the existing UPRR route. Also, it appears that a passenger train operation could be implemented between Bakersfield and Los Angeles, if a contract could be agreed upon with the UPRR and BNSF. The recent approval of State funds as a contribution to improvements of the Tehachapi segment may make such an agreement more plausible in the future. This alternative route would complement, not replace the existing bus transport system from Bakersfield to Los Angeles and other points to the south and east.

Regardless, the economic feasibility of implementing a daily passenger train operation between Bakersfield and Los Angeles may not be possible due to the lengthy eight to ten hours added by such a route.

Table 1.5-1
SUMMARY OF IMPACTS AND AVOIDANCE, MINIMIZATION AND MITIGATION MEASURES DIISCUSSED IN THIS DRAFT PEIR

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures		Responsible Agency
AIR QUALITY		
4.2-1	Simultaneous double-track construction shall not exceed one mile within the BAAB or two miles within the Sacramento Metro area unless it is demonstrated that combined NOx missions will not exceed daily CEQA significance thresholds though the use of cleaner off-road equipment.	
4.2-2	Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a “no visible dust” criterion either at the point of emission or at the right of way line, depending on local regulations.	
4.2-3	Spread soil binder on any unpaved roads used for construction purposes and all project construction parking areas.	
4.2-4	Wash off trucks as they leave the right of way as necessary to control fugitive dust emissions.	
4.2-5	Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.	
4.2-6	Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.	
4.2-7	When the Division of Rail or future entity overseeing Amtrak San Joaquin Corridor operations issues future contracts for bus service the requests for proposal (RFP) shall indicate that RFP respondents will be given additional consideration for supplying buses that incorporate diesel particulate traps or that have been converted to natural gas fuel. Unless the cost difference for such equipment is cost prohibitive, the contract shall be awarded to a contractor that provides equipment with reduce diesel particulate emissions.	
4.2-8	Future locomotive purchases by Division of Rail or future entities overseeing such equipment purchases shall acquire Tier 4 locomotives or locomotives with comparable or better emission controls. When locomotives are scheduled for major engine maintenance, diesel particulate traps or equivalent emission control equipment shall be installed on these locomotives.	

Impact Description	Impact After Implementing Measures
The proposed Project operations are not projected to result in significant adverse air quality impacts. However, there could be circumstances in any given year when construction emissions would exceed thresholds, for example, if more than two miles of track are constructed simultaneously in the Bay Area or if construction of both a mile of track and a new passenger station occurred simultaneously in the City of Elk Grove.	All efforts will be made to control construction activity emissions below the thresholds applicable for each air basin, but implementation of the proposed Project has the potential to result in significant construction-related air emissions even with mitigation identified to reduce potential impacts to the lowest level achievable. Construction-related air quality impacts would not be irreversible, because after completion of the construction activities construction emissions would cease and would no longer contribute to air quality conditions.

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures	Responsible Agency
BIOLOGICAL RESOURCES 4.3-1 Where future project-related impacts will affect undisturbed land with native vegetation, site surveys shall be conducted by a qualified biologist/ecologist. If sensitive species are identified as a result of the survey for which mitigation/compensation must be provided in accordance with regulatory requirements, the following subsequent mitigation actions will be taken: a. The project proponent shall provide compensation for sensitive habitat acreage lost by acquiring and protecting in perpetuity (through property or mitigation bank credit acquisition) habitat for the sensitive species at a ratio of not less than 1:1 for habitat lost. The property acquisition shall include the presence of at least one animal or plant per animal or plant lost at the development site to compensate for the loss of individual sensitive species. b. The final mitigation may differ from the above values based on negotiations between the project proponent and USFWS and CDFW for any incidental take permits for listed species. The project proponent shall retain a copy of the incidental take permit as verification that the mitigation of significant biological resource impacts at a project site with sensitive biological resources has been accomplished. c. Preconstruction botanical surveys for special-status plant communities and special-status plant species will be conducted. in areas that were not previously surveyed because of access or timing issues or project design changes, preconstruction surveys for special-status plant communities and special-status plant species will be conducted before the start of ground-disturbing activities during the appropriate blooming period(s) for the species.	
4.3-2 Biological Resources Management Plan: During final design, a BRMP will be prepared to assemble the biological resources mitigation measures for each specific infrastructure improvement in the future. The BRMP will include terms and conditions from applicable permits and agreements and make provisions for monitoring assignments, scheduling, and responsibility. The BRMP will also discuss habitat replacement and revegetation, protection during ground-disturbing activities, performance (growth) standards, maintenance criteria, and monitoring requirements for temporary and permanent native plant community impacts. The parameters of the BRMP will be formed with the mitigation measures from the project-level EIR/EIS, including terms and conditions as applicable from the USFWS, USACE, SWRCB/RWQCB, and CDFW.	
4.3-3 Prior to discharge of fill or streambed alteration of jurisdictional areas, the project proponent shall obtain regulatory permits from the U.S. Army Corps of Engineers, local Regional Water Quality Control Board and the California Department of Fish and Wildlife. Any future project that must discharge fill into a channel or otherwise alter a streambed shall be minimized to the extent feasible, and any discharge of fill not avoidable shall be mitigated through compensatory mitigation. Mitigation can be provided by restoration of temporary impacts, enhancement of existing resources, or purchasing into any authorized mitigation bank or in-lieu fee program; by selecting a site of comparable acreage near the site and enhancing it with a native riparian habitat or invasive species removal in accordance with a habitat mitigation plan approved by regulatory agencies; or by acquiring sufficient compensating habitat to meet regulatory agency requirements. Typically, regulatory agencies require mitigation for jurisdictional waters without any riparian or wetland habitat to be mitigated at a 1:1 ratio. For loss of any riparian or other wetland areas, the mitigation ratio will begin at 2:1 and the ratio will rise based on the type of habitat, habitat quality, and presence of sensitive or listed plants or animals in the affected area. A Habitat Mitigation and Monitoring Proposal shall be prepared and reviewed and approved by the appropriate regulatory agencies. The project proponent will also obtain permits from the regulatory agencies (U.S. Army Corps of Engineers, Regional Water Quality Control Board, CDFW and any other applicable regulatory agency with jurisdiction	

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures		Responsible Agency
	over the proposed facility improvement) if any impacts to jurisdictional areas will occur. These agencies can impose greater mitigation requirements in their permits, but Caltrans will utilize the ratios outlined above as the minimum required to offset or compensate for impacts to jurisdictional waters, riparian areas or other wetlands.	
4.3-4	Jurisdictional Water Preconstruction Surveys: A jurisdictional water preconstruction survey will be conducted at least six months before the start of ground-disturbing activities to identify and map all jurisdictional waters in the project footprint and if possible within a 250-foot buffer. The purpose of this survey is to confirm the extent of jurisdictional waters in areas where permission to enter was not previously granted and where aerial photograph interpretation was used to estimate the extent of these features. If possible, surveys would be performed during the spring, when plant species are in bloom and hydrological indicators are most readily identifiable. These results would then be used to calculate impact acreages and determine the amount of compensatory mitigation required to offset the loss of wetland functions and values.	
4.3-5	It is illegal to “take” active bird nests of native birds, and if such nests are present at a project site, no take is allowed. To avoid an illegal take of active bird nests, any grubbing, brushing or tree removal will be conducted outside of the State identified nesting season (nesting season is approximately from February 15 through September 1 of a given calendar year). Alternatively, coordination with the CDFW to conduct nesting bird surveys will be completed, and methodology of surveys will be agreed upon. All nesting bird surveys will be conducted by a qualified biologist prior to initiation of ground disturbance to demonstrate that no bird nests will be disturbed by project construction activities.	
4.3-6	Prior to commencement of construction activity in locations that are not fully developed, protocol burrowing owl survey will be conducted using the 2012 survey protocol methodology identified in the “Staff Report on Burrowing Owl Mitigation, State of California, Natural Resources Agency, Department of Fish and Wildlife, March 7, 2012”, or the most recent CDFW survey protocol available. Protocol surveys shall be conducted by a qualified biologist to determine if any burrowing owl burrows are located within the potential area of impact. If occupied burrows may be impacted, an impact minimization plan shall be developed and approved by CDFW that will protect the burrow in place or provide for passive relocation to an alternate burrow within the vicinity but outside of the project footprint in accordance with current CDFW guidelines. Active nests must be avoided with a 250-foot buffer until all nestlings have fledged.	
4.3-7	Prior to commencement of construction activity on a project facility within a MSHCP/HCP plan area, consistency with that plan, or take authorization through that plan, shall be obtained. Through avoidance, compensation or a comparable mitigation alternative, each project shall be shown to be consistent with a MSHCP/HCP.	
4.3-8	Place primary emphasis on the preservation of large, unbroken blocks of natural open space and wildlife habitat area, and protect the integrity of habitat linkages. As part of this emphasis, incorporate programs for purchase of lands, clustering of development to increase the amount of preserved open space, and assurances that the construction of railroad track and other facilities or infrastructure improvements meet standards identical to the environmental protection policies applicable to the specific facilities improvement.	
4.3-9	Require facility designs to be planned to protect habitat values and to preserve significant, viable habitat areas and habitat connection in their natural conditions. a. Within designated habitat areas of rare, threatened or endangered species, prohibit disturbance of protected biotic resources. b. Within riparian areas and wetlands subject to state or federal regulations, riparian woodlands, oak and walnut woodland, and habitat linkages, require that the vegetative resources which contribute to habitat carrying capacity	

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures		Responsible Agency
	(vegetative diversity, faunal resting sites, foraging areas, and food sources) are preserved in place or replaced so as not to result in an measurable reduction in the reproductive capacity of sensitive biotic resources. c. Within habitats of plants listed by the CNDDB or CNPS as “special” or “of concern,” require that new facilities not result in a reduction in the number of these plants, if they are present.	
4.3-10	Maximize the preservation of individual oak, sycamore and walnut trees within proposed development sites.	
4.3-11	Require the establishment of buffer zones adjacent to areas of preserved biological resources. Such buffer zones shall be of adequate width to protect biological resources from grading and construction activities, as well as from the long-term use of adjacent lands. Permitted land modification activities with preservation and buffer areas are to be limited to those that are consistent with the maintenance of the reproductive capacity of the identified resources. The land uses and design of project facilities adjacent to a vegetative preservation area, as well as activities within the designated buffer area are not to be permitted to disturb natural drainage patterns to the point that vegetative resources receive too much or too little water to permit their ongoing health. In addition, landscape adjacent to areas of preserved biological resources shall be designed so as to avoid invasive species which could negatively impact the value of the preserved resource.	
4.3-12	Following construction activities within or adjacent to any natural area, the disturbed areas shall be revegetated using a plant mix of native plant species that are suitable for long term vegetation management at the specific site, which shall be implemented in cooperation with regulatory agencies and with oversight from a qualified biologist. The seeds mix shall be verified to contain the minimum amount of invasive plant species seeds reasonably available for the project area.	
4.3-13	Clean Construction Equipment. During construction, equipment will be washed before entering the project footprint to reduce potential indirect impacts from inadvertent introduction of nonnative invasive plant species. Mud and plant materials will be removed from construction equipment when working in native plant communities, near special-status plant communities, or in areas where special-status plant species have been identified.	
4.3-14	Contractor Education and Environmental Training. Personnel who work onsite will attend a Contractor Education and Environmental Training session. The environmental training is likely to be required by the regulatory agencies and will cover general and specific biological information on the special-status plant species, including the distribution of the resources, the recovery efforts, the legal status of the resources, and the penalties for violation of project permits and laws. The Contractor Education and Environmental Training sessions will be given before the initiation of construction activities and repeated, as needed, when new personnel begin work within the project limits. Daily updates and synopsis of the training will be performed during the daily safety (“tailgate”) meeting. All personnel who attend the training will be required to sign an attendance list stating that they have received the Contractor Education and Environmental Training.	
4.3-15	Biological Monitor to Be Present during Construction Activities in areas where impacts to Riparian, Riverine, Wetland, Endangered Species or Endangered Species Critical habitat occurs. A biological monitor (or monitors) will be present onsite during construction activities that could result in direct or indirect impacts on sensitive biological resources (including listed species) and to oversee permit compliance and monitoring efforts for all special-status resources. A biological monitor (qualified biologist) is any person who has a bachelor’s degree in biological sciences, zoology, botany, ecology, or a closely related field and/or has demonstrated field experience in and knowledge about the identification and life history of the special-status species or jurisdictional waters that could be affected by project	

	Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures	Responsible Agency
	activities. The biological monitor(s) will be responsible for monitoring the Contractor to ensure compliance with the Section 404 Individual Permit, Section 401 Water Quality Certification and the Lake and Streambed Alteration Agreement. Activities to ensure compliance would include performing construction-monitoring activities, including monitoring environmental fencing, identifying areas where special-status plant species are or may be present, and advising the Contractor of methods that may minimize or avoid impacts on these resources. Biological monitor(s) will be required to be present in all areas during ground disturbance activities and for all construction activities conducted within or adjacent to identified Environmentally Sensitive Areas, Wildlife Exclusion Fencing, and Non-Disturbance Zones.	
4.3-16	Food and Trash: All food-related trash items (e.g., wrappers, cans, bottles, food scraps) will be disposed of in closed containers and removed at least once a week from the construction site.	
4.3-17	Rodenticides and Herbicides: Use of rodenticides and herbicides in the project footprint will be restricted. This measure is necessary to prevent poisoning of special-status species and the potential reduction or depletion of the prey populations of special-status wildlife species.	
4.3-18	Wildlife Exclusion Fencing: Exclusion barriers (e.g., silt fences) will be installed at the edge of the construction footprint and along the outer perimeter of Environmentally Sensitive Areas and Environmentally Restricted Areas to restrict special-status species from entering the construction area. The design specifications of the exclusion fencing will be determined through consultation with the USFWS and/or CDFW. Clearance surveys will be conducted for special-status species after the exclusion fence is installed. If necessary, clearance surveys will be conducted daily.	
4.3-19	Equipment Staging Areas: Staging areas for construction equipment will be located outside sensitive biological resources areas, including habitat for special-status species, jurisdictional waters, and wildlife movement corridors, to the maximum extent possible.	
4.3-20	Plastic mono-filament netting (erosion-control matting) or similar material will not be used in erosion control materials to prevent potential harm to wildlife. Materials such as coconut coir matting or tackified hydroseeding compounds will be used as substitutes.	
4.3-21	Vehicle Traffic: During ground-disturbing activities, project-related vehicle traffic will be restricted within the construction area to established roads, construction areas, and other designated areas to prevent avoidable impacts. Access routes will be clearly flagged and off-road traffic will be prohibited.	
4.3-22	Entrapment Prevention: All excavated, steep-sided holes or trenches more than 8 inches deep will be covered at the close of each working day with plywood or similar materials, or a minimum of one escape ramp constructed of earth fill for every 10 feet of trenching will be provided to prevent the entrapment of wildlife. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. All culverts or similar enclosed structures with a diameter of 4 inches or greater will be covered, screened, or stored more than 1 foot off the ground to prevent use by wildlife. Stored material will be cleared for common and special-status wildlife species before the pipe is subsequently used or moved.	
4.3-23	Weed Control Plan: A Weed Control Plan will be prepared and implemented to minimize or avoid the spread of weeds during ground-disturbing activities. In the Weed Control Plan, the following topics will be addressed: • Schedule for noxious weed surveys.	

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures	Responsible Agency
• Weed control treatments, including permitted herbicides, and manual and mechanical methods for application; herbicide application will be restricted in Environmentally Sensitive Areas. • Timing of the weed control treatment for each plant species. • Fire prevention measures.	
4.3-24 Dewatering/Water Diversion: Open or flowing water may be present during construction. If construction occurs where there is open or flowing water, a strategy that is approved by the resource agencies (e.g., USACE, SWRCB/RWQCB, and CDFW), such as the creation of cofferdams, will be used to dewater or divert water from the work area. If cofferdams are constructed, implementation of the following cofferdam or water diversion measures is recommended to avoid and lessen impacts on jurisdictional waters during construction: • The cofferdams, filter fabric, and corrugated steel pipe are to be removed from the creek bed after completion of the project. • The timing of work within all channelized waters is to be coordinated with the regulatory agencies. • The cofferdam is to be placed upstream of the work area to direct base flows through an appropriately sized diversion pipe. The diversion pipe will extend through the Contractor's work area, where possible, and outlet through a sandbag dam at the downstream end. • Sediment catch basins immediately below the construction site are to be constructed when performing in-channel construction to prevent silt- and sediment-laden water from entering the main stream flow. Accumulated sediments will be periodically removed from the catch basins.	

Impact Description	Impact After Implementing Measures
Based on the analysis in the DPEIR, there are certain areas within the overall project area of potential impact where the resource impacts from constructing new infrastructure may cause significant adverse impacts on biological resources.	Final determination of impacts can only occur after new track engineering and design are completed and avoidance measures are incorporated. Where avoidance cannot be achieved, the residual impact may be significant and unavoidable, even with the implementation of the identified mitigation measures.

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures	Responsible Agency
CULTURAL RESOURCES 4.4-1 Where a Cultural Resources evaluation has determined resources occur within the APE for a proposed project improvement, an assessment of the resources will be required prior to approval of a specific second-tier project. The following outlines a minimum acceptable level of evaluation to assess resources. Properties shall be evaluated using a well-understood cultural context that describes the cultural development of an area and identifies the significant patterns that properties represent. This same historic (or prehistoric) context is used to organize all identification, registration, and preservation decisions within the planning framework. To be useful in subsequent stages of the planning process, evaluation decisions must make clear the significance of the property with the historic (or prehistoric) context. Potential preservation treatments should not influence the evaluation of significance (National Park Service n.d.:35).	

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures	Responsible Agency
The nature and type of assessment will depend on the particular resource(s) and level of information for a particular region. Consequently, it is not possible to prescribe specific methods to be utilized. However, there are certain basic elements that should be included and are as follows: a. Preparation of a Research Design - Archaeological documentation can be carried out only after defining explicit goals and a methodology for reaching them. The goals of the documentation effort directly reflect the goals of the preservation plan and the specific needs identified for the relevant historic (or prehistoric) contexts. b. Field Studies - The implementation of the research design in the field must be flexible enough to accommodate the discovery of new or unexpected data classes or properties, or changing field conditions. An important consideration in choosing methods to be used in the field studies should be assuring full, clear, and accurate description of all field operations and observations, including excavation and recording techniques and stratigraphic or inter-site relationships. c. Report - The assessment report should contain the following information: (1) Description of the study area; (2) Relevant historical (or prehistoric) documentation/background research; (3) The research design; (4) The field studies as actually implemented, including any deviation from the research design and the reason for the changes; (5) All field observations; (6) Analysis and results, illustrated as appropriate with tables, maps, and graphs; (7) Evaluation of the study in terms of the goals and objectives of the investigation, including discussion of how well the needs dictated by the planning process were served; (8) Information on where recovered materials are curated and the satisfactory condition of those facilities to protect and to preserve the artifacts and supporting data.	
4.4-2 Once the specific APE for each project under the proposed program is established, it should be treated with a standard Phase I, project-level historical/archaeological resources assessment, including an intensive-level field survey, especially in the areas of high archaeological sensitivity, unless such an assessment has already occurred that analysis by a cultural resources professional has determined is applicable to the proposed project. The following outlines a minimum acceptable level of evaluation to inventory resources. a. Literature and Records Search - Existing maps, site reports, site records, and previous EIRs in the region of the subject area should be researched to identify known archaeological sites and works completed in the region. All maps, EIRs, historical maps and documents, and site records should be cited in text and references. Local historical societies should also be contacted and referenced. State Information Centers will provide the bulk of this information. The Cultural Resources Reports prepared for this PEIR may include sufficient literature and records search for covered locations if project development occurs within a reasonable time frame, as determined by a qualified cultural resource professional.	

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures		Responsible Agency
	b. Field Reconnaissance - Conduct a surface survey to obtain comprehensive examination of current status of the area and gather general understanding of the kinds of cultural and related phenomena present. At a minimum, all ground surfaces chosen for survey should be walked over in such a way that every foot of ground can be visually scanned. All previously recorded cultural resources should be revisited to determine their current status, and all newly discovered sites should be recorded as appropriate. Trinomial designations will be obtained from the Information Center. c. Report - A technical report should be prepared which fully describes both the methods and results of all efforts. Research sources should be listed, and the information summarized. The field work should be presented in detail, with all appropriate maps and graphics. Any areas not inspected with full intensity should be specified, preferably using clear, easily understood maps, and the reasons for the deficiency presented. Site records should be prepared for all new discoveries, and amendments prepared to update old records where necessary; since locational data are shielded from public access, the actual forms should be provided in the separable appendix, but the sites should be described in the main text. Each resource description should include a professional opinion of significance, with reference to the qualities or research potential which make it worthy of further consideration. Archaeological sites which need test excavation to confirm significance, integrity, and boundaries should be identified, and a sampling program recommended. For each potentially significant cultural resource, possible impacts should be listed and mitigating measures developed. All standards for compliance with the CEQA requirements and those of the lead agencies should be addressed.	
4.4-3	Prior to construction, construction personnel shall be briefed regarding what to do in the event buried cultural materials are encountered. If buried cultural resources (historic or pre-historic) are discovered during any earth-moving associated with the program, all work in the area of the find shall cease, and a qualified professional retained by the Project Proponent shall investigate the find and make recommendations on the disposition of any buried resources. This shall include assessing the value of objects, determining whether the resource deserves curation, and preparing and implementing a curation plan to protect such resources. The qualified professional shall compile a report of findings and make it available to peers for review and use of the information.	
4.4-4	If human remains are accidentally exposed during construction activities, all work shall cease in the area of discovery and the appropriate County Coroner's Office shall be contacted pursuant to procedures set forth in Section 7050.5 of the Health and Safety Code. Any discoveries of Native American human remains will be address under the procedures in PRC Section 5097.98 et al.	
4.4-5	In situations where resources are potentially subject to direct or indirect impact and testing or data recovery is not proposed, an archaeological/paleontological monitor and Native American observer/consultant should be present during subsurface work. One circumstance under which this might occur would be if a known resource was close to an area of impact and the site boundaries were ambiguous. Monitors help insure that exposed data or materials are collected and that if potentially significant cultural materials or features are encountered, they will be preserved either by realignment of the proposed facilities or by prompt evaluation and recommendations for any necessary mitigative measures. If archaeological/cultural monitoring is required during the ground-disturbing activities for the undertaking, monitors representing the various tribes that are indigenous to the area should rotate monitoring responsibilities.	

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures		Responsible Agency
4.4-6	Prior to construction, construction personnel shall be briefed regarding what to do in the event buried paleontological materials are encountered. If paleontological materials (bones, shells, leaf prints, etc.) are uncovered, all work in the area of the find shall cease, and a qualified professional retained by the Project Proponent shall investigate the find and make recommendations on the disposition of any buried resources. This shall include assessing the value of objects, determining whether the resource deserves curation, and preparing and implementing a curation plan to protect such resources. The qualified professional shall compile a report of findings and make it available to peers for review and use of the information.	
4.4-7	If an archaeological or paleontological resource is found to be significant and no other preservation option is possible, mitigation of adverse effects by scientific data recovery, including analysis and reporting is the method of last resort. Such a mitigation program is usually only developed after an assessment test has been completed to identify physical parameters and cultural complexity, and formulate a research design. Each specific program would have to be developed in response to the site and potential impact, with the concurrence of the appropriate agencies and in consultation with Native American representatives. The project would provide sufficient funding to document, collect and curate significant resources.	
4.4-8	To ensure successful avoidance of cultural resources in the vicinity of Site 07-002570, both an archaeological and tribal monitor will be present during initial ground disturbance activities within 100 feet of the known location of the archaeological deposit. In the event intact archaeological deposits are exposed, construction at the find location will be stopped and new measures will be designed and implemented in consultation with the SHPO and tribes, and will at a minimum meet the standards outlined in mitigation measures 4.4-3 through 4.4-7 above.	
4.4-9	At all locations where project impacts will extend to depths below 10 feet or where transitions occur to older sediments, spot monitoring by a qualified paleontologist shall be carried out to determine if high sensitivity deposits are being excavated. If high sensitivity deposits are being disturbed, then continuous paleontological monitoring will be required for all ground disturbing activities within these deposits. If paleontological resources are located during construction within sensitive deposits, construction in that area must stop, the resources must be protected, and treatment by a qualified paleontologist must occur following professional procedures.	

Impact Description	Impact After Implementing Measures
Significant cultural resource impacts would only occur if such resources were not avoided or were not recovered, evaluated and their data value placed in the broader context of such resources. Mitigation measures are identified that will be implemented to control potential cultural and paleontological resource impacts for the proposed Project.	Based on the requirements designed to ensure that cultural and paleontological resources are avoided or otherwise protected and evaluated, implementation of the proposed Project is not forecast to cause or contribute to cultural resource impacts that will be significant.

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures	Responsible Agency
GREENHOUSE GASES / GLOBAL WARMING 4.5-1 In any year when track improvement installation is expected to exceed 12.5 miles, a GHG reduction program shall become part of construction specifications. The program shall document that through the use of alternative fuels or cleaner equipment or other equally effective measures, annual GHG emissions from construction activities will be at least 28.9% less than for the business-as-usual condition (the AB-32 compliance goal).	

Impact Description	Impact After Implementing Measures
The operation of the proposed Project is forecast to result in a reduction in cumulative GHG emissions relative to business as usual. Most jurisdictions do not consider construction emissions to be permanent and significant. However, based on the most stringent applicable GHG threshold of 1,100 metric tons of CO_2e per year, implementation of mitigation measure 4.5-1 is required to reduce the potential construction GHG emissions to a less than significant impact level.	The construction and operational greenhouse gas emission analysis in the DEIR concludes that the proposed Project will not result GHG emission impacts that will be significant with implementation of the identified mitigation measure. Project-related GHG emissions will not result in a significant impact on global climate change.

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures	Responsible Agency
HYDROLOGY AND UTILITIES / SERVICE SYSTEMS 4.6-1 Where site specific data verify that a 100-year flood hazard zone can be clear spanned, Caltrans shall avoid installing infrastructure within the 100-year flood hazard zone. This requirement can be waived in an instance where installing a clear-span bridge causes some other unavoidable significant adverse impact that Caltrans deems of greater concern (such as a significant seismic hazard). Under such a case the bridge design shall be reviewed under the following mitigation measures.	
4.6-2 When a future bridge or levee design is completed for implementation within a 100-year flood hazard zone, Caltrans shall ensure that modeling, equivalent to standard HEC-RAS models, is conducted to determine modifications in downstream flows. This modeling shall be coordinated with local County public works or flood control agencies, and for those new infrastructure facilities located within the Central Valley, the Central Valley Flood Protection Board shall also be notified and consulted. If the modeling demonstrates that the proposed new infrastructure will substantially impede or redirect flood flows, alternative infrastructure designs must be considered and implemented that minimize such changes to a less than significant impact level, or downstream flood control facilities shall be modified to reduce or minimize potential indirect impacts to a less than significant impact level.	
4.6-3 Adequate freeboard shall be incorporated in all new bridges to pass the 100-year flood flow with a minimum of one foot of freeboard above the maximum elevation of the flood flow at a specific location.	

Impact Description	Impact After Implementing Measures
Based on data and analysis provided in this DPEIR, the proposed Project will result in unavoidable short-term and long-term changes in the hydrology and water quality.	Some drainages that cross the track alignments will be altered, but these changes will not cause significant adverse impacts to drainage flows or to the downstream drainage facilities or flood hazards with implementation of the identified mitigation measures designed to reduce impacts to a less than significant level.

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures		Responsible Agency
NOISE		
4.7-1	Construction shall be limited to the hours of 7 a.m. to 7 p.m. on Monday through Friday, and between 9 a.m. to 6 p.m. on Saturday, and shall be prohibited on Sundays and federal holidays. Exceptions for work outside of these hours can occur for declared emergency circumstances. Applicable local agency noise standards may be used instead of the threshold(s) identified in this measure if such local measures provide equal or greater construction noise mitigation/attenuation.	
4.7-2	All construction vehicles and fixed or mobile equipment shall be equipped with properly operating and maintained mufflers.	
4.7-3	All employees that will be exposed to noise levels greater than 75 dB over an 8-hour period shall be provided with adequate hearing protection devices to ensure no hearing damage will result from construction activities.	
4.7-4	If equipment is being used that can cause hearing damage at adjacent noise receptor locations (distance attenuation shall be taken into account), portable noise barriers shall be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds.	
4.7-5	Project design will include measures which assure adequate interior noise levels as required by Title 25 (California Noise Insulation Standards).	
4.7-6	Utilize construction methods or equipment that will provide the lowest level of noise impact, i.e., use newer equipment that will generate lower noise levels.	
4.7-7	Schedule the construction such that the minimum number of pieces of equipment will be operating at the same time.	
4.7-8	Maintain good relations with the local community where construction is scheduled, such as keeping people informed of the schedule, duration, and progress of the construction, to minimize the public objections of unavoidable noise. Communities should be notified in advance of the construction and the expected temporary and intermittent noise increases during the construction period.	
4.7-9	Where San Joaquin Corridor equipment or facilities will be installed adjacent to sensitive noise receptors in support of this program, a site specific noise/ vibration study will be conducted to ensure that local jurisdictional noise standards will be met. Where noise attenuation is required, the facility design shall incorporate the specific noise attenuation best management practices required to mitigate noise impacts to a less than significant level.	
4.7-10	Where a future new track will be installed within urban areas that contain noise sensitive uses, a project specific noise study shall be compiled and feasible mitigation measures identified in the study to attenuate increased rail noise shall be implemented by Caltrans.	

Impact Description	Impact After Implementing Measures
Based on the analysis in the PDEIR, the addition of ten additional passenger trains within the San Joaquin Corridor is not forecast to cause any project specific significant noise impacts during future construction or operations. However, the background noise level of 77-83 dBA CNEL along the corridor based on the current volume of train traffic (46 freight trains and 12 passenger trains) already exceeds acceptable noise levels for most uses except agriculture and industrial activities. The addition of ten passenger trains to the Corridor would add approximately 0.5 dBA to the existing background noise levels in the Corridor. The actual contribution of the proposed 10 additional passenger trains would be small, but in the context of the existing noise levels that exceed thresholds for most uses, the addition of more noise by the Project is considered to be a cumulatively considerable significant impact on sensitive noise uses adjacent to the Corridor.	Since the contribution of the proposed Project to the significant noise levels within the Corridor is minimal, Caltrans has not identified any "feasible or reasonable" mitigation that the project can implement within the whole Corridor. However, it may be possible to address noise levels at site specific noise sensitive land uses, such as existing hospitals or other similar existing uses. Mitigation measure 4.7-10 will be implemented on a case-by-case basis in the future where new infrastructure will be constructed adjacent to existing sensitive uses. Such limited mitigation may be feasible and may reduce noise impacts at specific locations, but the Corridor-wide noise remains an unavoidable cumulatively considerable significant adverse impact within the Corridor.

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures	Responsible Agency
TRAFFIC / TRANSPORTATION	
4.8-1 Where local jurisdictions determine that an at-grade rail crossing is contributing to unsatisfactory roadway functionality, the local jurisdiction shall initiate consultation with Caltrans DOR regarding separating rail and non-rail uses.	
4.8-2 Where local jurisdictions determine that vehicles accessing an Amtrak Station are contributing to unsatisfactory roadway functionality, the local jurisdiction shall initiate consultation with Caltrans DOR regarding fair share contribution to infrastructure upgrades of the surrounding transportation infrastructure.	
4.8-3 Caltrans DOR will periodically review parking capacity at Amtrak stations and shall initiate parking management plans when 85% of the station parking spaces are routinely occupied. Parking management plans shall be developed in conjunction with the local jurisdiction.	
4.8-4 Where a new or relocated station or layover facility is proposed, potential circulation impacts will be evaluated based upon project specific design when funding becomes available. Where a traffic study has already been completed, review in conjunction with the local jurisdiction shall determine if the existing study is sufficient based upon final project design and applicability of circulation assumptions. Specific measures shall be identified by the traffic study to ensure that local circulation system standards can be met. Where this is not possible, a follow-on EIR shall be prepared.	
4.8-5 Prior to initiating roadway impacts at each affected at-grade crossing, a construction traffic management plan must be developed, approved by the County or City and fully implemented by the construction contractor to minimize adverse effects on the flow of traffic during construction. At a minimum this plan shall address, but is not limited to, such items as: • How to minimize disruption of vehicle and alternative modes of traffic at all times, but particularly during periods of high traffic volumes. • Provision of adequate access to meet safety and emergency vehicle access. • Adequate signage and other controls, including flagpersons, to ensure that traffic can flow adequately during construction.	

Environmental Category / Issue and Avoidance, Minimization and Mitigation Measures	Responsible Agency
• The identification of alternative routes that can meet the traffic flow requirements of a specific area, including communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur. • Time of construction activities (e.g., off-peak hours). • Truck/Haul routes. • Construction employee parking. • Construction equipment staging. • Potential lane closures. • Work zone traffic control. • Control of traffic at any location where short-term hazards cannot be avoided. The construction traffic management plan is viewed as mitigation for short-term circulation system impacts and must be designed to minimize many of the anticipated impacts associated with the construction activities of the project.	
4.8-6 The construction contractor will ensure that traffic safety hazards, such as uncovered or unfilled open trenches, will not be left in roadways during period of time when construction personnel are not present, such as nighttime and weekends.	
4.8-7 The construction contractor will repair all roads adequately after construction to ensure that traffic can move in the same manner as before construction.	

Impact Description	Impact After Implementing Measures
Based on data and analysis provided in this DPEIR, the proposed Project would result in the creation of short-term construction-related circulation system impacts and construction-related generation of additional short-term traffic which could adversely affect local circulation systems. After development, the San Joaquin Corridor Amtrak California Service project would result in localized traffic impacts where new or upgraded stations or facilities require access and parking for passengers and employees. The projected increase in ridership has the potential to impact parking and roadway access infrastructure at existing stations.	Within each City and County there exists a review process when any project has a potential to impact local circulation levels of service. These institutional protections, along with the mitigation measures identified in this Subchapter, are deemed sufficient to prevent significant adverse impacts to traffic and transportation systems along the proposed Project alignment.

This page left intentionally blank for pagination purposes.

Chapter 2 Introduction

2.1 BACKGROUND

The California Department of Transportation, Division of Rail (Caltrans), in cooperation with multiple local agencies located within 11 California counties, proposes to fund expansion of the existing rail system within the BNSF Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along three segments of passenger rail corridor in the San Joaquin Valley and portions of the San Francisco Bay area in support of intercity passenger rail service. The map in Figure 1-1 shows the existing San Joaquin Corridor Intercity Passenger Rail route, operated by the National Railroad Passenger Corporation (Amtrak) as a service of the California Department of Transportation (San Joaquin Corridor Amtrak California Service). Some of the proposed alternatives would utilize rights-of-way through Tehachapi Pass and the Southern California Regional Rail Authority (SCRRA), also known as Metrolink. The expansion of this system would serve to accommodate existing and projected intercity passenger rail demand within the San Joaquin Corridor through 2035.

Caltrans has prepared a program-level, first tier, environmental document for the corridor-wide project as envisioned. This Program Environmental Impact Report (San Joaquin Corridor DRAFT PEIR) evaluates the potential environmental impacts of the proposed operational modifications and supporting infrastructure improvements required to support intercity passenger train operations within the San Joaquin Corridor through the 2035 planning period. The program is designed to meet the forecasted increase in intercity passenger demand through 2035, the expanded number of passenger train operations required to meet the demand, and the specific infrastructure improvements required to support future operations. Conceptual and site specific impact evaluations are presented, depending upon projected operations and the rail infrastructure improvements required to support those operations. Under this approach, proposed near-term capital improvements are evaluated with more detailed, site-specific information, while long-term capital improvements are evaluated at a programmatic level. The proposed San Joaquin Corridor project would:

- Install a second or third main track along:
  - 188.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  - 22.11 miles of the Port Chicago to Oakland segment of UPRR track;
  - 42.62 miles of the Stockton to Sacramento segment (Fresno Subdivision) of UPRR track.

  (Figures 1-2a through 1-2d depict where the installation of second or third track is proposed. Figure 1-3a reflects the current BNSF track structure. Figures 1-3b through 1-3h depict the proposed track structure for BNSF and UPRR in order to improve the efficiency of train movements and ensure that passenger train service can operate on a reliable schedule.)

- Install new sidings, or passing track, in order to facilitate train flow on existing tracks.

- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations.

- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures.

- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems.

- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas.

- Increase the maximum operating speed of passenger trains in all existing segments of the existing San Joaquin Corridor from 79 miles per hour (mph) to 90 mph.

- Obtain additional operating equipment (rolling stock e.g., passenger cars and locomotives) to meet the forecasted customer demand for passenger trains.

- Install or upgrade passenger train infrastructure, such as layover or station facilities, to support expansion of future train operations.

Caltrans will serve as the lead agency on this project for CEQA purposes. The proposed project would improve rail safety and operation and provide increased availability of public transportation, which would, in turn, help to reduce emissions from vehicular travel and achieve the goals of State and local plans.

If federal funding becomes available, a separate document for compliance with the National Environmental Policy Act (NEPA) will be prepared at that time.

2.2 PURPOSE AND USE OF AN EIR

The California Environmental Quality Act (CEQA) was adopted to assist with the goal of maintaining the quality of the environment for the people of the State. Compliance with CEQA, and its implementing guidelines, requires that an agency making a decision on a project must consider its potential environmental effects/impacts before granting any approvals or entitlements. Further, the State adopted a policy "that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." Thus, an agency, in this case Caltrans Division of Rail/District 7 (Caltrans), must examine feasible alternatives and identify feasible mitigation measures as part of the environmental review process. CEQA also states "that in the event specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof." (§21002, Public Resources Code)

When applied to a specific project, such as the San Joaquin Corridor Amtrak California Service, the agency is required to identify the potential environmental impacts of implementing the project; and, where potential significant impacts are identified the agency must determine whether there are feasible mitigation measures or alternatives that can be implemented to avoid or substantially lessen significant environmental effects of a project. The first step in this process, completion of an Initial Study to determine whether an Environmental Impact Report (EIR) is required and issuance of a Notice of Preparation (NOP), has been completed for the San Joaquin Corridor Amtrak California Service. This constitutes the "project being considered for approval and implementation" by Caltrans. Based on the information in the Initial Study, it was concluded that the proposed project might cause significant impacts to the following issues that require further analysis in an EIR: air quality; biological resources (including habitat conservation and natural community conservation plans); cultural resources; noise; greenhouse

gases/climate change; stormwater drainage; and hydrology and water quality. Certain conflicts with the circulation system and congestion management programs were also identified for further evaluation.

Based on the findings in the Initial Study, it is concluded that a Program Environmental Impact Report (PEIR) must be prepared for the proposed project.

Caltrans prepared and circulated a Notice of Preparation (NOP) for the project. The NOP public review period through the State Clearinghouse began on November 13, 2012 and ended 30 days later, December 13, 2012. Respondents were requested to send their suggestions for, and comments on, environmental information and issues that should be addressed in the San Joaquin Corridor DRAFT PEIR no later than 30 days after receipt of the NOP. The NOP was distributed to interested agencies, the State Clearinghouse, and a list of interested parties compiled by Caltrans. A copy of the project Initial Study was distributed with the NOP. Comments were received through December 13, but several agencies requested additional time to respond and Caltrans agreed to accept those comments. Twenty-seven comment letters to the NOP were submitted to Caltrans. A copy of the Initial Study is provided in Subchapter 8.1 of this San Joaquin Corridor DRAFT PEIR. A copy of the NOP and the 27 comments are included in Subchapter 8.2, and responses to the comment letters are included in the following text.

Several new issues for consideration in the San Joaquin Corridor DRAFT PEIR, not already identified in the Initial Study, were raised by the comment letters. A copy of the Initial Study, Notice of Preparation, and related materials are provided in Appendices 8.1, 8.2 and 8.7 of this Draft PEIR. This San Joaquin Corridor DRAFT PEIR was prepared in order to address all of the issues identified and to provide information intended for use by Caltrans, interested and responsible agencies and parties, and the general public in evaluating the potential environmental effects of implementing the proposed Project.

CEQA requires that Caltrans consider the environmental information in the project record, including this San Joaquin Corridor DRAFT PEIR, prior to making a decision on the proposed project. The decision that will be considered by Caltrans is whether to approve the rail infrastructure and San Joaquin Corridor Amtrak California Service operational changes described in Chapter 3, Project Description, or to reject the project as proposed. Caltrans also has the authority to modify the project based on input provided during the public review process.

2.2.1 Summary of Responses to the NOP Comment Letters and Scoping Meeting Comments

Caltrans received 27 comment letters/e-mails and a number of comments at the scoping meetings. As a result of these comments, changes have been made to the project description. Some issues have been eliminated and other issues have been added. As normally occurs when such diverse input is received, there are also some contradictory comments, statements of opinion, and a number of comments that do not directly address the scope of the San Joaquin Corridor DRAFT PEIR. Responses are provided to all comments received to date. A detailed summary of the content of the NOP comment letters and scoping meeting comments, as well as the Caltrans responses is provided in Appendix 8.2 of this DRAFT PEIR. A copy of each written or e-mailed comment and the scoping meeting comments are also provided in Appendix 8.2 of this DRAFT PEIR. Major revisions to the Project Description or alternatives under consideration are listed below. An abbreviated summary of the comments received and Caltrans responses to the comments is provided in the table beginning on Page 2-5. The

comments and responses are organized according to the environmental issue category under which the comment would be considered.

After careful consideration of the comments received, Caltrans made the following substantial alterations to the Project Description:

1. The Sacramento Maintenance Facility, now named as the Northern California Maintenance Facility, will be evaluated as a separate project under CEQA. It will be eliminated from the proposed Project Description.

2. The project will no longer consider two rail corridor alternatives for the connection between Stockton and Sacramento. The Sacramento Subdivision, the western alternative that was presented in the NOP, has been eliminated.

3. A new station is evaluated in the City of Elk Grove.

4. A new station is evaluated in the City of Hercules.

5. The analysis of the proposed relocated/updated Amtrak station in the City of Stockton carries forward, rather than eliminating, Alternative #2 for consideration. This alternative station location could serve both the San Joaquin Corridor Amtrak California and Altamont Commuter Express (ACE) train operations.

6. Additional track along the entire length of the UPRR Fresno Subdivision alignment between Stockton and Sacramento will be evaluated, rather than eliminating 2 miles near Lodi from consideration.

7. A *Preferred Alternative* will not be identified.

The NOP identified a Preferred Alternative as the expansion of the rail facilities in support of a San Joaquin Corridor system that would be capable of carrying passengers at speeds up to 90 mph. However, at the request of many commenters, a Preferred Alternative is not identified in the Draft PEIR and will not be considered until the Final EIR is compiled. Many of the comments submitted in response to the NOP requested a more detailed discussion of the "Blended System" concept that was being proposed by the California High Speed Rail Authority (CHSRA) at the time. Caltrans initiated communication with CHSRA to develop a more detailed description of a Blended System.

In May of 2013, representatives from BNSF met with CHSRA to confirm details of a Blended System concept as outlined in the San Joaquin Corridor Service Development Plan (SDP). During this meeting, the BNSF was informed that it was unlikely that a Blended System would be pursued along the First Construction Segment (FCS; now referred to as the Initial Construction Segment or ICS) between Bakersfield and Madera. Subsequent discussions with CHSRA indicate that a number of possible "shuttle" operations along the FCS are being considered, but specific operational details are yet to be developed. Caltrans is prepared to evaluate, in a future environmental document, any interconnected operational scenarios between the two systems once they have been defined. While there will be no Blended System, CHSRA has expressed the need for connections between intercity passenger rail (ICR) and the Initial Operation Section (IOS) between the San Fernando Valley and Madera, anticipated to be in service sometime after 2022. Caltrans continues to meet with the CHSTS Staff in order to define integration between San Joaquin Corridor Amtrak California Service and CHSTS

operations. A conceptual discussion of future interconnection with the IOS and the supporting infrastructure is provided in the revised Project Description Section 3.3.6 of Chapter 3 and within Chapter 5, Alternatives. The analysis in Chapter 5 of an integrated alternative incorporates detailed information, as well as potential impacts of the proposed San Joaquin Corridor Amtrak California Service infrastructure improvements necessary to serve future integrated operations. The issue of determining which ICR system components will be implemented over the next 10 to 20+ years to support the IOS will be based on actual demand for either or both passenger rail services.

The following table contains a summary of Comments and Responses Categorized by Environmental Issue:

Aesthetics	
Comment 1	Suggest using lighting that does not create glare and that minimizes energy use. (Letter #1, *Energy-Climate Committee of Sierra Club California*)
Response	*Mitigation is included in the Initial Study to address potential glare or offsite light impacts. Mitigation is also identified to integrate low energy lighting design elements in future structures that require lighting.*
Comment 2	Under what circumstances non-native species would be considered for landscaping? (Letter #1, *Energy-Climate Committee of Sierra Club California*)
Response	*Non-invasive, non-native species would only be considered when there are no native species that could meet a specific design requirement; where dense plant cover is required to control erosion and no native species are available to succeed in this role; and in locations that are completely urbanized.*
Agriculture	
Comment 3	Recommend analyzing potential direct and indirect impacts to farmland in the San Joaquin Corridor DRAFT PEIR and providing mitigation for the conversion of prime agricultural land and for cumulative growth inducing impacts on surrounding farmland. A commenter expresses concern that farm holdings will be bisected and that farmers will be required to drive 10 to 20 miles around to an over/underpass to access bisected lands, and that additional farmland will be lost for farm equipment turning areas adjacent to new rail alignments. (Letter #6, *Citizens for California High Speed Rail Accountability*; Letter #8, *Department of Conservation, Division of Land Resource Protection*; Letter #12, *Karen J. Stout, Citizens for California High Speed Rail Accountability*; Fresno Scoping Meeting)
Response	*As indicated on page 15 of the NOP, the rail corridors of the San Joaquin Corridor Amtrak California Service project are owned and maintained by BNSF and UPRR solely for the support of rail operations. No agricultural operations occur within the railroad rights-of-way, and no farmland would be lost to improvements proposed along the railroad alignment. The proposed project would not divide any farm holdings. The BNSF tracks were installed in the 1880's, well before agriculture on the scale currently practiced in the San Joaquin Valley was developed.* *The ancillary facilities that may or would require property acquisition are proposed to be located on land identified as urban and built-up land by the Important Farmlands Maps. The proposed property acquisition would not result in a loss of agricultural lands or any conflicts with Williamson Act contracts. No conversion of farmland is envisioned by the project at this time based upon a detailed review of the location of all proposed facilities.* *If specific facilities are proposed in the future that would require the procurement of agricultural land, including land under Williamson Act contracts, the associated*

	environmental impacts will be evaluated in a subsequent project-specific CEQA evaluation to allow a final determination on a future project's specific agricultural impacts. Such review is appropriate and consistent with utilization of a program environmental document in accordance with Sections 15162 and 15168 of the CEQA Guidelines. *With respect to the potential for the project to induce growth that could adversely impact agriculture, the improved rail facilities would be designed to accommodate future passenger growth, but would not attract substantial population to the area either by offering expanded passenger rail service or by a substantial increase in rail-related employment. A small increase in rail-related employment would occur primarily at the location of the layover facility, and potentially at other locations where increased service would begin or end, but any increase (~50 new employees) would be negligible when compared with employment growth expected over the next 25 years in the region. The additional passenger rail service proposed by the project would be implemented as customer demand necessitates, and the additional service would not provide rail access where it is not already available. As such, it is not anticipated to induce substantial numbers of people to relocate, for example, by providing passenger rail access to a new location that would allow people to live farther from existing employment centers that they would then commute to by rail. If the Hanford to Visalia or the Bakersfield to Los Angeles passenger rail routes were to be implemented, it would increase the availability of passenger rail to new communities, but in both cases efficient San Joaquin Corridor Amtrak California bus to rail service is already available. The project would not directly or indirectly induce substantial population growth. By the same logic, it also would not result in "leap-frog" development that would place pressure on agricultural lands to convert to other uses.*
Comment 4	Request that the San Joaquin Corridor DRAFT PEIR analyze the effect of additional train traffic on the safe movement of agricultural equipment at rail crossing intersections as well as impacts to commercial spray operations and the potential for air movement associated with faster trains to increase potential drift of pesticides. (Letter #6, *Citizens for California High Speed Rail Accountability*; Letter #12, *Karen J. Stout, Citizens for California High Speed Rail Accountability*; Fresno Scoping Meeting)
Response	*Accidents occur when vehicles or pedestrians trespass on railroad property or when agricultural operations using private or public grade crossings fail to observe existing rules and safe practices. Caltrans, Amtrak, and the Class I railroads jointly participate in the Operation Lifesaver Program, http://oli.org/. This is only one example where the railroads and the agencies participate in public outreach in an effort to educate the public about rail safety and help save lives.* *Any commercial agricultural spraying operations already accommodate the existing railroad tracks used by the San Joaquin Amtrak California trains. To the extent feasible, these issues are addressed at a programmatic level within the traffic and air quality sections of the San Joaquin Corridor DRAFT PEIR.*
Air Quality	
Comment 5	Request that the San Joaquin Corridor DRAFT PEIR compare current locomotive emissions with future emissions and discuss the availability of alternative fuels (hybrid diesel or electric/hybrid-electric), as well as estimating public health effects from future train emissions. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #22, *Transportation Solutions Defense and Education Fund*; Fresno Scoping Meeting; Bakersfield Scoping Meeting)
Response	*San Joaquin Corridor Amtrak California Service operates over privately owned railroad infrastructure. Host railroads do not allow electrical systems on their tracks. Therefore, no estimate of future train speeds and schedules will be provided for an electric train option in the San Joaquin Corridor DRAFT PEIR. Discussions with*

	Amtrak indicate that currently there are no locomotives in operation that can utilize cleaner fuels, such as biodiesel, biomethane or hybrid diesel technology. To consider such engines at this time was concluded to be speculative. Caltrans is committed to utilizing the cleanest locomotives available, and Amtrak San Joaquin currently operates a fleet with some of the lowest emitting Tier 2 locomotives in the State. As new locomotives are acquired, Caltrans will begin a shift to Tier 4 locomotives with procurement of Passenger Rail Investment and Improvement Act (PRIIA/NGEC) locomotives. The procurement project is in the contract development stage, and procurement is estimated to be complete by 2018. The term "Tier" for locomotives refers to the degree of emission control. Tier 4 represents the most current level of emissions control for locomotives. Appendix 8.3 contains the current emission requirements for Tier 4 locomotives. The emission reductions are substantial, and these data are utilized in the air emission forecast along with an assessment of public health risk associated with Amtrak train operations. This information includes a comparison of pollution per passenger mile from various modes of passenger transportation.
Comment 6	Request that the San Joaquin Corridor DRAFT PEIR evaluate air quality impact of layover facilities, discuss Air Resources Board standards for in-state locomotive operation, and request pre-project air quality monitoring at the Courtyard Private School located adjacent to the Northern California Maintenance Facility. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #22, *Transportation Solutions Defense and Education Fund*)
Response	*The requested information is included in the San Joaquin Corridor DRAFT PEIR in Subchapter 4.2 of Chapter 4, except that the Northern California Maintenance Facility is no longer being considered in the San Joaquin Corridor DRAFT PEIR. It is now being evaluated as a separate project under CEQA. Upon completion of the separate project environmental review, it will be provided for review and comment.*
Biological Resources	
Comment 7	Expressed concern regarding impacts to lake, stream, wetland, floodplain and riparian resources, including both direct physical impacts and the possible introduction of invasive species through construction or operational activities. A comment requests a comparison of the effects of different modes of transportation on wetland. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #3, *California State Lands Commission;* Letter #9, *California Department of Fish and Game (renamed California Department of Fish and Wildlife*)
Response	*The San Joaquin Corridor DRAFT PEIR identifies and addresses any potential impacts to* lake, stream, wetland, floodplain and riparian resources*, including providing adequate avoidance, mitigation, monitoring and reporting regarding such resources in the biological resources evaluation Chapter 4, Subchapter 4.4. Also included in this analysis is the potential for construction or operational activities to introduce or favor aquatic or terrestrial invasive species. Where required, mitigation is provided that is capable of reducing potentially significant impacts to below a level of significance.* *The project is mainly on existing railroad right-of-way that has already been impacted. As there is no comparative data base regarding wetland effects from different modes of transportation, it will not be possible to compile such a comparison.*
Comment 8	Request that the San Joaquin Corridor DRAFT PEIR include a complete sensitive species and habitat evaluation and identify mitigation if impacts would be significant. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #3, *California State Lands Commission;* Letter #9, *California Department of Fish and Game (renamed California Department of Fish and Wildlife*)

Response	*The San Joaquin Corridor DRAFT PEIR provides a complete assessment of species and habitats within and adjacent to the project area in Chapter 4, Subchapter 4.3. The San Joaquin Corridor DRAFT PEIR identifies potential biological resource impacts to the extent feasible at this programmatic level of review, including addressing impacts to active bird nests, identifying and addressing any fully protected species that may be impacted by the proposed project. The analysis in the referenced section includes programmatic level avoidance and mitigation measures designed to reduce impacts to sensitive species and habitats. The proposed project will consult with California Department of Fish and Wildlife (CDFW) as required; and when implementing future site-specific projects will procure California Endangered Species Act (CESA) permits, as required.*
Comment 9	Request that the San Joaquin Corridor DRAFT PEIR evaluate the proposed project-related construction noise and vibration impacts on fish and birds and suggests possible mitigation. (Letter #3, *California State Lands Commission)*
Response	*The San Joaquin Corridor DRAFT PEIR evaluates the proposed project-related construction noise and vibration impacts on adjacent land, fish and birds in Chapter 4, Subchapter 4.3.*
Cultural Resources	
Comment 10	The California State Lands Commission (CSLC) requested that the San Joaquin Corridor DRAFT PEIR evaluate the potential for the proposed project to impact cultural resources, including submerged resources. Any submerged archaeological site or submerged historic resource that has remained in State waters for more than 50 years is presumed to be significant. (Letter #3, *California State Lands Commission)*
Response	*The San Joaquin Corridor DRAFT PEIR analyzes the potential for the proposed project to impact cultural resources, including submerged resources in Chapter 4, Subchapter 4.4. The analysis will include a review of CSLC's shipwrecks database and an understanding that many shipwrecks are unknown. The San Joaquin Corridor DRAFT PEIR includes information to the effect that title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on land under jurisdiction of CSLC is vested in the State and under the jurisdiction of CSLC. This information is provided in Chapter 4, Subchapter 4.4. Mitigation is included in the San Joaquin Corridor DRAFT PEIR that requires the proposed project proponent to consult with the CSLC should any cultural resources be discovered during construction of the proposed project.*
Geology and Soils	
No comments specific to this topic were received.	
Greenhouse Gases (GHG)	
Comment 11	Requested that the San Joaquin Corridor DRAFT PEIR include an analysis of greenhouse gas emissions consistent with CA Global Warming Solutions Act (AB 32). Specific questions asked what Amtrak California's share of Statewide GHG transportation emissions are currently and how these emissions will change over the next 25 years. A comment also asked how the Northern California Maintenance Facility would contribute to emissions. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #3, *California State Lands Commission*)
Response	*The San Joaquin Corridor DRAFT PEIR includes an analysis of greenhouse gas emissions consistent with CA Global Warming Solutions Act (AB 32) in Chapter 4, Subchapter 4.5. The Air Quality and GHG analyses (available in Subchapters 4.2 and 4.5) include an evaluation of greenhouse gas emissions generated by future San Joaquin Corridor Amtrak California operations and methods of achieving reductions of such emissions, including projected reductions. Information regarding comparative GHG emissions from different modes of transportation is also included. As new Tier 4*

	locomotives and cleaner buses replace existing locomotives and buses, overall GHG emissions from trains and buses are estimated to be reduced. New equipment will be integrated into the existing fleet by 2018. Most of the old diesel engines are expected to be replaced over the next 17 years. The Northern California Maintenance Facility is no longer being considered in the San Joaquin Corridor DRAFT PEIR.
Hazards and Hazardous Materials	
Comment 12	Letter #25 from Chevron Environmental Management Company identifies potential underground abandoned facilities or contaminated areas from Chevron's former pipeline operations in Contra Costa County and the San Joaquin Valley. Historical remediation information is provided. (Letter #25, *Chevron Environmental Management Company*)
Response	*Potential impacts to Chevron's former facilities will be taken into consideration as specific rail infrastructure projects are implemented as part of the future San Joaquin Rail Corridor infrastructure improvement projects.*
Hydrology and Water Quality	
Comment 13	Request that the potential for more severe storms be considered in the design of future track infrastructure. Letter #1, *Energy-Climate Committee of Sierra Club California*)
Response	*As a PEIR, this document does not examine the specific design of existing or future bridges within areas exposed to flood hazards. However, the issue of increased severity of future runoff from severe storms is considered in Chapter 4, Subchapter 4.6, Hydrology and Water Quality. Mitigation is included in this section to ensure that future site specific engineering evaluations of flood hazards take into account estimates of future increased severity of flood hazards. To the extent feasible, given future uncertainties regarding the effects of climate change, future bridge design can take estimated increases in runoff into account and will be required to.*
Comment 14	Central Valley Flood Protection Board (Board) commented that the proposed project is located within counties that include rivers and streams under their jurisdiction. The Board enforces standards for construction, maintenance, and protection of adopted flood control plans that protect public lands from floods in the Central Valley. The comment identifies when a permit is required prior to starting work within its jurisdiction, including for impacts to levees and to existing structures. The Board states that any vegetation plantings require a detailed planting plan including a complete vegetative management plan for maintenance to prevent interference with flood control, levee maintenance, inspection, and flood flight procedures. The Board states that hydraulic impacts due to encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation, and that the project should include mitigation to prevent and/or reduce such impacts. (Letter #4, *Central Valley Flood Protection Board*)
Response	*The proposed project will procure permits from the Board as required and will submit a detailed vegetation plan as required when project-related activities require revegetation. The planting plan will include the required information, including a complete vegetative management plan. Specific measures to prevent interference with the integrity of flood control facilities will be included in Chapter 4, Subchapter 4.3. Specific measures to prevent/reduce hydraulic impacts to acceptable levels will be included in Chapter 4, Subchapter 4.6.*
Land Use and Planning	
Comment 15	Raised concerns regarding additional land required by the replacement of Amtrak California trains with light rail and CHSTS. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #6, *Citizens for California High Speed Rail Accountability*; Letter #12, *Karen J. Stout, Citizens for California High Speed Rail Accountability*)

Response	*The proposed project does not envision replacement of San Joaquin Corridor Amtrak California Service with light rail or CHSTS, and San Joaquin Amtrak California trains will not operate over the CHSTS FCS under any alternative being considered at this time. It is expected that Amtrak California trains will serve as a feeder or collector system for future CHSTS operations. Caltrans continues to meet with the CHSTS Staff in order to define integration between San Joaquin Corridor Amtrak California Service and CHSTS operations. A separate environmental document was prepared for the CHSTS operations. A conceptual discussion of future interconnection with the IOS and the supporting infrastructure is provided in the revised Project Description Section 3.3.6 of Chapter 3 and within Chapter 5, Alternatives. The analysis in Chapter 5 of an integrated alternative incorporates detailed information, as well as potential land impacts of the proposed San Joaquin Corridor Amtrak California Service infrastructure improvements necessary to serve future integrated operations. If the selected scenario differs from that identified in this document, a subsequent environmental document will be prepared under this Program EIR.*
Comment 16	Request information regarding the need to acquire new property to support San Joaquin Corridor Amtrak California future operations, including construction activities. (Letter #6, *Citizens for California High Speed Rail Accountability*; Letter #12, *Karen J. Stout, Citizens for California High Speed Rail Accountability*; Letter #20, *San Joaquin Regional Rail Commission;* Letter #22, *Transportation Solutions Defense and Education Fund*; Sacramento Scoping Meeting; Fresno Scoping Meeting)
Response	*Our project engineers concluded that there is sufficient rights-of-way (ROW) to install and operate double and triple track within the host railroads (ROW), with little or no property acquisition required. It is not possible to define specific locations for construction activities, such as shoofly track locations (track detours around a specific location), in a program environmental document. However, under the program concept, future specific construction projects, including bridges and related shooflies, will be evaluated on a case-by-case basis; and if different proposed construction effects will occur, these effects will be documented within a future environmental document. However, for the future stations and the layover facility, new property will/may have to be acquired and the potential effect of such an acquisition will be considered in the San Joaquin Corridor DRAFT PEIR. The Sacramento Subdivision rail alignment and the Northern California Maintenance Facility will not be given further consideration in the San Joaquin Corridor DRAFT PEIR.*
Comment 17	Request examination of a wider range of layover locations. (Letter #20, *San Joaquin Regional Rail Commission;* Letter #22, *Transportation Solutions Defense and Education Fund*)
Response	*A facility located either in Merced or Fresno would allow a new train to start in the middle of the alignment and reach Oakland, Sacramento, and Bakersfield early in the morning. Merced has the added benefit of being the current crew change location for the San Joaquin Corridor Amtrak California Service. No other layover facility locations have been suggested by any parties to date, and these are the only proposed layover facility locations that will be evaluated in the San Joaquin Corridor DRAFT PEIR. It will be up to Caltrans or the future manager of the operations to determine if and when demand may be sufficient to initiate service from a layover stop.*
Comment 18	Requests a full evaluation of Land Use and Planning issues in the San Joaquin Corridor DRAFT PEIR to evaluate the Sacramento Subdivision, new stations and CHSTS integration. (Letter #20, *San Joaquin Regional Rail Commission)*
Response	*In response to comments, Caltrans reevaluated and eliminated the Sacramento Subdivision as an alternative Stockton to Sacramento alignment. Both new stations to be considered in the San Joaquin Corridor DRAFT PEIR (Hercules (EIR/EIS) and Elk Grove (planning review) have undergone previous environmental or planning review or evaluation and these issues have been addressed by local governments.*

	The San Joaquin Corridor DRAFT PEIR will bring forward the findings of these previous evaluations. Regarding land use issues, CHSRA evaluated potential land use impacts to installing the CHSTS in the San Joaquin Valley. As currently addressed in the San Joaquin Corridor DRAFT PEIR, there will be no Blended System alternative. A conceptual discussion of future interconnection with the IOS and the supporting infrastructure is provided in the revised Project Description Section 3.3.6 of Chapter 3 and within Chapter 5, Alternatives. *When the CHSTS IOS begins operation sometime after 2022, a connection between the San Joaquin Corridor Amtrak California system and the CHSTS IOS will be built. The exact nature of the connections between these two systems is not defined, but Caltrans envisions that the San Joaquin Corridor Amtrak California system will function as a feeder and collector of CHSTS passengers in San Fernando Valley, Bakersfield, and Madera. Connection options include bus transfers and cross platform transfers where stations of both systems can be co-located. It does not appear that there will be any new land use impacts as a result of these connections. Thus, Caltrans does not see the merit in adding Land Use and Planning issues to the San Joaquin Corridor DRAFT PEIR for evaluation.*
Comment 19	Several agencies state that they are a trustee/responsible agency because the proposed projects could directly or indirectly affect lands or resources under their jurisdiction (school lands, the public easement in navigable waters, streambeds, Williamson Act Lands, etc.) (Letter #3, *California State Lands Commission;* Letter #4, *Central Valley Flood Protection Board;* Letter #8, *Department of Conservation, Division of Land Resource Protection;* Letter #9, *California Department of Fish and Game (renamed California Department of Fish and Wildlife*)
Response	*As the project proceeds, Caltrans will conduct further coordination with respon-sible/trustee agencies to identify any project components that may impact land or resources under agency jurisdiction. If any such lands/resources would be impacted, Caltrans will procure required permits and/or leases.*
Mineral Resources	
No comments specific to this topic were received.	
Noise	
Comment 20	Requested that the San Joaquin Corridor DRAFT PEIR address noise issues related to future San Joaquin Corridor Amtrak California Service operations, including noise and vibration impacts with respect to fish and wildlife and associated with at-grade crossings. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #3, *California State Lands Commission;* Letter #22, *Transportation Solutions Defense and Education Fund*; Bakersfield Scoping Meeting)
Response	*A detailed noise evaluation is provided in Chapter 4, Subchapter 4.7. It includes a discussion of noise from existing train and future bus service to San Joaquin Corridor Amtrak California Service stations.*
Population and Housing	
Comments specific to growth-inducing impacts were raised in the context of impacts to agriculture; therefore, these comments are addressed in the Agriculture section. No other comments specific to this topic were received.	
Public Services	
No comments specific to this topic were received.	
Recreation	
No comments specific to this topic were received.	

Transportation and Traffic	
Comment 21	Numerous comments sought clarification of the role of Amtrak California trains in the future, and in particular many comments expressed concern over the future ridership forecast for the San Joaquin Corridor Amtrak California Service operations with respect to CHSTS. Some comments confused the proposed project with CHSTS, expressed concern that current Amtrak California service will be adversely affected by implementation of the CHSTS, or misunderstood the proposed project to be a new proposed passenger train system in addition to Amtrak and CHSTS through the San Joaquin Valley. Some comments expressed concern that the Blended System with CHSTS was not the Preferred Alternative in the NOP, while other comments were opposed to CHSTS entirely or as currently envisioned (along the same basic corridor as Amtrak). Finally, comments expressed concern regarding duplicated efforts and expenditures of the proposed project and CHSTS. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #6, *Citizens for California High Speed Rail Accountability;* Letter #12, *Karen Stout, Citizens for California High Speed Rail Accountability;* Letter #15, *Ross Browning;* Letter #18, *Members of the Regional Governance Working Group for the San Joaquin Rail Service;* Letter #20, *San Joaquin Regional Rail Commission;* Letter #22, *Transportation Solutions Defense and Education Fund*; Fresno Scoping Meeting; Fresno Scoping Meeting; Bakersfield Scoping Meeting; Los Angeles Scoping Meeting)
Response	*The proposed creation of CHSTS is a key issue with respect to the future implementation of Amtrak California passenger rail service along the San Joaquin Corridor. As indicated previously in this chapter, Blended System operations will not be evaluated in this document. The proposed project for which the San Joaquin Corridor DRAFT PEIR was originally initiated consisted solely of a program to expand the existing San Joaquin Corridor Amtrak California Service (train and bus) in the San Joaquin Valley. The proposed project rail alignment improvements would be located within existing railroad rights-of-way and would be designed to improve the efficiency of train movements, which would increase the capacity of the existing rail system to carry more frequent passenger trains and ensure that passenger train service can operate on a reliable schedule. The purpose of the 90 mile per hour upgrade for San Joaquin Corridor Amtrak California Service trains is to reduce the travel time in order to improve the schedule for passengers and attract additional riders. Additional Amtrak California trains will be added to the San Joaquin Corridor (up to 11 roundtrip trains) based on future passenger demand.* *Information from the CHSRA and the current Draft State Rail Plan has been reviewed and incorporated into this document. During each of the scoping meetings, public comments indicated strong support for continued San Joaquin Corridor Amtrak California Service.* *The San Joaquin Corridor Amtrak California Service ridership forecast was based on continued operation along the existing San Joaquin Corridor through 2035, and it was generated from modeling that was based on existing ridership and future growth in population within the Corridor, based upon future population estimates modeled by the California Department of Finance. A copy of the modeling results is provided as Appendix 8.4 of this document. Over the past two years Caltrans carefully coordinated its expansion plans with UPRR and BNSF. After models of future ridership on the BNSF alignment were generated, capacity modeling was conducted by Willard Keeney and Associates in coordination with Caltrans and BNSF. (The modeling for future ridership was completed in 2010, as was the capacity modeling for the BNSF segment of the San Joaquin Corridor Amtrak California Service.) UPRR chose not to model the route but stated their requirements for future service in a letter (see Appendix 4 to Appendix 8.1)). As a result of this close coordination, the future infrastructure improvements necessary to support 11 daily roundtrip passenger trains*

	per day within the San Joaquin Corridor were identified. This is all part of ensuring that 11 daily roundtrip San Joaquin Corridor Service Amtrak California trains can be operated over the host freight railroad infrastructure and that schedules can be maintained that will continue to attract new passengers. On-time operations were approximately 90% over the past year and maintaining the on-time percentage as ridership growth increases is a critical element of the project objectives. The proposed project has an internal consistency that is carefully documented and acceptable to the host railroads. Once the San Joaquin Corridor DRAFT PEIR process is completed, it will provide CEQA compliance that will allow implementation of a future 11 roundtrip train San Joaquin Corridor Amtrak California Service schedule that can be implemented as future passenger demand will support and as funding becomes available. *CHSRA uses a different methodology to develop a forecast based on the assumption that a high volume of passenger service will induce additional ridership. Chapter 5, Alternatives, provides an evaluation of the proposed connections envisioned between Amtrak California and the CHSTS after the IOS is completed.* *The project under review in the San Joaquin Corridor DRAFT PEIR represents an assumed future for intercity passenger rail operations that can be evaluated. CHSTS operations are defined at a general level, therefore the details of how the CHSTS can be integrated with future San Joaquin Corridor Amtrak California operations can only be addressed at a conceptual or programmatic level. In response to comments received on the NOP, Caltrans will proceed with the San Joaquin Corridor DRAFT PEIR without identifying a Preferred Alternative. The issue of determining which integrated projects will be implemented over the next 20+ years will be based on actual demand for either or both passenger rail services in the San Joaquin Valley. As stated previously, if the selected scenario differs from that identified in this document, a subsequent environmental document will be prepared under this Program EIR.*
Comment 22	One comment indicates opposition to the current CHSTS project and envisions a future where the San Joaquin Amtrak California Service trains will serve to connect to a CHSTS system within a different corridor. They seek to ensure that the future Corridor design will preserve compatibility with this concept if it does become a reality. (Letter #22, *Transportation Solutions Defense and Education Fund*)
Response	*Caltrans is examining two primary alternatives in the San Joaquin Corridor DRAFT PEIR: the continued operation of the existing San Joaquin Corridor Amtrak California Service and integrating the existing Amtrak California Service with the CHSTS operations on the segment between Madera and the San Fernando Valley. Either alternative is intended to provide, sufficient trains to meet future intercity passenger demand.*
Comment 23	Requested the San Joaquin Corridor DRAFT PEIR discuss in detail the process of predicting future passenger and freight traffic. Several requested faster expansion of service, particularly with regard to more rapid implementation of increased train frequency. Several comments also requested evaluation of alternatives that would improve speed, efficiency, and on-time performance, such as including incentive payments for on-time performance; use of tilt-train technology; push/pull vs. turn table or round-about tracks; direct trains; and fewer transfers to/from buses. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #2, *Dr. Matania and Alice Ginosar;* Letter #20, *San Joaquin Regional Rail Commission;* Letter #22, *Transportation Solutions Defense and Education Fund*; Fresno Scoping Meeting; Bakersfield Scoping Meeting; Los Angeles Scoping Meeting)
Response	*The proposed project is based on model forecasts for future ridership within the San Joaquin Corridor and for capacity on the tracks owned by the host railroad. Future passenger demand was forecast through the year 2035 as summarized in Table 1-1*

	of the Project Description that accompanied the NOP. A copy of the modeling results is provided as Appendix 8.4 of this document. Based on the future passenger forecasts, Caltrans determined that 11 daily roundtrip trains would be required to meet this future demand. Essentially, UPRR and BNSF were asked by Caltrans to identify the rail infrastructure improvements required to meet the future number of San Joaquin Corridor Amtrak California Service trains per day (11 roundtrip trains) and to maintain current on-time performance of approximately 90% for passenger trains. The proposed capital improvements to the railroad infrastructure as identified in the NOP represent the infrastructure required to meet projected demand. *Host railroad infrastructure expansion within the San Joaquin Corridor will be in conjunction with increases in intercity passenger growth, thus balancing the need to retain existing ridership and expand future ridership. Caltrans has not received any data that contradicts the assumed rate of adding new trains through 2035. Regardless, new trains cannot be added to the host railroads prior to the completion of a defined set of infrastructure improvements. Caltrans and BNSF have developed a sequential process when proposing to add new passenger trains to the corridor: modeling the service; determining capital improvement costs, design and engineering; acquiring funds for the capital, operational and equipment needs; negotiating contracts for the improvements and slots; and installing requisite infrastructure. If the demand exists, additional trains up to the 11 daily roundtrips being evaluated in the San Joaquin Corridor DRAFT PEIR can be added as quickly as all of the above steps can be completed. Future ridership could be altered with the presence of the CHSTS, and any improvements would be adjusted to actual changes in Amtrak California ridership in the future.*
Comment 24	Comment Letter #2 states that their understanding of the proposed project is that it would result in "very little change in the rail service between Sacramento and Southern California, specifically Los Angeles…" and express disappointment that projected improvements would not include a direct train between Sacramento and Bakersfield, and that it would still require an Amtrak bus between these cities. (Letter #2, *Dr. Mantania and Alice Ginosar)*
Response	*The proposed San Joaquin Corridor Amtrak California Service would continue to be an intercity rail service and direct trains (with no stops) are not proposed between Sacramento and Bakersfield. The proposed project includes the evaluation of an alternative in Section 1.3.4 of the NOP project description that would carry passengers between Bakersfield and Los Angeles via train rather than bus. This alternative will be evaluated in the DRAFT PEIR for the proposed project.*
Comment 25	Comment Letter #22 requests evaluation of an alternative that will improve on-time performance, including incentive payments for on-time performance like that of the Capitol Corridor. (Letter #22, *Transportation Solutions Defense and Education Fund)*
Response	*Both the Capitol Corridor and the San Joaquin Corridor Amtrak California Service provide incentive payments to the railroads through the Amtrak agreement.*
Comment 26	Comment Letter #22 requests investigation of an alternative using tilt-train technology. (Letter #22, *Transportation Solutions Defense and Education Fund)*
Response	*The San Joaquin Corridor does not have sufficient curves to justify the use of tilt-train technology. Thus, this alternative will not be considered in the DRAFT PEIR.*
Comment	Comment Letter #1 asks whether push/pull Amtrak trains are efficient and whether they should be replaced by turn tables or round-about tracks. (Letter #1, *Energy-Climate Committee of Sierra Club California)*
Response	*The industry standard is to operate intercity corridor trains using push-pull equipment. Push-pull shortens the time needed to turn train sets for the next scheduled run. This results in less engine emissions, lower crew costs, and more efficient use of scarce equipment. The use of wye's and turntables would require the construction of*

	dedicated facilities and would add an additional hour to equipment layover, as well as increase fuel use, emissions, and crew costs.
Comment 27	Several Comments request that the alternative route from Stockton to Sacramento, the Sacramento Subdivision, be eliminated from consideration in the San Joaquin Corridor DRAFT PEIR. (Letter #20, *San Joaquin Regional Rail Commission;* Letter #21, *Sacramento Regional Transit District*)
Response	*The Fresno Subdivision is UPRR's main freight artery through the San Joaquin Valley. As such, UPRR indicated that any increased intercity passenger rail service frequencies between Sacramento and Stockton would be required to operate over the Sacramento Subdivision. This stated requirement initially necessitated an analysis of the Sacramento Subdivision in the San Joaquin Corridor DRAFT PEIR in order to provide an alternative to increased bus service for any expansion of San Joaquin Corridor Amtrak California Service between Stockton and Sacramento. In order to operate over the Sacramento Subdivision, it was envisioned that either a back-up movement or a new track alignment in downtown Sacramento would be necessary for direct entry into the new Sacramento Intermodal Terminus. After considering comments received in response to the NOP, Caltrans concurs that the cited potential environmental and planning effects eliminate the need for further consideration of the Sacramento Subdivision in the San Joaquin Corridor DRAFT PEIR.*
Comment 28	Commenters identified alternative station/stop locations for consideration in the San Joaquin Corridor DRAFT PEIR. Comments suggest modeling to include local stops and request that the San Joaquin Corridor DRAFT PEIR address issues of connectivity, accessibility, and Station Area Development. (Letter #20, *San Joaquin Regional Rail Commission;* Letter #21, *Sacramento Regional Transit District*; Richmond Scoping Meeting; Los Angeles Scoping Meeting)
Response	*The San Joaquin Corridor Amtrak California Service trains serve intercity passengers and should not be confused with a commuter rail system. The objective with intercity rail is to move passengers between stops within the corridor at speeds comparable to the primary alternative modes of transportation, buses and automobiles. At the present time, train speeds between Oakland/Sacramento and Bakersfield average a little above 50 miles per hour (mph). The distance now between stations allows intercity trains to maintain this overall average speed. Additional station stops reduce the overall average speed, as well as reducing train competitiveness with alternative means of transport. Additional stops also generate air emissions caused by the locomotive acceleration from stopped to full track speed. Further, stopping would add more train noise to the local environment near the new station. Nonetheless, based on current planning for the corridor, Caltrans concurs that station/stops can be considered in the San Joaquin Corridor DRAFT PEIR for Hercules and Elk Grove. The San Joaquin Corridor DRAFT PEIR will consider proposed new stations in Elk Grove and Hercules. Berkeley was previously a stop for the San Joaquin Corridor Amtrak California Service trains, but service was discontinued due to low ridership. Subsequently, upon indications that potential ridership would support a re-opening of the station at Berkeley, Caltrans sought to do so; but the capital improvement costs required by the host railroad were economically prohibitive. The station at Emeryville is approximately one mile south of the former Berkeley stop, and accessible to area intercity rail passengers. The other possible station locations suggested by commenters are general areas rather than specific station locations (North Fresno, North/West Bakersfield, 65th Street in Sacramento); therefore, Caltrans concluded that it would be pre-mature/speculative to consider them in the DRAFT PEIR for intercity service.* *Connectivity and accessibility will be evaluated in the San Joaquin Corridor DRAFT PEIR for the three new station locations being considered in this document (Hercules, Elk Grove, and Stockton).*

Comment 29	A number of comments request greater coordination with CHSTS operations in the San Joaquin Valley and more broadly to other parts of the State, including coordinated planning between transportation agencies and local governments. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #5, *California High-Speed Rail Authority;* Letter #15, *Ross Browning;* Letter #16, *Sacramento Area Council of Governments;* Letter #18, *Members of the Regional Governance Working Group for the San Joaquin Rail Service;* Letter #20, *San Joaquin Regional Rail Commission;* Letter #21, *Sacramento Regional Transit District;* Richmond Scoping Meeting; Fresno Scoping Meeting)
Response	*Caltrans continues to meet with the CHSTS Staff in order to define integration between San Joaquin Corridor Amtrak California Service and CHSTS operations. Additional information is provided in a revised Project Description in SubChapter 3.3.6 of the San Joaquin Corridor DRAFT PEIR and within Chapter 5, Alternatives. The analysis in Chapter 5 of an integrated alternative incorporates detailed information, as well as potential impacts of the proposed San Joaquin Corridor Amtrak California Service infrastructure improvements necessary to serve future integrated operations.* *San Joaquin Amtrak California trains will not operate over the CHSTS FCS under any alternative being considered at this time. Amtrak California trains will serve as a feeder or collector system for future CHSTS operations. Caltrans will continue to work with the CHSRA to define a mutually acceptable operating scenario. If the selected scenario differs from that identified in this document, a subsequent environmental document will be prepared under this Program EIR. Caltrans also met with other groups in order to receive input on the San Joaquin Corridor DRAFT PEIR.*
Comment 30	Commenters noted that a Joint Powers Authority (JPA) may be responsible for San Joaquin Corridor Amtrak California Service operations in the future. (Letter #5, *California High-Speed Rail Authority;* Letter #20, *San Joaquin Regional Rail Commission;* Fresno Scoping Meeting; Bakersfield Scoping Meeting)
Response	*Regardless of who will be the managing agency of the Corridor, the infrastructure improvements identified in the San Joaquin Corridor DRAFT PEIR will still be required to meet the freight railroads capacity requirements if the number of passenger trains will be increased to support ridership growth in the Corridor. At the present time Caltrans has a statutory responsibility to continue planning to support projected increases in ridership on the San Joaquin Corridor.*
Comment 31	Commenters requested consistency between the proposed project and Caltrans' Draft State Rail Plan Vision. They further note that both documents are scheduled to be released at about the same time. (Letter #18, *Members of the Regional Governance Working Group for the San Joaquin Rail Service;* Letter #20, *San Joaquin Regional Rail Commission;* Fresno Scoping Meeting)
Response	*The San Joaquin Corridor DRAFT PEIR is a planning document that is based primarily on railroad simulation modeling and preliminary engineering. That said, additional coordination has been initiated with Caltrans staff responsible for the Draft State Rail Plan, and additional information from the Draft State Rail Plan has been incorporated into the San Joaquin Corridor DRAFT PEIR.*
Comment 32	A number of comments request an evaluation of increasing the speed of Amtrak California trains above 90 mph trains (generally 110 mph) and better coordination of all train operations to minimize passenger train delays. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #2, *Dr. Mantania and Alice Ginosar;* Letter #22, *Transportation Solutions Defense and Education Fund;* Letter #27, *Transportations Solutions Defense and Education Fund*; Los Angeles Scoping Meeting)
Response	*A 110 mph operational scenario was given consideration, but was rejected from further consideration because San Joaquin Corridor Amtrak California Service*

	intercity operations currently operate on Class I railroad right-of-way. Any passenger rail operations in excess of 100 mph would require a separate right-of-way with no at-grade crossings, with all the associated capital costs and environmental impacts of building a new dedicated railroad. The proposed San Joaquin Corridor Amtrak California Service infrastructure improvements are designed to provide adequate track capacity for both freight and passenger trains.
Comment 33	Commenters requested consideration of the Altamont Corridor Rail Project, particularly with respect to the future Stockton Amtrak California station location. Comments request reconsideration of a downtown Stockton station at or adjacent to the ACE (Cabral) Station. (Letter #5, *California High-Speed Rail Authority;* Letter #20, *San Joaquin Regional Rail Commission;* Letter #22, *Transportation Solutions Defense and Education Fund)*
Response	*Caltrans incorporated additional information into the San Joaquin Corridor DRAFT PEIR regarding the Altamont Corridor Rail Project based on information available. The only facilities where the Altamont Commuter Express (ACE) and the San Joaquin Corridor Amtrak California Service interconnect are the current and the proposed new passenger rail station in the City of Stockton. The location of this station and its ability to serve both Amtrak California's San Joaquin and Altamont's train operations while meeting the needs of the two host railroads is currently given detailed consideration in the San Joaquin Corridor DRAFT PEIR. In response to comments received on the NOP, the San Joaquin Corridor DRAFT PEIR analysis of the proposed relocated/updated Amtrak station in the City of Stockton carries forward, rather than eliminating, Alternative #2 for consideration. This alternative station location could serve both the San Joaquin Corridor Amtrak California and Altamont Commuter Express (ACE) train operations.* *Both BNSF and UPRR have documented that additional Amtrak moves necessary to access a station in downtown Stockton would require an unacceptable increase in capacity where the two main line tracks cross, due to increased train movements required between the two railroads and through the Stockton Diamond. The station locations identified in the NOP were selected because they eliminated the need for a reverse or backward train movement and did not add excessive time to the proposed schedules for San Joaquin Corridor Amtrak California Service trains heading north or south from Stockton. Please refer to communication via e-mails received from BNSF and UPRR in Appendix 8.5.*
Comment 34	Requests that the Visalia alternative be eliminated. (Letter #22, *Transportation Solutions Defense and Education Fund)*
Response	*The Visalia alternative is not identified for further consideration in the San Joaquin Corridor DRAFT PEIR.*
Comment 35	Comments raise the Bakersfield to Los Angeles train alternative considered in the NOP, with two in favor and the other opposed. Another alternative is suggested that would utilize buses to Santa Clarita and then Metrolink into Los Angeles Union Station (LAUS). An additional alternative is proposed to connect Bakersfield with Santa Clarita via public-private partnership through Wheeler Ridge as an alternative to connecting to downtown LAUS. (Letter #22, *Transportation Solutions Defense and Education Fund*; Bakersfield Scoping Meeting; Los Angeles Scoping Meeting)
Response	*Currently the host railroads do not allow passenger trains over the Tehachapi Pass. Therefore, a bus connection between Los Angeles and Bakersfield is the only way to travel between these two locations at this time. Note that a bus takes about 2 hours to travel from Los Angeles to Bakersfield, whereas a train traveling over the Tehachapi Pass between these locations would require four to five hours, based on current speed limits.*

	Consideration of the Bakersfield to Los Angeles train via existing UPRR freight track was a high priority of the San Joaquin Rail Committee. The San Joaquin Corridor DRAFT PEIR includes an alternative that would have one train per day travel over Tehachapi Pass to Palmdale and from there to LAUS. A description of how this can be accomplished is provided as Appendix 5 to the NOP Initial Study (see Appendix 8.1 of this document). Due to the heavy freight traffic over the tracks between Bakersfield and Mojave, the freight railroads have expressed opposition to this passenger train alternative. The environmental effects of this alternative will be evaluated in the San Joaquin Corridor DRAFT PEIR. Given the constraints, it is a low probability alternative, but it follows up on the "Gap Analysis" prepared by Caltrans Division of Rail. It will be retained in the San Joaquin Corridor DRAFT PEIR. *The alternative bus route proposed in one of the comments was assessed, and there does not appear to be any measurable time savings to justify its consideration. Since a bus to Santa Clarita would likely result in scheduling delays, this alternative will not be given further consideration. At this time the Wheeler Ridge concept would require several different parties to initiate several actions making this alternative is too speculative for consideration in the San Joaquin Corridor DRAFT PEIR and will not be given further consideration.*
Comment 36	Requests that the whole Fresno Subdivision alignment be considered in the San Joaquin Corridor DRAFT PEIR. (Letter #20, *San Joaquin Regional Rail Commission*)
Response	*Although there were sound engineering and environmental reasons to eliminate about two miles of double track near Lodi, the San Joaquin Corridor DRAFT PEIR will be expanded to address the whole alignment.*
Comment 37	Raises a new issue regarding future train corridors served by the San Joaquin Corridor Amtrak California Service operations. (Letter #20, *San Joaquin Regional Rail Commission*)
Response	*This issue is too speculative for the San Joaquin Corridor DRAFT PEIR, and it will not be given further consideration at this time.*
Comment 38	Requests that all Transportation/Traffic issues be examined in the San Joaquin Corridor DRAFT PEIR with respect to the Sacramento Subdivision and new stations. (Letter #20, *San Joaquin Regional Rail Commission*)
Response	*As noted previously, the Sacramento Subdivision will not receive further consideration in the San Joaquin Corridor DRAFT PEIR. All Transportation/Traffic issues may be considered in the San Joaquin Corridor DRAFT PEIR for the proposed new/renovated stations (Hercules, Elk Grove and Stockton), depending upon the content of previous environmental documents (e.g., The Hercules Intermodal Transit Center Final EIR and EIS.).*
Comment 39	Requests that the document reconcile the stance of UPRR regarding the use of its tracks for passenger rail service. (Letter #6, *Citizens for California High Speed Rail Accountability*)
Response	*UPRR indicated that if additional passenger rail service is to be considered, then it would require adding a new track along the Oakland to Martinez and Stockton to Sacramento tracks that currently serve the San Joaquin Corridor Amtrak California Service passenger train operations. This requirement has been integrated into the Project Description provided in Chapter 3 of the San Joaquin Corridor DRAFT PEIR, and the impacts of constructing the infrastructure is included in the environmental impact evaluation and forecast.*
Comment 40	Requests accommodation of bicycles at train stations and on trains. (Letter #1, *Energy-Climate Committee of Sierra Club California*)

Response	*Bicycle parking at stations and transport on trains are discussed in Chapter 4, Subchapter 4.8. Amtrak accommodates bicycles to the extent feasible at this time and will continue to do so. The planning and installation of bicycle lanes on the local circulation system roadways that provide access to stations is the responsibility of local jurisdictions and is beyond the scope of the San Joaquin Corridor DRAFT PEIR.*
Comment 41	The Kern County Development Services Agency Roads Department (Roads Department) found that the truck traffic and number of employees described in the Section 1.2.2 Construction Scenario on page 10 of the NOP would not result in a significant impact on County roadways. The Roads Department requests that the proposed project enter into a secured agreement with the Roads Department that ensures that the project promptly repairs any damage to County roads in accordance with the requirements of the State and/or Kern County. The Roads Department states that the project should obtain encroachment permits for any proposed work in the County road right-of-way (ROW) and transportation permits for any oversized or overweight loads that will utilize County maintained roads. (Letter #7, *Kern County Development Services Agency, Roads Department*)
Response	*Thank you for your review. This letter and your comment has been noted and filed for the record. The project will obtain encroachment permits for any work proposed within the County road ROW and will obtain transportation permits for any oversized or overweight loads that will utilize County maintained roads.*
Comment 42	The California Public Utilities Commission (CPUC) states its jurisdiction over the safety of highway-rail crossings in California including the approval of construction and/or alternation of crossings. Modification to existing crossings along the San Joaquin Rail Corridor will require CPUC approval per General Order (GO) No. 88-B. Contact and procedural information are provided to initiate the process of evaluating the impacts of any proposed changes at each crossing. (Letter #14, *California Public Utilities Commission*)
Response	*The San Joaquin Corridor DRAFT PEIR analyzes potential impacts to roadways and will discuss impacts to crossings in Chapter 4, Subchapter 4.8. Caltrans and railroad standard procedure requires a grade crossing diagnostic be performed with the CPUC and the local transportation agencies.*
Comment 43	The County of Los Angeles Department of Public Works requests that any traffic studies be conducted using the County's Traffic Impact Analysis Report Guidelines. (Letter # 23, *County of Los Angeles, Department of Public Works*)
Response	*If any traffic studies are conducted in Los Angeles County, the County's Guidelines will be followed.*
Utilities and Service Systems	
Comment 44	Asks if there are opportunities to mount renewable energy systems on trains or to use waste heat from the engines to generate electricity. (Letter #1, *Energy-Climate Committee of Sierra Club California*)
Response	*Trains are mobile platforms that utilize the entire clearance profile allowed by the host railroads. There are no proposals to mount renewable energy systems on trains, and there is no room on the locomotives for a waste heat recovery unit. Train electricity is provided by the diesel electric generation system and there are no proposals to change or modify this system over the life of this project at this time.*
Comment 45	Asks what renewable energy generation is being considered on Amtrak California-owned property? (Letter #1, *Energy-Climate Committee of Sierra Club California*)
Response	*The San Joaquin Corridor Amtrak California Service occurs on tracks owned by UPRR and BNSF. Amtrak pays for access on these tracks and has no authority to develop renewable energy along the tracks. At other Amtrak facilities, such as stations, most of the land is devoted to parking areas for train passengers. There are*

	no specific plans to develop renewable energy resources at this time, but if funding were to become available it would be possible to install covered parking with solar electric panels on the roof of the covers. The potential energy generation would have to be calculated for each station with parking area to determine if a positive or net energy balance could be achieved. The issue is not evaluated in this document because there are no proposals to implement renewable energy at this time.
Comment 46	Suggests other design measures to generate renewable electricity or reduce the structural heating loads. (Letter #1, *Energy-Climate Committee of Sierra Club California*)
Response	*This issue is addressed in Chapter 4, Subchapter 4.5. Mitigation is identified to integrate low impact design elements into future San Joaquin Corridor Amtrak California Service structures to reduce the overall energy footprint of such facilities.*
General Comments	
Comment 47	Requested printed copies of the NOP and/or to be placed on the future distribution mailing list for the proposed project. (Letter #3, *California State Lands Commission;* Letter #4, *Central Valley Flood Protection Board;* Letter #8, *Department of Conservation, Division of Land Resource Protection;* Letter #9, *California Department of Fish and Game (renamed California Department of Fish and Wildlife;* Letter #10, *J.K. Drummond;* Letter #13, *Francis Montgomery II, Montgomery Management Company;* Letter #16, *Sacramento Area Council of Governments;* Letter #17, *Sacramento Regional Transit District;* Letter #19, *San Diego Association of Governments;* Letter #24, *SAIC Energy, Environmental & Infrastructure, LLC;* Letter #26, *City of Antioch*; Richmond Scoping Meeting; Fresno Scoping Meeting; Bakersfield Scoping Meeting; Los Angeles Scoping Meeting)
Response	*Commenters will be included in future mailings related to the proposed project.*
Comment 48	Many comments summarized the proposed project description, requested a thorough and complete project description be included in the San Joaquin Corridor DRAFT PEIR for the proposed project, and/or identified expectations regarding the presentation of the proposed project as a programmatic document. (Letter #3, *California State Lands Commission;* Letter #8, *Department of Conservation, Division of Land Resource Protection;* Letter #9, *California Department of Fish and Game (renamed California Department of Fish and Wildlife;* Letter #20, *San Joaquin Regional Rail Commission)*
Response	*The San Joaquin Corridor DRAFT PEIR for the proposed project includes a thorough and complete project description consistent with the programmatic nature of the EIR in Chapter 3. As a program document, project-specific details may not be available for evaluation in the San Joaquin Corridor DRAFT PEIR. The San Joaquin Corridor DRAFT PEIR for the project will be completed in accordance with CEQA Guidelines for programmatic documents, including identifying mitigation measures that are specific, feasible, and enforceable obligations or presented as formulas containing performance standards. Clarification will be provided as to what specific activities are being analyzed in sufficient detail in the San Joaquin Corridor DRAFT PEIR such that those activities that require no further environmental analysis and those activities that would require subsequent review are clearly defined. As specific facilities are proposed in the future, the associated environmental impacts will be evaluated in a subsequent project-specific CEQA evaluation to allow a final determination on a future project's specific impacts. Such review is appropriate and consistent with utilization of a program environmental document in accordance with Sections 15162 and 15168 of the CEQA Guidelines.*

Comment 49	Several agencies/individuals expressed concern regarding noticing of the NOP. These agencies requested additional time to respond to the NOP and/or additional scoping meetings be held in Sacramento and other parts of the Central Valley. (Letter #16, *Sacramento Area Council of Governments;* Letter #17, *Sacramento Regional Transit District;* Letter #18, *Members of the Regional Governance Working Group for the San Joaquin Rail Service;* Letter 20, *San Joaquin Regional Rail Commission;* Letter #21, *Sacramento Regional Transit District;* Sacramento Scoping Meeting; Los Angeles Scoping Meeting)
Response	*Copies of the NOP were sent to more than 150 government agencies and interested parties, including numerous local and regional agencies throughout the San Joaquin Corridor. The NOP was filed with the State Clearinghouse, as well. A complete mailing list for distribution of the NOP is provided in Appendix 8.7. All newspaper advertisements were arranged to be in a local newspaper of general circulation a minimum of several days prior to the scoping meetings.* *In response to comments received that agencies did not have sufficient time to comment, additional time was made available for the receipt of comments. Caltrans accepted comments on the NOP through January 4, 2013. Since the scoping process is clearly outlined in the CEQA Statute and CEQA Guidelines, Caltrans decided not to hold additional scoping meetings. But, Caltrans offered to meet with concerned agencies/groups and make a presentation, upon request, from which additional comments were accepted. This was offered as a courtesy to ensure that the diverse views of interested agencies/individuals were given full consideration during the preparation of the San Joaquin Corridor DRAFT PEIR.* *Caltrans began making public presentations regarding the San Joaquin Corridor Program Environmental Impact Review to Councils of Government in early 2011. Copies of the stakeholder meetings, the NOP mailing list, and Public Notices are provided in Appendix 8.7 of the San Joaquin Corridor DRAFT PEIR. As the information in Appendix 8.7 confirms, elected representatives, planning agencies, and regional transportation agencies in each county affected by the San Joaquin Corridor Amtrak California Service expansion plans have been notified and/or received presentations regarding the proposed project. Based on the input in response to the NOP, Caltrans revised the anticipated availability of the document for a 45-day public review in order to provide ample opportunity for agencies and interested parties to provide input. Additional meetings to take public and agency comments on the San Joaquin Corridor DRAFT PEIR will be conducted during the 45-day public review.*
Comment 50	Request information regarding track wear and cost sharing agreements for maintenance, information on funding sources, and capital cost data. (Letter #1, *Energy-Climate Committee of Sierra Club California;* Letter #20, *San Joaquin Regional Rail Commission*; Fresno Scoping Meeting; Bakersfield Scoping Meeting)
Response	*Caltrans considered including capital cost estimates in its project environmental review, but concluded that this is information that belongs in the Draft State Rail Plan, not the San Joaquin Corridor DRAFT PEIR. Economic issues are not a consideration in EIRs unless they have measurable effect on the environment. Caltrans could not identify any environmental effects from the cost issue. California (as well as other States) was awarded federal grants to purchase new rolling stock (passenger cars and locomotives). The passenger cars are being designed now and will be built in Illinois. Caltrans Division of Rail is the coordinating project manager for the rail car project. The locomotive procurement project will be led by the State of Illinois. Illinois anticipates awarding a contract in January 2014. At this time, we do not know who might bid on the locomotive contract or where the work will be done. If new track is installed to meet Amtrak operational requirements, funding for the infrastructure improvements is provided primarily by the State. Federal funding has been part of some capital improvements in California, as well. Amtrak presently provides a fixed*

	cost per train mile to the railroads for maintenance in accordance with their operating agreements. The railroads also receive an incentive payment for meeting the on-time performance requirements.
Comment 51	Several comments suggest that environmental documentation should be expanded to include an analysis under the NEPA to support future federal funding options. (Letter #6, *Citizens for California High Speed Rail Accountability*; Fresno Scoping Meeting)
Response	*In order to process a National Environmental Policy Act (NEPA) document, there must be a federal lead agency. No federal lead agency was willing to work with Caltrans on the San Joaquin Corridor Amtrak California Service project at this time. However, the documentation is being prepared to meet NEPA requirements, and if the opportunity arises in the future, it could quickly be modified for NEPA processing.*
Comment 52	The San Diego Association of Governments requested additional information regarding the alternative that would provide passenger rail between Bakersfield and Los Angeles, particularly how such service would potentially impact the Los Angeles–San Diego (LOSSAN) corridor with respect to: • Future equipment rotations; • Surfliner On Time Performance in contact with heavy Tehachapi freight traffic in the circumstance where an Amtrak train from Bakersfield functions on the LAUS to San Diego tracks (refer to Appendix 5 of Appendix 8.1 of this document); • Track capacity along the LOSSAN Corridor segment Burbank Junction to Los Angeles Union Station (LAUS)—long range LOSSAN service plans do not include San Joaquin service and it has not been included in the LOSSAN corridor operations modeling; • LAUS operational capacity. (Letter #19, *San Diego Association of Governments*)
Response	*The information requested by SANDAG was prepared by Caltrans. Appendix 5 to the Initial Study package (Appendix 8.1 of this document), which was inadvertently omitted from the Initial Study package, provided a direct response to this request. In addition, a representative of the project team made a presentation to the LOSSAN Committee on February 7, 2013 at the request of SANDAG representatives.*

PUBLIC SCOPING MEETINGS

During the 30-day period that the Notice of Preparation (NOP) was available for public review and comment, Caltrans sponsored six scoping meetings beginning in Sacramento on November 19, 2012 and ending in Los Angeles on December 4, 2012. The dates and locations of the scoping meetings were announced in the NOP, and although not required, legal advertisements announcing the scoping meetings were published in newspapers of general circulation prior to each scoping meeting. The following is a summary of comments from each meeting.

Many questions were received regarding the CEQA procedural process. Responses were provided as noted in Appendix 8.2.

Sacramento Scoping Meeting, November 19, 2012

One member of the public attended this meeting. Four (4) Caltrans staff/consultant representatives were present. All issues raised at this meeting are detailed in the above summary of concerns listed by environmental issue.

Stockton Scoping Meeting, November 20, 2012

No members of the public attended this meeting. Three (3) Caltrans staff/consultant representatives were present and no oral or written comments were received at this meeting.

Richmond Scoping Meeting, November 26, 2012

One member of the public attended this meeting. Three (3) Caltrans staff/consultant representatives were present. In addition to issues already detailed in the above summary of concerns listed by environmental issue, the following additional comments were provided.

The sole attendee expressed concern about the proposed project's status and how the project would impact Contra Costa County, and was particularly interested in the project including a new station in Hercules. The commenter indicated that the proposed Hercules station environmental review has been completed, but that there were some outstanding issues regarding historical structure, Native American burial grounds and underground utilities. Utility relocation may require new easements or property acquisition.

> *As a result of comments received on the NOP from several commenting agencies, the City of Hercules in Contra Costa County will be considered for a station and stop by San Joaquin Corridor Amtrak California operations. The informational comments were noted and filed for the record.*

Fresno Scoping Meeting, November 27, 2012

Seven (7) members of the public attended this meeting. Five (5) Caltrans staff/consultant representatives were present. All issues raised at this meeting are detailed in the above summary of concerns listed by environmental issue.

Bakersfield Scoping Meeting, November 29, 2012

Twenty-five (25) members of the public attended this meeting. Five (5) Caltrans staff/consultant representatives were present. This scoping meeting was the best attended of the six meetings held along the Corridor. In addition to issues already detailed in the above summary of concerns listed by environmental issue, the following additional comments were provided.

A commenter questioned how a comfortable ride for passengers would be maintained with increased train speed.

> *If an increase in San Joaquin Corridor Amtrak California passenger trains is authorized to 90 mph, the track system will require enhanced maintenance. Such maintenance is proposed in order to manage train vibrations at current or better comfort levels.*

One commenter complimented Caltrans' Amtrak operations from Los Angeles to San Diego (Surfliner). This operation has been very successful and new cars have been added as needed. However, why does Caltrans still need financial support for these train operations?

> *The balance between ridership and ticket cost is complex and at least up to the present, the total costs of passenger train operation costs (rolling stock, train maintenance, and track system maintenance) cannot be fully covered by fares.*

Los Angeles Scoping Meeting, December 4, 2012

Two (2) members of the public attended this meeting. About eight (8) Caltrans staff/consultant representatives were present. All issues raised at this meeting are detailed in the above summary of concerns listed by environmental issue.

2.2.2 List of Issues Found to be Less Than Significant, or Less Than Significant with Mitigation Incorporated

Based on the information in the Initial Study and a thorough review of comments received in response to the NOP, Caltrans has concluded that implementation of the *San Joaquin Corridor Amtrak California Service* (Project) would either result in no impact, less than significant impacts or less than significant impacts with incorporation of the identified mitigation measures for the issues of **Aesthetics, Agriculture, Geology and Soils, Hazards and Hazardous Materials, Mineral Resources, Population and Housing, Public Services, and Recreation**. No further analysis of these issues was required, and these issues **will not be** addressed in the San Joaquin Corridor DRAFT PEIR.

These issues were analyzed in the Initial Study (Section 8.1) and were found to be less than significant or less than significant with mitigation incorporated. Therefore, the issues listed above do not require further analysis in this San Joaquin Corridor DRAFT PEIR.

2.2.3 Areas Remaining Significant

Based on the information in the Initial Study and a thorough review of comments received in response to the NOP, Caltrans has concluded that implementation of the *San Joaquin Corridor Amtrak California Service* (Project) has the potential to result in significant environmental impacts and requires further review as follows:

All resource issues under **Air Quality, Biological Resources, Cultural Resources, Greenhouse Gases, and Noise** were found to be potentially significant. These issues **will be** addressed in the San Joaquin Corridor DRAFT PEIR.

Specific issues under **Hydrology and Water Quality, Land Use and Planning, Transportation and Traffic, and Utilities and Service Systems** were found to be potentially significant as identified below and **will be** evaluated in the San Joaquin Corridor DRAFT PEIR.

The issues of Utilities and Service Systems were found to have no significant impacts without implementation of mitigation except for the potential for the project to require construction of new or expanded storm water drainage facilities, which **will be** addressed in conjunction with the Hydrology and Water Quality Issues in the San Joaquin Corridor DRAFT PEIR. The issues of Land Use and Planning were found to have no significant impacts without implementation of mitigation except for the issue of habitat conservation plans and natural community conservation plan, which **will be** evaluated in conjunction with the Biological Resources impacts in the San Joaquin Corridor DRAFT PEIR.

The proposed project has the potential to substantially alter the existing drainage pattern of specific sites or along the alignment in a manner which could result in substantial erosion, siltation, or flooding onsite or offsite. The proposed project also has the potential to place structures that might impede or redirect flood flows within a 100-year flood hazard. These Hydrology and Water Quality issues **will be** addressed in the San Joaquin Corridor DRAFT

PEIR. The Transportation and Traffic issues regarding the potential for the proposed project to significantly adversely impact the performance of the circulation system or conflict with an applicable congestion management program were found to be potentially significant; therefore, these Transportation and Traffic issues **will be** addressed in the San Joaquin Corridor DRAFT PEIR. Based on the analysis and findings presented in the Initial Study, all other Hydrology and Water Quality, Land Use and Planning, Transportation and Traffic, and Utilities and Service Systems issues were found not to require further evaluation as part of the San Joaquin Corridor DRAFT PEIR. Potential impacts associated with the issues identified above were determined to have the potential to result in significant adverse impacts to the environment based on the preliminary analysis. Therefore, these issues will be the topics evaluated in the San Joaquin Corridor DRAFT PEIR to be prepared for this project.

In summary, the resource issues identified above as potentially significant and requiring further analysis will be carried forward in the San Joaquin Corridor DRAFT PEIR and evaluated in the sections addressing: **Air Quality, Biological Resources, Cultural Resources, Greenhouse Gases, Hydrology and Water Quality, Noise, and Transportation and Traffic.**

The San Joaquin Corridor DRAFT PEIR was prepared in order to address the issues identified above and provide an informational document intended for use by Caltrans, interested and responsible agencies and parties, and the general public in evaluating the potential environmental effects of implementing the project. A copy of the Initial Study is attached as Section 8.1 in Chapter 8 and a copy of the NOP and comment letters are provided in Chapter 8, Section 8.2 of the San Joaquin Corridor DRAFT PEIR.

CEQA requires that Caltrans, the CEQA Lead Agency, consider the environmental information in the project record, including the San Joaquin Corridor DRAFT PEIR, prior to making a decision on the proposed project. The decision that will be considered by Caltrans is whether to approve the Project for implementation, or to reject the proposed project. The San Joaquin Corridor DRAFT PEIR evaluates the environmental effects on **Air Quality, Biological Resources, Cultural Resources, Greenhouse Gases, Hydrology and Water Quality, Noise, and Transportation and Traffic** as detailed above.

Caltrans will serve as the CEQA Lead Agency pursuant to the CEQA Guidelines Section 15051(b)(1). The San Joaquin Corridor DRAFT PEIR was prepared by Tom Dodson & Associates (TDA). TDA was retained to assist Caltrans and BNSF to perform the independent review of the project required by CEQA before the San Joaquin Corridor DRAFT PEIR is released. Caltrans reviewed the content of the San Joaquin Corridor DRAFT PEIR and concurs in the conclusions and findings contained herein.

2.3 SCOPE AND CONTENT OF THIS EIR

In accordance with Sections 15063 and 15082 of the CEQA Guidelines, Caltrans prepared an Initial Study to identify the environmental resources and manmade systems that could experience significant environmental impact if the proposed project is implemented. After applying mitigation measures, Caltrans' Initial Study concluded that potential impacts associated with 8 of the 17 issues evaluated would be less than significant adverse impacts if the project is implemented as proposed. As discussed previously, the issue within land use that requires further study is the potential impact of the project on habitat conservation plans and natural community conservation plans, which will be evaluated in conjunction with the biological resources section of the San Joaquin Corridor DRAFT PEIR. The issue within utilities/service

systems that requires further study is storm water facilities, which will be evaluated in conjunction with the hydrology/water quality section of the San Joaquin Corridor DRAFT PEIR.

This focused San Joaquin Corridor DRAFT PEIR analyzes the potential for the *San Joaquin Corridor Amtrak California Service* Project to cause significant adverse environmental impacts to the following environmental issues/topics:

Air Quality, Biological Resources, Cultural Resources, Greenhouse Gases, Hydrology and Water Quality, Noise, and Transportation and Traffic as detailed above in Section 2.2.3.

In addition to evaluating the environmental issues listed above, the San Joaquin Corridor DRAFT PEIR contains all of the sections mandated by the CEQA and CEQA Guidelines. Table 2.3-1 provides a listing of the contents required in an EIR along with a reference to the chapter and page number where these issues can be reviewed in the document. This EIR is contained in two volumes. Volume 1 contains the CEQA mandated sections and Volume 2 contains the technical appendices.

Table 2.3-1
REQUIRED EIR CONTENTS

Required Section (CEQA)	Section in EIR	Page Number
Table of Contents (Section 15122)	same	Ii
Summary (Section 15123)	Chapter 1	1-1
Project Description (Section 15124)	Chapter 3	3-1
Environmental Setting (Section 15125)	Chapter 4	4-1
Significant Environmental Effects of Proposed Project (Section 15126a); Environmental Impacts	Chapter 4	4-1
Unavoidable Significant Environmental Effects (Section 15126b)	Chapter 4	4-1
Mitigation Measures (Section 15126c)	Chapter 4	4-1
Cumulative Impacts (Section 15130)	Chapter 4	4-1
Alternatives to the Proposed Action (Section 15126d)	Chapter 5	5-1
Growth-Inducing Impacts (Section 15126g)	Chapter 6	6-1
Irreversible Environmental Changes (Section 15126f)	Chapter 6	6-1
Effects Found Not to be Significant (Section 15128)	Chapter 2 & 8	2-1
Organizations and Persons Consulted (Section 15129)	Chapter 7	7-1
Appendices	Chapter 8	8-1

2.4 DRAFT PEIR FORMAT AND ORGANIZATION

The San Joaquin Corridor DRAFT PEIR contains eight chapters in Volume 1 and a set of technical appendices in Volume 2, which, when considered as a whole, provide the reviewer with an evaluation of the potential significant adverse environmental impacts from implementing the proposed *San Joaquin Corridor Amtrak California Service* Project. The following para-

graphs provide a summary of the content of each chapter of the San Joaquin Corridor DRAFT PEIR.

Chapter 1 contains the Executive Summary for the San Joaquin Corridor DRAFT PEIR. This includes an overview of the proposed project and a tabular summary of the potential adverse impacts and mitigation measures.

Chapter 2 provides the reviewer with an Introduction to the document. This chapter of the document describes the background of the proposed project, its purpose, and its organization. The CEQA process to date is summarized and the scope of the San Joaquin Corridor DRAFT PEIR is identified.

Chapter 3 contains the Project Description used to forecast environmental impacts. This chapter describes for the reviewer how the existing environment will be altered by the proposed project. Chapter 3 sets the stage for conducting the environmental impact forecasts contained in the succeeding several chapters.

Chapter 4 presents the environmental impact forecasts for the issues considered in the San Joaquin Corridor DRAFT PEIR. For each of the environmental issues identified in Section 2.3, the following impact evaluation is provided for the reviewer: the potential impacts forecast to occur if the project is implemented; proposed mitigation measures; unavoidable adverse impacts; and cumulative impacts.

Chapter 5 contains the evaluation of alternatives to the proposed project. Included in this section is an analysis of the no project alternative and other project alternatives.

Chapter 6 presents the topical issues that are required in an EIR. These include any significant irreversible environmental changes and growth inducing effects of the project. As of January 1, 1995, the assessment of short-term benefits relative to long-term impacts is no longer required, because it is considered redundant to other sections in an EIR. This change was adopted as part of SB 749 (Thompson) which became law in January 1995.

Chapter 7 describes the resources used in preparing the San Joaquin Corridor DRAFT PEIR. This includes persons and organizations contacted; list of preparers; and bibliography.

Chapter 8 contains those materials referenced as essential appendices to the San Joaquin Corridor DRAFT PEIR, such as the Initial Study and Notice of Preparation. Technical Appendices are provided in Volume 2 of the San Joaquin Corridor DRAFT PEIR, under separate cover. All Appendix material is referenced at appropriate locations in the text of the San Joaquin Corridor DRAFT PEIR.

2.5 AVAILABILITY OF THE SAN JOAQUIN CORRIDOR DRAFT PROGRAM EIR

The San Joaquin Corridor DRAFT PEIR for this project has been distributed directly to all public agencies and interested persons identified in the NOP mailing list (see Section 8.1, Chapter 8), the State Clearinghouse, as well as any other requesting agencies or individuals. All reviewers will be provided 45 days to review the San Joaquin Corridor DRAFT PEIR and submit comments to Caltrans for consideration and response. The San Joaquin Corridor DRAFT PEIR is also available for public review at the following locations during the 45-day review period:

Beal Memorial Library
701 Truxtun Avenue
Bakersfield, CA 93301

Fresno Central Library
2420 Mariposa Street
Fresno, CA 93721

Kings County Library—Hanford Branch
401 North Douty Street
Hanford, CA 93230

Los Angeles Public Library
630 West 5th Street
Los Angeles, CA 90071

Madera County Library
121 North G Street
Madera, CA 93637

Merced County Library
2100 "O" Street
Merced, CA 95340

Oakland Public Library
125 14th Street
Oakland, CA 94612

Pittsburg Library—Contra Costa County
80 Power Avenue
Pittsburg, CA 94565

Richmond City Library
325 Civic Center Plaza
Richmond, CA 94804

Sacramento Public Library
828 I Street
Sacramento, CA 95814

Cesar Chavez Central Library
Stockton—San Joaquin County
Public Library
605 North El Dorado Street
Stockton, CA 95202-1907

2.6 REVIEW PROCESS

After receiving comments on the San Joaquin Corridor DRAFT PEIR, Caltrans will prepare a Final PEIR for certification by Caltrans District 7 prior to making a decision on the project. Information concerning the PEIR public review schedule and Caltrans meetings for this project can be obtained by contacting Ms. Dawn Kukla, Senior Environmental Planner, at Caltrans District 7. Questions and comments submitted by mail shall be addressed to:

Caltrans District 7
Ms. Dawn Kukla, Senior Environmental Planner
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Questions and comments may also be e-mailed to the following address:
betty_l_miller@dot.ca.gov

Other agency approvals (if required) for which this environmental document may be utilized include:

Although local communities do not have jurisdiction or direct approval over the implementation of the proposed project, certain components of the project may be subject to review and approval by other agencies. This includes: encroachment permits from local jurisdictions where construction activities may occur outside of the BNSF, UPRR, and under certain conditions, Metrolink rights-of-way; filing of a Notice of Intent with the State for a Construction Activity General Permit; and regulatory permits from the U.S. Army Corps of Engineers (Corps), California Regional Water Board, and the California Department of Fish and Wildlife. These permits are discussed in their pertinent Subchapters, including Water Resources and Biological

Resources. For example, where drainage channels must be modified, the permits must be obtained from the referenced regulatory agencies before construction activities can proceed in such areas.

This page left intentionally blank for pagination purposes.

Chapter 3 Project Description

This chapter contains a detailed description of the proposed project, with focus on those characteristics and activities that can cause physical changes in the environment. The description contained herein for the San Joaquin Corridor Amtrak California Service Programmatic Environmental Impact Report provides the reviewer with a summary of the project as it would be developed by the California Department of Transportation, Division of Rail (Caltrans) if the project is approved following certification of this Program Environmental Impact Report (PEIR). The project description focuses on the physical facilities and associated activities that would be implemented if the proposed project is approved.

The State of California has directly supported intercity passenger rail services since 1976. Functioning through Caltrans, the State manages two routes operated by the National Railroad Passenger Corporation (Amtrak)--the Pacific Surfliner Corridor and the San Joaquin Corridor. The State financially supports a third Amtrak intercity passenger rail service, the Capitol Corridor. In addition to providing operating funds to Amtrak, Caltrans funds capital infrastructure improvements and equipment purchases (locomotives and passenger cars).

As State manager of the San Joaquin Corridor, Caltrans initiated the PEIR process to comply with the California Environmental Quality Act (CEQA) (Cal. P.R.C. § 21000 et seq.). There is no federal action associated with the project, so compliance with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. § 321 et seq.) is not required. However, to ensure data in this PEIR can be used in conjunction with future federal projects, all technical reports have been prepared to comply with Federal Railroad Administration (FRA) standards. The FRA's "Procedures for Considering Environmental Impacts" contain the procedures relating to environmental assessment and documentation and establish procedures for compliance by the FRA with NEPA, in particular NEPA Section 102 (2)(C) (42 U.S.C. 4332(2)(C)); Section 4(f) of the Department of Transportation Act (49 U.S.C. 303(c)); Section 106 of the National Historic Preservation Act (16 U.S.C. 470(f)); Section 309(a) of the Clean Air Act (42 U.S.C. 7609(a)); Section 307(c)(2) of the Coastal Zone Management Act (16 U.S.C. 1456(c)(2)); Section 2(a) of the Fish and Wildlife Coordination Act (16 U.S.C. 662(a)); Section 7 of the Endangered Species Act (16 U.S.C. 1536); the Noise Control Act of 1972 (42 U.S.C. 4901 et seq.); and certain Executive Orders, regulations, and guidelines. These procedures supplement the Council on Environmental Quality (CEQ) Regulations (40 CFR parts 1500 et seq.) and Department of Transportation (DOT) Order 5610.1C.

Caltrans is the lead State agency for the environmental review. Caltrans is evaluating the San Joaquin Corridor Amtrak California Service Project (project) as a "state program" to be implemented over the next 25 years. The objective in preparing the PEIR is to review potential impacts of proposed rail improvement projects to the San Joaquin Intercity Passenger Rail Corridor (San Joaquin Corridor) through 2035.

This PEIR provides a detailed description of the proposed project and alternatives, with a focus on those characteristics and activities that can cause physical changes in the human, physical, and biological environment. A statement of purpose and need for the proposed project is included. This statement of purpose and need applies to each alternative. A project's "need" is an identified transportation deficiency or limitation, and it's "purpose" is the set of objectives that will be met by addressing the transportation deficiency. A reasonable solution or range of solutions is developed and evaluated based on the objectives. A project's purpose and need

statement is designed to meet the requirements of federal and state statutes and regulations by providing a basis for the selection of reasonable and practicable alternatives, a comparison of those alternatives, and the selection of an alternative for implementation.

The purpose of the proposed project improvements is to accommodate existing and future California intercity passenger rail demand and projected increases in ridership through 2035. The proposed project would also serve to improve rail safety and operation and provide increased availability of public transportation, which would, in turn, help to reduce emissions from vehicular travel and achieve the goals of State and local plans.

The need for increased rail capacity and the proposed improvements to the San Joaquin Corridor is demonstrated by ridership increases that have resulted in both sold out trains and an increased number of standees on board the corridor trains. Travel demand is projected to grow threefold over the course of this planning period, well exceeding current capacity.

3.1 PROJECT OBJECTIVES

Caltrans, in cooperation with multiple local agencies located within 11 California counties, proposes to fund expansion of the existing rail system within the BNSF Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along three segments of passenger rail corridor in the San Joaquin Valley and portions of the San Francisco Bay area. If federal funding becomes available, a separate document for compliance with NEPA will be prepared at that time. The map in Figure 3-1 shows Amtrak's existing San Joaquin Corridor intercity rail passenger route. Some of the proposed Project alternatives would utilize rights-of-way along the San Joaquin Valley Railroad (SJVR) and the Southern California Regional Rail Authority (SCRRA), also known as Metrolink. The expansion of this system would serve to accommodate existing and future passenger rail demand and projected increases in ridership through 2035.

3.1.1 Specific Objectives

- Install a second or third main track along:
  - 188.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  - 22.11 miles of the Port Chicago to Oakland segment of UP track;
  - 43.61 miles of the Stockton to Sacramento segment (Fresno Subdivision) of UPRR track. (Figures 3-2a through 3-2d depict where the installation of second or third track is proposed. Figure 3-3a reflects the current BNSF track structure. Figures 3-3b through 3-3g depict the proposed track structure for BNSF and UPRR in order to improve the efficiency of train movements and ensure that passenger train service can operate on a reliable schedule.)
- Install new sidings, or passing track, in order to facilitate train flow on both tracks.
- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations.
- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures.
- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems.
- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas.
- Increase the maximum operating speed of passenger trains in all existing segments of the San Joaquin Corridor from 79 miles per hour (mph) to 90 mph.

- Obtain additional operating equipment (rolling stock i.e., locomotives and passenger cars) to meet the forecasted customer demand for passenger trains.
- Install or update passenger train infrastructure, such as layover or station facilities, to support expansion of future train operations.

The San Joaquin Corridor Strategic Plan includes details on projects that are programmed or currently underway. The BNSF and UPRR all currently have projects that are either underway or approved and are waiting for construction, or funding, to begin. Projects are defined as underway if State funds have been allocated by the California Transportation Commission (CTC) or if other funding sources (such as FRA, Amtrak, local, or others) are provided and under contract. Larger projects are often funded and completed in phases. Programmed projects are defined as projects that have been approved, but funding will not be available until sometime in the future. Current programmed projects include track and signal upgrades, route capacity improvements, and a number of station area improvements. Proposed immediate projects are defined as projects that would be developed in one to two years. These proposed improvements are discussed in the following text.

3.2 PROJECT CHARACTERISTICS

The proposed project traverses approximately 357 miles of existing track that is located mainly throughout California's Central Valley, reaching into portions of the San Francisco Bay area, and includes three main rail line segments:

- Bakersfield to Port Chicago (BNSF) – Milepost[1](MP) 887.7 to MP 1164.0 (276.6 track miles);
- Port Chicago to Oakland (UPRR) – MP 41.3 to MP 3.2 (38.1 track miles); and
- Stockton to Sacramento (UPRR) – MP 82.96 to MP 39.35 (43.61 miles) of UPRR's Fresno Subdivision track (generally to the east of Highway 99).

Some of the project alternatives include secondary passenger train segments that extend beyond the existing areas presently served by the three main San Joaquin Corridor track segments. These secondary passenger train segments include:

- Fresno to Porterville (SJVR)
- Bakersfield to Lancaster (UPRR tracks) and Lancaster to Los Angeles (SCRRA/Metrolink – Antelope Valley Line)
- Port Chicago to Richmond on the existing BNSF main line

As indicated earlier, Figures 3-2a through 3-2d show the proposed locations of second and third track installation and alignments that encompass the three main San Joaquin Corridor segments (Bakersfield to Stockton, Stockton to Sacramento, and Stockton to Oakland). Figures 3-4 through 3-6 show secondary segments. These secondary segments are described in the alternatives section below.

3.2.1 Program / Project Approach

A program-level, first tier, environmental document is considered appropriate for a corridor-wide project as envisioned by Caltrans. This Draft PEIR evaluates the potential environmental impacts of the proposed operational modifications and supporting infrastructure improvements

[1] Mileposts refer to the distance from a point of origin, e.g., BNSF track is measured from the point of origination in Kansas.

required to support intercity passenger train operations within the San Joaquin Corridor over the 25-year planning period. The program is designed to meet the forecasted increase in intercity passenger demand over the 25-year period, the expanded number of passenger train operations required to meet the demand, and the specific infrastructure improvements required to support future operations. Conceptual and site specific impact evaluations are presented, depending upon projected operations and the rail infrastructure improvements required to support those operations. Under this approach, proposed near-term capital improvements are evaluated with more detailed, site specific information, while long-term capital improvements are evaluated at a programmatic level.

3.2.1.1 Key Program Elements

In order to create a vision for the San Joaquin Corridor at the end of the 25-year planning period, Caltrans focused on the following aspects of the passenger rail system: defined the passenger demand growth over the 25-year planning period; determined how many passenger trains will be required to meet this demand; established an objective of increasing passenger train speeds to 90 miles per hour (mph) where possible; and identified the track and facility infrastructure improvements required to support the proposed future passenger train operations. Caltrans developed the program outlined in the following sections, based on continued growth in intercity rail passenger use of the San Joaquin Corridor. The number of passengers using the San Joaquin Corridor increased about 21.5 percent over the four-year period between 2006 and 2010 (see below). Although the future growth in demand for intercity rail capacity will be affected by a large number of variables, such as future High Speed Rail operations, increased costs for fuel, and availability of future funding to support infrastructure and operations, ridership modeling shows that demand will continue to grow over the 25-year planning period. Based on this assumption, Caltrans has developed a vision of the San Joaquin Corridor operations and infrastructure improvements required to meet the 2035 demand forecast.

3.2.1.2 Existing San Joaquin Corridor Intercity Passenger Train Operations

Current San Joaquin Corridor intercity passenger train operations consist of the following: 6 daily round trip trains on the Bakersfield-Stockton segment (total of 12 trains); 4 daily round trip trains on the Stockton-Oakland segment (total of 8 trains); and 2 daily round trip trains on the Stockton-Sacramento segment (total of 4 trains). Passenger ridership on the San Joaquin Corridor has increased by about 170,000 riders since 2006, as shown in the following ridership summary:

Year	Number of Passengers
2006-2007	804,785
2007-2008	949,611
2008-2009	929,172
2009-2010	977,834
2010-2011	1,067,441
2011-2012	1,144,616

Based upon the forecasted growth, Caltrans concluded that additional intercity passenger trains will be needed to serve the San Joaquin Corridor. The additional passenger trains forecasted to be needed over the next 25 years, along with the required track system and other infrastructure to support the trains, are the focus of this environmental review.

Another component of current passenger train service along the San Joaquin Corridor is the extensive connecting thruway bus system that supports the train operations. The effectiveness of the San Joaquin Corridor transportation system is partially based on connecting bus routes throughout the Central Valley and into the Los Angeles Basin and beyond. It is through the combined use of Amtrak California buses and trains that the San Joaquin Corridor transportation system reaches the majority of Californians and adjacent populations in Nevada. The statewide Amtrak California System Map, included as Figure 3-7, presents the San Joaquin Corridor passenger train route and the connecting bus routes. The bus system extends north to Redding, east to Reno and Las Vegas, Nevada; south to Indio; and all along the California coast from Arcata to San Diego. Throughout the system, interconnections are available between buses and other Amtrak California intercity routes (such as the Pacific Surfliner), with Amtrak National Train Routes (such as the Coast Starlight or the Sunset Limited); and with the various commuter rail systems. Bus motor coaches are leased from local companies. All bus motor coaches are required to meet Amtrak motor coach design and safety requirements. Appendix 1 of Appendix 8.1 contains the current San Joaquin Corridor train and bus schedules January 2013, from *Amtrak California's Operating Timetable No. 43*). Note that all technical appendices are compiled in Volume 2 of this PEIR. The Draft Service Development Plan for the San Joaquin Corridor identifies the following types of operational modifications to the existing bus system. Expansion of the Amtrak bus feeder system can be accomplished through modifications of the contracts with the bus service providers as passenger demand increases. Modifications include capital facilities such as drop off and loading areas, layover facilities, transfer centers, and other necessary improvements. Bus route modifications include rerouting existing lines, adding routes to service secondary segments, adding bus stops, and increasing train frequencies. Bus improvements specifically impact connections in Bakersfield and Stockton, as well as possible new connections in Madera.

3.2.1.3 Future Intercity Passenger Demand for the San Joaquin Corridor Passenger Trains

In order to forecast demand for passenger train operations in 2035, Caltrans modeling included, among other factors, anticipated population growth over the next 20-year period and demand for alternative modes of transportation as fuel prices increase. The modeling was conducted using the Caltrans/Amtrak revenue and ridership model created by AECOM. The modeling generated the following demand forecast for a mid-point (2020) and end date for the planning period (2035).

Table 3-1
FORECAST RESULTS FOR SAN JOAQUIN CORRIDOR SERVICE

	Baseline		10-year Plan 79 mph service	10-year Plan 90 mph service	25-year Plan 90 mph service
	2011	**2012**	**2020**	**2020**	**2035**
Annual Forecasts					
Ridership	1,016,300*	1,069,500**	1,665,600	1,721,200	3,044,500
Ticket Revenue	$31,341,000*	$34,748,000**	$67,896,000	$70,732,000	$144,527,000
Passenger-Miles	139,410,000*	149,140,000**	248,330,000	258,920,000	461,890,000
Service Characteristics					
Train Frequency	Daily	Daily	Daily	Daily	Daily
Oakland-Stockton	4	4	6	6	10
Sacramento-Stockton	2	2	3	3	6
Stockton-Merced	6	6	7	7	10
Merced-Bakersfield	6	6	8	8	11
Average Travel Time (minutes)					
Oakland-Bakersfield	368	368	346 (-6%)	327 (-11%)	324 (-12%)
Sacramento-Bakersfield	318	318	312 (-2%)	302 (-5%)	300 (-6%)

Notes:

Forecasts are based solely upon information available to Caltrans' contractor as of 6/21/11.
Forecasts are provided for the sole use of Amtrak and Caltrans.
Forecasts are not intended for disclosure in a financial offering statement.
* FY11 Estimate (prepared May 2011)
** FY 12 Budget (prepared May 2011)

Market Growth
Based on California Department of Finance growth and population projections
Auto Congestion
Auto travel times increase by 2% every five years due to increased congestion
Service Changes
Changes in frequency and travel time as shown above (timetables provided by Caltrans 5/21/11 & 5/31/11)
On Time Performance (OTP) at 90% in all years
Pricing Actions
+2% per year applied to all prices (assume no ridership loss since increase matches inflation rate)

See Appendix 2 of Appendix 8.1, *Passenger Demand Forecast Modeling*, for the detailed information in support of Table 3-1. Based upon the modeling, Caltrans identified a demand for 8 passenger trains per day (total 16 trains) on the BNSF tracks between Merced and Bakersfield in 2020. This represents an increase in 2 round trip trains, or a total of 16 trains using this segment compared to the current total of 12 Amtrak passenger trains. The total of 16 trains represents an increase in train operations by about 33 percent in 2020. By 2035 the modeling indicated a need for 11 round trip passenger trains per day (total of 22 trains) from Bakersfield to Stockton on the BNSF tracks. Relative to the current total of 12 Amtrak passenger trains, the 2035 operations represent an increase in operations by 10 trains, or an 83% increase in passenger train operations. These passenger trains would operate with 4 or more passenger cars to meet demand.

The above information is adequate for planning purposes over the 25-year planning period, but the actual number of daily trains and their schedules will be developed in response to customer demand over the planning period. The information provides a baseline from which the program environmental effects can be forecast.

3.2.1.4 Future Line Capacity Demand: BNSF Railway and Union Pacific

Caltrans met with both BNSF and UPRR and requested they model the passenger schedules for the service proposed in this document in order for the railroads to assess the ability of their respective infrastructure and to support the future demand for track capacity, including freight. BNSF used its own RTC (Rail Traffic Controller) model to determine specific projects that would be needed. Instead of modeling the proposed service increases on its track system, the UPRR asserted that an additional track would be required on its system to accommodate additional passenger trains and thus requested specific track improvements to their railroad infrastructure which they stated would be needed to support the proposed increases in passenger train operations.

BNSF

Using the passenger demand data, BNSF proceeded with line capacity modeling to identify the track modifications between Port Chicago and Bakersfield that the railroad considered necessary to support the proposed 2020 operating scenario (16 trains) and the 2035 operating scenario (22 trains). Port Chicago is the location (see Figure 3-2c) where intercity passenger trains operating between Oakland and Bakersfield transition between the BNSF and UPRR tracks.

BNSF evaluated four different schedule proposals, as follows:

- 8 daily round trip trains on the full Bakersfield to Port Chicago segment (total of 16 trains) with the passenger trains operating at a maximum speed of 79 miles per hour (mph). This scenario is termed the 5/10 year 79 mph plan.
- 11 daily round trip trains on the full Bakersfield to Stockton segment (total of 22 trains) with the passenger trains operating at a maximum speed of 79 mph. This scenario is termed the 25 year 79 mph plan.
- 8 daily round trip trains on the full Bakersfield to Stockton segment (total of 16 trains) with the passenger trains operating at a maximum speed of 90 mph. This scenario is termed the 5/10 year 90 mph plan.
- 11 daily round trip trains on the full Bakersfield to Stockton segment (total of 22 trains) with the passenger trains operating at a maximum speed of 90 mph. This scenario is termed the 25 year 90 mph plan.

BNSF also incorporated the following assumptions in its modeling:

- Each of the 5/10 year cases reflects a scenario where one round trip operates as an “express” schedule, with intermediate stops at Stockton, Modesto, Merced, Fresno, and Hanford only on the BNSF. The other 5/10 year cases reflect all trains stopping at all stations.
- In the 5/10 cases the freight counts were increased by 14 trains per week (2 intermodal Z1-7, 10 intermodal Q/S and 2 unit). The freight counts were then kept at those levels for the 25-year cases (in order to identify just the scope of projects needed for the

modified passenger services beyond the 5/10 plan). This alternative also includes the express trains.

Based on the above assumptions, BNSF identified the line capacity improvements that would be required to meet the four different schedule proposals. Figure 3-3a shows the existing track structure from Port Chicago to Bakersfield. Only limited double track occurs along this segment, but this configuration supports the current 12 trains per day from Stockton to Bakersfield (8 to/from Oakland and 4 to/from Sacramento). Figure 3-3b shows the track improvements required to support the 5/10-year 79 mph plan. Additional double track is required for 5 new segments, totaling about 31 miles. Figure 3-3c shows the track improvements required to support the 25-year 79 mph plan. Additional double track (relative to the current circumstance) is required for 11 new segments totaling about 75.2 miles. Figure 3-3d shows the track improvements required to support the 5/10-year 90 mph plan. Less additional double track (relative to the current circumstance) is required to support this operational scenario, as only 8 new segments totaling about 54 miles is required. Finally, Figure 3-3e shows the track improvements required to support the 25-year 90 mph plan. Additional double track (relative to the current circumstance) is required for 16 new segments totaling about 188.5 miles. With the described improvements to BNSF's tracks between Port Chicago and Bakersfield, the modeled future passenger train operational scenarios are feasible.

Appendix 3 of Appendix 8.1, *San Joaquin Valley Capacity Analysis, Summary of RTC Simulations*, provides details of the BNSF report.

Union Pacific

In a letter to Caltrans, UPRR indicated that in order to accommodate any additional intercity passenger trains along its track segments from Oakland to Port Chicago and Stockton to Sacramento, one additional track would be required on each of the specified segments. See Appendix 4 of Appendix 8.1, *UPRR Letter, San Joaquin Service Bakersfield—Oakland*. Thus, a third track would need to be installed from Richmond to Martinez and a second track would need to be installed from Martinez to Port Chicago and from Stockton to Sacramento. This proposal is discussed in more detail below.

In order to evaluate an actual improvement scenario for the UPRR track segments from Oakland to Port Chicago and Stockton to Sacramento, Caltrans contracted with an engineering firm with expertise in railroad engineering to examine these alignments and identify the scope of improvements that could reasonably be installed within three specific segments of the San Joaquin Corridor. Three corridors were examined, because there are currently two UPRR track corridors from Stockton to Sacramento, as shown on Figure 3-2d. However, after considering feedback on the Notice of Preparation (NOP) for this project, Caltrans has eliminated the Sacramento Subdivision from further review and it will not be considered in the Draft PEIR. Improvements will be considered for the UPRR Fresno Subdivision between Stockton and Sacramento. Although UPRR did not model the route, Caltrans accepts that there is a need for an additional track to be installed on each segment, resulting in three tracks from Oakland to Martinez and two tracks from Martinez to Port Chicago, as well as two tracks on the Fresno Subdivision between Stockton and Sacramento.

Based upon field surveys and a review of existing track charts, it has been determined that it is possible to add the required track improvements to each of the UPRR corridors. The UPRR Niles and Tracy Subdivisions would be improved with a third main track beginning at Shellmound on the west (MP 5.20) and ending at Martinez on the east (MP 32.00). A double

track would be added on the Tracy Subdivision from Martinez at MP 36 to Port Chicago at MP 41.3. Figure 3-3f shows the track improvements along these UPRR Subdivisions. The areas to be improved include segments of existing siding, which would be upgraded to mainline standards, and a new second/third track beginning at MP 6.35. Installation of an additional track was considered infeasible as a result of the engineering review on two segments east of Shellmound, in Richmond and between Crockett and Costa. Of the approximate 38.10 miles of the Tracy Subdivision considered for improvement, approximately 33 miles of second or third track would be installed.

Figure 3-3g shows the UPRR Fresno Subdivision track. The NOP stated that a small segment of track near Lodi would not be considered for construction of a second track due to engineering constraints; however, based upon feedback received on the NOP, Caltrans will analyze construction of a second track along the entire 43.61 miles of the Fresno Subdivision. The proposed project would either install a new second track or upgrade an existing siding to "main line track" status if approved.

Summary – 25-Year 90 mph

In summary, the following additional track improvements would be required to meet the 25-year 90 mph intercity passenger train operating forecast on the San Joaquin Corridor: This identifies the maximum rail infrastructure improvements proposed by the host railroads.

BNSF from Bakersfield to Port Chicago:	Existing - 276.6 total track miles; 188.5 miles are proposed for new double track (68.1%)
UPRR from Port Chicago to Oakland:	Existing - 38.10 track miles; 33 proposed new double or triple track miles (86.6% of segment).
UPRR from Stockton to Sacramento:	
Fresno Subdivision:	Existing - 43.6 track miles; 43.6 miles new double track (100%)

An estimated total of 265 miles of new track, identified as siding extensions or additional main line, is proposed to meet the 2035 90 mph operational scenario with 22 trains. All new track improvements would include new or revised signal systems, culvert extensions, positive train control systems, and all other infrastructure required to operate the San Joaquin Corridor intercity passenger train system in 2035. These additional infrastructure support facilities are addressed below.

3.2.1.5 General Design Features: Track Improvements throughout the San Joaquin Corridor

The alignments of the proposed additional main line tracks would closely follow the existing track and be designed for the maximum allowable speed, currently 79 mph for passenger trains and 70 mph for freight trains. In locations where operating speed is restricted (track geometry or other constraints), the additional main line tracks would be designed with the same standard as the existing main line track through all segments of the rail corridor.

Connections to sidings and spur tracks from the new track would be made using turnouts that meet host railroad standards, currently No. 11 turnouts (the term "No. 11" refers to the most current turnout design). Where existing track would be upgraded to mainline standard, connections to sidings and spur tracks would also use No. 11 turnouts or the current standard. All mainline connections are assumed to be No. 24 turnouts and crossovers. Roadbed sections would be constructed to conform to current railroad construction standards for mainline and major spur tracks. The proposed second mainline track alignments, as well as the upgraded

mainline track, would use standard mono-block concrete ties with a resilient fastening system. Running rail would be 136 or 141 continuously welded (CWR) (136/141 lbs per meter of rail) rail on tangents and curves flatter than one degree. Sharper curves would be laid with 141# CWR rail. Cross ties through grade crossings, as well as transition ties, would be 10-foot-long wood ties.

The limits of the area of potential effect (APE) would be fixed at 5 feet from the outer edge of the new drainage ditch paralleling new mainline track alignments, i.e., the edge farthest from the new track.

3.2.1.6 Track Design

- *Structural Bridge Design* – Bridge design would follow common railroad and American Railway Engineering and Maintenance-of-Way Association (AREMA) standards. The existing timber trestle ballasted deck bridges would be replaced with pre-cast concrete slab or box girder bridges or steel girder ballasted deck bridges as appropriate. All new bridges would use one of the following four designs: (1) pre-cast concrete slab; (2) pre-cast concrete box girder; (3) plate girder; or (4) rolled steel beam. Figure 3-8 provides an example of a typical railroad bridge structure.

  It is estimated that approximately 12 existing bridges along the BNSF right-of-way will be impacted by project implementation and would need to be widened to accommodate the additional facilities. In addition, an estimated 28 new bridges would be constructed along the UPRR Fresno Subdivision to accommodate the additional track facilities. Exact bridge locations would be determined during project design.

- *Grade Crossing Design* – Grade crossings would follow current railroad standards using pre-cast steel clad, shunt resistant concrete panels on 10-foot-long timber ties spaced on 19.5-inch centers. The timber ties would use tie plates adapted for the same elastic rail clips as the concrete cross ties. End ramps would be provided per railroad standards. Figure 3-9 shows a typical at grade crossing. Generally, new 8-foot concrete crossing panels would be installed for second mainline track alignments. Panels in existing grade crossings would not be upgraded.

  It is estimated that implementation of this project would require approximately 218 grade crossings to be upgraded along the UPRR Fresno Subdivision. BNSF estimates more than 400 at-grade crossings occur within its alignment from Bakersfield to Port Chicago. There are currently no grade separations anticipated. Exact grade crossing locations would be determined during the project development phase.

3.2.1.7 Culverts

It is estimated that the extension of approximately 247 culverts would be required on the UPRR Fresno Subdivision. Exact culvert locations would be determined during the project development phase. An estimated 1,000 culverts exist on the BNSF Bakersfield to Port Chicago segment. All culverts would be extended to accommodate additional tracks. Figure 3-10 contains a photo of a typical culvert.

3.2.1.8 Road Improvements

Several at-grade road crossing improvements may be required as part of the proposed project. Exact road improvements would be determined during the project development phase. As

stated above, no new grade separations are currently envisioned as part of the proposed 22 train, 90 mph operational scenario in 2035.

3.2.1.9 Other Project Aspects

- *Land Acquisition.* The width of railroad right-of-way varies throughout the San Joaquin Corridor. Along most of the alignment, the existing right-of-way is sufficient for completion of the proposed track improvements, with a distance of 15 to 25 feet between track centers.

- *Utility Crossings.* It is anticipated that there would be utility crossings affected by the project. These may include natural gas and oil pipelines; water and sewer lines; electric, cable, and telephone lines; storm drains; and industrial product and waste lines (caustic soda, nitrogen, and oxygen gas lines). Construction would avoid the utility crossings, if possible. If not, the lines would be relocated within the railroad right-of-way. A utility line within the railroad right-of-way that is no longer necessary would be removed or closed. Any utility relocations or closures would be implemented only after close coordination with the utility owner(s).

- *Staging Areas.* A number of staging areas would be necessary in order to accommodate storage of equipment, materials, and employee parking. The staging areas would be located along the railroad right-of-way at a distance of at least 25 feet from the closest track. Necessary staging areas outside the railroad's right-of-way would be the contractor's responsibility and cannot be identified at this time. If permits (entitlements or regulatory permits) are required for staging areas, they would be obtained by the contractor and any subsequent environmental documentation would be prepared and processed on a case-by-case basis by the contractor.

- *Permits.* Various permits would be required for the proposed project. They include, but are not limited to, Section 404 permit from the U.S. Army Corps of Engineers (Corps); California Regional Water Quality Control Board (RWQCB) 401 Water Quality Certification; California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement (1601 or 1603 Agreement); and a National Pollution Discharge Elimination System (NPDES) permit, which is a construction stormwater discharge permit. The NPDES permit is obtained by filing a Notice of Intent and compiling a Storm Water Pollution Prevention Plan (SWPPP) with the RWQCB. It may also be necessary to obtain incidental take permits for listed protected species from the U.S. Fish and Wildlife Service (USFWS) and CDFW. County Drainage Permits would be required from each county that the proposed project alignment would traverse for activities affecting watercourses and drainage facilities in unincorporated areas. A Flood Control Encroachment Permit may be required for any temporary or permanent encroachment on County Flood Control and Water Conservation District properties or rights-of-way.

3.2.2 <u>Construction Scenario</u>

3.2.2.1 General

The proposed project track installation would be completed by a series of construction activities. Contracts for construction of new track are typically awarded on an incremental basis. For example, a logical construction segment would be from Merced to LeGrand. It would require an estimated 9 to 12 months to install a 5 to 10-mile segment of new track, excluding the need for

grading, permitting, or grade separations. It is estimated that about 31 years of construction activity would be required to install the approximately 265 miles of new track envisioned for this project. Thus, for analysis of potential project-related construction impacts, it is assumed that two track segments may be under construction at any given time over the 25-year period through 2035.

For a complex project component, such as constructing a new bridge over the San Joaquin River (near Fresno) or the Nichols Curve Bridge near Port Chicago and related track improvements, the track construction period could extend to between 24 to 36 months.

Installation of new second track and support facilities would involve a series of construction activities that would culminate in BNSF or UPRR track-laying teams installing welded rail on new fill that would be placed along a segment selected for an additional track. The proposed welded rail type (136/141 #CWR) is among the heaviest rail currently being used by BNSF and UPRR, and provides the best ride and safety for high speed trains, such as the existing passenger trains.

3.2.2.2 Construction Process

The first step in the construction process would be to remove and compact existing soil material within the project alignment and install fill to elevate the new track surface an average of about 5 feet above existing ground level in order to match the existing track elevation. This also maintains a drainage ditch adjacent to the track to manage stormwater runoff. This is accomplished in the following manner:

- A grading contractor would be engaged to first create a compacted base for installation of the sub-ballast. For planning purposes, it is assumed that approximately 50,000 cubic yards (cy) of this material would be excavated within a 10-mile alignment adjacent to existing track(s). About 30,000 cy would be utilized to make the new high fill. The remaining 20,000 cy of material would be exported from the site and made available to contractors as fill material. Assuming 20 cy per truck, a total of 1,000 truck trips would be required to remove the excavated material. It is assumed that the roundtrip distance would be a maximum of 20 miles. The excavation activities are proposed to occur over an estimated 4 to 6 months, which is about 17 truck trips per day.

- After the sub-ballast fill is placed, the dirt contractor would place 12 inches of sub-ballast on the subgrade. Overall, an estimated 40,000 cy of material would be used for sub-ballast. The sub-ballast material would be purchased from commercial sources in the project area and delivered by truck. Assuming 20 cy per truck delivery, a total of 2,000 truck trips would be required to import sufficient material to create the new fill and sub-ballast. Assuming 60 days of sub-ballast installation, about 34 truck trips per day would occur to deliver the sub-ballast to the entire project alignment.

- An estimated 30 people are forecast to be employed during the grading operations and typical grading equipment (dozers, graders, rollers, etc.) would be used to excavate the existing material and properly compact and install the fill and sub-ballast. Completion of the fill is expected to require approximately 4 to 6 months from the date construction begins. Due to an expected need to dispose of a portion of the excavated material, it is assumed that a maximum of 60 truck trips would occur per day during this phase of construction.

During the same period that the fill is being installed, a separate work crew will be installing bridges, drainage pipes/culverts, and other support facilities for the track. Several small culverts and several road crossings will have to be improved to ensure safety for vehicles using these roads. In addition, pipelines (such as water, natural gas, etc.) located under the railroad right-of-way will have to be protected, either by encasement, relocation or other similar measures. An estimated 50 employees may be utilized on this phase of construction. Most of the material for constructing these support facilities will be delivered by truck and are part of the estimated 60 truck deliveries to the project each day. It is anticipated that these facilities will be completed in six to nine months for each construction contract within a segment of this corridor.

The final phase of construction involves laying the new track and upgrading existing track. Track laying will be carried out by BNSF and UPRR personnel using a Track Laying Machine (TLM), with the majority of track work materials delivered and installed by rail. Rail, concrete ties, and ballast rock will be installed in sequence as follows:

- Approximately 5 percent of the railroad ballast (1,600 cy or 100 trucks in a 10-day period) will be delivered, laid by bottom dump truck, and leveled by graders to provide an initial working surface.

- The new rail will be delivered by a special train in 1,140-foot segments and laid alongside the existing track.

- The TLM will arrive with all needed ties on flatcars, and position the ties and rail on the newly laid ballast - approximately on alignment, but below final grade.

- Railroad cars with the remainder of the ballast will travel on top of the partially built skeleton track, and unload the ballast on top of the ties and rail.

- Specialized rail-mounted equipment will surface the track structure to final alignment and grade, smoothing the ballast placement and installing safety walkways beside the track as required.

- New signals required for operation and safety will be installed and hooked up to BNSF and UPRR electrical and communication systems which parallel the existing track. In addition, the access road will be improved for the track corridor to provide for ongoing operations and maintenance.

The final phase of construction would take approximately two months for completion. The new rail will be delivered by a special train in 1,140-foot segments. The new track can be installed at a rate of approximately one mile per day. Track laying requires approximately 50 people to carry out the required tasks. At the same time new signals required for operation and safety will be installed and connected to the railroad electrical and communication systems. When the track and signals have been installed and tested, the new track will be available to support train operations.

Both rail and vehicular traffic will be maintained within the corridor through the period of construction. Disturbance at an individual road crossing occurs only for a few days, except where bridges are being installed. Where road crossings are improved, vehicular traffic will be

detoured for short periods of time. This activity will be coordinated with the appropriate local agency with roadway responsibility. It is anticipated that the majority of the construction activities will take place in the daytime with the exception of major cutovers. This work will need to be coordinated with railroad operations and be scheduled during construction windows in existing track operations.

3.2.3 Expanded Program Elements

A variety of program elements (infrastructure support systems) are presented here for inclusion in all of the alternatives analyzed in this document. These include both fixed stock (rail infrastructure such as tracks, signals, stations, other building, electric wires, etc.) and rolling stock (all the vehicles that move on a railway).

3.2.3.1 New Stations

The NOP included discussion of a new or updated station in Stockton, which is discussed in further detail below. In response to the NOP, several additional station locations were suggested for consideration. Caltrans reviewed these suggestions and concluded that two of these station locations merit further consideration: the City of Hercules and the City of Elk Grove. Descriptions of these two proposed station locations are provided below.

Stockton

A new rail station, or refurbishment of the existing station in Stockton, is proposed as part of the project. Amtrak California in Stockton is currently served by two passenger stations. The original Santa Fe Railroad station is located at 735 South San Joaquin Street and consists of a building with a waiting room. The station serves 8 Amtrak California trains on the Oakland to Bakersfield route. There is also a second Amtrak California stop that has one platform with a shelter (the ACE Station located at 949 East Channel Street) served by 4 Amtrak California trains on the Stockton to Sacramento route.

It is hoped that an alternative station can be built that could serve both Amtrak and ACE. This station would include standard rail station design features, such as platforms that extend the full length of the passenger boarding area. It would be equipped with shelter, lighting, signage, schedules, leaning bars, information kiosks, ticket vending machines, as well as have adequate space for dedicated bus passenger circulation, loading or unloading bays and shelters, van, shuttle, taxicab, and passenger vehicle drop-off. Once a new station site is selected and funds become available, the project will follow a general construction scenario.

Plans for the new station include a police-staffed, state-of-the-art, Emergency Operations Center (EOC), in which all stations, staffed and unstaffed, would be monitored. The EOC will incorporate a security management system that consists of video surveillance, access control, motion detection, intercoms and emergency mass notifications to ensure maximum safety for all passengers within our facilities.

Five alternative locations were considered for the new Stockton station in the NOP. The NOP eliminated three of the possible locations under consideration; however, after reviewing comments on the NOP, Caltrans decided to maintain consideration of joint or adjacent Amtrak California/Ace stations. Descriptions of the locations to be considered in the Draft PEIR are as follows (See Figure 3-11, USGS topographic map):

Stockton Station Alternative 1 (See Figure 3-12): Alternative 1 would include the development of a new Amtrak California station to be located at the corner of East Scotts Avenue and South Wilson Way, compass north of the BNSF mainline in the City of Stockton. The site is currently developed with industrial and commercial uses. Implementation of this alternative would include the demolition of existing facilities in order to accommodate the new train station. Standard rail station design features, as described above, would be implemented. Caltrans concluded that Alternative 1 should not be given further consideration for two reasons. First, because a station at this location would require a difficult backup maneuver for trains heading to the San Francisco Bay area (Oakland), which comprises the majority of the train movements through Stockton. Second, reverse train movements through the Stockton Diamond are considered unacceptable to both UPRR and BNSF. It would also cause delays in the schedule. Therefore, Alternative 1 will not be given further consideration in this environmental document.

- Stockton Station Alternative 2 (See Figure 3-13): Alternative 2 would include the development of a new Amtrak California station as part of the existing Robert J. Cabral Altamont Commuter Express (ACE) train station located at 949 East Channel Street in the City of Stockton. The site is currently developed with a bus station and parking lots. The existing UPRR mainline runs directly east of the site. Several residences along Channel Street would need to be demolished as part of the implementation of Alternative 2. Similarly, the Stockton Civic Center, located on the corner of East Miner Avenue and South Aurora Street, would be demolished as part of implementation of Alternative 2. Standard rail station design features, as described above, would be implemented. Caltrans concluded that Alternative 2 should not be given further consideration for the same reasons outlined for Stockton Station Alternative 1. However, comments submitted in response to the NOP discussed the City of Stockton's goal of locating the Amtrak California Station in the downtown core of the City. In response Caltrans has decided to include an evaluation of the Cabral train station in the Draft PEIR.

- Stockton Station Alternative 3 (See Figure 3-14): Alternative 3 would include the development of a new Amtrak California station located at the site of the old Western Pacific train depot, on the corner of Weber Avenue and North Union Street in the City of Stockton. Portions of the site are undeveloped, but the old depot remains. Standard rail station design features, as described above, would be implemented. Caltrans originally concluded that Alternative 3 should not be given further consideration for the same reasons outlined for Stockton Station Alternative 1.

- Stockton Station Alternative 4 (See Figure 3-15): Alternative 4 would include the development of a new Amtrak California station located at the corner of East Scotts Avenue and Pilgrim Street in the City of Stockton on the BNSF right-of-way. Currently, the site is developed with a manufacturing plant. The site also contains a rail interlock connecting the UPRR and BNSF railroads. Implementation of Alternative 4 would include the demolition of the manufacturing plant. Existing tracks are located west and south of this site. Standard rail station design features, as described above, would be implemented. This alternative location would serve passengers on both the Oakland to Bakersfield and Sacramento to Bakersfield routes. Alternative 4 is the preferred location for a new passenger rail station, because it could easily serve both the Oakland and Sacramento trains that use the San Joaquin Corridor.

- Stockton Station Alternative 5 (See Figure 3-16): Alternative 5 would rehabilitate the existing Amtrak California station located on the BNSF right-of-way at 735 South San Joaquin Street in the City of Stockton. Existing train tracks are located directly south of this site. Rehabilitation of this station would include an expansion of existing facilities to accommodate additional passengers. This Alternative would also include the demolition of commercial uses currently located on the southern portion of the site to accommodate expansion. Standard rail station design features, as described above, would be implemented. Alternative 5 is considered a viable, if not the preferred, alternative.

Hercules

The Hercules Intermodal Transit Center (ITC) Project would construct a new station and passenger platform to improve transit access to approved surrounding transit-oriented housing and business developments. (Refer to Figure 3-17 through 3-19.) The approved Hercules ITC Project would create permanent station and passing tracks through the project area and past the station stop to meet freight and passenger operational requirements. In order to improve operation of the rail line and accommodate a passenger platform, Hercules ITC Project approved acquisition of ~1.77 acres of new right-of-way to allow for realigning and straightening the existing UPRR track to the east (away from San Pablo Bay). Hercules ITC Project also approved spreading the tracks to accommodate a passenger platform between a dedicated station track and a station-passing track; construction of a new railroad bridge over Refugio Creek, and installation of new riprap to meet current 50-year and 200-year storm event design criteria. Rail improvements approved as part of the Hercules ITC Project include:

1. A new signal-controlled station-passing track, Main Track 1 (MT1), capable of holding a full length freight train;

2. A new dedicated station track on the land side of the existing MT2 from MP 20.4 to MP 22.1 (~8,600 feet of new track), adjusting the horizontal alignment of MT2 to shift the track landward by approximately 1.5 feet or less from MP 22.1 to MP 22.3;

3. A new right hand turnout[2] on MT2 at the existing crossover[3] at MP 20.4 at the west end of the ITC Project;

4. A new crossover and turnout at MP 22.1 to the new dedicated station track to be used primarily by passenger trains;

5. Relocation of the railroad bridge across Refugio Creek approximately 100 feet east of the current bridge location to accommodate a new mouth for the creek as part of Refugio Creek and North Channel Restoration. The new bridge would have a larger span of approximately 68 feet;

6. Existing industrial siding remaining and removal of the existing crossover within the limits of the station platform.

The approved passenger platform would be 35 feet wide by 800 feet long and have two passenger shelter structures. The proposed station building would provide grade-separated pedestrian access over the tracks to the passenger rail platform. The station roof would be

[2] allows trains to move from one track to another track or branch-line
[3] Crossovers consist of two turnouts that permit movement of rail cars from one track to the other

covered in photovoltaic cells that would generate about 47,100 kWh of energy per year, and the passenger platform would accommodate small-scale wind turbines that would generate potentially another 2,400 kWh of energy per year.

The project also approved realigning and dredging Refugio Creek channel where it enters San Pablo Bay to improve flow during heavy rain events and high tides to reduce the existing risk of local flooding. The approved Hercules ITC Project includes provision of grade-separated pedestrian access over the railroad tracks to the future Hercules Point open space to improve safety and promote public access to the San Pablo Bay. The Hercules ITC Project also approved construction of a parking lot, completion of the waterfront multi-use trail (Bay Trail) adjacent to the site, and provision of public bus service and pedestrian access to the facility. More detail regarding all aspects of the proposed Hercules Station are available in the Hercules ITC Final EIS dated April 2012.

The Final EIR for the Hercules Intermodal Transit Center (ITC) Project was prepared in June 2011 and approved by the City of Hercules on August 8, 2011. A Notice of Determination was filed with the Contra Costa County Clerk on August 10, 2011 in order to complete the CEQA review process. On June 14, 2012, the Federal Transit Administration issued a NEPA Record of Decision for the Hercules ITC Project. Based on input in response to the San Joaquin Corridor PEIR NOP, Caltrans concurs with the inclusion of this potential new Amtrak California station for evaluation in the Draft PEIR.

Elk Grove

The City of Elk Grove received a grant from Caltrans to select a site and develop a plan for an Amtrak California Station. The Caltrans grant was issued in February 2008. The City selected a site adjacent to the UPRR tracks in the northern portion of the City and proceeded to develop a station layout. This long slender parcel encompasses approximately 14.1 acres located north of the intersection of Campbell Road and Florin Road in the City. The property location is shown on Figure 3-20. The City progressed as far as developing a preliminary design for the proposed station and re-designated the property on the General Plan for Transit Oriented Development (TOD). It was at this point that funding for the project ran out and the City was unable to complete an environmental document for the proposed Amtrak California Station. The project was closed out in October 2011. Figure 3-21 contains an aerial photograph of the potential Elk Grove Amtrak California Station site, and Figure 3-22 shows the preliminary design of the proposed Station, which the City designated as an “Intermodal Rail Station.” In this context the site would serve all modes of transportation, including buses, automobiles, bicycles and pedestrians. Based on the input in response to the NOP, Caltrans concurs with the inclusion of this potential new Amtrak California station for evaluation in the Draft PEIR.

3.2.3.2 Layover Facilities

Within the 25-year planning period, Caltrans proposes initiating two train operations from the middle of the San Joaquin Corridor, either from Merced or Fresno. The objective would be to start a train early in the morning that would head north to Sacramento and south to Bakersfield. This would allow mid-route passengers to reach the Bay Area, or Bakersfield, at the start of the work day. The train would return to the layover facility at the end of the day.[4]

[4] Schedules were modeled for Merced where the crew base is currently located. Early morning Fresno service would still be served both ways if Merced were the selected location. The train from the Bay Area goes through to Bakersfield where it is served by the overnight bus connection to and from Los Angeles. The ridership model showed this option would result in a significant increase in through ridership. The southbound morning train from Merced and northbound evening train would both lay over in Merced.

The new layover facility would include a storage yard; light running maintenance and repair area; support shops; parts storage; mechanical and electrical rooms; and administrative offices. Such a facility would reduce the need to run “deadhead” trains (i.e., trains without passengers), which will reduce the cost of operation and improve the utilization of train crews. The facility will be designed and built to accommodate planned and future service requirements.

Descriptions of the potential layover locations are as follows:

- Fresno Layover Facility Alternative (See Figures 3-23 and 3-24: This Alternative would include the development of a layover facility located in the City of Fresno that would extend along the existing train tracks from Tulare Street in the north to Walker Avenue in the south. The layover facility would be located adjacent to the existing Fresno Amtrak California station. This site is constrained by its small size and ability to meet the layover objective.

- Merced Layover Facility Alternative (See Figures 3-25 and 3-26 : This Alternative would include the development of a layover facility located in the City of Merced that would extend along the existing train tracks from K Street in the north to 6th Avenue in the south. The layover facility would be located adjacent to the existing Merced Amtrak California station.

3.2.3.3 Track Relocation

A track relocation project underway in the City of Sacramento has realigned the existing UPRR tracks approximately 1,000 feet to the north, closer to the Sacramento River. The tracks have been relocated to the northeast end of the Old Sacramento Rail Yard, which affects approximately 0.55 miles of track from the UPRR bridge over the Sacramento River to north 7th Street. This alignment is shown on Figure 3-27. As presently envisioned, the existing historic downtown Amtrak California station will continue to serve arriving and departing passengers, but a 1,080-foot underground tunnel or trench connects the station to a platform adjacent to the new track alignment. Realignment will allow access for community development to a larger parcel between the existing station and the new track from 7th Street. The relocation has resulted in a walk of about 750 feet from the existing Sacramento Amtrak California Station to the platform. This description is provided as background information since no further evaluation of this facility is required in the PEIR.

3.2.3.4 Equipment Needs

Over the next 25 years new rolling stock will be required to replace equipment that has reached the end of its useful life and to provide new train sets needed to increase the number of train operations along the San Joaquin Corridor from the current 12 trains to the 22 trains envisioned in 2035. The anticipated useful life of a locomotive, including various rebuild cycles is 30 years, while the current anticipated life of a passenger car is 40 years. The expansion of rail services on the San Joaquin Corridor will require procurement of additional conventional train equipment, including new passenger rail cars and diesel locomotives. Caltrans developed the following estimates of new rolling stock acquisition over the 25-year period. Table 3-2 summarizes a programmatic equipment acquisition schedule over the planning period.

- The current San Joaquin Corridor service requires seven trainsets daily for operation of six roundtrips – four between Bakersfield and Oakland, and two between Bakersfield and Sacramento. These seven trainsets utilize a total of 42 cars and 9 locomotives,

including maintenance spares. The current revenue equipment requirements are detailed under the "current" field in Table 3-2.

- The revenue equipment requirements for the 2020 operating schedule (for both 79 mph and 90 mph scenarios) requires a total of nine trainsets, which includes an additional 12 cars and 2 locomotives, for a total of 54 cars and 11 locomotives (including maintenance spares). A detailed equipment rotation and consist summary is located under the "2020 79 mph" and "2020 90 mph" fields in Table 3-2. Additionally, between now and 2020, four Superliner cars will be returned to Amtrak and two "Dash 8" locomotives currently used in San Joaquin service are scheduled to be retired. This increases the total new equipment requirement for the implementation of the 2020 operating scenarios to 16 cars and 4 locomotives.

- Implementation of the 2035 90 mph operating scenario will require a total of 17 trainsets, with a total of 110 cars and 20 locomotives (including maintenance spares). A detailed equipment rotation and consist size summary is located under the "2035 90 mph" field in Table 3-2. This represents an increase of 56 cars and nine locomotives over the 2020 operating scenarios (and is an increase of 68 cars and 11 locomotives over current). Additionally, the 38 California Cars and Surfliners and seven F59PHI used to provide the current services will be at the end of their projected useful life by 2035, and will require replacement. This increases the amount of new rolling stock that will need to be acquired in order to implement the 2035 operating scenario to 94 cars and 16 locomotives (56 new cars and 38 replacement cars, and 9 new and 7 replacement locomotives).

3.2.3.5 Bus System Modifications

Modifications to the existing bus system within the San Joaquin Corridor would be necessary as part of the proposed project, including possible modifications to existing bus routes and development of additional bus routes. Modifications to the bus system may also occur as part of facilities expansion. Expanding the capacity of the current bus system would increase capacity and thus increase the amount of ridership for the overall Amtrak California system. Expanding the capacity of the current bus system does not involve direct acquisition of new buses, because the feeder bus service is contracted; the State does not own or operate the buses. Thus, expansion of the Amtrak California bus feeder system simply requires modifications of contracts with the bus service providers in response to future demand throughout the extended San Joaquin Corridor service area.

Potential facility improvements to the bus system within the San Joaquin Corridor may include the following elements:

- Bus drop off/loading areas;
- Bus layover facilities;
- Additional bus transfer centers; and
- Bus pullout areas.

Potential route improvements to the bus system within the San Joaquin Corridor may include the following:

- Minor reroutes of existing lines;
- Additional routes to service increased passengers of proposed secondary (bus feeder) segments;
- Additional bus stops; and
- Decreased connection times.

3.2.4 Facility Construction Activities

The proposed project would be implemented by construction of the support facilities as funding becomes available over the 25-year period. Contracts for construction of new track are typically awarded on an incremental basis. Such contracts are dependent upon funding available from the state or federal agencies, which also have competing projects in different areas of the state or nation, respectively. The description of second track or other track construction is provided in the previous text. Construction of most Project components will extend over a period of 24-36 months. Larger and more complex projects are designed to be built and funded, in phases, allowing time for funding to become available while projects move ahead incrementally.

The following general construction scenario is evaluated in this document for individual facilities. If a facility (new station, maintenance facility, etc.) will be located on a site with existing structures or development, the existing facilities will be demolished and removed, with as much construction material recycled as is possible; the new facility site will be graded and compacted in a manner consistent with the type of facility (examples are provided below); any structural foundation will be constructed; the utilities will be extended to the site concurrent with foundation installation; the new structure or facility and all supporting facilities will be constructed; and the final step will be equipping the new facility as appropriate.

For example, constructing a new Amtrak facility in Elk Grove would first require clearing the existing property. The site would then be graded to meet the facility footprint, including the lead tracks entering the maintenance facility. Once grading is completed, the foundations for the facility would be constructed, including underground and above ground storage tank components required to fuel and maintain the rolling stock. Utilities would then be extended to the maintenance facility site from the nearest connection point, undergrounded wherever possible. The above ground structures would then be constructed based upon an architectural design. The final step would be to bring in all of the necessary equipment to operate the maintenance facility.

Table 3-2
FUTURE EQUIPMENT FORECAST

	Cab/ Baggage	Coach	Café-Lounge	Locomotive	Total # of Cars	Total # of Trainsets
Current revenue requirements*	9	24	9	9	42	7
2020 79/90mph total revenue operating requirement*	11	32	11	11	54	9
new revenue equipment required (increase over current)	2	8	2	2	12	2
equipment due for replacement by 2020	0	4	0	2	4	--
total new & replacement equipment for 2020 79/90mph	**2**	**12**	**2**	**4**	**16**	**2**
2035 90mph total revenue operating requirement*	20	70	20	20	110	17
new revenue equipment required (increase over 2020)	9	38	9	9	56	--
new revenue equipment required (increase over current)	*11*	*46*	*11*	*11*	*68*	*10*
equipment due for replacement by 2035	9	20	9	7	38	--
total new revenue & replacement equipment for 2035 90mph	**18**	**58**	**18**	**16**	**94**	**--**
total new revenue equipment (2020 and 2035)	11	46	11	11	68	--
total replacement equipment (2020 and 2035)	9	24	9	9	42	--

* Revenue requirements include maintenance spares.

Assumptions:

a) There are no shared trainsets between the San Joaquin and Capitol Corridor trains. All equipment shown operates exclusively on the San Joaquin corridor.
b) Consist size is calculated to accommodate peak ridership levels, and is based on the maximum peak ridership for all schedules within a given trainset's rotational pattern.
c) No additional layover facilities will be required at Bakersfield, Oakland or Sacramento to accommodate these operating scenarios.
d) Any additional station platform capacity required to implement these scenarios will be addressed elsewhere in the document.
e) The Merced layover facility is addressed elsewhere in the environmental document.
f) All trains will have a cab/baggage and café-lounge car, including both sections of trains that split or combine at Stockton (thus, combined trains operating south of Stockton will have two café-lounge cars, two cab/baggage cars coupled face-to-face, and a locomotive on each end). This is required to meet the requirements of set interchangeability, passenger service and equipment maintenance.
g) All equipment will rotate through a primary maintenance facility (Oakland or Sacramento) for servicing at least once during its rotational cycle.
h) No analysis was performed to validate the operability of the schedules, or to confirm that the equipment will be operationally capable of meeting the schedule times and speeds.

This page left intentionally blank for pagination purposes.

3.3 ALTERNATIVES

CEQA and its guidelines require an evaluation of alternatives to the proposed project. Section 15126 of the CEQA Guidelines indicates that the "discussion of alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of not significant…" One of the alternatives that must be evaluated is a "no project/no change alternative" regardless of whether it is a feasible alternative to the proposed project, i.e., would meet the project objectives or requirements. Under the No Project alternative, the environmental impacts that would occur if the proposed Project is not approved and implemented are identified. Other alternatives that are being considered at this time are summarized below, with the detailed evaluation contained in Chapter 5, the Alternatives section of the EIR.

NEPA and its guidelines have similar requirements regarding alternatives analysis. Part 1502 of the Council on Environmental Quality (CEQ) Regulations requires that agencies "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated" and "devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits" (Sec. 1502.14).

The alternatives described below are designed to satisfy the state requirements as well as the federal alternatives analysis regulations, in the event that NEPA review becomes necessary.

3.3.1 No Project Alternative

The No Project alternative is the baseline for comparison of the alternatives, as described below. Under the No Project alternative, the existing rail system would not be expanded along any of the segments included in the proposed project.[5] The No Project alternative would not meet the project purpose and need because it would lack the facilities described as necessary elements of the proposed project that would accommodate existing and future passenger rail demand and projected increases in ridership through 2035. In addition, the No Project alternative has the potential to cause increased vehicular travel and congestion on roadways due to lack of adequate passenger rail capacity along the San Joaquin Corridor, and would not help achieve the goals of state and local transportation plans.

3.3.1.1 Freight Rail

The purpose of the proposed project is to serve passenger rail demand over the next 25 years. However, project implementation would also benefit freight rail operations because the additional infrastructure improvements would increase capacity and reduce congestion along the San Joaquin Corridor for all trains. Thus, the No Project Alternative would not provide additional operational benefits to freight rail operations, which would affect the efficiency of future goods movement. As goods movement is anticipated to increase, either longer or more frequent trains would be required for this purpose. Insufficient capacity to transport goods by rail could also lead to increased goods movement by trucks. Thus, the No Project Alternative would have transportation impacts due to additional truck traffic on the roadways, with resultant negative air quality impacts in the long term.

[5] Implementation of the No Project alternative would not preclude previously approved projects from being developed. Rail projects within the San Joaquin Corridor that have been approved prior to the certification and approval of the proposed Project could be developed under the No Project alternative.

3.3.2 Proposed Project

The proposed project would include three main rail line segments that traverse over 360 miles:

- Bakersfield to Port Chicago (BNSF) – MP 887.7 to MP 1164.0 (276.6 track miles);
- Port Chicago to Oakland (UPRR) – MP 41.3 to MP 3.2 (34.5 track miles); and
- Stockton to Sacramento (UPRR) – MP 82.96 to MP 39.35 (43.61 miles) of UPRR's Fresno Subdivision track (generally follows the alignment of State Highway 99).

These tracks would be installed adjacent to existing BNSF and UPRR rail lines, as part of a double or, in some cases, a triple track system. The segments would require bridges, culverts, grade crossings, utility crossings, staging areas and road improvements as part of the general design. The proposed project would also require permit acquisition, and when necessary, land acquisition. In addition to the proposed infrastructure improvements (segments), the proposed project would include the following elements:

- New or rehabilitated passenger station within the City of Stockton;
- New station within the City of Hercules;
- New station within the City of Elk Grove;
- New layover facility (either in Merced or Fresno);
- Equipment Needs (including railcars, locomotives, wayside objects, etc.); and
- Bus system modifications.

3.3.2.1 Purpose and Need

The purpose of the proposed rail improvements to the San Joaquin Corridor is to accommodate existing and future passenger rail demand and projected increases in ridership through 2035. The proposed project would increase the number of daily round trips from 16 to 22 trains operating per day. The proposed project also includes increasing the maximum passenger train speed to 90 mph along the corridor. Further, the proposed project would serve to improve rail operations and provide increased availability of public transportation; which would in turn help reduce vehicular emissions and achieve the air quality goals of state and local plans.

The need for the proposed rail improvements to the San Joaquin Corridor is demonstrated by ridership increases and the increased number of standees on board the corridor trains, demonstrating the need to increase the capacity of the current system to meet existing travel demand. The proposed project is also needed to reduce negative impacts to the natural environment and air quality that would result as additional roadways are constructed and vehicular use increases.

3.3.2.2 Travel Demand

The San Joaquin Corridor (Bakersfield to Oakland, Los Angeles and Sacramento) is a major transportation resource between Southern and Northern California. It boasts the fifth highest ridership of any Amtrak service in the country and serves a vital function in providing intercity passenger rail service within and between cities in California's Central Valley.[6] As California's population continues to increase, the travel demand will also increase, with passenger rail ridership growth anticipated to outpace the number of trains available to serve the population.

[6] San Joaquin Corridor Strategic Plan, California Department of Transportation, January 2008. p.1-2.

The California State Rail Plan (2007-08 to 2017-18) (Plan) proposes implementation of 10-year intercity passenger rail service expansion to address projected increases in passenger rail ridership. There are currently 6 train round trips occurring on this route. Caltrans anticipates that within the next 10 years, there will be sufficient demand to support 8 train round trips on the San Joaquin Corridor, with 2 additional round trips operating between Oakland and Stockton.[7] One of the Plan's principal route objectives for the San Joaquin Corridor (defined by the Plan as Bay Area/Sacramento – Fresno – Bakersfield – Los Angeles) includes a 66 percent increase in annual ridership from 853,000 to 1,417,000, with a corresponding 105 percent increase in annual revenues from $27.8 million to $56.9 million.[8]

3.3.2.3 Safety

Passenger rail is one of the safest modes of transportation in the nation, with significantly less accident risk than motor vehicle travel. The projected increase in passenger rail ridership does, however, bring with it an inherent increase of risk for accidents. In particular, the potential of rail/automobile collisions at grade crossings is elevated with the corresponding increase in the number of vehicles on the road and more frequent, faster trains. The San Joaquin Corridor Strategic Plan notes that the "San Joaquins" have over 400 public and private at-grade crossings throughout the corridor on both the UPRR and BNSF rail lines. On the BNSF route alone, there are 362 at-grade crossings with 255 public and 107 private crossings. In California, the San Joaquin Corridor has 3 out of the top 10, and 8 out of the top 20 at-grade road crossings with the most accidents between 1995 and 2004.[9] The consideration of safety will weigh heavily upon proposed rail improvement design features for the San Joaquin Corridor.

3.3.2.4 Natural Environment and Air Quality

Caltrans considers the preservation and improvement of the natural environment and air quality one of its key goals in its vision for intercity passenger rail. Both rail passenger and rail freight service contribute to improved air quality by reducing vehicle miles traveled and vehicle emissions. It reduces fuel consumption, thereby helping to limit dependence on scarce petroleum resources. It also helps to reduce the need for highway construction, which can contribute to inefficient land use patterns and their loss of economically, environmentally, and historically valuable land.[10] Expansion of the intercity passenger rail system on the San Joaquin Corridor will provide the opportunity to move more passengers by rail versus automobile.

3.3.3 <u>Proposed Project with a Secondary Segment from Fresno to Visalia (San Joaquin Valley Rail – SJVR)</u>

This alternative includes all facilities and components described above in Section 3.3.2 (proposed project). In addition, this alternative would include the development of a secondary rail segment that would extend from Fresno to Visalia. One to two additional trains were considered for the Fresno to Visalia segment. The San Joaquin Corridor Strategic Plan originally envisioned service to Porterville, but no trains are currently being operated to Porterville; nor are the tracks being maintained for service. Therefore, the extension of passenger train service to Porterville is not considered to be a viable alternative, and it will not be given further consideration in this document.

---

[7] California State Rail Plan (2007-08 to 2017-18), California Department of Transportation, March 2008. p. 114.
[8] Ibid.
[9] San Joaquin Corridor Strategic Plan, California Department of Transportation, January 2008. p. 1-6.
[10] California State Rail Plan (2007-08 to 2017-18), California Department of Transportation, March 2008. p. 10.

Enhanced track would occur along the existing SJVR alignments, either Fresno to Visalia or Fresno to Hanford to Visalia. The former segment is operated by SJVR, but they are leasing the tracks that are owned by the UPRR. The latter segment would travel the BNSF tracks from Fresno to Hanford and then the SJVR tracks from Hanford to Visalia. Refer to Figure 3-4 which shows the proposed two alignments for a Fresno to Visalia passenger train service. Two trains per day would operate along this segment, including one train to Fresno and from Fresno. The additional trains proposed for this segment would travel at speeds between 79 to 90 miles per hour, based on the track geometry and signal system. This segment would require upgraded tracks, signals, bridges, warning devices, and grade crossings.

After reviewing the population to be served by this proposed alignment and the close proximity of this alignment to the current Fresno to Hanford passenger train operations, the Fresno to Visalia alternative was rejected from further consideration. It does not provide through service consistent with objectives of the San Joaquin Corridor and the distance of travel for the communities along the UPRR track alignment to access trains along the existing corridor is typically less than 10 miles. These circumstances render this a less than viable alternative.

3.3.4 Proposed Project with a Secondary Segment from Bakersfield to Los Angeles (UPRR and SCRRA)

This alternative includes all facilities and components described above in Section 3.3.2 (proposed project). In addition, this alternative would include the development of a passenger rail segment that would extend from Bakersfield to Los Angeles through Lancaster, a distance of approximately 120 miles. None of the existing rail alignments from the San Joaquin Valley that connect these two locations currently carry passengers. An alignment owned and operated by the UPRR is currently in operation between Bakersfield and Lancaster. This alignment passes through Tehachapi and Mojave to Lancaster. From Lancaster to Los Angeles, a San Joaquin passenger train would utilize the railroad tracks owned by the Southern California Regional Rail Authority (SCRRA). Refer to Figure 3-5.

The existing UPRR track segment from Bakersfield to Mojave is dedicated solely to freight service,. This is one of the busiest single track freight lines in the western United States. The segment from Mojave to Lancaster is also dedicated solely to freight service. The UPRR and BNSF share the capacity over this route and do not allow regularly scheduled passenger train access over the Tehachapi Pass due to the combination of heavy freight tonnage, the frequency of trains, and track geometry that requires slow operating speeds. The UPRR will re-route passenger trains over the pass, but only when maintenance or repairs are required on the Coast Route. Thus, it is feasible for passenger trains to operate over the Bakersfield to Lancaster track segment. Note that under current operating conditions, the San Joaquin Corridor Amtrak California rail operations terminate in Bakersfield and the final segment from Bakersfield to southern California is provided by Amtrak buses.

Caltrans received a request from the San Joaquin Valley Rail Committee to explore the feasibility of operating passenger train service over the Tehachapi Pass. This proposal would allow San Joaquin Corridor trains to be extended via Tehachapi Pass to connect with the Pacific Surfliner Corridor that operates between Los Angeles and San Diego. The evaluation of this proposal identified a number of constraints to the operation of a passenger train through Tehachapi Pass. Because of the high freight density on Tehachapi, the likelihood of interference with BNSF and UPRR freight trains on this single-track mountain railroad requires any proposed passenger train schedule to plan for delays. To allow passenger service to operate between Bakersfield and Lancaster with minimal impact to freight service and maintain

a high level of on-time performance, it was determined that 3 hours of extra time (pad) should be added to the schedule. The provision of a schedule pad allows the use of existing San Joaquin Corridor schedules. Additionally, the southbound pad would provide an early morning arrival in Los Angeles for connection with the Pacific Surfliners. It is important that a southbound San Joaquin Amtrak California train operate on a regular schedule within Metrolink territory due to the need to interact with Metrolink and Pacific Surfliner trains. This evaluation resulted in the development of a conceptual schedule that holds the southbound San Joaquin train in Palmdale until the train's scheduled morning departure to Los Angeles over Metrolink territory. After departing Palmdale, the train would proceed south to Los Angeles and then continue to San Diego as a Pacific Surfliner train.

The best feature of this scenario is that it requires no new equipment, with the exception of adding one sleeping car per train set and one sleeper to serve as a spare. This is because the proposed service operates at night when the equipment sets currently sit overnight in either Los Angeles or Bakersfield. The equipment rotation scenario would be as follows: #718 → #564 → #573 → #580 → #591 → #711. This allows for the train to continue to San Diego as a Pacific Surfliner through train. The #564 → #573 → #580 → #591 rotation will be the actual equipment rotation on the Pacific Surfliner Corridor. This rotation would take two equipment sets, with the sets maintained in Oakland every other day between 11:00 a.m. and 5:50 p.m. Three sleepers would be required to operate the service, which will operate as trains #573 → #580. Appendix 5 of Appendix 8.1 contains the detailed analysis of this operating scenario.

This alternative proposes to develop the infrastructure necessary to enable the existing UPRR alignment to carry passenger trains. Infrastructure improvements would be required to satisfy UPRR rail capacity requirements. The ability to operate over this segment would enable passengers to ride the train continuously from northern California to Los Angeles Union Station, eliminating the need for bus service for this segment of the trip on one train. This alternative would also reduce the total reliance on the extensive bus connections currently operating between Bakersfield and southern California cities.

3.3.4.1 General Design Features

The alignment of the proposed secondary segment would utilize the existing track and would be designed for a maximum allowable speed of 90 miles per hour for passenger trains, except through Tehachapi Pass. Since the existing alignment is designed for freight rail only, the UPRR track system would be upgraded as necessary using regulation standards for passenger rail. All design features would be constructed to conform to current UPRR construction standards. There is currently a separate effort in progress to enhance goods movement through the Tehachapi Pass that would install double track along an additional 8.21 miles of the approximate 25.23 mile route through the Tehachapi Pass from Bena to Marcel. This improvement would provide additional areas through Tehachapi Pass for train meets. The objective of the additional double track is to increase the maximum capacity of this segment from 50 to 65 freight trains, including the ability to add longer trains. Thus, the potential to add one or two passenger trains may be feasible. In order to serve a passenger train in Lancaster, a new connection and platform would need to be constructed between the existing Metrolink station in Lancaster to the UPRR line. Although the schedule over Tehachapi Pass to Los Angeles Union Station requires about twice the time as the bus trip from Bakersfield to Los Angeles, this alternative will be given consideration as a complete passenger train trip from the Bay Area/Sacramento to Los Angeles.

3.3.5 Proposed Project BNSF Track Alignment from Port Chicago to Richmond, California

This alternative was originally intended to evaluate a second track on the BNSF rail alignment between Richmond (Richmond Connector) to Port Chicago. However, given the key stop in Martinez where all of the coastal northern California buses connect with the San Joaquin Corridor Amtrak trains, the cost and potential environmental impacts were concluded not to justify considering such a comprehensive alternative. Instead, as generally discussed in the Initial Study (Chapter 8.1 of this PEIR), this alternative considers the assignment of one express Amtrak train (roundtrip) along the BNSF tracks from Richmond to Bakersfield. This train would originate in Oakland and include stops in Stockton, Fresno and Bakersfield. It would bypass all other stations and provide Amtrak with an option to save a few hours along this route. In addition, during an emergency on the UPRR tracks from Richmond to Port Chicago, the Amtrak trains might possibly be routed on the BNSF track to maintain passenger schedules. See Figure 3-6 for a depiction of this alternative alignment.

Note that this alternative would require Amtrak/Caltrans to negotiate a new contract with BNSF to allow this service to utilize the segment from Richmond to Port Chicago. It would also require Amtrak/Caltrans to adjust its schedules to accommodate an express passenger train from Oakland to Bakersfield and a once a day return. Future implementation of this alternative is dependent on sufficient capacity on the BNSF segment from Richmond to Port Chicago to integrate a single roundtrip express Amtrak passenger train. Under this alternative the single BNSF track from Richmond to Port Chicago would be retained and those improvements required to support passenger train operations on this segment would be constructed on the existing single track between Richmond to Port Chicago.

3.3.6 Proposed Project Combined with California High Speed Train System (CHSTS)

This alternative analyzes the relationship between the proposed project in conjunction with the possible future development of the California High Speed Train System (CHSTS) operations within the San Joaquin Valley.

Amtrak California's San Joaquin Corridor is an intercity rail (ICR) operation that serves as a key alternative transportation mode for the residents of California. Train stations are located in many communities between the San Francisco Bay Area, Stockton, Sacramento, and Bakersfield along the Corridor. The rail line is integrated with an extensive feeder bus system throughout the state that provides most San Joaquin Valley and Sacramento Valley residents with access to a safe and efficient alternative mode of transportation.

The California High Speed Rail Authority (CHSRA) plans to construct a statewide high speed rail network between San Francisco and Los Angeles. The first phase, known as the First Construction Segment (FCS), will be constructed from Rosedale (a community north and west of Bakersfield) to Madera on an alignment that is roughly parallel to the State Route 99 highway corridor.

One operational scenario alternative considered by CHSRA was to create a "blended" rail system on the FCS. Under the blended system, ICR trains traveling from Sacramento or the Bay Area would travel on the existing track alignment to Madera, where some of the passengers would switch to the FCS. Once on the FCS, passengers would travel between Madera and the San Fernando Valley, where they would switch back to the ICR track or bus system.

When Caltrans published the project Notice of Preparation (NOP) in November of 2012, there was very little published information available regarding how a blended system would operate. As a result, the description of the blended system concept in the NOP and scoping meetings was very general. Several requests for more detail on the operation of a blended system along the San Joaquin Corridor were received in response to the NOP and during scoping meetings.

In early March 2013 Caltrans released a draft Service Development Plan (SDP) for the San Joaquin Corridor, which described future service as follows:

> *The Service Development Plan (SDP) for improved intercity passenger rail service in the San Joaquin Corridor (Corridor) describes the Corridor and identifies proposed service expansion and operational improvements. Additionally, the SDP presents the rationale for improved and expanded services, and identifies candidate rail infrastructure investments needed to support growth and deliver improved operations….Analysis of the Corridor reflects the proposed implementation of the California High-Speed Rail (HSR) first construction section of the Initial Operating Segment (IOS) between Madera and just north of Bakersfield, which is scheduled for completion in 2018. The first construction section of the IOS will connect the Central Valley to the Los Angeles Basin with addition of the Bakersfield to Palmdale section scheduled for completion in 2022 per the California High-Speed Rail Program Revised 2012 Business Plan (Business Plan 2012). It will bring high-speed, electric passenger operations to California tying together the Central Valley with the Los Angeles Basin as a first step toward a statewide high-speed rail system…The San Joaquin service will be restructured to operate some trains over the California HSR first construction section of the IOS as part of the blended system approach described in the Business Plan 2012. Blended service and operations refers to the integration of high-speed trains with existing intercity passenger and commuter/ regional rail systems by way of coordinating infrastructure investment, scheduling, ticketing, and other means. The SDP for the San Joaquin will focus on near-term improvements between now and 2018 and will reflect a high level of coordination and integration between the two services to maximize utility.*

The SDP provided sufficient detail of a blended system alternative to permit an evaluation in the Program EIR.

On May 31, 2013, however, representatives from BNSF Railway Company (BNSF) met with CHSRA staff to confirm details of the blended system concept as outlined in the SDP. During the meeting, BNSF was informed that blended service as outlined in the SDP on the FCS was unlikely to be pursued.

Subsequent discussions with CHSRA staff indicate that a number of possible “shuttle” operations along the FCS are being considered, but no specific operational scenarios are available for these alternatives. Therefore, Caltrans will not include an evaluation of a “blended service” along the FCS. However, should the CHSRA define an operational scenario on the FCS involving blended service, Caltrans is prepared to evaluate such a scenario.

Further, while there is no blended service currently planned for the FCS, CHSRA indicates that there will need to be connections between the ICR and operations on an Initial Operating Section (IOS) that CHSRA envisions as consisting of CHSTS operations between the San Fernando Valley and Merced. Under such operations, Caltrans envisions future connections between the ICR and IOS. It is also possible that ICR buses could serve as feeders to the IOS.

Based upon the assumption that the ICR will serve as a feeder/collector to CHSTS when the IOS becomes operational, Caltrans reviewed potential alternative scenarios and selected the following as the most reasonable option for evaluation: No passenger interface is envisioned between ICR trains and CHSTS until 2022 or the actual date that CHSRA begins revenue service over the IOS. Once CHSTS operations are initiated, passenger connections between ICR trains and CHSTS will be established at Rosedale and Madera. ICR train operations will serve as both a collector and feeder to the CHSTS system at both locations. Once operational, passengers would take ICR trains or buses to defined interchange points, which could include joint ICR/CHSTS stations or bus connections.

The scenario described above assumes the 11 train, 90 mph ICR train schedule in place by 2035 (supported by completed capital projects as currently proposed), unless passenger demand justifies the 11 train scenario at an earlier date. This is in contrast to the CHSRA proposal, which assumes that all ICR system improvements would be completed in 2022, prior to scheduled CHSTS operations. The CHSRA proposal would require all identified modifications to the ICR infrastructure and feeder bus system to be funded and in place. The CHSRA proposal could also include modifications to existing bus routes, potential development of additional bus routes, and improvements to bus facilities. The modifications to the bus system infrastructure identified in the SDP appear achievable by 2022. Modifications include capital facilities such as drop off and loading areas, layover facilities, transfer centers, and other necessary improvements. Bus route modifications include rerouting existing lines, adding routes to service secondary segments, adding bus stops, and increasing train frequencies. Bus improvements specifically impact connections in Bakersfield and Stockton, as well as possible new connections in Madera.

The implementation of the interconnection scenario between CHSTS and ICR operations assumes close communication between Caltrans and CHSRA in the future to ensure that an adequate feeder/collector system can be funded and installed prior to initiating scheduled CHSTS operations. It is anticipated that additional environmental documentation (second tier documentation) will be required if substantial changes are made to the scenario outlined in the preceding text.

3.3.7 Service to Wheeler Ridge

Rail service to Wheeler Ridge (near the Grapevine area along Interstate 5) was analyzed during the earlier phase of project development based on public comments and stakeholder input, and was presented as an alternative in the San Joaquin Corridor Strategic Plan. Implementation of service would require additional infrastructure in support of an extension of the San Joaquin service south to the Wheeler Ridge/Grapevine area along a new right-of-way.

The acquisition of new right-of-way and construction of new infrastructure for this alternative would result in a high capital cost. In addition, the extent of existing service modification would be high, as coordination with Metrolink along its Antelope Valley line, as well as modifications to the Metrolink or Pacific Surfliner equipment rotations and service timetables would be required. It was determined that these circumstances were prohibitive to implementation of this alternative.[11]

[11] San Joaquin Corridor Strategic Plan, California Department of Transportation, January 2008. p. 7-6

3.4 RELATED PROJECTS

There are presently several actions that are underway that are related to the proposed project. These include:

- An update of the State Rail Plan;
- A new San Joaquin Corridor Service Development Plan;
- San Joaquin Valley Regional Rail Commission Joint Powers Authority, legislative reference; and
- California High-Speed Rail Authority Initial Operating Segment, Merced to Rosedale.

The above actions will be discussed in the pertinent sections of the PEIR.

3.5 USES OF THE ENVIRONMENTAL IMPACT REPORT

Before the project can be implemented, Caltrans must approve the funding for construction of the proposed project. Specific funding will come from the State or Intercity Rail Passenger funds. Certification of the PEIR will allow Caltrans to approve construction contracts for the proposed work, which will ultimately result in the activities identified above and the related physical changes to the environment, which are described in Chapter 4.

In addition to the above discretionary actions, this PEIR may also be used by the following agencies for related reviews and approvals:

Table 3-3
PERMITS AND APPROVALS

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers	404 Permit	No Action
CA Regional Water Board	401	Certification
CA Department of Fish and Wildlife	Streambed Alteration Agreement	
CA Department of Fish and Wildlife	CESA Incidental Take Permit	
U.S. Fish and Wildlife Service	FESA Incidental Take Permit	
Local jurisdictions	Encroachment Permits	
Local jurisdictions	Land Use Entitlements	

This page left intentionally blank for pagination purposes.

Figure 3-1: San Joaquin Corridor Intercity Route

Source: J.L. Patterson & Associates, Inc. / Amtrak California

Figure 3-2a: Proposed Track Upgrades – BNSF Bakersfield to Fresno

Source: J.L. Patterson & Associates, Inc.

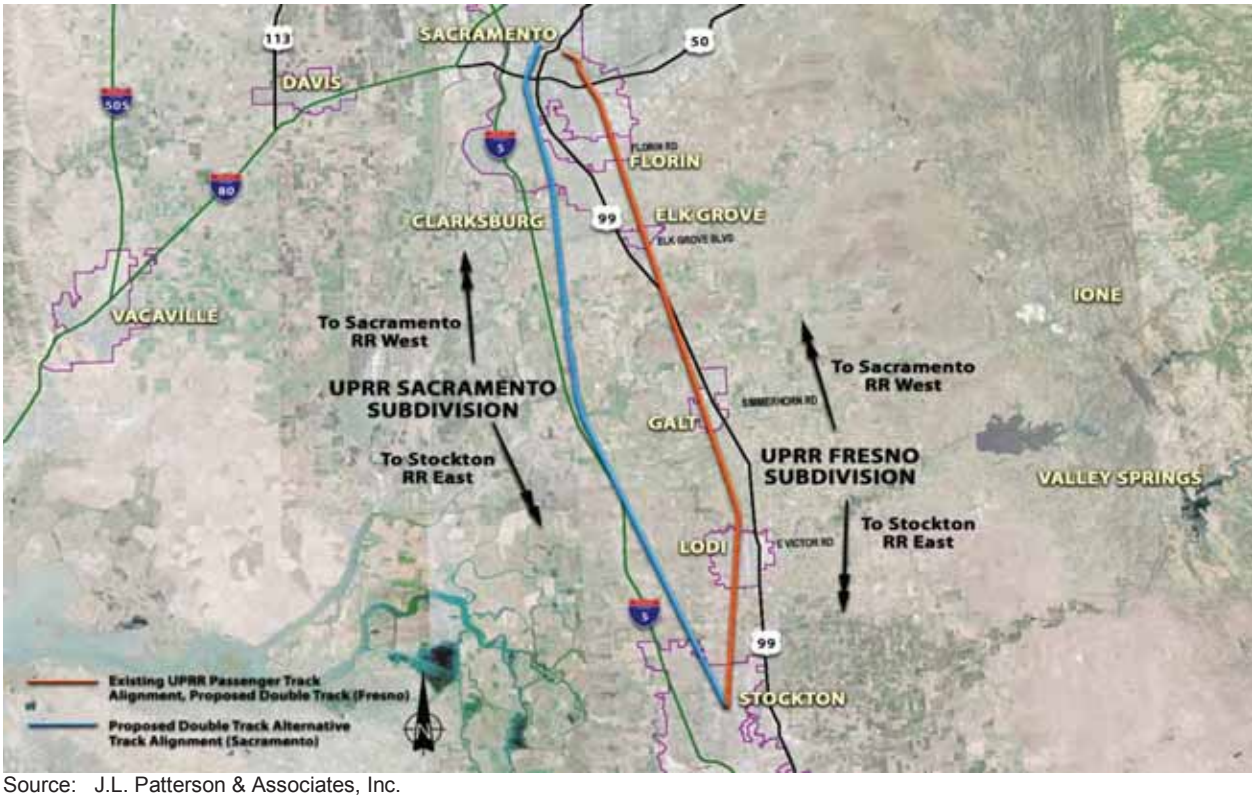
Figure 3-2b: Proposed Track Upgrades – BNSF Fresno to Stockton

Source: J.L. Patterson & Associates, Inc.

Figure 3-2c: Proposed Track Upgrades – UPRR Antioch to Oakland

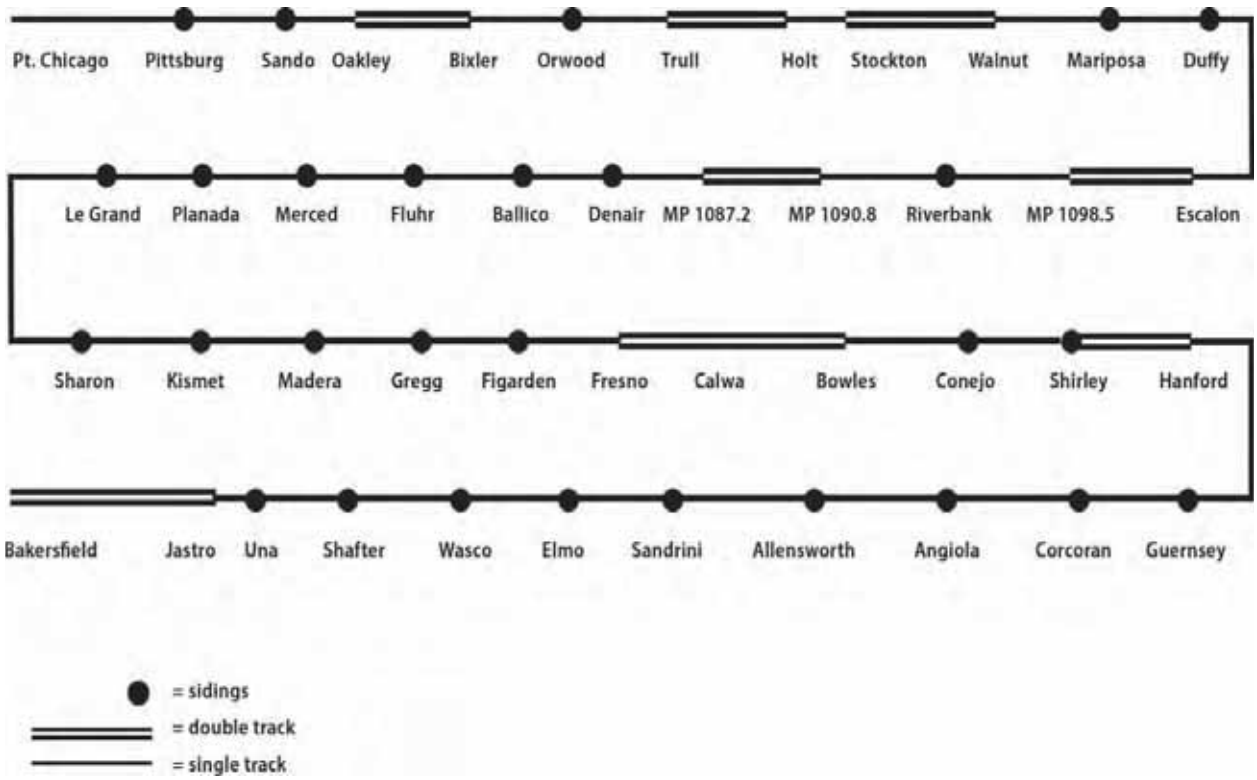
Source: J.L. Patterson & Associates, Inc.

Figure 3-2d: Proposed Track Upgrades – UPRR Stockton to Sacramento



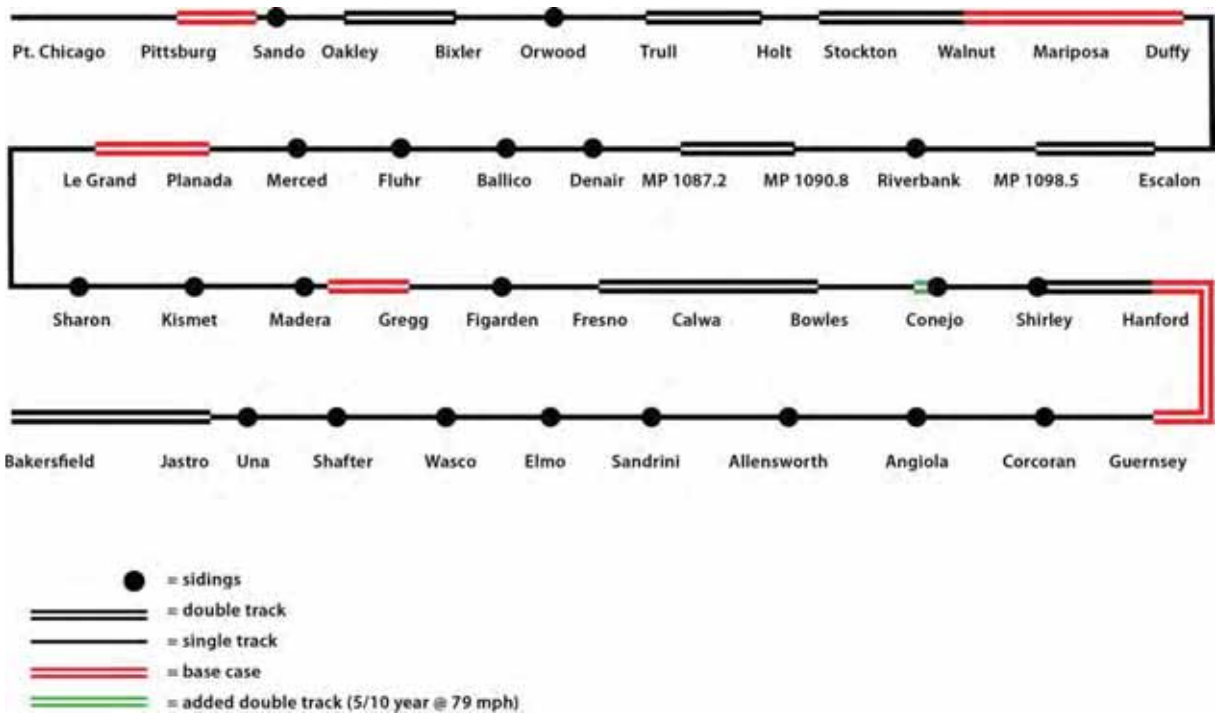
Source: J.L. Patterson & Associates, Inc.

Figure 3-3a: Current BNSF Track Structure



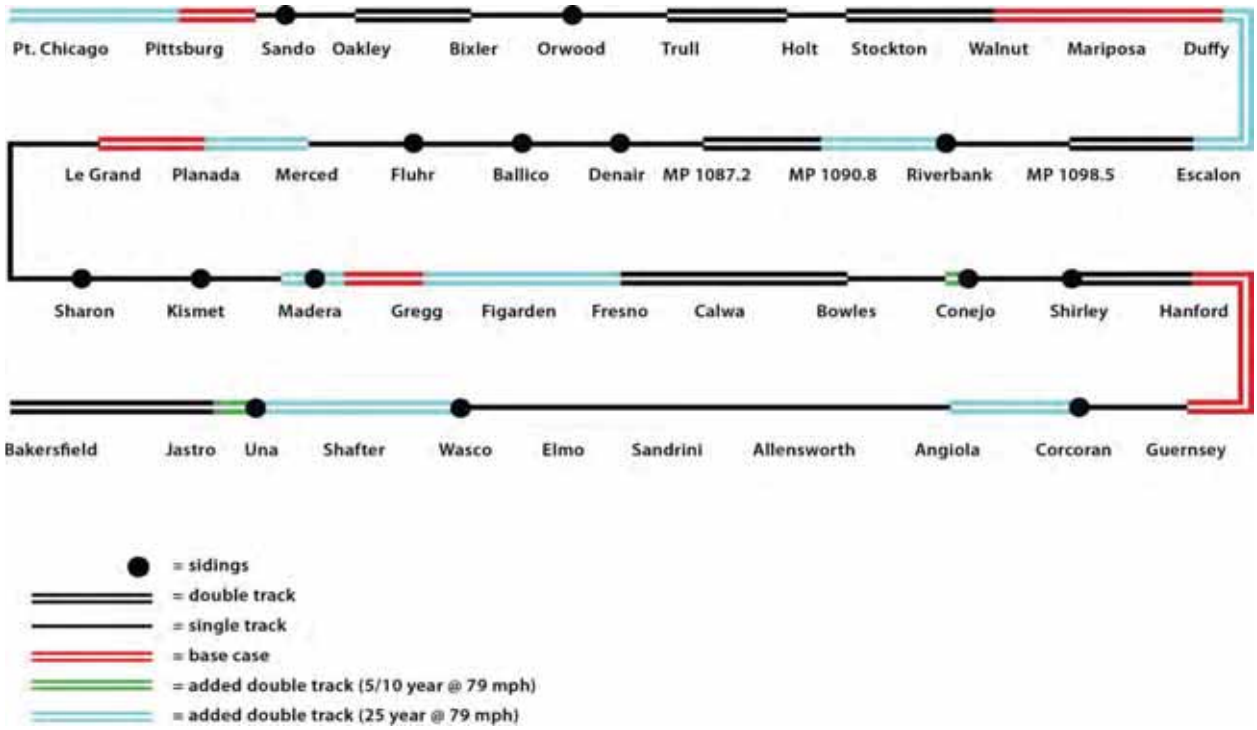
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 3-3b: Proposed BNSF 5 / 10-Year (79 mph) Plan



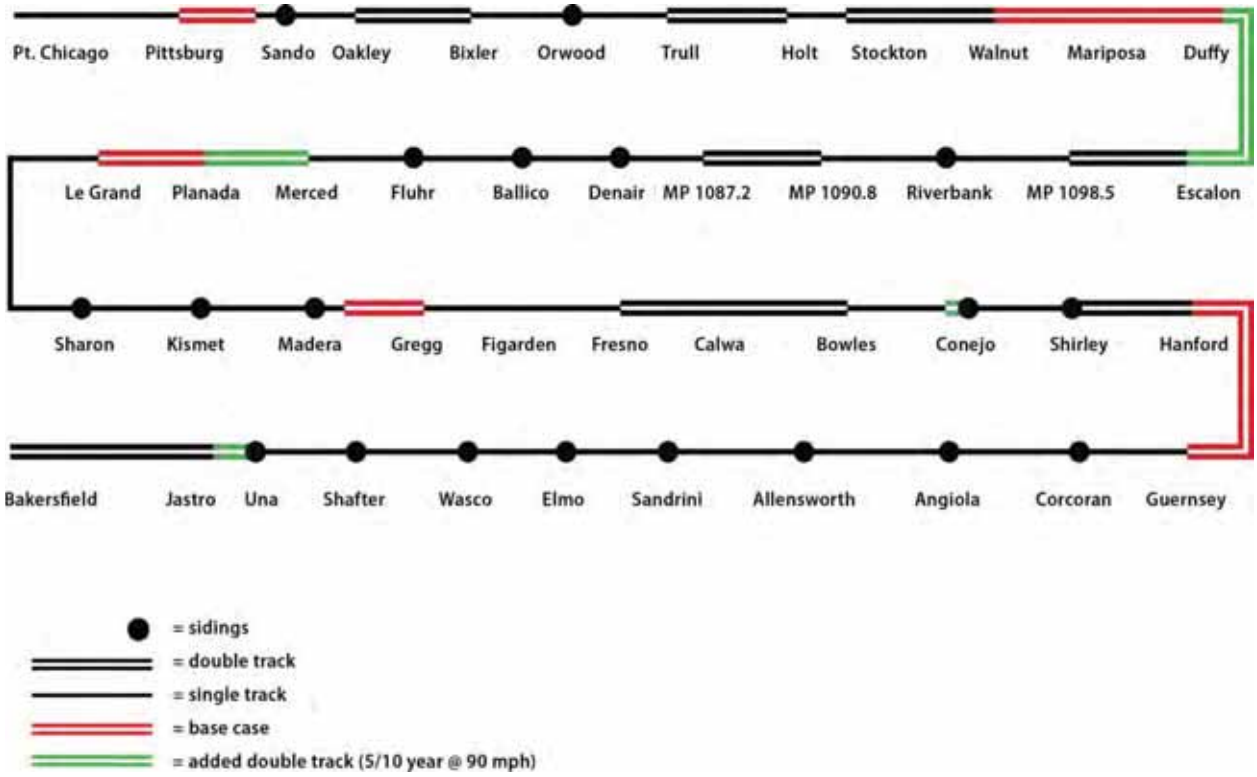
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 3-3c: Proposed BNSF 25-Year (79 mph) Plan



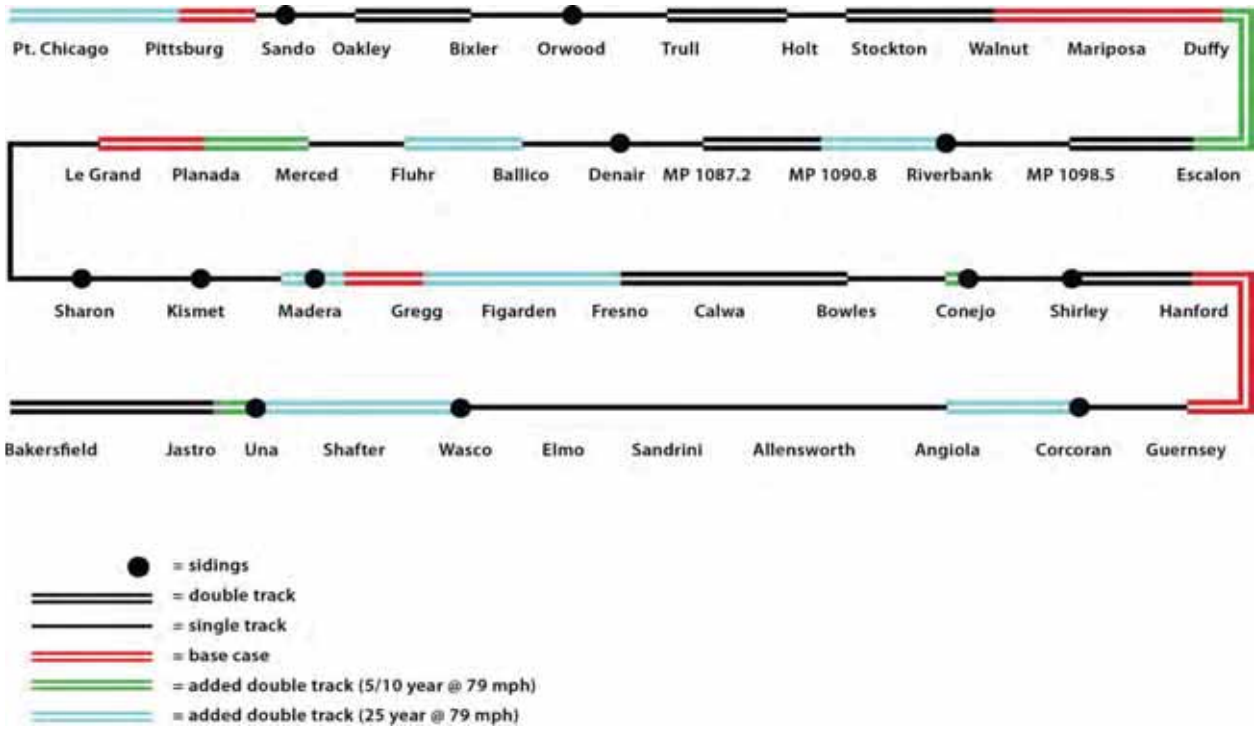
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 3-3d: Proposed BNSF 5 / 10-Year (90 mph) Plan



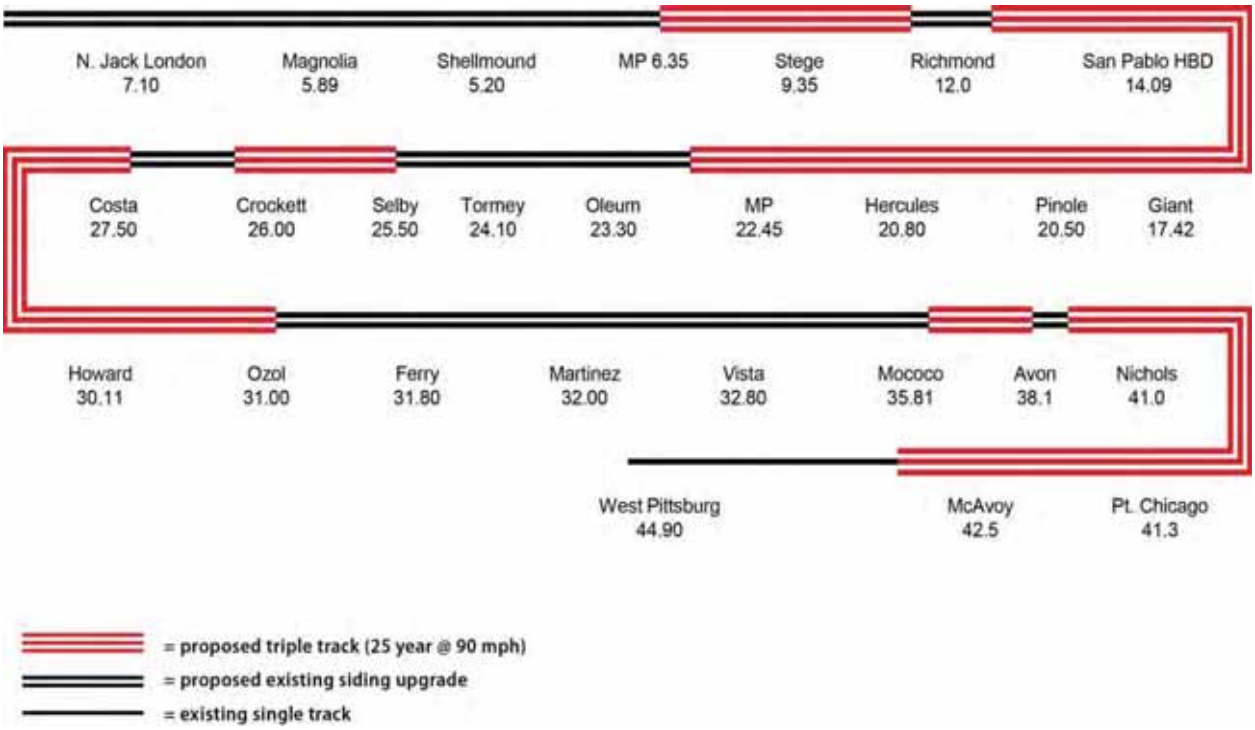
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 3-3e: Proposed BNSF 25-Year (90 mph) Plan



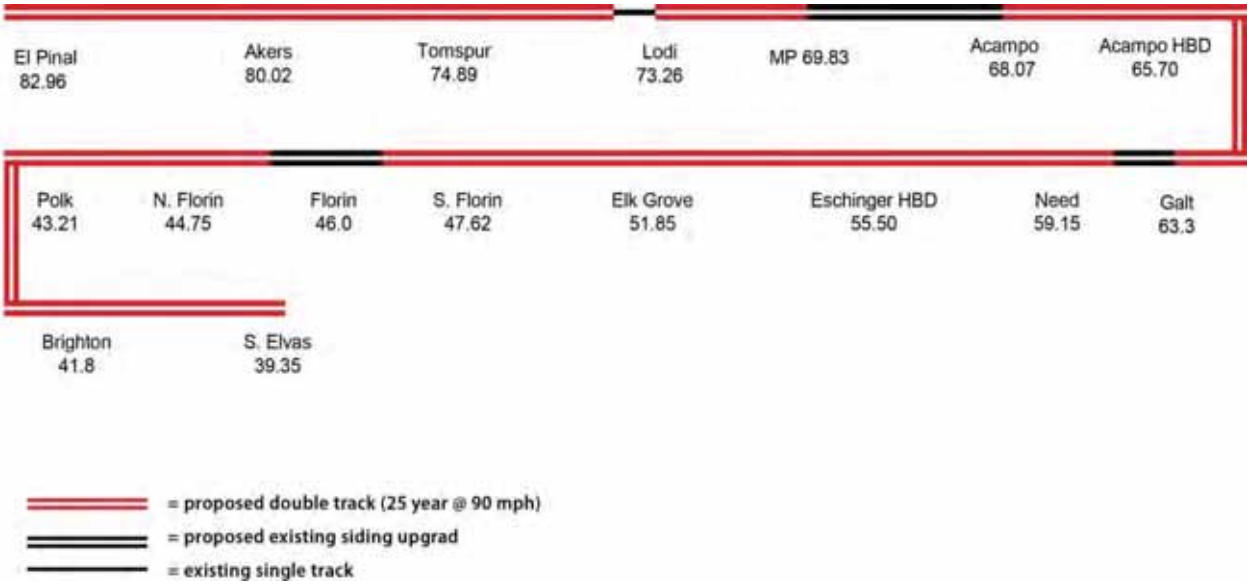
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 3-3f: Proposed UPRR 25-Year (90 mph) Plan Niles – Tracy Subdivision



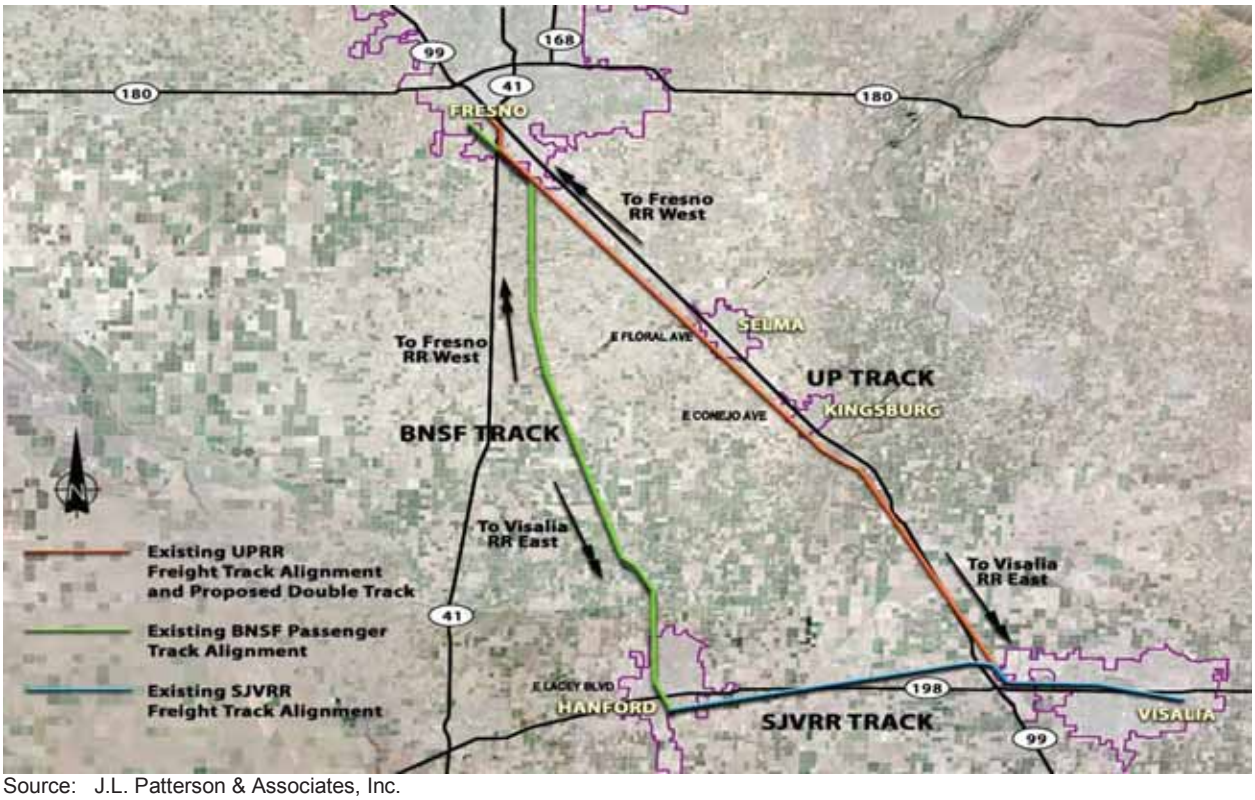
Source: J.L. Patterson & Associates, Inc.

Figure 3-3g: Proposed UPRR 25-Year (90 mph) Plan Fresno Subdivision



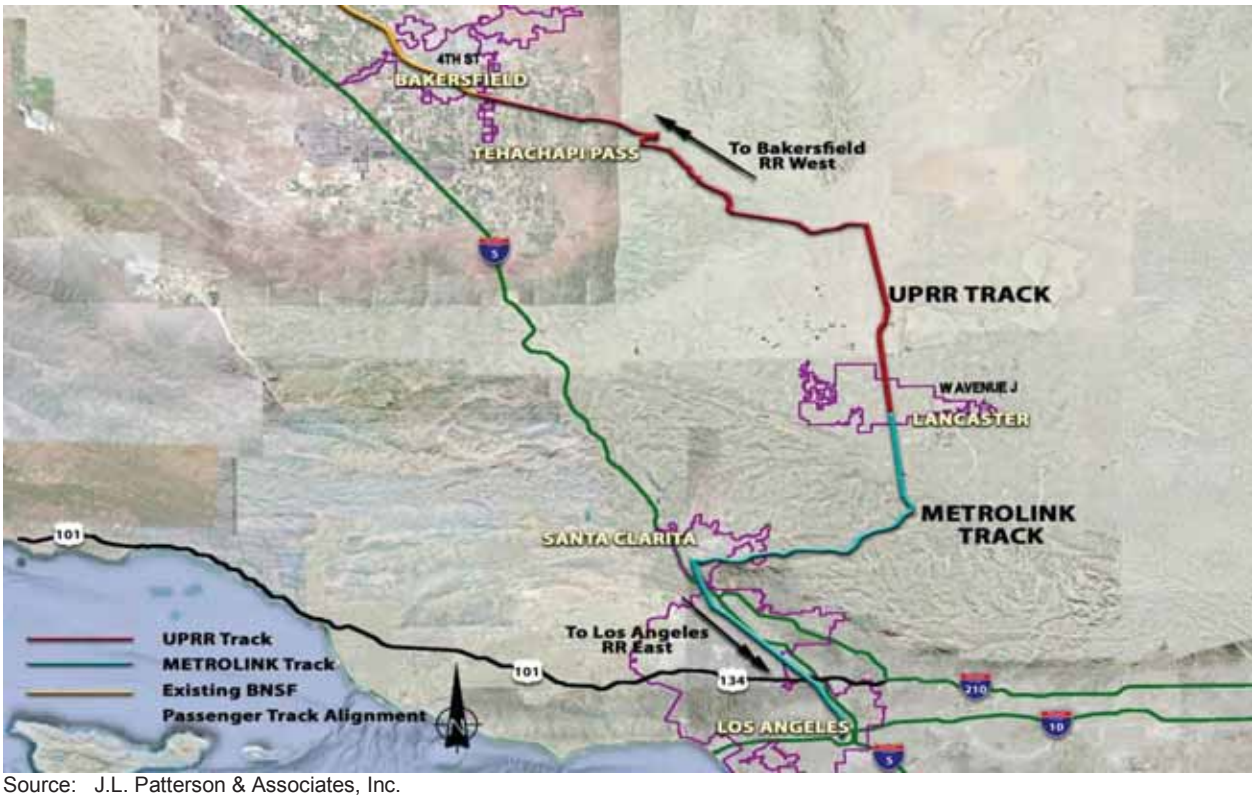
Source: J.L. Patterson & Associates, Inc.

Figure 3-4: Proposed Visalia to Hanford Route



Source: J.L. Patterson & Associates, Inc.

Figure 3-5: Alternative Project – Los Angeles Route Los Angeles to Bakersfield (includes Tehachapi)



Source: J.L. Patterson & Associates, Inc.

Figure 3-6: Alternative Project – Port Chicago to Richmond on BNSF

Source: J.L. Patterson & Associates, Inc.

Figure 3-7: California Intercity Passenger Service System Map

Source: Amtrak California

Figure 3-8: Railroad Standard Bridge Structure

Source: Tom Dodson & Associates

Figure 3-9: Typical At-Grade Railroad Crossing Design

Source: Tom Dodson & Associates

Figure 3-10: Typical Railroad Equalizer Culvert

Source: Tom Dodson & Associates

Figure 3-11: Proposed Stockton Station Alternative Sites
USGS 7.5 Minute Quadrangle Map "Stockton West"

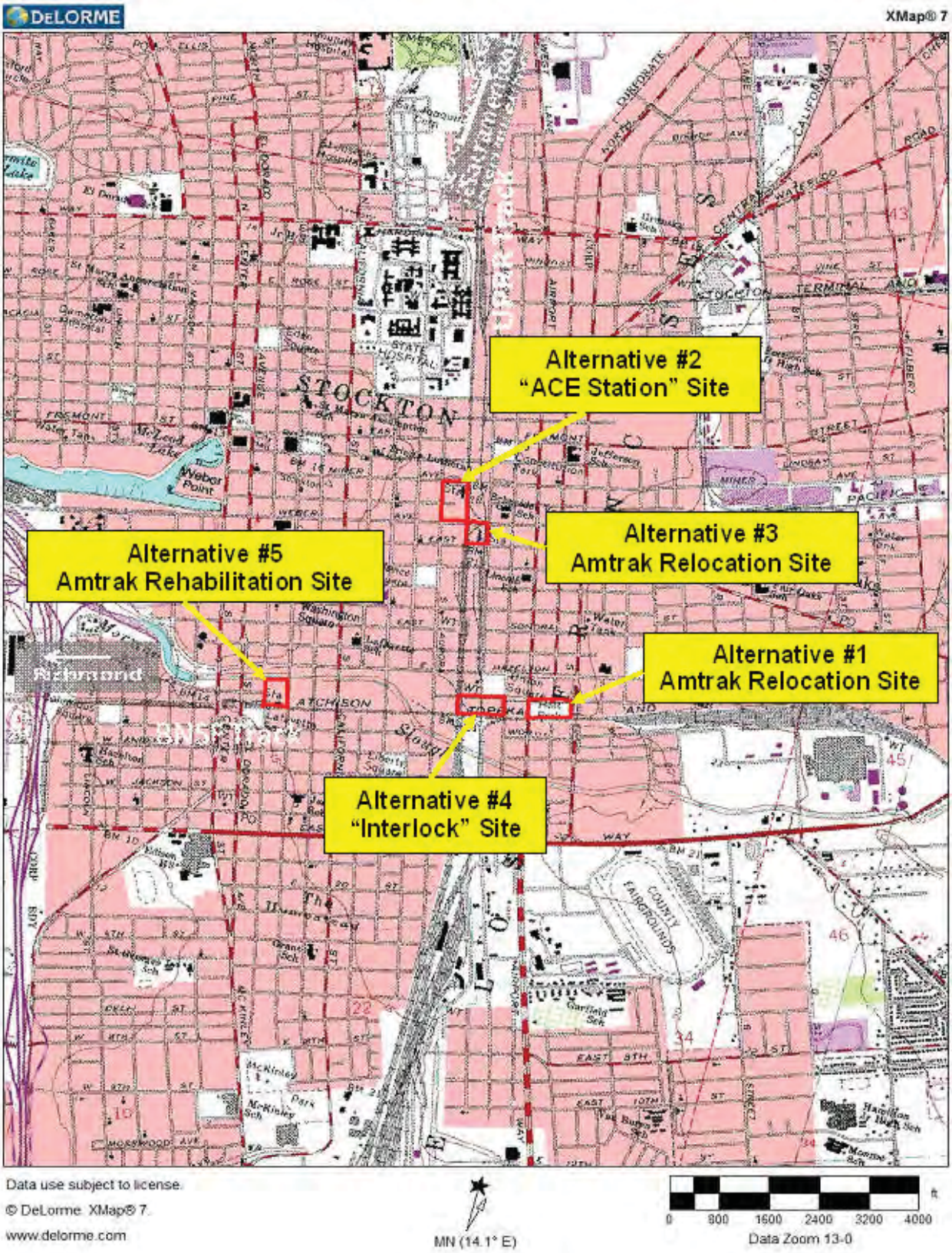
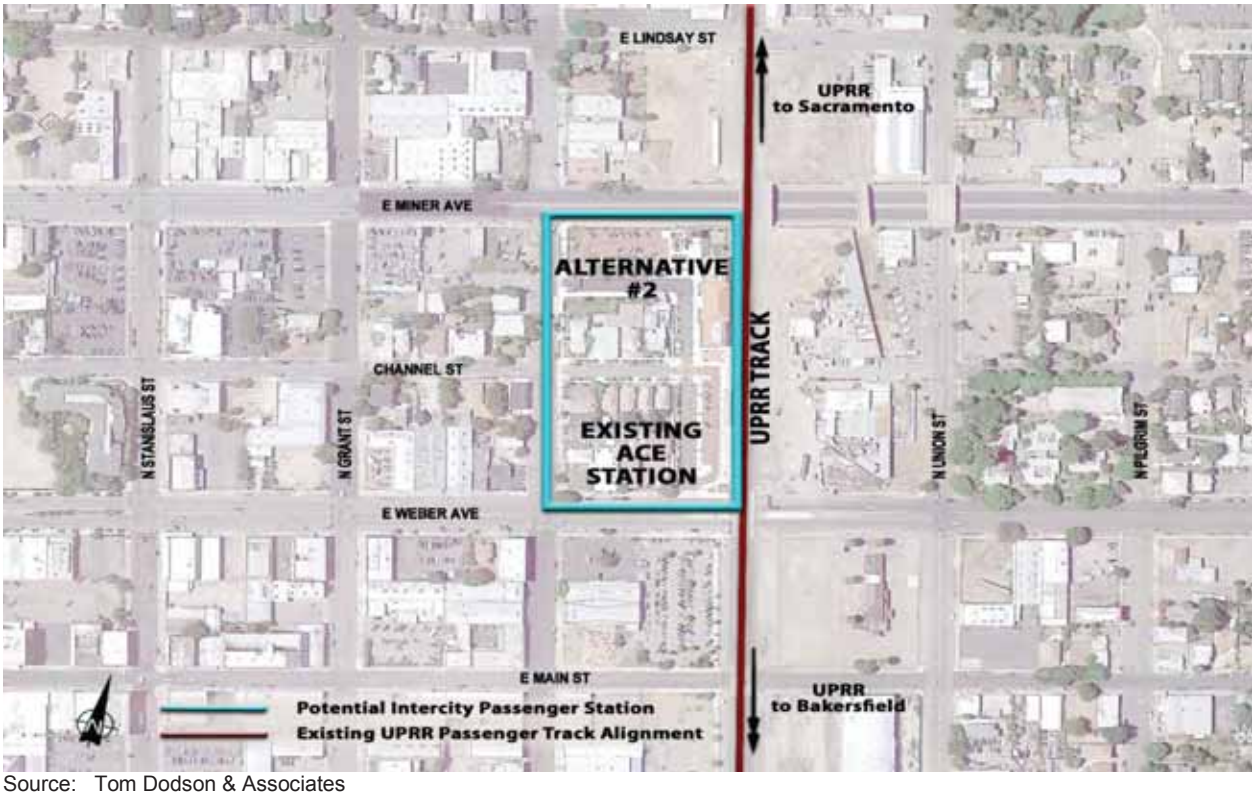


Figure 3-12: Alternative #1 – Stockton Amtrak Station Relocation Site

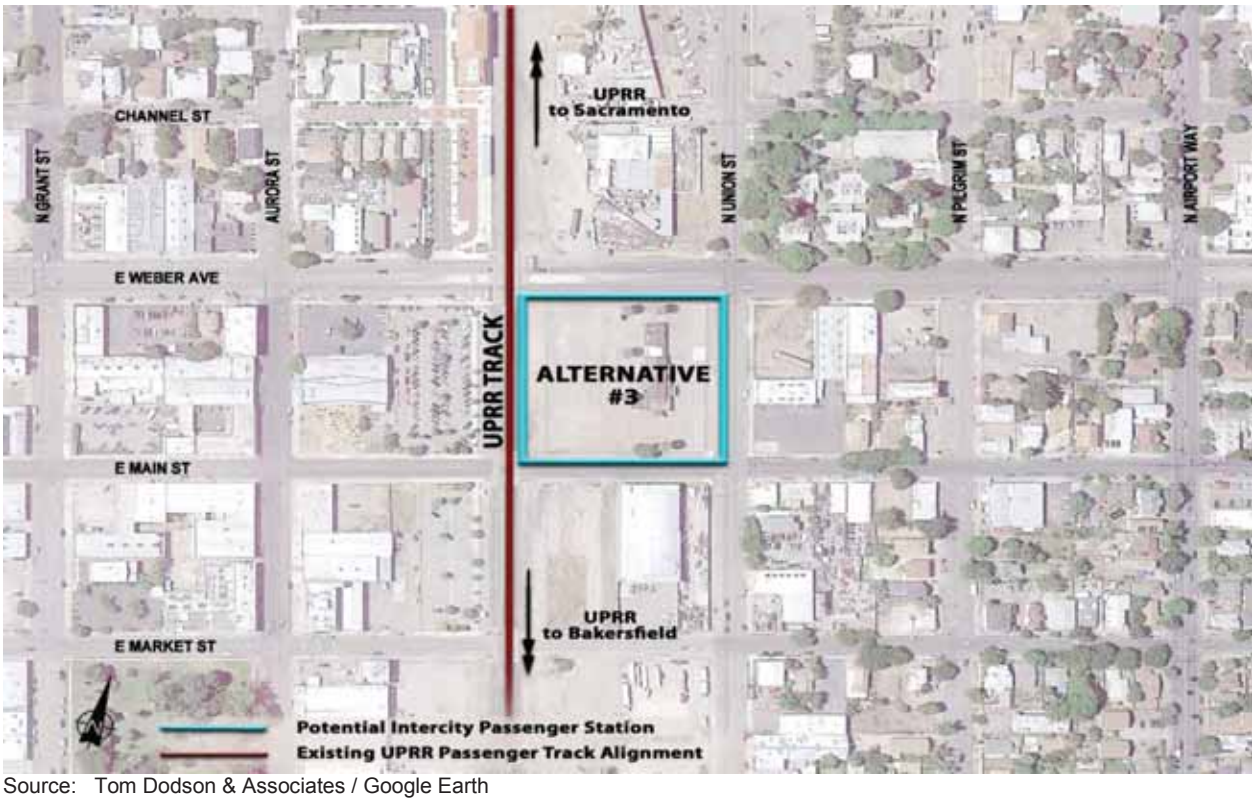
Source: Tom Dodson & Associates

Figure 3-13: Alternative #2 – Stockton Amtrak Station Relocation Site (ACE Station)



Source: Tom Dodson & Associates

Figure 3-14: Alternative #3 – Stockton Amtrak Station Relocation Site



Source: Tom Dodson & Associates / Google Earth

Figure 3-15: Alternative #4 – Stockton Amtrak Station Relocation Site "The Interlock"

Source: Tom Dodson & Associates / Google Earth

Figure 3-16: Alternative #5 – Existing Stockton Amtrak Station Site

Source: Tom Dodson & Associates / Google Earth

Figure 3-17: Hercules Station Area on USGS 7.5 Minute Quadrangle Map

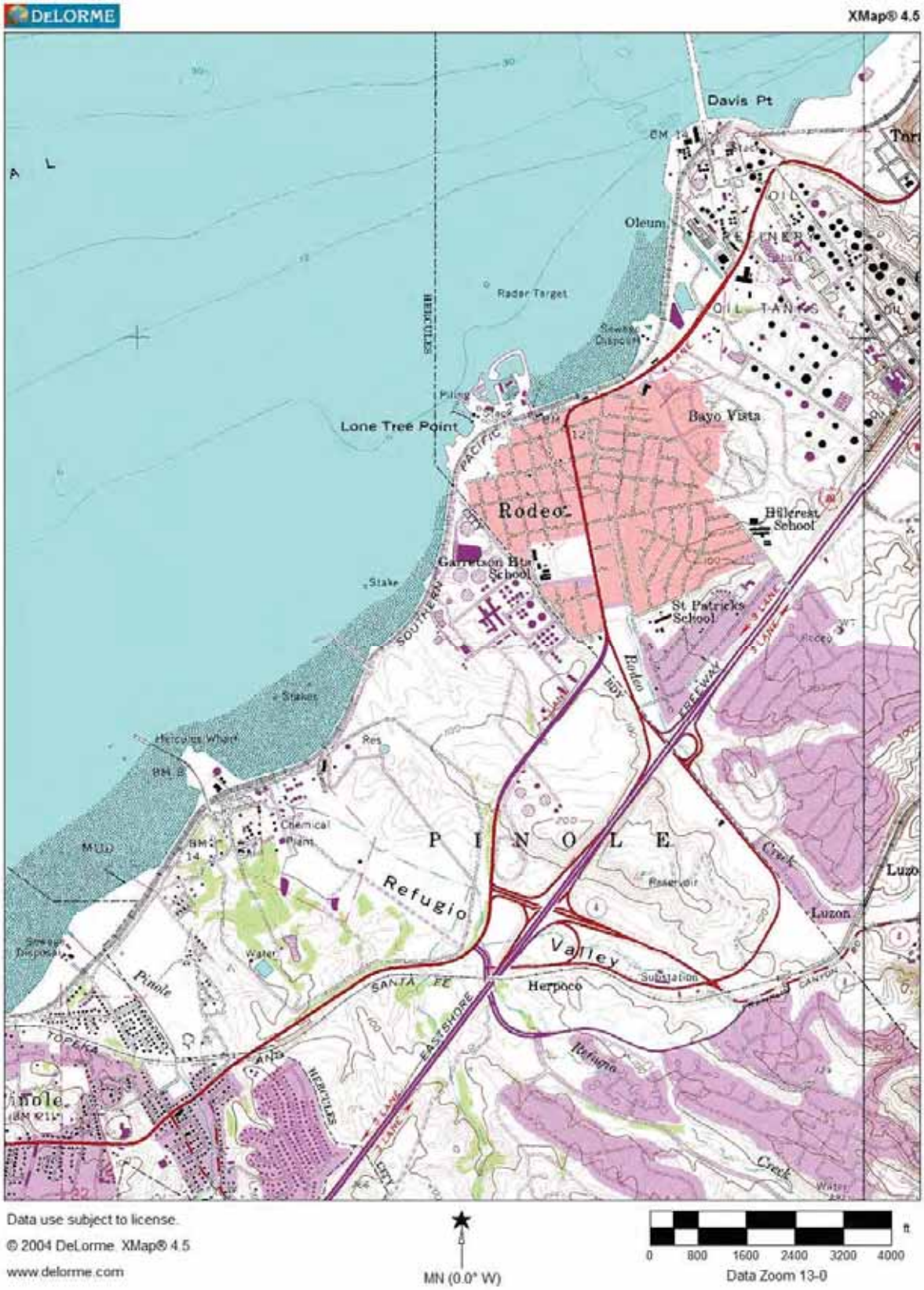
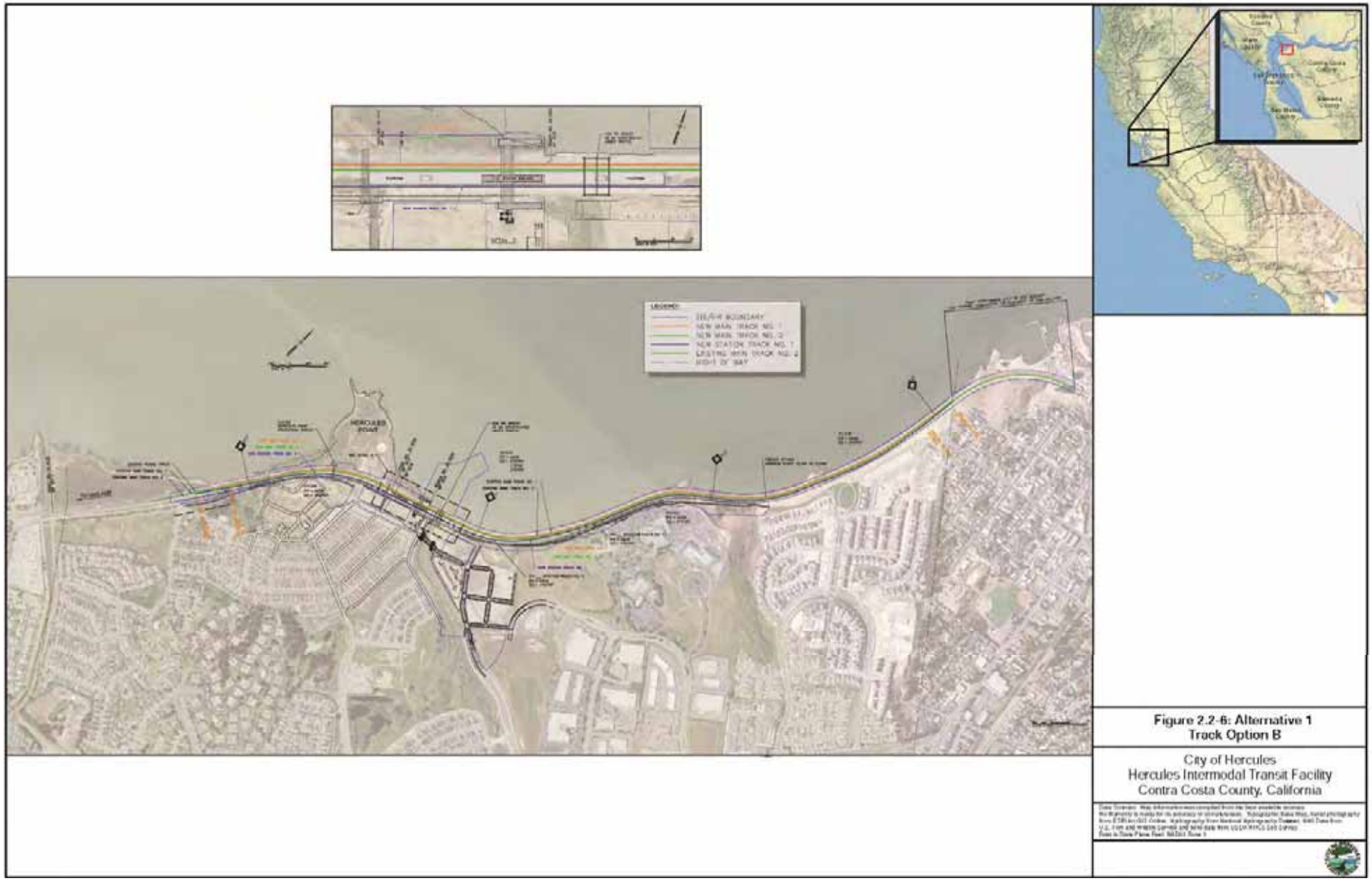


Figure 3-18: Hercules Intermodal Transit Facility



Source: Hercules ITC FEIS, April 2012 (Figure 2.2-6)

Figure 3-19: Hercules ITC Station Building

Source: Hercules ITC FEIS, April 2012 (Figure 2.2-8)

Figure 3-20: Elk Grove Potential Station Site Location

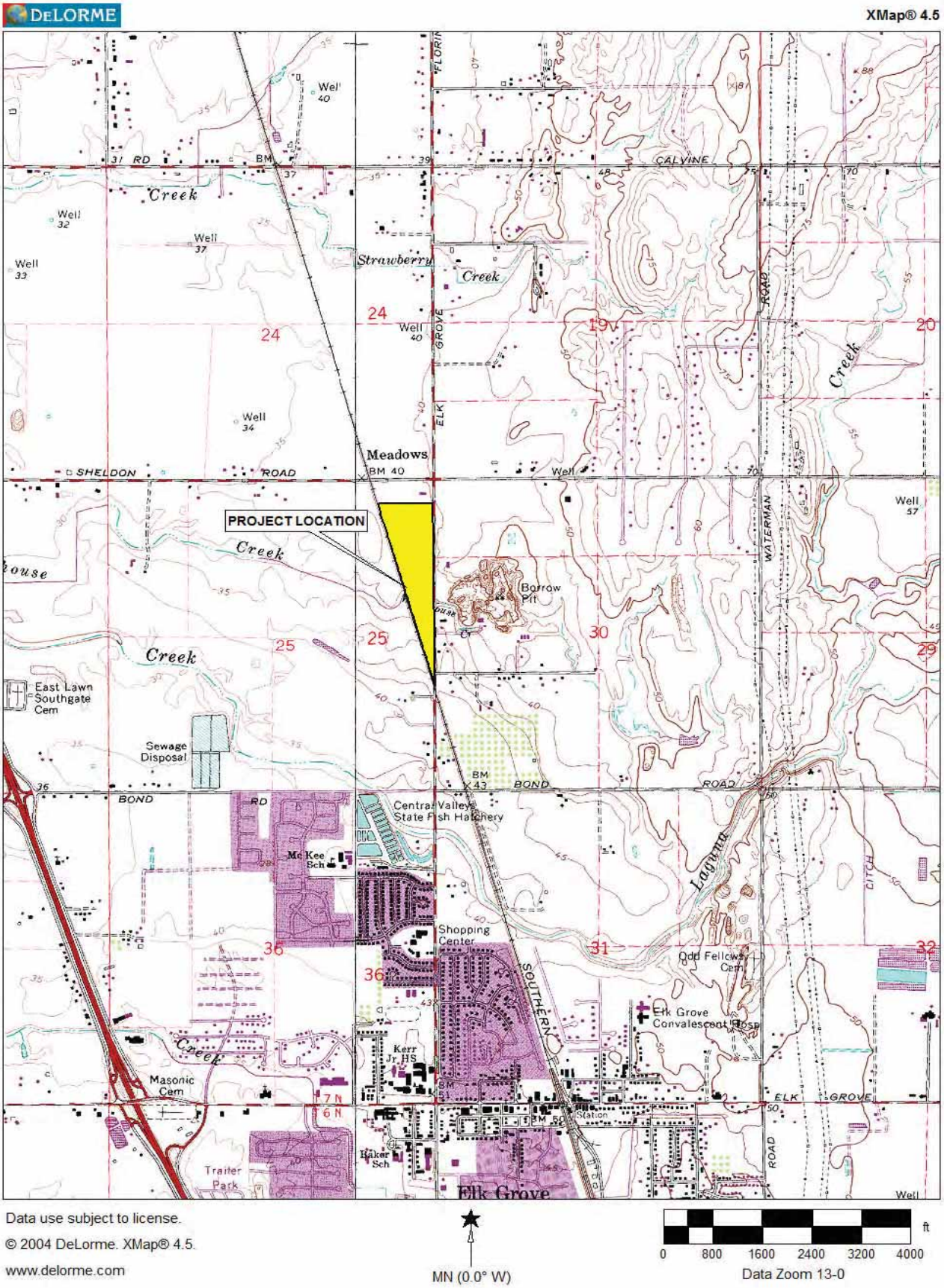


Figure 3-21: Elk Grove Potential Site Aerial Photo

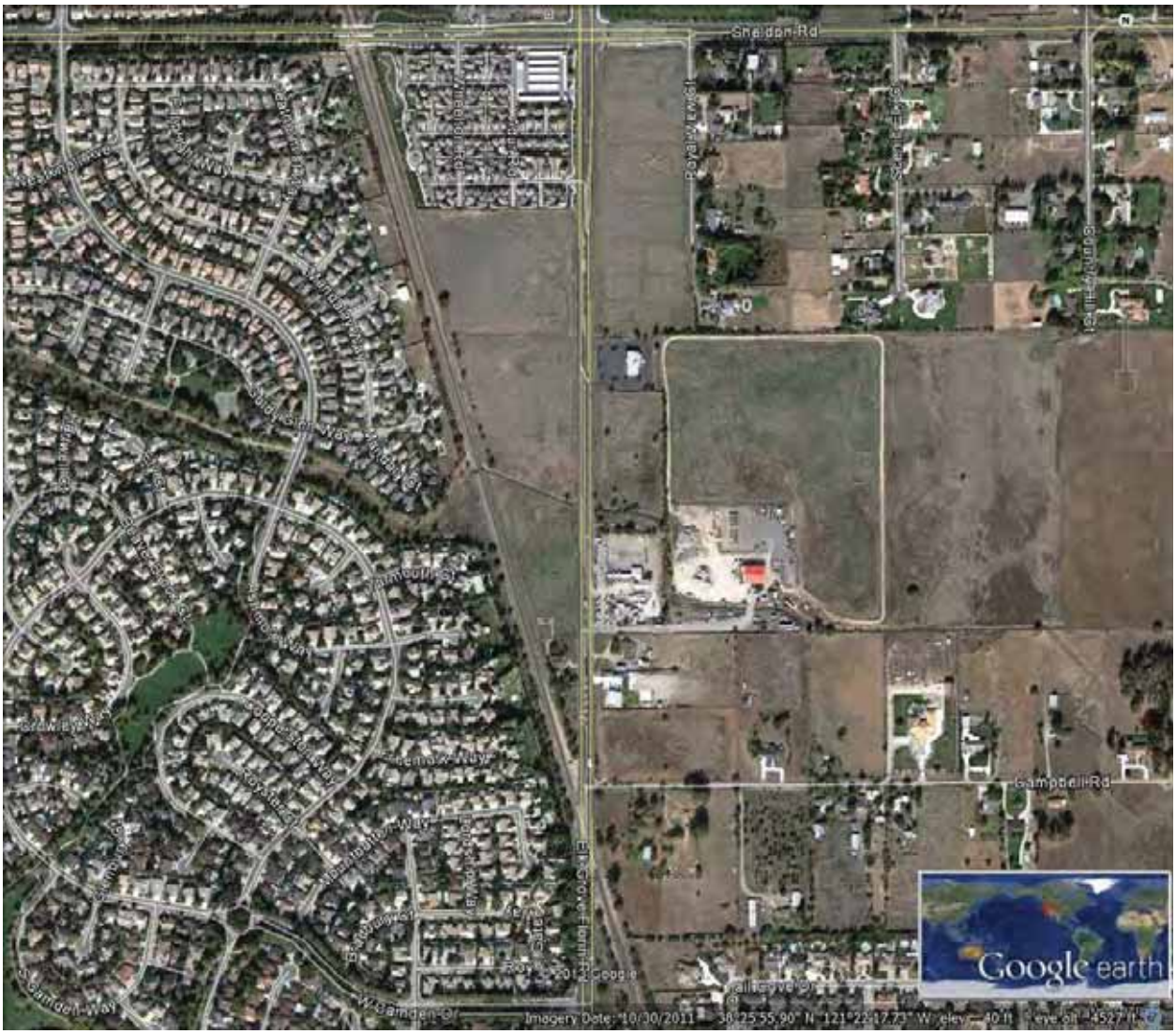


Figure 3-22: Elk Grove Station Access Road Plan

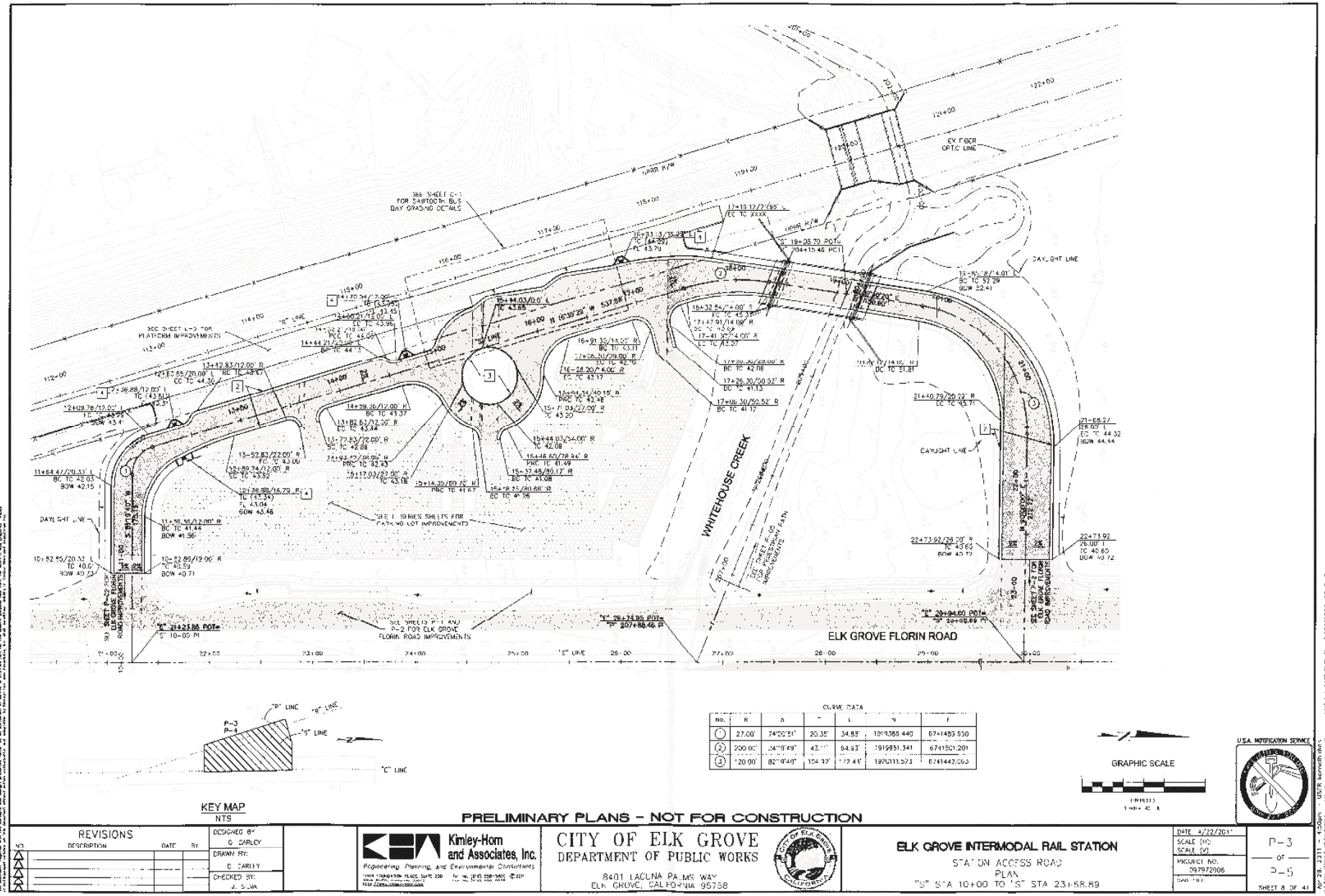


Figure 3-23: USGS – Potential Fresno Layover Facility Site
USGS 7.5 Minute Quadrangle Map "Fresno South"

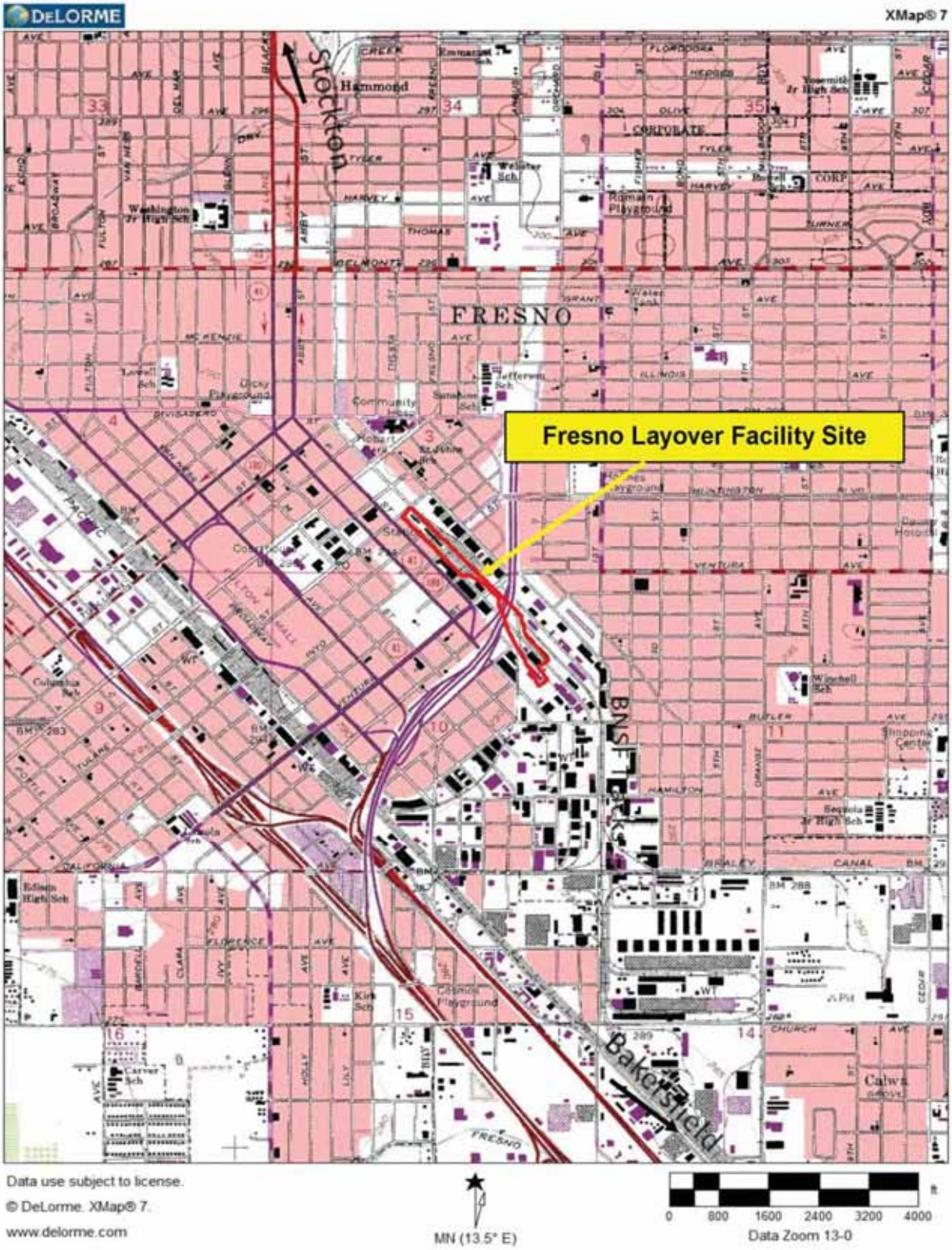
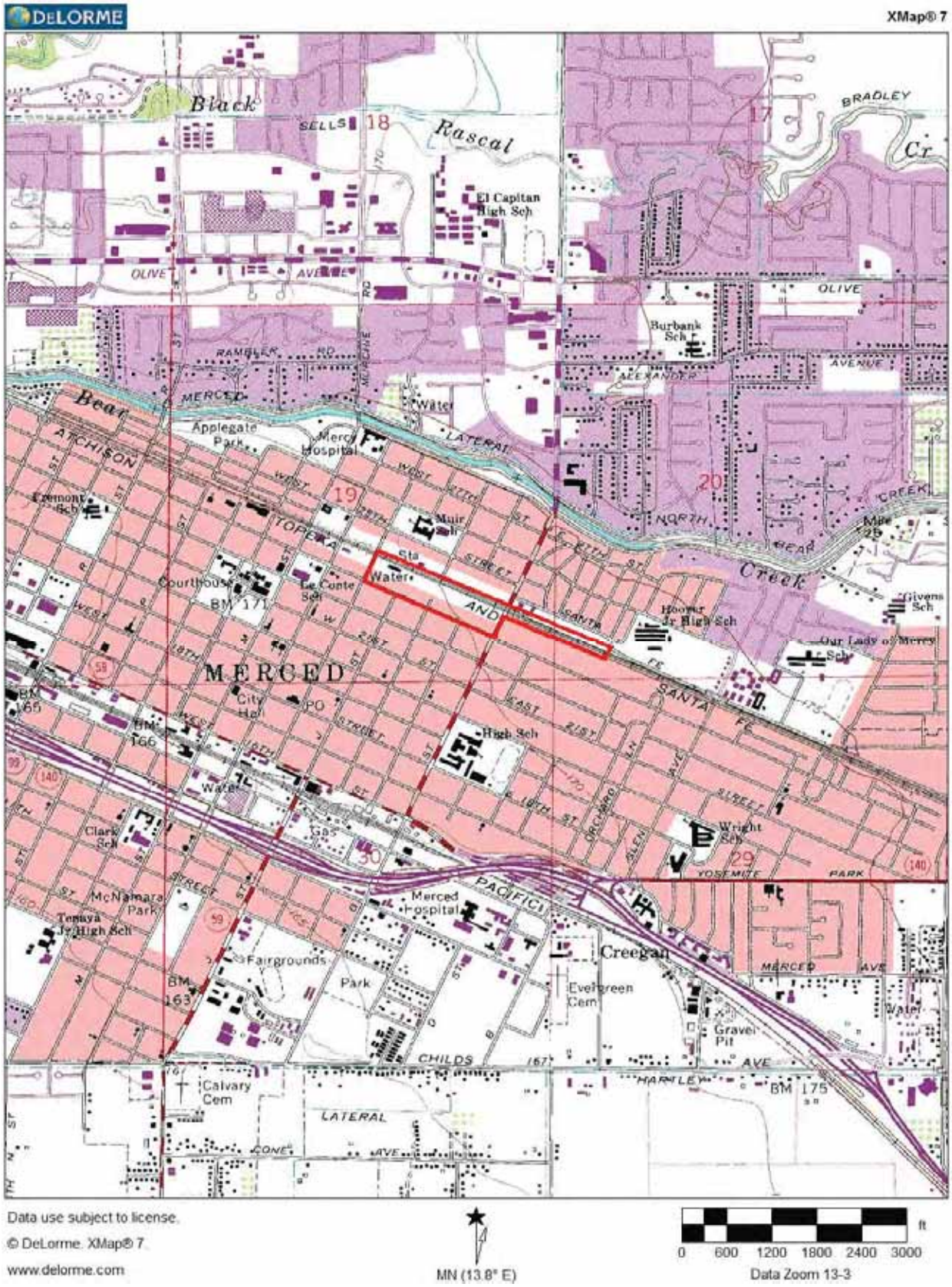


Figure 3-24: Potential Fresno Layover Facility Site

Source: Tom Dodson & Associates / Google Earth

Figure 3-25: USGS – Potential Merced Layover Facility Site
USGS 7.5 Minute Quadrangle Map "Merced"



Data use subject to license.
© DeLorme. XMap® 7.
www.delorme.com

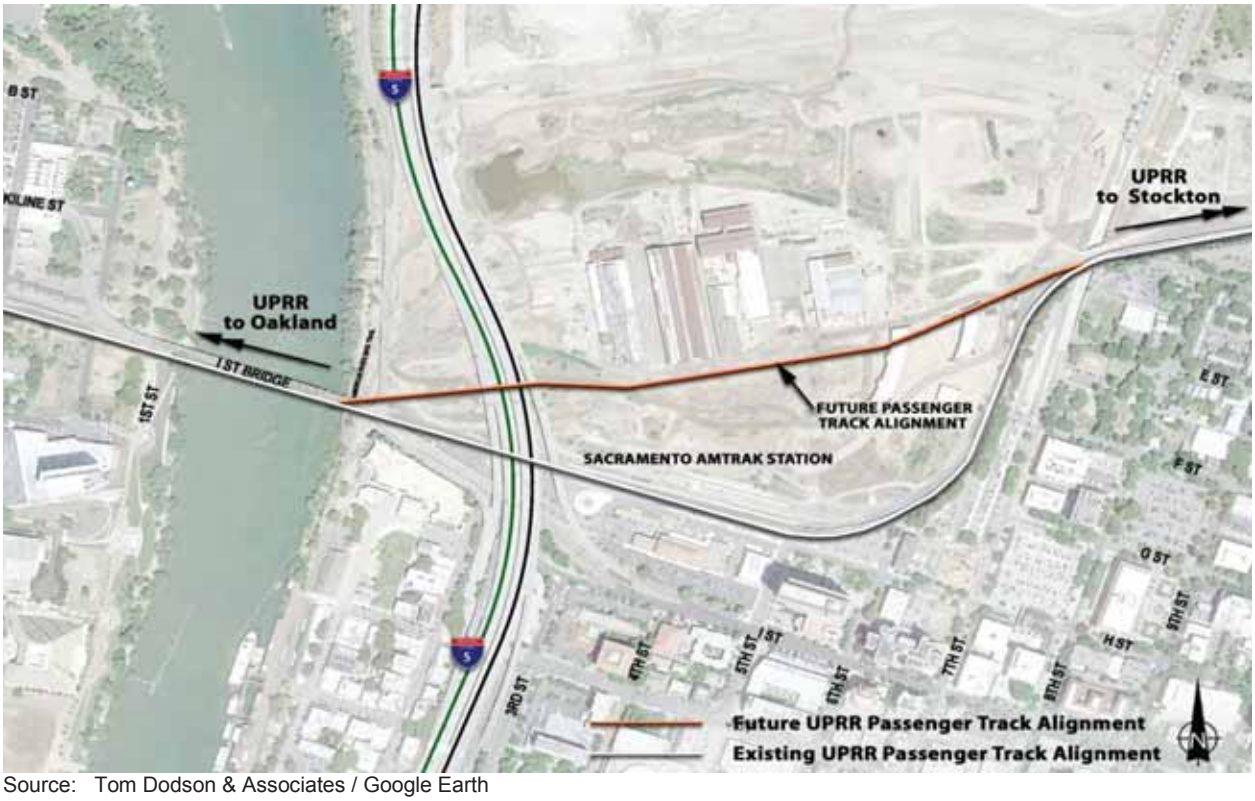
MN (13.8° E)

0 600 1200 1800 2400 3000 ft
Data Zoom 13-3

Figure 3-26: Potential Merced Layover Facility Site

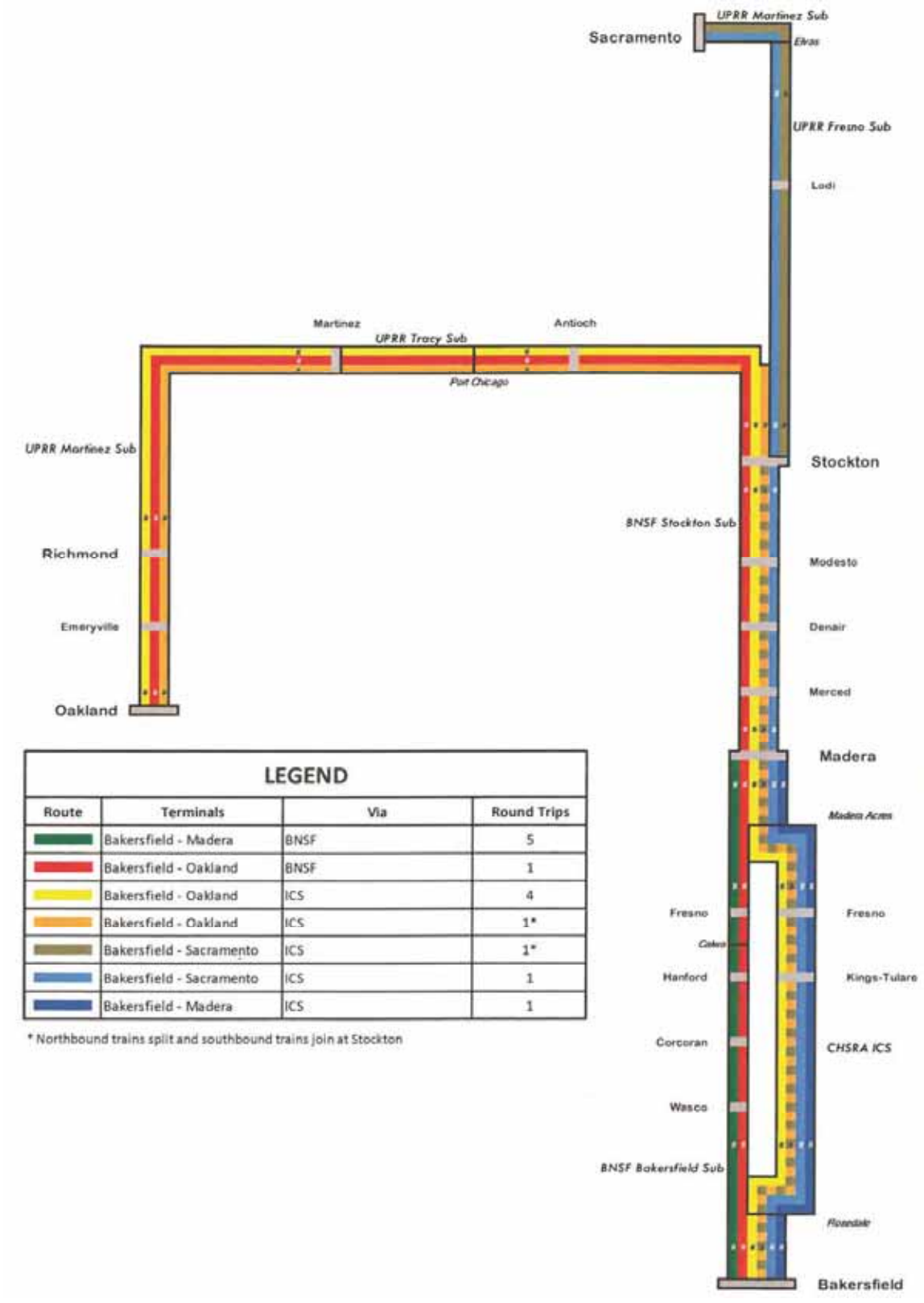
Source: Tom Dodson & Associates / Google Earth

Figure 3-27: Sacramento Amtrak Station – Future Track Relocation



Source: Tom Dodson & Associates / Google Earth

Figure 3-28: Build Alternative B Service Scenario



LEGEND

Route	Terminals	Via	Round Trips
	Bakersfield - Madera	BNSF	5
	Bakersfield - Oakland	BNSF	1
	Bakersfield - Oakland	ICS	4
	Bakersfield - Oakland	ICS	1*
	Bakersfield - Sacramento	ICS	1*
	Bakersfield - Sacramento	ICS	1
	Bakersfield - Madera	ICS	1

* Northbound trains split and southbound trains join at Stockton

Source: California State Rail Plan, San Joaquin Corridor Service Development Plan, March 6, 2013 (Exhibit 4-5)

Chapter 4 Environmental Impact Evaluations

4.1 INTRODUCTION

This Program Environmental Impact Report (PEIR) evaluates the potential significant environmental impacts that may result from constructing and operating the "Project." The purpose of the proposed rail improvements to the San Joaquin Corridor is to accommodate existing and future California intercity passenger rail demand and projected increases in ridership through 2035. The proposed project would also serve to improve rail safety and operation and provide increased availability of public transportation within the San Joaquin Corridor.

Based upon the findings of the Initial Study that the proposed project may have one or more significant effects on the environment, it was concluded that a PEIR must be prepared. The decision to prepare a PEIR is documented in the Initial Study and Notice of Preparation, which is provided as Subchapter 8.1 to this Draft PEIR.

This Chapter of the Draft PEIR provides the detailed information used to forecast the type and significance of potential environmental impacts that can result if the Project and related actions are implemented as described in Chapter 3, "Project Description." Some impact categories lend themselves to scientific thresholds established by regulatory agencies. For other impact categories that are more qualitative or are entirely dependent on the immediate setting, a hard-and-fast threshold is not generally feasible, and the overall adverse change in physical conditions is applied as the significance criterion. In the current analysis, Caltrans has given careful consideration to the issue of significance and has applied the significance criteria established in the State CEQA Guidelines, Appendix G to evaluate the significance of the effects of the San Joaquin Corridor Program under CEQA.

In the following subchapters, each of the environmental topics identified in the Initial Study and in Chapter 2 of this PEIR as having a potential to cause significant impact is evaluated. The environmental impact analysis section for each environmental topic in Chapter 4 (Subchapter) is arranged in the following manner:

a. An introduction that summarizes the specific issues of concern for each subchapter, identified in the Initial Study and Notice of Preparation scoping process;

b. A summary of the current or existing environmental setting for each physical resource or human infrastructure system is presented as the baseline from which impacts will be forecast;

c. Based on stated assumptions, the potential direct and indirect impacts are forecast and the significance of impacts is assessed without applying any mitigation using identified impact evaluation criteria;

d. Recommended measures that can be implemented to substantially lessen potential environmental impacts are identified, and their effectiveness in reducing impacts to non-significant levels is evaluated;

e. Potential cumulative environmental impacts are assessed under each environmental topic, where applicable; and

f. Significant and unavoidable environmental impacts and any significant impacts that may be caused by implementing mitigation measures are addressed.

Where appropriate and feasible, measures to reduce potential significant environmental impacts are identified and described in each Subchapter of Chapter 4 in this DRAFT PEIR. Over the past several years, mitigation has evolved in scope and complexity. As environmental issues are addressed in a progressive and adaptive manner, previous measures developed to mitigate project specific impacts are eventually integrated into local, regional, state and federal statutes, rules and regulations, such as the Uniform Building Code and Water Quality Management Plans. Mitigation measures that become statutes or rules and regulations become mandatory requirements (not discretionary). They no longer need to be identified as additional mitigation applicable to the Project, although they are often referenced to demonstrate that identified environmental impacts are capable of being and will be mitigated.

The following subchapters summarize the various measures that are anticipated to be incorporated into the Project to reduce potential significant environmental effects, either to the extent feasible or to a level of non-significance. After determining the degree of mitigation that can be achieved by the proposed measures and after identifying any potential impacts that the mitigation measures can cause, a conclusion is provided regarding the remaining significant and/or unavoidable adverse impact(s) for each environmental topic, if any.

The Draft PEIR utilizes conservative (worst case) assumptions in making impact forecasts based on the assumption that the impact forecasts should over-predict (if they cannot be absolutely quantified) consequences, rather than under-predict them. Many technical studies were prepared for the Draft PIER and they are incorporated by summarizing the technical information in each Subchapter of Chapter 4 to ensure technical accuracy of the analysis in these Subchapters. These technical studies themselves are compiled in a separate volume of the DEIR (Volume 2) and copies of Volume 2 will be distributed in electronic form and made available to all parties on distribution upon request. The information used and analyses performed to make impact forecasts are provided in depth in each Subchapter of Chapter 4 to allow reviewers to follow a chain of logic for each impact conclusion and to allow the reader to reach independent conclusions regarding the significance of the potential impacts described in the following subchapters.

4.1.1 Specific Objectives of the Proposed Project

- Install a second or third main track along:

  » 188.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  » 22.11 miles of the Port Chicago to Oakland segment of UP track; and
  » 43.61 miles of the Stockton to Sacramento segment (Fresno Subdivision) of UP track.

  Figures 3-2a through 3-2d depict where the installation of second or third track is proposed. Figure 3-3a reflects the current BNSF track structure. Figures 3-3b through 3-3g depict the proposed track structure for BNSF and UP in order to improve the efficiency of train movements and ensure that passenger train service can operate on a reliable schedule.

- Install new sidings, or passing track, in order to facilitate train flow on both tracks.

- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations.

- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures.

- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems.

- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas.

- Increase the maximum operating speed of passenger trains in all existing segments of the San Joaquin Corridor from 79 miles per hour (mph) to 90 mph.

- Obtain additional operating equipment (rolling stock i.e., locomotives and passenger cars) to meet the forecasted customer demand for passenger trains.

- Install or update passenger train infrastructure, such as layover or station facilities, to support expansion of future train operations.

This page left intentionally blank for pagination purposes.

4.2 AIR QUALITY

4.2.1 Introduction

The proposed San Joaquin Corridor project is designed to accommodate an increased ridership from currently around 1.07 million to 3.04 million passengers per year by 2035. Refer to Table 3-1 in the project description (Chapter 3) which summarizes the basis for this increase in ridership over the next 21 years. Anticipated side benefits include improved track safety and increased passenger travel speeds. The number of daily passenger trains to meet the forecast demand would need to increase from 6 in each direction between Stockton and Bakersfield to 11 per day (22 per day total). With a new Stockton to Sacramento connection, some of the new trains in/out of Stockton will be split between the Sacramento and Bay Area.

The San Joaquin Corridor and its route alternatives traverse a variety of climate zones and air quality jurisdictions. A description of the atmospheric environment must acknowledge this variability. However, almost every jurisdiction along the corridor fails to meet clean air standards for ozone and for particulate matter. There is some variation in the severity of the violations, but these air pollutants are an on-going issue in much of California.

Moving people out of cars and into high occupancy transportation is seen as air quality positive. However, the energy expenditure per passenger mile for a 2-occupant auto, 20 passenger bus, 100 passenger airplane or 100 passenger Amtrak (the typical current train passenger load of corridor trains) tend to vary only by a small amount. The major emission difference is that diesel fueled transportation generates around 30 times more NOx or PM-2.5 (soot) per mile than gasoline engines. Until low-NOx and low-PM-2.5 Tier 4[1] locomotives achieve greater market penetration within the next decade, there is no substantial operational air quality benefit for most criteria pollutants. Future average passenger loads per train are expected to increase substantially from 100 passengers per train to 155 per train mile. That increase in transportation efficiency will not, however, overcome the dramatic NOx and PM-2.5 emissions “penalty” for diesel combustion. Any potentially substantial air quality impact differences from project implementation would derive almost exclusively from construction activities. Because use of Tier 4-rated locomotives can enhance operational air quality benefits of passenger rail compared to existing emissions per travel mile, measure 4.2-8 requires future locomotive purchases or major repairs to meet Tier 4 locomotive emission standards.

The San Joaquin Corridor Program includes 314.7 miles of track from Bakersfield to Oakland and a 43-6 mile track segment from Stockton to Sacramento. Some of the proposed project alternatives include consideration of passenger train operations between Bakersfield to Los Angeles via Lancaster, and Port Chicago to Richmond via BNSF tracks versus on UPRR lines. The total amount of double and triple track envisioned under this program is approximately 250 miles.

Two passenger train travel speed goals are under consideration within the Corridor. In the near term (5-10 years), travel speed goals of 79 mph and 90 mph have been evaluated in terms of physical improvements needed to support the increase in number of passenger trains and speed. For the long term planning horizon (beyond 2035), the San Joaquin Corridor is envisioned as carrying a tripling of existing annual ridership with a corresponding increase from

[1] The term “Tier” for locomotives refers to the degree of emission control. Tier 4 represents the most current level of emissions control for locomotives.

12 to 22 passenger trains per day. The travel speed goal is to accommodate 90 mph trains where feasible.

Much of the increased system design efficiency would derive from a substantial increase in the number of double-tracked segments with some additional siding and spur tracks to reduce passenger/freight track competition. Bridges will need to be widened on the existing BNSF right-of-way and up to 28 new bridges would be required along the new UPRR tracks from Stockton to Sacramento. Similarly, an estimated 1,000 existing drainage culverts would need to be extended to accommodate a second track berm and almost 250 new culverts must be constructed on the new Stockton to Sacramento segment. Many at-grade crossings would need to be improved if two tracks are crossed instead of one. Because each grade separated crossing costs $25 million or more, all road crossings are expected to remain at-grade under this program.

In addition to track improvements, the proposed project includes several physical facilities. These include a station modernization or relocation in Stockton, an intermodal transit center in Hercules, an Amtrak California Station in Elk Grove, and a layover facility in either Fresno or Merced to allow early-morning passengers to reach the Bay Area or Bakersfield at the start of the work day. The Hercules and Elk Grove stations were added to the San Joaquin Corridor Program in response to comments on the Notice of Preparation. These proposed stations have been evaluated in this PEIR as part of the overall Program.

In order to accommodate the various program objectives, the amount of rolling stock must be increased from 7 existing to 14 future train sets. Additionally, state-owned commuter rail equipment will be at the end of their useful lives by 2035. Acquisition of such equipment will not have any direct environmental effects, but represents a further commitment of project resources.

Comments received in response to the NOP concerning air quality are summarized in Chapter 2 and copies of the comment letters themselves and full responses are provided in Chapter 8, Appendix 8.2. Information is provided in this Subchapter to address the concerns expressed regarding air quality impacts.

The air quality evaluation of the above project that follows is based on an air quality and greenhouse gas technical report titled "Air Quality and GHG Impact Analyses, San Joaquin Corridor Project, Central Valley and Bay Area, California, April 4, 2014" A copy of this report is provided as Appendix 2 of Volume 2 of this DRAFT PEIR. Much of the information provided in the following sections is abstracted directly from this technical report with minor edits.

4.2.2 Regulatory Setting

4.2.2.1 California Air Basins

The same diversity in climate created by physical features in the state combines to create a similar pattern of semi-homogeneous air quality. California is divided into 15 air basins. The project alignment and its alternatives pass through 5 of these basins. Although air quality is also affected by population patterns and industrial development, the role of meteorology and climate is so strong such that the distribution of air basins and climate zones is very similar.

The San Joaquin corridor traverses the San Joaquin Valley, Bay Area and Sacramento Valley Air Basins. Implementation of the alternative to connect the system from Bakersfield to the Los

Angeles Basin would pass through the Mojave Desert and South Coast Air Basins (MDAB and SoCAB). The characterization of existing basin wide air quality is expressed in terms of applicable ambient air quality standards. Future air quality will derive from mandatory implementation plans for pollutants that are not in attainment with standards (nonattainment), or maintenance plans for any attainment pollutants.

4.2.2.2 Ambient Air Quality Standards (AAQS)

In order to gauge the significance of the air quality impacts of the proposed San Joaquin Corridor Program, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species (criteria pollutants) with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 4.2-1. Sources and health effects of various pollutants are shown in Table 4.2-2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

Table 4.2-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O3)	1 Hour	0.09 ppm (180 µg/m3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m3)		0.075 ppm (147 µg/m3)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m3	Gravimetric or Beta Attenuation	150 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m3		–		
Fine Particulate Matter (PM2.5) [8]	24 Hour	–	–	35 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m3	Gravimetric or Beta Attenuation	12 µg/m3	15 µg/m3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m3)	–	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9 ppm (10 mg/m3)		9 ppm (10 mg/m3)	–	
	8 Hour (Lake Tahoe)	6 ppm (7 g/m3)		–	–	
Nitrogen Dioxide (NO2) [9]	1 Hour	0.18 ppm (339 µg/m3)	Gas Phase Chemiluminescence	100 ppb (188 pg/m3)	–	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)		0.053 ppm (100 µg/m3)	Same as Primary Standard	
Sulfur Dioxide (SO2) [10]	1 Hour	0.25 ppm (655 µg/m3)	Ultraviolet Fluorescence	75 ppb (196 pg/m3)	–	Ultraviolet Flourescense; Spectrophotometry (Paraosaniline Method)
	3 Hour	–		–	0.5 ppm (1300 µg/m3)	
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm (for certain areas) [10]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas) [10]	–	
Lead 8 [11,12]	30-Day Average	1.5 µg/m3	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m3 (for certain areas) [12]	Same as Primary Standard	
	Rolling 3-Month Avg	–		0.15 µg/m3)		
Visibility Reducing Particles [13]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Chloride [11]	24 Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

Footnotes

1 California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter – PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year, with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7 Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

8 On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained as 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

9 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

10 On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

11 The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

12 The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

13 In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: California Air Resources Board (6/4/2013)

Table 4.2-2
HEALTH EFFECTS OF MAJOR CRITERIA POLLUTANTS

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide ($NO_{2)}$ that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted. In December, 2012, the federal annual standard for PM-2.5 was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of some basin's non-attainment status for PM-2.5 may be increased by this action and thus require accelerated planning for future PM-2.5 attainment.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA had proposed a further strengthening of the 8-hour standard. Draft standards were published. The anticipated future 8-hour standard was 0.065 ppm. Environmental organizations generally praised this proposal. Most manufacturing, transportation or power generation groups opposed the new standard as economically unwise in an uncertain fiscal climate. In recognition of the fact that a stronger ozone standard could adversely impact employment, that proposal has been placed on indefinite hold.

A new federal one-hour standard for nitrogen dioxide (NO_2) has also recently been adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in various California air basins, the California Air Resources Board has requested the EPA to designate all California air basins as being in attainment for this standard. The federal standard for sulfur dioxide (SO_2) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, SO_2 is typically not a problem pollutant throughout the state.

4.2.3 Affected Environment

4.2.3.1 Meteorology and Climate

Because of wide geographic and topographic diversity along the program alignment, the baseline atmospheric environment is dramatically variable. Climatic conditions are heavily driven by the distance separation from the Pacific Ocean in the west to the Mojave Desert in the east with intervening mountains and valleys further creating micro-climates. California is divided

into 16 climate zones. The San Joaquin Corridor Program, including project alternatives, passes through five zones, including:

Zone No.	Generic Descriptor	Reference City
3	Bay Area	Oakland
9	South Coast Inland	San Clarita
12	Northern San Joaquin	Stockton and Sacramento
13	Southern San Joaquin	Fresno and Bakersfield
14	High Desert	Lancaster

Temperature differences in various climate zones are dramatic near the coast and then taper off quickly in moving west to east. The coastline is typically warmer than inland areas in winter and much cooler than interior valleys in summer. The onshore/offshore airflow from cool to warm dominates the smaller nocturnal temperature gradient from a cooler north to a warmer south.

Rainfall would normally be expected to have a north to south decrease in response to the weakening of mid-latitude storms as they move from northwest to southeast. That natural pattern is similarly partly obscured by north-south mountain ranges that create damp winter coastal areas and corresponding interior rain shadow effects.

Much of the proposed project, except for a short excursion into the Bay Area, is located in inland valleys with hot summers, cool winters and rain shadow conditions. The blocking action of the Coast Range disrupts the strong summer onshore and weak winter offshore airflow patterns. Although there is often a strong onshore flow through the Carquinez Strait, the strength of the flow diminishes as it fans out in the central valley. Local airflow patterns tend therefore to be more dominated by mountain/valley winds rather than ocean/desert interaction. The lack of a sustained prevailing wind pattern also leads to poor dispersion conditions. Summers are periods when photochemical smog created by abundant sunlight is not rapidly dispersed. In winter, poor ventilation leads to prolonged periods of “tule fog” and elevated localized particulate or odor levels associated with agricultural activities in the Central Valley.

The limited horizontal circulation potential is exacerbated by vertical temperature structures that restrict the vertical depth through which contaminants can be mixed. When temperatures increase with height (inversions), vertical mixing is suppressed. In summer, sinking air within the off shore high pressure cell creates regional subsidence inversions. They form an elevated lid above most California interior valleys. They are a major reason why parts of the Central Valley have warm season air quality that is almost as degraded as that in the Los Angeles Basin. During the winter, air near the ground cools rapidly while the air aloft remains warmer. The radiation inversions thus created contribute to micro-scale air stagnation. They often burn off after sunrise, but can persist for days if thick fog inhibits inversion burn off.

4.2.3.2 Baseline Air Quality

Attainment designations are made annually by the California Air Resources Board (CARB) for state standards. The U.S. Environmental Protection Agency (EPA) performs the same service for federal standards. The applicable time span for making that determination is the last three years of complete monitoring data. The 2013 designations thus represent data from 2010 through 2012. There is a slight difference in state versus federal non-attainment definitions. Any single violation of state standards in the last three years is considered non-attainment. The federal definition is no more than three violations in the last three years (average of no more

than one per year). The definition also makes a provision to exclude days with highly unusual events such as wildfires because they are not representative of “ambient” air quality. If there are insufficient monitoring data to conclusively support a finding, the basin may be designated as being “Unclassified”.

For some pollutants such as ozone or PM-10, a qualifier may be added to indicate the degree of severity of the non-attainment with respect to the applicable AAQS. Table 4.2-3 summarizes the baseline air quality along the proposed project alignment and its route alternatives. With some variation in non-attainment severity, the entire alignment experiences violations of standards for ozone, PM-2.5 and PM-10, and meets standards for CO and NO_2 (except SoCAB).

Unless there is significant pollution transport from one air basin into another (such as from the SoCAB into MDAB or BAAB to the SJVAB), air quality trends can be inferred from basin-wide patterns of emissions. Future air quality within the air basins along the project alignment will follow the daily emissions burden within each basin. Table 4.2-4 is the predicted daily burden of ROG and NOx (ozone precursors), CO and particulate matter based upon growth forecasts, anticipated vehicular improvements and the phase-in of pollution control programs.

Throughout much of the state, NOx emissions are expected to decline, but ROG emissions trends will see slower reductions. Slow improvement in ozone concentrations (created by ROG and NOx and sunlight) is expected, but “slow” is the operative word. CO emissions are forecast to continue to substantially decline such that continued attainment of standards is expected. Because particulate emission trends are forecast to be very flat, ultimate attainment of particulate standards may actually be harder than for ozone.

4.2.3.3 Air Quality Planning

For those pollutants shown as “non-attainment” in Table 4.2-3 (except for marginal), the CAAA (amended in 1990) require that an air quality management plan be developed, adopted and approved by specified agencies. Attainment plans for federal standards are typically locally adopted by air quality agencies, reviewed by the CARB, and sent to the EPA for final approval. The entire combined package of plans becomes the State Implementation Plan (SIP) after EPA approval. Federal law prohibits the participation by any federal agency in any project, plan or program that does not conform to the SIP. Participation most typically entails funding or permitting a proposed action, such as a freeway or railroad infrastructure improvement.

Because of a wide diversity of the attainment status of various air basins covering the project alignment and its route alternatives, there is a quilt-work pattern of federal attainment plans. That pattern is further complicated by periodic revisions to AAQS and to attainment designations that require corresponding plan revisions. When attainment is demonstrated for areas that were formerly classified as non-attainment for federal standards, the attainment plan converts to a maintenance plan to prevent future backsliding.

Transportation projects typically must demonstrate conformity with the SIP on two scales of motion. Regional conformity must be confirmed by documenting that the proposed action has been incorporated into the appropriate component of the regional transportation plan (RTP). The inclusion of the proposed project into the adopted transportation project budgets must also be verified. Locally, the proposed project must not create air pollution “hot spots” in the project vicinity.

Table 4.2-3
AIR QUALITY STANDARDS ATTAINMENT STATUS

Pollutant	Air Basin	State Standards	Federal Standards
Ozone	SJVAB	Severe Non-Attainment	Extreme Non-Attainment
	BAAB	Serious Non-Attainment	Marginal Non-Attainment
	SVAB	Serious Non-Attainment	Severe Non-Attainment
	MDAB	Moderate Non-Attainment	Severe Non-Attainment
	SoCAB	Extreme Non-Attainment	Extreme Non-Attainment
PM-2.5	SJVAB	Non-Attainment	Non-Attainment
	BAAB	Non-Attainment	Non-Attainment
	SVAB	Non-Attainment	Non-Attainment
	MDAB	Unclassified	Unclassified
	SoCAB	Non-Attainment	Non-Attainment
PM-10	SJVAB	Non-Attainment	Attainment
	BAAB	Non-Attainment	Unclassified
	SVAB	Non-Attainment	Moderate Non-Attainment
	MDAB	Non-Attainment	Serious Non-Attainment
	SoCAB	Non-Attainment	Serious Non-Attainment
Carbon Monoxide	SJVAB	Attainment/Unclassified	Attainment/Unclassified
	BAAB	Attainment/Unclassified	Attainment/Unclassified
	SVAB	Attainment/Unclassified	Attainment/Unclassified
	MDAB	Attainment/Unclassified	Attainment/Unclassified
	SoCAB	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	SJVAB	Attainment	Attainment/Unclassified
	BAAB	Attainment	Attainment/Unclassified
	SVAB	Attainment	Attainment/Unclassified
	MDAB	Attainment	Attainment/Unclassified
	SoCAB	Non-Attainment	Attainment/Unclassified

SJVAB = San Joaquin Valley Air Basin
BAAB = Bay Area Air Basin
SVAB = Sacramento Valley Air Basin (Sacramento Metro Area)
MDAB = Mojave Desert Air Basin
SoCAB = South Coast Air Basin

Table 4.2-4
PROGRAM ALIGNMENT EMISSIONS FORECASTS (tons/day)[1]

Pollutant/Basin	2008	2010	2015	2020
SJVAB				
NOx	566	524	398	316
ROG	369	361	346	345
CO	1352	1272	1086	988
PM-10	300	302	303	310
PM-2.5	105	104	101	102
BAAB				
NOx	448	414	335	284
ROG	377	359	331	318
CO	1748	1596	1340	1206
PM-10	212	216	225	236
PM-2.5	81	82	83	85
SVAB				
NOx	270	249	198	161
ROG	192	184	172	166
CO	1105	1041	917	845
PM-10	230	232	238	242
PM-2.5	75	75	75	76
MDAB				
NOx	272	250	223	204
ROG	92	91	90	93
CO	432	400	357	337
PM-10	200	203	211	219
PM-2.5	54	54	57	59
SoCAB				
NOx	917	836	667	561
ROG	632	596	545	525
CO	3344	3039	2556	2281
PM-10	308	314	328	340
PM-2.5	110	110	111	113

[1] with current emission reductions programs and adopted growth forecasts

Source: California Air Resources Board, California Emissions Projection Analysis Model, 2009

Conformity determination on a project level is generally required for projects receiving FHWA/FTA funding. The project must be consistent with the regional conformity determination. Potential localized emissions impacts on health-based pollutant standards must be addressed. The local impact analysis generally entails a CO hot spot analysis and a PM-10/PM-2.5 analysis for projects of air quality concern. Because there is currently no FHWA/FTA involvement in the proposed project, this process would only be triggered if there is a future NEPA document preparation requirement.

In 1988 California adopted a California Clean Air Act (CCAA) as a companion to federal air quality attainment planning. The CCAA differs from federal requirements only insofar as requiring a demonstration of continued progress towards attainment without any fixed deadlines.

The CCAA requires a three-year update of local clean air plans (CAP). Adoption of CAPs was initially a separate planning process. In most jurisdictions, the state CAP and the federal SIP have often been rolled into a single plan since they address very similar issues. As with the federal plans, the intensity of the CAP process varies somewhat within various project jurisdictions as a function of the severity of existing air quality problems.

4.2.3.4 Impact Evaluation Criteria

Project operations would replace on-road mobile source emissions with presumably more efficient train travel. However, a comparison of transportation fuel efficiency shows that trains, buses or multi-occupant personal vehicles have little substantial benefit (Wikipedia, Energy efficiency in transportation). The energy expenditures for a 2-person automobile, a 20-passenger Amtrak thru-way bus or a 100-passenger San Joaquin Corridor train are as follows:

Car:	120,000 BTU/gal(gas)÷25 mph÷2 passengers = 2,400 BTU/passenger mile
Bus:	140,000 BTU/gal(diesel)÷6 mph÷20 passengers = 1,167 BTU/passenger mile
Pass. Train:	2,435 BTU/pass-mile Amtrak annual report

Regional effects are thus air quality neutral except that diesel and gasoline-powered exhausts have different characteristics/composition. Potential air quality impacts would derive from temporary construction activities. Localized impacts at any new passenger stations such as site access or parking facilities as well as added delays for at-grade crossings may also result from increased train traffic.

A reduction in idling train emissions may also result when multiple track availability precludes the need to shuttle trains on/off sidings to allow for priority train passage. Microscale effects tend to be very localized. Construction activity impacts are also localized, but become potentially cumulatively significant within any single air basin when summed over a variety of simultaneous improvements.

Construction activity impacts are treated differently in each air quality jurisdiction along the proposed project and its route alternatives. Until recently, many air quality jurisdictions had concluded that use of best management practices (BMPs) for fugitive dust control were considered to be adequate to conclude that no air quality impact would occur. Current BAAB and SJVAB CEQA guidelines conclude that use of BMP's will be adequate to prevent any fugitive dust impacts. SVAB guidelines agree that smaller construction projects that use BMPs will not have a fugitive dust air quality impact.

Similarly, quantification of equipment exhaust emissions and any comparison to any impact evaluation criteria was only required on a limited basis. With the realization that off-road equipment exhaust represents a non-negligible component of a jurisdiction's emissions burden, many CEQA guidelines have been modified to address these emission impacts more explicitly. The motivation for these requirements has been strengthened by adoption of risk assessment guidelines that acknowledge the impact of diesel exhaust in human health risk. Many updated CEQA analysis guidelines thus require evaluation of equipment exhaust emissions as precursors to ozone formation (ROG and NOx) as well as diesel particulate matter (DPM) impacts to excess human cancer risk. A strong focus on effective impact mitigation from construction activities remains as a substantial part of CEQA guidelines in various air districts. Use of BMPs alone, however, may not insure that construction impacts have been mitigated to a less-than-significant level for large-scale projects when numerical emissions-based thresholds

are considered. A summary of CEQA impact thresholds for construction in various air districts is provided below. Also, note that in anticipation of future federal funding, some National Environmental Policy Act (NEPA) evaluation criteria are also considered in the following impact evaluation section.

San Joaquin Valley Unified APCD

Construction projects are considered to have an air quality impact if they cause the following annual emissions to be exceeded (tons/year):

CO - 100
NOx - 10
ROG - 10
SOx - 27
PM-10 - 15
PM-2.5 - 15

Projects must comply with District Regulation VIII related to dust control. Additionally, if annual emissions of ROG or NOx exceed 2.0 tons per year District Rule 9510 is triggered that requires use of cleaner equipment than the statewide average, or the payment of mitigation fees.

Bay Area AQMD

CEQA thresholds were revised/updated in 2010. After some legal maneuvers that suspended their implementation, further legal arguments reinstated them. In contrast to previous guidelines that supported a finding of a less-than-significant impact, using BMPs without requiring emissions, quantifications of daily equipment exhaust must now be compared to relatively stringent standards.

In addition to exhaust emissions analysis, the current Bay Area AQMD CEQA guidelines require an analysis of individual and cumulative health risks associated with release of toxic air contaminants, especially DPM. The DPM health risk assessment is provided in the impact evaluation section presented below. The current BAAB CEQA impact thresholds are as follows:

<u>Exhaust Emissions</u>

ROG - 54 lb/day
NOx - 54 lb/day
PM-10 - 82 lb/day
PM-2.5 - 82 lb/day

Fugitive Dust	Use BMPs
Risks & Hazards (Individual)	Excess cancer risk < 10 in a million, and Chronic or acute hazard index <1.0, and Ambient PM2.5 increase <0.3 uGu/m3 Zone of Influence = 1,000 feet
Risks & Hazards (Cumulative)	Comply with Quantified Risk Plan, or, Excess cancer risk <100 in a million, or Chronic or acute hazard index <10.0, and Ambient PM-2.5 increase <0.8 ugm3, Zone of Influence = 1,000 feet

Sacramento to Metropolitan AQMD

NOx - 85 lb/day
ROG - None

Any emissions that would contribute substantially to an existing or projected violation of a California AAQS is considered significant. A substantial contribution is 5% of a CAAQS.

Mojave Desert AQMD

Construction activity emissions are aggregated with operational emissions and include indirect emissions generated beyond the immediate project boundary. Significant CEQA emissions thresholds in the MDAQMD are as follows:

Pollutant	Annual (ton/year)	Daily (pound/day)
CO	100	548
NOx	25	137
VOC	25	137
SOx	25	137
PM-10	15	82

South Coast AQMD

NOx - 100 lbs/day
VOC - 75 lbs/day
PM-10 - 150 lbs/day
PM-2.5 - 55 lbs/day
SOx - 150 lbs/day
CO - 550 lbs/day
Lead - 3 lbs/day

Incremental increases of PM-10 or PM2.5 of 10.4 $\mu g/m^3$ per day at any off-site sensitive receptor would also be considered potentially significant under the SCAQMD Local Significance Threshold (LST) policy.

4.2.4 Environmental Consequences

Under the proposed Project it is assumed that future passenger train operations would replace on-road mobile source emissions with train travel. A comparison of transportation fuel efficiency shows that trains, buses or multi-occupant personal vehicles have little substantial benefit. Regional effects are thus air quality neutral. Potential air quality impacts would derive from temporary construction activities. Localized impacts at any new passenger stations such as site access or parking facilities as well as added delays for at-grade crossings may also result from increased train traffic.

A reduction in idling train emissions may also result when multiple track availability precludes the need to shuttle trains on/off sidings to allow for priority train passage. Microscale effects tend to be very localized. Construction activity impacts are also localized, but become potentially cumulatively considerable within any single air basin when summed over a variety of simultaneous improvements.

4.2.4.1 Passenger Transportation Energy Efficiency and Emissions

Modes of passenger transportation that are powered by internal combustion engines do not currently differ dramatically in terms of their energy efficiency (BTU consumed per passenger mile). Larger passenger loads of multi-occupant vehicles are off-set by dramatically increased vehicle weights. A number of factors affect efficiency, but average vehicle occupancy is critical in making any comparisons. Trains are more efficient than single occupant cars for commuting purposes. However, long distance intercity travel often involves couples or families with little change in miles per gallon, but increased fuel efficiency per individual passenger.

Passenger fuel efficiency according to the U.S. Department of Transportation was reported to be as follows in 2009:

Mode	Occupancy	BTU/Passenger Mile
Buses	20	1,951
Intercity Rail	100	2,435
Automobile	2	2,740
Airplane	100	2,806

The intercity rail estimate is based upon train occupancy of 100 passengers/train mile (the current San Joaquin Corridor ridership). The future buildout occupancy is presumed to be 155 passengers/train mile. The increase to 11 trains each way and the increased occupancy by adding one Amtrak California Car (seating capacity = 74 passengers) would accommodate 3 million passengers per year.

With increased ridership, the energy expenditure efficiency per passenger mile improves dramatically for train travel. By adding one full car per train, the energy efficiency is reduced to 1,620 BTU/passenger mile. Even if two cars are added to account for variable traffic demand, the train at 1,850 BTU/passenger mile is comparable to a 20-passenger bus and much more energy efficient than the 2-occupant automobile. However, because buses and trains are diesel-powered, their NOx emissions per gallon of fuel burned are as much as 30 times higher than for a gasoline fueled automobile. NOx is a critical contributor to photochemical smog production. Gasoline produces more CO per gallon than diesel, but since there are no CO non-attainment areas in California, the NOx “penalty” is a potentially more serious issue.

Passenger transportation-related air pollution emissions were calculated by combining identified energy efficiencies with the most current emission factors for autos, buses, and Amtrak locomotives. On-road emission factors were derived from the California EMFAC2011 computer model. Locomotive factors were obtained from EPA documents assuming that the San Joaquin Corridor engines are a mix of Tier 2 and Tier 3 units. The emission factors per passenger mile are shown in Table 4.2-5.

The relative proportion of emissions will change in that Tier 4 train engines to be phased in within the next several years are much cleaner than their predecessors while on-road improvements are becoming slower. However, except for CO, cars will be less polluting than trains or buses for intercity travel. This comparison does not take into account the energy expenditure associated with the shorter useful life of an automobile when compared to train rolling stock and other infrastructure support (fuel distribution, roadway repair, street lighting, etc.) that consume energy. However, purely in terms of air pollution generated by intercity travel, trains do not currently have a substantial advantage over on-road transportation.

Table 4.2-5
TRANSPORTATION EMISSION FACTORS (gram/passenger mile)

Pollutant	Light Duty Auto	Diesel Bus	Passenger Train[1]	Passenger Train[2]
HC	0.018	0.028	0.050	0.038
NOx	0.060	0.699	1.906	1.448
CO	0.640	0.118	0.493	0.375
PM-10	0.001	0.012	0.031	0.024
PM-2.5	0.001	0.011	0.028	0.021
CO2	173.1	122.0	187.1	142.1

[1] at current average ridership (100 passengers/train mile)
[2] at forecast average ridership (175 passengers/train mile, 2 added cars)

The San Joaquin Corridor currently accommodates 400,000 passenger miles per day of travel demand. By 2035, the 3+million annual passengers are calculated to travel 1.14 million passenger miles per day. Part of this demand will be met by adding 10 trains (5 up/5 down), the other part by increasing train occupancy from 100 passenger mile per track mile (PM/TM) to 155 PM/TM per train. Daily air pollution emissions from train travel will be reduced versus existing conditions by cleaner locomotives and by increased occupancy factors. Table 4.2-6 compares the air pollution emissions from existing versus future passenger train travel, and also contrasts daily total emissions from the 1.14 million future passenger miles by train, bus, or private automobile.

Two obvious conclusions can be drawn as follows:

1. Except for CO, future train travel by 3+ million passengers per year will generate fewer criteria pollutants than existing travel by 1.07 million passengers per year. This conclusion derives from assumed Tier 4 locomotives in the entire fleet and an increase in ridership per train.
2. However, Table 4.2-6 shows that future travel by bus or automotive may be more pollution efficient than intercity passenger travel, even with Tier 4 locomotives and improved passenger occupancy levels.

Implementation of the San Joaquin Corridor Plan thus will not create an air quality impact, but is not environmentally preferred compared to intercity transportation alternatives. It does, however, carry out the objectives of the California Rail Master Plan (2013) to accommodate future travel demand by rail instead of on-road mechanisms. This comparison does not take into account the energy expenditure associated with a lesser useful life of an automobile than train rolling stock and other infrastructure support (fuel distribution, roadway repair, street lighting, etc.) that consume energy. However, purely in terms of air pollution generated by intercity travel, trains do not have any substantial advantage over on-road transportation.

Table 4.2-6
INTERCITY TRAVEL EMISSION COMPARISON (lb/day)

	Existing	Future (1.14 E06 pm/day)			
Pollutant	**Train (400,000 pm/day)**	**Cars**	**Future Buses**	**Trains***	**∆ Trains**
HC	97.0	7.5	22.6	21.0	-76.0
CO	408.3	505.0	108.0	751.2	+342.9
NOx	2116.3	62.8	1175.7	587.9	-1528.8
PM-10/PM-2.5	55.6	2.5	10.0	7.5	-48.1

*All Tier 4/155 pm/tm occupancy

4.2.4.2 Construction Activity Impacts

The proposed project would entail the installation of approximately 250 miles of second/third track and other support facilities over a 20-year period. The locations and phasing of such construction is unknown at this time. A generic construction scenario was therefore created to identify a single unit of activity that could be applied to any segment of the project alignment. Each mile of track improvements was assumed to require 30 work-days of track-bed improvements, and 30 work-days of track installation, drainage structures and other improvements. Construction of physical facilities such as new train stations, or lay-over's was assumed to require approximately 7 months for clearing/grading, new construction, paving and finish work. This assumption is based on recent construction of the Merced Train Station.

The CalEEMod (2013.2.2) computer model was used to generate emissions from a representative construction fleet and vendor deliveries. Calculated emissions for a peak activity day and for the duration of the construction of one generic component are summarized in Table 4.2-7a for a construction fleet. The same calculation was performed for a year 2035 fleet to demonstrate the effects of off-road equipment emissions controls that would minimize impact potential shown in Table 4.2-7b. It is not known how many projects will occur simultaneously. At approximately 250 miles of track installation over 20 years, an average of 12.5 miles of tracks would be installed each year. At 3 months of work per mile, three segments might be under simultaneous construction. When future specific projects are authorized and funded, the potential construction emissions will be evaluated by comparing the specific emissions with the program evaluation construction scenario described in the preceding text. However, for the present the construction emission forecast is considered to be conservative because it uses emissions from equipment currently available. In the future it is assumed that equipment with lower emissions will be available, but the evaluation of these equipment emissions will be conducted when specific projects are being considered for funding and authorization.

A comparison with the recommended impact evaluation criteria shows that three segments can easily be accommodated within the San Joaquin Valley Air Basin threshold of 10 tons per year of NOx or ROG. In the Sacramento Valley Air Basin, the NOx threshold of 85 pounds per day could be exceeded if three miles of double track were under simultaneous construction. The daily NOx threshold could also be exceeded if the Elk Grove station construction were to occur at the same time as more than one mile of track installation. The Bay Area CEQA significance threshold of 54 pounds per day represents the most severe constraint. More than one simultaneous track-laying project or concurrent improvements of the Hercules ITC with track-laying activities could exceed the CEQA threshold.

Maintaining a less-than-significant impact can be accomplished by construction scheduling spread out over a suitable period. It can also be achieved by use of the cleanest available diesel equipment (Tier 3 or Tier 4). The calculations in Table 4.2-7a assumed an on-and off-road construction equipment mix for 2014-2015. In each successive year, the emissions will decline in response to the mandatory entry of Tier 4 rated new equipment into the fleet. New purchases and low emissions overhauls will allow for progressively greater annual construction activities without exceeding CEQA significance thresholds independent of implementation of added mitigation measures. By 2035 construction emissions will be reduced to the levels identified in Table 4.2-7b.

Table 4.2-7a
CONSTRUCTION ACTIVITY AIR POLLUTION EMISSIONS

	ROG	NOx	CO	PM-10*	PM-2.5*
Peak Day (lb/day)					
Double Track	4.3	37.9	23.8	4.2	3.0
Structures	8.6	43.7	29.6	5.7	4.0
Annual (tons/year)					
Double Track	0.12	1.02	0.67	0.10	0.08
Structures	0.27	2.00	1.27	0.16	0.14

*including compliance with dust control measures such as SJVUAPCD Regulation VIII or BAAQMD CEQA BMPs.

Source: CalEEMod2013.2.2

Table 7b
CALEEMOD2013.2.2 RESULTS
CONSTRUCTION ACTIVITY AIR POLLUTION EMISSIONS-2035 FLEET

	ROG	NOx	CO	PM-10*	PM-2.5*
Peak Day (lb/day)					
Double Track	1.5	5.3	13.2	3.0	1.7
Structures	1.5	5.9	17.4	3.2	1.7
Annual (tons/year)					
Double Track	0.03	0.16	0.35	0.10	0.05
Structures	0.06	0.35	0.84	0.02	0.01

Source: CalEEMod2013.2.2

Other Project Operational Emissions

Microscale CO Analysis

An increase in passenger train activity would create added brief periods of delay for on-road traffic waiting for the train to pass. Such delay is brief for Amtrak trains of one engine and typically six cars. Similarly, congestion effects would increase around the new Stockton or Elk Grove stations or the lay-over facility. The applicable CAAQS is an hourly or 8-hour standard. Idling by a small number of cars at a grade crossing for less than one minute would not measurably increase CO levels relative to a one-or eight-hour average.

Increased traffic around train-oriented fixed facilities could, however, generate congestion effects lasting for longer periods. The proposed project has not conducted detailed traffic studies that would allow for an explicit microscale CO impact study. However, several CO impact studies for rail facilities have concluded that such facilities do not generate enough traffic/congestion to create any CO “hot spots”. For example, the air quality technical report for the California High Speed Rail (HSR) Project EIR calculated the worst case CO concentrations around the Fresno and Merced HST stations, the Merced Maintenance Facility and long major facility access points. The calculated one-hour CO level was less than 6.0 ppm for one hour, and less than 4 ppm for 8-hours, including background concentrations. The CAAQS is 20 ppm for one hour and 9 ppm for 8 hours. Similarly, the final Hercules ITC EIR (this facility is now included as a future infrastructure facility to support the San Joaquin Corridor Program)found that microscale CO concentrations were less than 5 ppm for one hour and slightly over 4 ppm for 8 hours, including any background concentrations, at 25 feet from any site access roadway.

Use of these findings as surrogates for new San Joaquin Corridor facilities suggests negligible microscale impact potential. However, as future train stations are implemented or modifications to existing stations that expand parking area implemented, site specific CO hotspot evaluations will be performed where justified. This will allow site specific traffic CO hotspot evaluations to include the most recent levels of service on the local circulations system to make the CO forecast.

Particulate Matter Hot Spot Analysis

The San Joaquin Valley is located in a designated non-attainment area for PM-2.5. Under federal guidelines, projects of air quality concern (POAQC) require a quantitative PM-2.5 analysis if federal funding or approvals are involved. A project would not be a POAQC if it attracts only a small number of diesel vehicles congregating at a single location.

Most guidance as to what constitutes a POAQC is roadway vehicle emissions based. For example, federal guidelines consider projects associated with roadways carrying 10,000 diesel-powered trucks to be a POAQC. Conversely, an increase in arrivals at a bus terminal of less than five buses during a peak hour is cited as an example of a project that is not a POAQC. There are currently twelve daily Amtrak arrivals at stations along the San Joaquin Corridor. The build-out forecast is for 22 arrivals per day (eleven in each direction). Amtrak operations will increase by less than 50 percent with no more than two trains per hour (one in each direction) since they are spaced fairly evenly throughout the day. The forecast increase in train movements will not generate sufficient PM-10/PM-2.5 as to require a particulate matter hot spot analysis.

Mobile Source Air Toxics (MSAT)

The Federal Highway Administration (FHWA) has issued guidance on the analysis of MSAT exposure in NEPA documents. FHWA guidance distinguishes between projects that are exempt or have no meaningful MSAT effects versus those with potential MSAT effects. The latter category is divided between those projects with low versus higher potential effects. Lower potential impact projects require a qualitative analysis in NEPA documents. Higher potential MSAT effects must be analyzed in a quantitative analysis. FHWA guidelines characterize higher potential projects as those that generate 10 tons per year of any hazardous air pollutant (HAP) or 25 tons per year of all major hazardous air pollutants.

The proposed project is being environmentally cleared through CEQA. Because the FHWA guidance is focused on roadway projects for NEPA clearance, it is not likely the best prototype for a train-oriented CEQA document. Local jurisdictions along the corridor all have developed guidelines and/or thresholds for minimizing sensitive receptor exposure to project-related MSAT emissions. The primary MSAT associated with heavy vehicle transportation is diesel particulate matter (DPM). DPM is a known carcinogen. The adopted excess cancer risk factor is 300 in a million if a person remain outdoors at the same location for 24 hours per day, 350 days per year for the next 70 years beginning at three months before birth for a 1 $\mu g/m^3$ DPM exposure. More recent guidelines that incorporate the age sensitivity of infants and children recommend a lifetime excess cancer unit risk factor of around 500 in a million per one microgram per cubic meter exposure. A recurring issue with the use of this risk factor is that no known person has remained “chained to their porch” from 3 months before birth until 69.75 years later for 350 days per year. This factor is useful for comparative purposes among various locations but bears no relationship to actual inhalation health risk.

However, even if the localized emissions burden is not accurately linked to actual health risk, MSAT exposure clearly has adverse consequences. Although minor amounts of MSATs are released by vehicles accessing rail facilities, the primary concern is from locomotive exhaust DPM emissions. The EMD engine in current use generates around 40 grams of DPM per hour at idle and around 400 grams per hour at full throttle. With existing requirements to reduce particulate matter from railroad diesel engines through retrofits during engine overhauls (basically installing diesel particulate filters), DPM reductions of 86% from base case (2014) conditions are forecast (EPA-420-F-09-025).

An existing operational scenario of 12 passenger trains with one engine and 46 freight trains with three engines was assumed to increase to 22 passenger trains (1 engine) and 48 freights (3 engines) by 2035. Each passenger train was assumed to idle for 5 minutes and spend 1 minute each at half-throttle during arrival and departure. Freights usually do not stop, but slow to half throttle while passing through a station. The resulting DPM emissions generated in the immediate vicinity of a prototype train station are as follows (grams/hour):

	Amtrak Idling	Amtrak Arrive/Depart	Freight Passage	Total
Existing	40	80	221	341
Existing w/ Project	113	226	231	510
2035 no Project	6	11	31	48
2035 w/Project	16	32	32	80

If all 10 new passenger trains (5 in each direction) were added to the system instantaneously, the MSAT emissions increase would be substantial. However, the anticipated particulate emissions controls on locomotives are predicted to occur much faster than the rate of passenger growth. As a result, the MSAT emissions burden due to train operations will decrease over time. The DPM emissions increment associated with future passenger rail increases would be 14 grams per day. Annual DPM emissions in the vicinity of the prototype station are currently 0.14 tons compared to the MSAT definition of a higher potential effects threshold of 10 tons per year. With required new Tier 4 locomotives and existing engine retrofits to Tier 4 standards, the DPM level in 2035 would be 0.025 tons per year. The proposed project would have low MSAT potential effects. MSAT emissions impacts are less-than-significant.

Naturally Occurring Asbestos (NOA)

NOA is found within serpentine rock formations in a number of counties along the corridor alignment. However, even if NOA were present in the rock used for rail ballast, train activities would not disturb the rock during project operations. Further, no portions of the track alignment contain asbestos containing bedrock, so it is not anticipated that NOA would be generated during construction.

Train Depot Operations

Relocation of the Stockton Amtrak station to one of 5 locations shown in Figure 3-11 or new construction of stations in Hercules or Elk Grove would introduce a greater intensity of automobile exhaust emissions into the immediate train station vicinity. Impacts may vary depending upon source-receptor distances, vehicle mixes and background pollution levels. However, for the typical suburban vehicular fleet it takes several thousand cars per hour concentrated into a very small area to create even a minor air pollution “hot spot”. The number

of vehicles per hour entering or leaving a typical Amtrak station along the corridor is less than one hundred. Station access is not a sufficiently intensive activity as to create any potentially substantial air quality impacts from on-road sources.

The Stockton station relocation or the Elk Grove station are developed, a subsequent of supplemental environmental document may be required to evaluate project level impacts. At the current program level of analysis, impact potential appears to be low.

Several stations offer thru-way bus connections that presumably will create an increase in bus access/egress as train ridership grows. The Bakersfield Amtrak station, at the southern terminus of the San Joaquin Corridor, has the most bus activity. Currently, a maximum of five buses meet any arriving train. The number of buses per scheduled train at Bakersfield is not likely to change as ridership grows, but the number of events per day would likely increase. The cumulative emissions associated with bus activity would proportionally increase, but peak hourly impacts would remain unchanged. Because most buses are diesel-fueled, increased daily connecting bus service would increase the DPM burden around the bus depot.

As previously noted, diesel emissions improvements are forecast to exceed the rate of train passenger growth such that future DPM emissions will be less than today. Increased bus service will slow the improvement rate, but will not fully impede progress. The DPM impact from bus service growth, using the Bakersfield thru-way facility as a worst-case, is less-than-significant with over 400 feet of distance separation from the terminal to the nearest apartments to the south. Buses do not idle between drop-off and pick-up as a matter of company policy and fuel conservation. A terminal with 10 buses or less is considered a “small terminal” under federal air quality analysis guidelines. Impacts from a small terminal with limited DPM emissions and a substantial set-back to the nearest residents are therefore minimal. On-going conversion of much of the diesel bus fleet to compressed natural gas over the next two decades will further reinforce that finding.

Lay Over Facilities

Two candidate lay-over facilities at the location shown in Figures 3-23 and 3-25 would allow for an early morning departure that would reach the Bay Area for a full work-day. The primary source of potential impact is from engine idling to provide on-board power during the lay-over period. No maintenance or servicing would typically occur except perhaps to dump the lavatories or to receive fresh goods for the café car. The current DPM emission rate for an idling locomotive is 40 grams/hour (EPA 2009). With an 8-hour lay-over, this would result in 320 grams of DPM emissions per day. If the lay-over train runs 6-days per week, annual DPM emissions would total 0.11 tons per year near the Fresno or Merced lay-over yards. By 2035, the annual emissions would be 0.017 tons of DPM. As previously noted, federal guidelines consider any project that generates 10 tons of hazardous air pollutants per year to have a higher impact potential. A locomotive idling in a lay-over yard does not have a high impact potential.

Future Project Specific Conformity Determinations

This document discusses general conformity issues which is more related to NEPA air quality impact evaluations than CEQA evaluations. General conformity of the Program has been discussed in this Subchapter, but specific demonstrations of conformity will need to be compiled if and when federal funding is offered for specific infrastructure projects of the Program in the future.

4.2.4.3 Cumulative Impacts

Air emission significance thresholds established for each air basin are based on cumulative emissions within each air basin. Thus, by controlling construction emissions to a level below the established significance thresholds, project-related construction emissions are not forecast to be cumulatively considerable. However, as outlined in the preceding sections there could be circumstances in any given year where construction emissions can exceed thresholds. Examples given include the construction of more than two miles of track simultaneously in the Bay Area and construction of both a mile of track and a new passenger station in Elk Grove. In addition, there are several other large construction projects that could occur during the next 20 years, including the High Speed Rail track and possible new tunnels associated with a Delta bypass. Given these background conditions, the possibility exists for the proposed project to contribute to cumulatively considerable significant air emissions from project-related construction activities.

Regarding future expanded passenger rail operations, Amtrak is forecast to carry approximately two million additional passengers by 2035 within the San Joaquin Corridor (forecast total of 3.2 million passengers per year). As noted in the Project Description, the Amtrak San Joaquin Corridor operations extend and connect residents throughout California and into portions of Nevada and provide residents with an alternative means of transportation throughout the State. By 2035 under this ridership assumption, the passenger trains will have substantially higher transportation energy expenditure efficiency than automobiles (up to 1,620 BTU/passenger mile compared to 2,740 BTU/passenger mile). Based on the reductions in emissions from Tier 4 locomotives, actual emissions from 22 trains per day will be less than current train emissions.

It is anticipated that as passenger demand grows, Division of Rail or the future manager of the San Joaquin Corridor Amtrak operations will dictate the demand for new trains operations within the Corridor, and this in turn will determine the rate of constructing new Program infrastructure. If more rapid growth in passenger demand occurs, then it is anticipated that infrastructure will be constructed over a shorter time-frame. Slower growth in passenger demand would result in slower implementation of new infrastructure. The future environmental review for specific project, or for the Program as a whole, would be adjusted to accommodate such changes. Thus, cumulative construction impacts may vary depending on how closely future passenger demand occurs compared to the model used for evaluation in this program document.

4.2.4.4 Significance of Forecast Impacts

Funding for rail infrastructure improvements is typically provided through State funding from the California Transportation Commission and occasionally provided from the FRA. To be conservative, the option of conducting more than one project within an air basin in order to take advantage of future funding opportunities will be retained. Therefore, based on the preceding construction activity emission forecasts, the potential short-term air quality impacts could result in an unavoidable significant adverse air quality impact. All efforts will be made to control construction activity emissions below the thresholds applicable for each air basin, but under plausible future funding scenarios, such emissions may exceed thresholds of significance after application of all construction mitigation measures.

4.2.5 <u>Avoidance, Minimization and Mitigation Measures</u>

Operational activities were demonstrated to have a negligible air quality impact that would require discretionary mitigation. Project construction activities may cause CEQA thresholds to

be exceeded early during the 20-year build-out if several improvements are under simultaneous construction. Project activities also require compliance with dust control BMPs consistent with rules and regulations of the applicable air district. Although compliance with rules is technically not mitigation, specific measures for fugitive dust control are included in the following menu of measures.

4.2-1 ***Simultaneous double-track construction shall not exceed one mile within the BAAB or two miles within the Sacramento Metro area unless it is demonstrated that combined NOx missions will not exceed daily CEQA significance thresholds though the use of cleaner off-road equipment.***

4.2-2 ***Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the right of way line, depending on local regulations.***

4.2-3 ***Spread soil binder on any unpaved roads used for construction purposes and all project construction parking areas.***

4.2-4 ***Wash off trucks as they leave the right of way as necessary to control fugitive dust emissions.***

4.2-5 ***Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.***

4.2-6 ***Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.***

The following measures are designed to reduce future operating emissions, especially diesel particulate emissions, to the extent feasible.

4.2-7 ***When the Division of Rail or future entity overseeing Amtrak San Joaquin Corridor operations issues future contracts for bus service the requests for proposal (RFP) shall indicate that RFP respondents will be given additional consideration for supplying buses that incorporate diesel particulate traps or that have been converted to natural gas fuel. Unless the cost difference for such equipment is cost prohibitive, the contract shall be awarded to a contractor that provides equipment with reduce diesel particulate emissions.***

4.2-8 ***Future locomotive purchases by Division of Rail or future entities overseeing such equipment purchases shall acquire Tier 4 locomotives or locomotives with comparable or better emission controls. When locomotives are scheduled for major engine maintenance, diesel particulate traps or equivalent emission control equipment shall be installed on these locomotives.***

This page left intentionally blank for pagination purposes.

4.3 BIOLOGICAL RESOURCES

4.3.1 Introduction

A Program Natural Environmental Study (PNES) was prepared by Lisa M. Patterson of J.L. Patterson & Associates to evaluate the general biological resources within the San Joaquin Corridor Amtrak California Service Project's Biological Analysis Area (BAA). The BAA is defined as the Project's estimated potential physical ground disturbance area, plus a buffer zone where indirect impacts may result from future construction. The PNES also evaluated the potential for occurrence of special-status species, Designated Critical Habitats (DCH), and other special biological and aquatic resource areas within the BAA.

The proposed project constitutes a programmatic project that envisions construction of specific rail infrastructure within the Corridor that will be constructed over the next 22 years. The program is designed to meet the forecasted increase in intercity passenger demand over the 25-year period, the expanded number of passenger train operations required to meet this forecasted demand, and the specific infrastructure improvements required to support projected future operations. The specific facilities have not been designed, and therefore the precise future disturbance areas and limits are not yet available. Because this is a program level document with individual facilities improvements expected to occur over the next 20+ years, only cursory level surveys were conducted throughout the project BAA. Biological surveys are typically only valid for one to two years. Therefore, the PNES evaluated the potential/likelihood for sensitive resources to occur within areas proposed for construction or improvements. Once a specific facility improvement is designed, a Biological Study Area (BSA) will be identified, a biological survey will be conducted, and a site specific NES will be prepared to address the identified resource impacts.

Several comments received in response to the NOP were specific to biological resources. Information is provided in this Subchapter to address the concerns expressed regarding biological resource impacts. Refer to the summary list of comments in Chapter 2 and also to copies of the comment letters themselves along with the full responses provided in Chapter 8, Appendix 8.2.

The biological resources impact evaluation that follows is based on the PNES technical report titled "San Joaquin Corridor Amtrak California Service Oakland and Sacramento to Bakersfield and then Los Angeles Union Station Program Natural Environment Study Discussions of Biological Assessments." A copy of this report is provided as Appendix 3 of Volume 2 of this DRAFT PEIR. Much of the information provided in the following sections is abstracted directly from this technical report with minor edits.

4.3.2 Regulatory Setting

4.3.2.1 Federal

Federal Railroad Administration

In accordance with the Federal Railroad Safety Act of 1970, existing railroad roadbeds compose a zone of federal preeminence within which federal law takes precedence over any state or local laws/policies. The specific delineation of this zone extends outward from the center of the railroad roadbed to and including drainage ditches and spoil banks on either side of the roadbed.

Clean Water Act

The purpose of the Clean Water Act (CWA) (1977) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from the United States Army Corps of Engineers (USACE). The definition of waters of the United States includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] 328.3 7b). The U.S. Environmental Protection Agency (EPA) also has authority over wetlands and may override a USACE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; in California this certification or waiver is issued by the RWQCB.

Section 10 of the Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable waters of the U.S.

Endangered Species Act

The Federal Endangered Species Act (FESA) (1973) protects plants and wildlife that are listed by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) as endangered or threatened. Section 9 of FESA (USA) prohibits the taking of endangered wildlife, where taking is defined as any effort to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 United States Code [USC] 1538). Under Section 7 of FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided the action will not jeopardize the continued existence of the species. FESA specifies that the USFWS designate habitat for a species at the time of its listing in which are found the physical or biological features "essential to the conservation of the species," or which may require "special Management consideration or protection..." (16 USC § 1533[a][3].2; 16 USC § 1532[a]). This designated Critical Habitat is then afforded the same protection under the FESA as individuals of the species itself, requiring issuance of an Incidental Take Permit prior to any activity that results in "the destruction or adverse modification of habitat ...determined... to be critical" (16 USC § 1536[a][2]).

Interagency Consultation and Biological Assessments: Section 7 of ESA provides a means for authorizing the "take" of threatened or endangered species by federal agencies, and applies to actions that are conducted, permitted, or funded by a federal agency. The statute requires federal agencies to consult with the USFWS or NMFS, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. If a proposed project "may affect" a listed species or destroy or modify

critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the potential effect.

Habitat Conservation Plans: Section 10 of the federal ESA requires the acquisition of an Incidental Take Permit (ITP) from the USFWS by non-federal landowners for activities that might incidentally harm (or "take") endangered or threatened wildlife on their land. To obtain a permit, an applicant must develop a Habitat Conservation Plan that is designed to offset any harmful impacts the proposed activity might have on the species.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 U.S.C. Sections 661 to 667e et seq.) applies to any federal project where any body of water is impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with the USFWS and the appropriate state wildlife agency.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. Section 1801 et seq.) requires all federal agencies to consult with the NMFS on all actions or proposed actions (permitted, funded, or undertaken by the agency) that may adversely affect fish habitats. It also requires cooperation among NMFS, the councils, fishing participants, and federal and state agencies to protect, conserve, and enhance essential fish habitat, which is defined as those waters and substrates needed by fish for spawning, breeding, feeding, and growth to maturity.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (The Eagle Act) (1940), amended in 1962, was originally implemented for the protection of bald eagles (*Haliaeetus leucocephalus*). In 1962, Congress amended the Eagle Act to cover golden eagles (*Aquila chrysaetos*), a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. This act makes it illegal to import, export, take (molest or disturb), sell, purchase, or barter any bald eagle or golden eagle or part thereof. The golden eagle, however, is accorded somewhat lighter protection under the Eagle Act than that of the bald eagle.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (1918) implements international treaties between the United States and other nations created to protect migratory birds, any of their parts, eggs, and nests from activities, such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code (CFGC).

Executive Orders (EO)

Invasive Species—Executive Order 13112 (1999): Issued on February 3, 1999, promotes the prevention and introduction of invasive species and provides for their control and

minimizes the economic, ecological, and human health impacts that invasive species cause through the creation of the Invasive Species Council and Invasive Species Management Plan.

Protection of Wetlands—Executive Order 11990 (1977): Issued on May 24, 1977, helps avoid the long-term and short-term adverse impacts associated with destroying or modifying wetlands and avoiding direct or indirect support of new construction in wetlands when there is a practicable alternative.

Migratory Bird—EO 13186 (2001): Issued on January 10, 2001, promotes the conservation of migratory birds and their habitats and directs federal agencies to implement the Migratory Bird Treaty Act. Protection and Enhancement of Environmental Quality—EO 11514 (1970a), issued on March 5, 1970, supports the purpose and policies of the National Environmental Policy Act (NEPA) and directs federal agencies to take measures to meet national environmental goals.

> *Migratory Bird Treaty Reform Act:* The Migratory Bird Treaty Reform Act (Division E, Title I, Section 143 of the Consolidated Appropriations Act, 2005, PL 108–447) amends the Migratory Bird Treaty Act (16 U.S.C. Sections 703 to 712) such that nonnative birds or birds that have been introduced by humans to the United States or its territories are excluded from protection under the Act. It defines a native migratory bird as a species present in the United States and its territories as a result of natural biological or ecological processes. This list excluded two species commonly observed in the United States, the rock pigeon (*Columba livia*) and domestic goose (*Anser domesticus*).

4.3.2.2 State

<u>California Fish and Game Code (CFGC)</u>

Sections 1600 through 1606 of the CFWC: This section requires that a Streambed Alteration Application be submitted to the California Department of Fish and Wildlife (CDFW) for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the Department and the applicant is the Streambed Alteration Agreement. Often, projects that require a Streambed Alteration Agreement also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Streambed Alteration Agreement may overlap.

California Endangered Species Act: The California Endangered Species Act (CESA) (Sections 2050 to 2085) establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats by protecting "all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation." Animal species are listed by the CDFW as threatened or endangered, and plants are listed as rare, threatened, or endangered. However, only those plant species listed as threatened or endangered receive protection under the California ESA.

CESA mandates that state agencies do not approve a project that would jeopardize the continued existence of these species if reasonable and prudent alternatives are available that

would avoid a jeopardy finding. There are no state agency consultation procedures under the California ESA. For projects that would affect a species that is federally and state listed, compliance with ESA satisfies the California ESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with the California ESA under Section 2080.1. For projects that would result in take of a species that is state listed only, the project sponsor must apply for a take permit, in accordance with Section 2081(b).

Fully Protected Species: Four sections of the California Fish and Game Code (CFWC) list 37 fully protected species (CFWC Sections 3511, 4700, 5050, and 5515). These sections prohibit take or possession "at any time" of the species listed, with few exceptions, and state that "no provision of this code or any other law will be construed to authorize the issuance of permits or licenses to 'take' the species," and that no previously issued permits or licenses for take of the species "shall have any force or effect" for authorizing take or possession.

Bird Nesting Protections: Bird nesting protections (Sections 3503, 3503.5, 3511, and 3513) in the CFWC include the following:

- Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.
- Section 3503.5 prohibits the take, possession, or needless destruction of any nests, eggs, or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys, and falcons, among others), or Strigiformes (owls).
- Section 3511 prohibits the take or possession of fully protected birds.
- Section 3513 prohibits the take or possession of any migratory nongame bird or part thereof, as designated in the MBTA. To avoid violation of the take provisions, it is generally required that project-related disturbance at active nesting territories be reduced or eliminated during the nesting cycle.

Native Plant Protection Act: The Native Plant Protect Act (NPPA) (1977) (CFWC Sections 1900-1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The Fish and Wildlife Commission has the authority to designate native plants as endangered or rare and to protect endangered and rare plants from take. CESA (CFWC 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the Fish and Game Code.

Natural Communities Conservation Planning Act: This act was enacted to encourage broad-based planning to provide for effective protection and conservation of the state's wildlife resources while continuing to allow appropriate development and growth (CFWC Sections 2800 to 2835). Natural Community Conservation Plans (NCCP) may be implemented, which identify measures necessary to conserve and manage natural biological diversity within the planning area, while allowing compatible and appropriate economic development, growth, and other human uses.

Senate Concurrent Resolution No. 17 – Oak Woodlands: State Senate Concurrent Resolution No. 17 is legislation that requests state agencies having land use planning duties and responsibilities to assess and determine the effects of their decisions or actions within any oak woodlands containing Blue, Engleman, Valley, or Coast Live Oak. The measure requests those state agencies to preserve and protect native oak woodlands to the maximum extent feasible or provide replacement plantings where designated oak species are removed from oak

woodlands. The mitigation measures, as described above, will ensure that impacts to oak woodlands are less than significant.

4.3.2.3 Local

General, Specific, or Rural Community Plans or Municipal Codes for each local jurisdiction through which the Project passes were reviewed for regulations pertaining to biological resources. Most of the local jurisdictions have few regulations relating to biological resources due to the low-density population nature of the land. Local regulations are listed below:

Kern County

Oak Tree Conservation Ordinance: General Plan Map Code 1.10.10 of the Kern County General Plan protects oak woodlands and large individual oaks. Oak woodlands are characterized by canopy cover by oak trees of at least ten percent (10%), as determined from baseline aerial photography or by site survey performed by a licensed or certified arborist or botanist.

4.3.3 Affected Environment

4.3.3.1 Existing Biological and Physical Conditions of the BAA

The BAA traverses a majority of the California's Central Valley, the large flat valley that is 40 to 60 miles wide and stretches approximately 450 miles inland from and parallel to the Pacific Ocean coast. The proposed facilities trend in an overall southeast to northwest direction for approximately 307 miles between Bakersfield and Richmond, and north for approximately 41 miles between Stockton and Sacramento. The assessment areas cross a number of major rivers, canals, agricultural ditches, smaller creeks, and ephemeral drainages. The study areas are primarily composed of agricultural lands, urban and rural communities, and scattered fragments of undeveloped natural habitat. In general, the study areas parallel the existing BNSF Railway and UPRR rights-of way.

Topography and Soils
The majority of track through the Central Valley and into the San Francisco Bay area is characterized by very flat topography. The elevation at Bakersfield is approximately 405 feet average mean sea level (amsl); at Stockton is approximately 5 feet amsl; at Sacramento it is approximately 41 feet amsl. The portions of the project between Stockton and Oakland remain between 5 and 10 feet amsl along the entire right of way.

Most of the soils in the inventory area formed from alluvial, sedimentary, and meta-sedimentary sources and have been formed in concert with the complex geologic history of the area. Many areas on the lower terraces have been urbanized and/or altered to produce crops. The general soil types identified in the vicinities of the proposed facilities includes the Joice-Reyes association, which consists of saline mucks and silty clays in saltwater marshes and tidal flats.

Regional Habitat and Land Use in the Assessment Areas
Areas with natural vegetation and wetlands are most prevalent in the central third of the proposed alignment. Native plants are uncommon in the Project area and are generally limited to the ditches, sloughs, and marshes bordering the proposed track alignments. The lack of native vegetation along the majority of the alignment is a result of a history of industrial

development adjacent to the track, and maintenance disturbance of the existing railroad tracks. In a few areas native vegetation and quality wildlife habitat remain relatively undisturbed.

The assessment areas are located in the Great Central Valley and the Central Western California subregions of the California Floristic Province (i.e., a geographic area, made of six regions, defined by the continuity of its vegetational, topographic, geologic, and climatic features) of these two subregions (Hickman 1993). Like other Mediterranean-type ecosystems, the California Floristic Province is distinguished more by the endemism of its plants than of its animals. The high levels of plant species endemism are due to its varied topography, climate zones, geology and soils. Habitats that occur in the vicinity of the study area include: Valley Oak Woodland, Valley Foothill Riparian, Alkali Desert Scrub, Annual Grassland, Pasture, Riverine, Lacustrine, Fresh Emergent Wetland, Saltwater Marsh, Northern Vernal Pool as well as Urban, Agriculture, Barren and BNSF/UPRR Urban lands. Of the habitats listed above, only Northern Vernal Pool was not found to occur within the BAA, but since the alignment was not subject to a 100% survey, this habitat may occur within the alignment. Future site specific studies must survey for this habitat to verify presence or absence.

Overall, the study areas are highly disturbed and fragmented because of historic man-made changes to the landscape, including urban, agricultural, industrial, railroad, and highways/road development, as would be expected given that the existing rail corridors have been in place for more than 100 years and these corridors originally induced man-made development on adjacent land. The majority of land in the study areas is agricultural. Urban areas are the second greatest land use in the study area, including large cities such as Bakersfield, Fresno, Stockton, Sacramento, and Oakland as well as multiple smaller cities such as Shafter, Madera, Escalon, Lodi, Antioch, and Hercules. In these areas native vegetation is absent or highly disturbed, and the more typical vegetation consists of a variety of planted landscape trees such as eucalyptus (*Eucalyptus* spp.) and mulberry (*Morus* spp.), and other nonnative or ornamental vegetation.

The proposed Project's BAAs traverse some areas of relatively undisturbed and in some cases preserved native wildlife habitats such as the Consumnes Preserve, a predominantly wetland preserve that occurs between Lodi and Sacramento; and the coastal salt marsh region of the San Francisco Bay Delta, a coastal intertidal wetland that occurs between Port Chicago and Oakland.

4.3.3.2 Investigative Methodology

Before conducting field surveys, available information was reviewed from resource management plans and other relevant documents to determine locations and types of biological resources that have the potential to exist within and adjacent to the BAA. The 2013 California Natural Diversity Database (CDFW, 2013), U.S. Fish and Wildlife Service County lists (USFWS, 2013), California Native Plant Society Electronic Inventory of Rare and Endangered Plants of California, and National Wetlands Inventory (USFWR, 2013) were queried for occurrence of special-status species and habitats within the San Joaquin Rail Corridor. CDFW Bios database was also queried for general habitat types and potential features subject to environmental regulations (e.g., Clean Water Act [CWA], Porter-Cologne Water Quality Control Act [Porter-Cologne] and California Department of Fish and Wildlife's Fish and Game Code 1600 et seq. jurisdictional features) that may exist within or adjacent to the BAA. Additionally, studies previously conducted for facility improvements along the San Joaquin Rail Corridor by Caltrans DOR were reviewed. These studies include Richmond Rail Connector (2013), Stockton to Escalon (2013), Merced to Le Grande (2011), Port Chicago to Oakley (2008), and Positive Train Control (2010). Finally, other studies including the High Speed Rail EIR (2005) and the Hercules

Intermodal Transit Center (ITC) Draft EIR/ Environmental Impact Statement (EIS) (2010), Final EIR (2011) and Final EIS (2012) were reviewed to determine areas with known sensitive resources. The review identified the known locations of jurisdictional waters, special-status plant and wildlife species, special-status plant communities, natural lands, and federally designated or proposed critical habitat units recorded or potentially occurring in the proposed infrastructure improvement areas. Areas potentially suspected of being special aquatic resources were documented during field surveys.

Reconnaissance-based field surveys of the BAA were conducted to assess general and dominant vegetation types, habitat types, and the potential for special-status wildlife and plant species to occur within the project areas. Community types were based on observed dominant vegetation composition and density. Vegetation classifications of plant communities in the BAA were derived from the criteria and definitions of Holland (1986). The ground reconnaissance consisted of driving the portions of the proposed facility improvement alignments that were not located in completely developed and urbanized areas. Some areas were not accessible by automobile and will require future access via a high-rail vehicle. Once these future development areas are designed and a BSA can be established, focused surveys and high-rail access will be required. Additional areas were not accessed that required automobile access through private property. These locations will also require future surveys, either via a high-rail vehicle or after permission to access is granted, if future development associated with the project will occur within unsurveyed areas. Focused surveys were not conducted because, typically, biological surveys are valid for one year. Any focused biological surveys conducted would need to be redone once a specific facility is designed and the second tier level environmental process is initiated. Estimations and assumptions regarding the potential for jurisdictional waters and special-status species were based on assessments from previous projects, and existing resource information. In some instances these assessments are based solely on aerial photography, which provides an adequate level of detail for a programmatic environmental document.

Detailed observations of sensitive species and habitats identified as occurring or potentially occurring within the BAA are provided in the Program NES as Appendix 3 of Volume 2 of this DRAFT PEIR. After a background review, 56 special-status plant species were evaluated for their potential to occur in the BAA. These special-status plant species include 8 federally and state listed species, 3 federally listed species, 2 state listed species, and an additional 43 special-status species that have been listed by the CNPS. Three out of five of the federally-listed plant species have designated critical habitat within portions of Fresno, Madera, Tulare, and San Joaquin counties.

Of the 56 special-status plant species evaluated, 30 species were ruled out based on the lack of suitable habitat, local or regional extirpations, and/or because the BAA lies outside of the known geographic or elevation range of these species. Where sensitive species were determined to potentially occur within the BAA, detail is provided in the Program NES as to what areas the species may occur (if restricted to a specific area of the BAA).

4.3.3.3 Impact Evaluation Criteria

The following items were carried over to the EIR from the Initial Study and these issues will serve as the proposed impact evaluation criteria for assessing and determining significant biological resource impacts from implementing the proposed project.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

4.3.4 Environmental Consequences

The construction and operation of the infrastructure required to support the San Joaquin Corridor Amtrak California Service project may result in direct impacts and indirect impacts on special-status wildlife species. The extent and nature of impacts on special-status wildlife species varies depending on the species under consideration, their range, and the type and quality of suitable habitats present.

In general, permanent and temporary direct impacts on special-status wildlife species during construction of the future infrastructure improvements include mortality or injury, and disturbances to suitable habitats for special-status wildlife species, including disruption or penetration of the underlying hardpan soils (in vernal pool areas); water pollution; amphibian breeding pool disturbance; and reptile, bird, and mammal burrow or nest disturbance. These habitat disturbances within the track alignment or at specific facilities (such as new stations) could lead to the permanent or temporary abandonment of these habitats by special-status species, a disruption in the life cycle of these species, or mortality or injury of these species. Because it is difficult to determine the number or extent of these kinds of impacts, direct impacts on special-status wildlife species will be addressed in subsequent environmental review once a specific component of the proposed project has been defined for design and implementation.

Permanent and temporary indirect impacts on special-status wildlife species would occur through construction of the Project in a number of ways depending on the species and type of disturbance. Potential indirect impacts include erosion, soil compaction, increased siltation and sedimentation, fractures in the hardpan soils, alteration of jurisdictional water hydrology, dust aerosolization, host plant stress, destruction of native vegetation, habitat fragmentation, and noise and light pollution. These indirect impacts could lead to the disturbance of special-status wildlife species such as a temporary shift in foraging patterns or territories, refugia abandonment, increased predation, decreased reproductive success, and reduced population viability. Because it is difficult to quantify and measure these kinds of impacts, indirect impacts on special-status wildlife species are described qualitatively, and will be quantitatively address in

subsequent tiered environmental documents once a specific aspect of the project is proposed for implementation and designed.

Construction of the station alternatives should only result in mostly minimal impacts on special-status wildlife species, because only a limited amount of marginal habitat for special-status wildlife species would be impacted by this activity. All stations would impact only barren, urban, or agricultural areas and thus construction would potentially impact only the special-status wildlife species that use urban areas, or that are known to use agricultural areas (e.g., special-status bird species, special-status mammal species, special-status bat species).

During operation of the train, maintenance activities requiring ground disturbance, clearing, or grubbing could cause erosion and sedimentation that could indirectly affect the hydrology of nearby jurisdictional waters and the species that depend on these resources. Chemical runoff from trucks or equipment along the railroad right-of-way could indirectly degrade suitable habitat used by these species that are present adjacent to the rail. If operational maintenance requires weed abatement activities, such as the use of herbicides, these activities could also contribute to chemical runoff and pollution of adjacent suitable habitats.

However, maintenance activities that have potential impacts on special-status wildlife species are limited to the railroad right-of-way areas that are not improved road bed with ballast and rail and are at the same grade level as the adjacent habitats.

Potential impacts on jurisdictional waters, special-status plant communities, protected trees, special-status plant, and wildlife species (including critical habitat) will be analyzed for each facility improvement as design and APE areas are established. Once a particular facility APE is established, the following steps will be taken during a detailed second-tier evaluation to assure resource impacts are quantified, and site specific measures are identified. Where none of the biological resource impacts below will occur, no further biological resource impact analysis may be necessary within a second-tier analysis. Further, where potentially significant impacts may occur, but specific mitigation outlined below can reduce such impacts to a less than significant level, future documentation may rely upon the procedures outlined in Sections 15162 and 15168 of the State CEQA Guidelines to determine the required level of CEQA documentation for future infrastructure projects. These analyses will be performed at the time individual infrastructure improvements are considered for funding.

- Each resource will be evaluated for its presence or absence, and for the presence of habitat that could support the resource or provide habitat for the resource. Suitable habitat was determined based on background review and identification of species-specific life history requirements.

- Potential impacts on special-status wildlife species will be determined using a habitat based approach where the presence of the species was assumed in suitable habitat. Habitats in the project footprint and vicinity were determined through a combination of background review, habitat mapping during field surveys, and aerial photograph interpretation.

- Potential impacts on designated critical habitat will be based on the location of the critical habitat relative to the project footprint and the presence of primary constituent elements (PCEs) associated with the critical habitat designation. In determining the potential direct and indirect impacts associated with construction and operation impacts on biological resources, a number of assumptions and limitations are identified:

- Construction and operation impacts will be considered temporary if they can be fully restored to pre-disturbance conditions following construction. Temporary impacts would include construction staging areas, construction laydown areas, relocation of underground utilities, and other work space that would not be occupied by permanent facilities during project operation.

- Impacts will be considered permanent when they have lasting effects beyond the project construction period, or cannot be fully restored following construction. Permanent impacts would include new right-of-way for new or expanded at-grade track segments, elevated structure track segments (everything under the aerial extent of the structure), road crossings, electrical substations, facilities for maintenance-of-way and stations.

- Certain jurisdictional waters types (vernal pools, vernal swales, and vernal pool and swale complexes) are especially sensitive to disturbance; therefore, impacts on these features will be considered permanent regardless of the type of activity that would occur because it is unlikely that these features could be restored to their pre-project condition.

HCP/Preserve Lands and Designated Critical Habitat

Critical habitat has been designated for several species adjacent to or in the general vicinity of the San Joaquin Corridor. One example is the critical habitat designated for the delta smelt in San Pablo Bay adjacent to the UPRR tracks west of Crockett. The specific locations of pertinent critical habitat areas are shown in maps contained in Appendix 4 of Volume 2 of this DRAFT PEIR. The primary mitigation for potential impacts to critical habitat will be avoidance. Where avoidance is not feasible, mitigation measures 4.3-1 and 4.3-7 will be implemented. It is rare that critical habitat extends within the railroad property owned by BNSF and UPRR because these areas are generally maintained to support rail operations, not protect habitat. However, where either permanent or temporary disturbances will occur within critical habitat, full mitigation will be provided to offset impacts to such habitat. As indicated in the discussion in Section 4.3.5 Cumulative Impacts, certain areas (San Pablo Bay, Consumnes River Preserve and the Dow Chemical Preserve) that contain critical habitat for species may not be fully mitigable, and an unavoidable significant adverse biological resource impact may occur. This can only be determined after the new track engineering and design are completed and avoidance measures incorporated. Where avoidance cannot be achieved, the residual impact to critical habitat may be unavoidable.

The following areas of HCP/Preserve Lands and Designated Critical Habitat (DCH) were identified as having potential to be impacted, either directly or indirectly, by the proposed project actions.

<u>BNSF Railroad Facility Improvements</u>

- Double Track LeGrand (MP1041.5) to Planada (MP 1047.3): This segment will require the construction of approximately 5.8 miles of new track adjacent to the existing track.

This segment occurs approximately .6 KM westerly (at MP1042) from DCH for Green's tuctoria. There will be no direct impacts to this DCH. However, due to the fact that the Project's BAA is in close proximity to this DCH, potential for indirect effects should be minimized by implementing the proposed mitigation measures in Section 4.3.4 of this subchapter.

- Upgrade and Extend Pittsburg Siding: The existing Pittsburg Siding (MP 1152.7 to MP 1154.1) will be upgraded to mainline track. This upgrade will not result in any additional railroad bed or expand the footprint of the existing railroad. The Pittsburg Siding will be extended 2.8 miles from MP 1154.1 to MP 1156.9.

This segment occurs approximately .5 KM westerly (at MP 1042) from DCH for Delta smelt. There will be no direct impacts to this DCH. However, due to the fact that the Project's BAA is in close proximity to this DCH, potential for indirect effects should be minimized by implementing the proposed mitigation measures in Section 4.3.4 of this subchapter.

- Double Track Angiola (MP 942.1) to Corcoran (MP 950.9): This double track segment includes the construction of 8.8 miles of new railroad high-fill be constructed.

This segment occurs approximately 1.6 KM westerly (at MP 1042) from DCH for vernal pools fairy shrimp. There will be no direct impacts to this DCH. However, due to the fact that the Project's BAA is in close proximity to this DCH, potential for indirect effects should be minimized by implementing the proposed mitigation measures in Section 4.3.4 of this subchapter.

- Double Track Pittsburg (MP 1155.8) to Port Chicago (MP 1164.0): This double track segment includes the construction of 8.2 miles of new railroad high-fill be constructed.

This segment occurs within DCH for Delta smelt. Due to the fact that the Project's BAA is in DCH, an analysis to determine if primary constituent elements for this DCH have the potential to be adversely modified by the Project construction or operations a habitat assessment for primary constituent elements shall be conducted once the facility is designed.

- Double Track Allensworth (MP 932.3) to Corcoran (MP 950.9): This double track segment includes the construction of 18.6 miles of new railroad high-fill be constructed.

This segment occurs immediately adjacent to DCH on the east side of the BNSF ROW for vernal pools fairy shrimp. There will be no direct impacts to this DCH. However, due to the fact that the Project's BAA is in close proximity to this DCH, potential for indirect effects should be minimized by implementing the proposed mitigation measures in Section 4.3.4 of this subchapter.

<u>Union Pacific Railroad Facility Improvements</u>

- The UPRR Niles and Tracy Subdivisions would be improved with a third main track beginning at Shellmound on the west (MP 5.20) and ending at Martinez on the east (MP 32.00).

This segment occurs within DCH for Delta smelt. Due to the fact that the Project's BAA is in DCH, once the facility is designed, an analysis to determine if primary constituent elements for this DCH have the potential to be adversely modified by the Project construction or operations shall be conducted.

- A double track would be added on the Tracy Subdivision from Martinez at MP 36 to Port Chicago at MP 41.3.

This segment occurs within DCH for Delta smelt. Due to the fact that the Project's BAA is in DCH, once the facility is designed, an analysis to determine if primary constituent elements for this DCH have the potential to be adversely modified by the Project construction or operations shall be conducted.

Proposed Stations and Layover Facilities

These proposed facilities are situated in urbanized and developed areas, and do not support any natural environments. Additionally there is no DCH in proximity to any of these facilities that could be either directly or indirectly impacted by the construction and operations of these facilities. Therefore, there will be no impacts to any DCH as a result of proposed stations or layover facilities.

Jurisdictional Waters

Wetlands and other waters in the project vicinity, including waters of the U.S., waters of the state, and state streambeds, are regulated by the federal government (USACE) and the State of California (RWRCB and CDFW). When considering wetlands and other waters, these features are collectively termed jurisdictional waters. Wetlands and other waters are assumed to fall under the jurisdiction of the USACE, SWRCB, and CDFW for purposes of this discussion. The jurisdictional status of these waters will be confirmed by the USACE, SWRCB, and CDFW when the regulatory permitting process is conducted. Further definitions are presented below.

- *Wetlands*: According to the USACE Wetlands Delineation Manual (Environmental Laboratory 1987) and the recently published Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (USACE 2008b), three criteria must be satisfied to classify an area as a jurisdictional wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation), (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils), and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

- *Waters of the U.S.*: The CWA defines waters of the U.S. as follows: (1) all waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; (2) all interstate waters including interstate wetlands; (3) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of waters otherwise defined as waters of the U.S.; (5) tributaries to the foregoing types of waters; and (6) wetlands adjacent to the foregoing waters (33 CFR 328.3[a]).

- *Waters of the State*: Waters of the state are broadly defined by the Porter-Cologne Water Quality Control Act (Section 1305[e]). Under this definition, isolated wetlands that may not be subject to regulations under federal law are considered waters of the state. On March 9, 2012, the California Water Boards released a preliminary draft of their Wetland Area Protection Policy, which includes a proposed wetland definition. Under their proposed definition, an area is a wetland if, under normal circumstances, it (1) is continuously or recurrently inundated with shallow water or saturated within the upper substrate; (2) has anaerobic conditions within the upper substrate caused by such

hydrology; and (3) either lacks vegetation or the vegetation is dominated by hydrophytes (SWRCB 2012).

- *State Streambeds*: CDFW has not released an official definition of lake or streambed and therefore the extent of the area regulated under Section 1602 remains undefined. However, CDFW jurisdiction generally includes the streambed and bank, together with the adjacent floodplain and riparian vegetation.

Based on the background review and subsequent windshield surveys, numerous jurisdictional waters occur in the BAA for this project. Many of the jurisdictional waters (canals/ditches and seasonal riverine) are heavily managed by local irrigation districts, which serve public water needs and agricultural production. As a result, these jurisdictional waters support few natural biological functions and values. The biological functions of these man-made features include limited habitat for wildlife and capacity for water storage or release. A number of these jurisdictional waters have been previously degraded or impacted by existing roads and BNSF Railway and UPRR infrastructure.

Direct impacts on natural and man-made features include the removal or modification of local hydrology, the redirection of flow, and the placement of fill material. In the case of man-made features, these impacts would remove or disrupt the limited biological functions that these features provide. In natural areas, these activities would remove or disrupt the hydrology, vegetation, wildlife use, water quality conditions, and other biological functions provided by the resources.

Temporary impacts on jurisdictional waters include the placement of temporary fill during construction in both man-made and natural jurisdictional waters. Temporary fill could be placed during the construction of access roads and staging/equipment storage areas. The temporary fill would result in a temporary loss of jurisdictional waters and could potentially increase erosion and sediment transport into adjacent areas.

Potential indirect impacts on jurisdictional waters include a number of water-quality-related impacts: erosion and transport of fine sediments or fill downstream of construction to unintentional release of contaminants into jurisdictional waters that are outside of the project footprint. These discharges would indirectly impact adjacent or downstream jurisdictional waters.

A Jurisdictional Determination and subsequent approval of the determination by the regulatory agencies will be conducted on each facility as the design becomes available and construction of a particular facility is scheduled to occur within the foreseeable future. However, unforeseen direct impacts, indirect impacts, and temporary impacts to natural and man-made water bodies may occur depending upon the design of the infrastructure improvement, and the construction methodology required.

Noise and Vibration Impacts on Fish and Birds

A comment requested that this analysis include an evaluation of the noise and vibration impacts of the proposed project on fish and birds.

There aren't adopted standards that identify what constitutes a significant adverse change in the noise environment for fish and wildlife. The noise evaluation in Subchapter 4.7 of this Draft PEIR identifies a 3 dB(A) change as significant because some (human) individuals may notice this level of change. Studies of noise impacts on wildlife have found that noise adversely

impacts breeding and foraging success of birds, bats and frogs, and note that wildlife detect different frequencies of noise than humans and thus may be impacted when humans are not and conversely may be less affected by some noises than humans (*www.fws.gov/windenergy/docs/**noise**.pdf* accessed February 11, 2014)

The Federal Highway Administration summarizes the sensitivities of various groups of wildlife as follows (http://www.fhwa.dot.gov/environment/noise/noise_effect_on_wildlife/effects/wild04.cfm accessed February 11, 2014):

- Human hearing extends from frequencies (perceived as pitch) from about 20 Hz (cycles per second) to about 20,000 Hz (20 kHz)
- Mammals < 10 Hz to 150 kHz ; sensitivity to -20 dB
- Birds (more uniform than mammals) 100 Hz to 8-10 kHz; sensitivity at 0-10 dB
- Reptiles (poorer than birds) 50 Hz to 2 kHz; sensitivity at 40-50 dB
- Amphibians 100 Hz to 2 kHz; sensitivity from 10-60 dB
- Fish 50 Hz to 2 kHz

A detailed analysis of the incremental increase of noise and vibration that will be associated with the increased frequency and speed of passenger trains on the existing track alignment is provided in Chapter 4, Subchapter 4.7 of this Draft PEIR. The noise technical study prepared for the proposed project by Giroux & Associates dated January 2014 states that noise from existing train operations along the project alignment varies substantially with train travel speed, with faster moving trains creating more noise and vibration than slower moving trains. In heavily developed areas, speeds are restricted to around 35 mph. In wide open spaces travel speeds of 70 mph are common. The use of train horns near at-grade intersections also determines train noise.

The noise study concluded that freight trains are the predominant noise contributor along the alignment under existing conditions and would generally continue to be the predominant source of noise after implementation of the proposed project. Freight trains are longer than passenger trains, are pulled by more engines, and a large number of freights run at night. Existing background noise along the corridor varies between 77 dBA CNEL and 83 dBA CNEL based on a current volume of train traffic that includes 46 freight trains and 12 passenger trains. The noise analysis in Subchapter 4.7 of this Draft PEIR found that the additional proposed ten passenger trains in the Corridor add approximately 0.5 dBA CNEL to the existing background noise levels in the Corridor, an increase in noise levels that would typically be undetectable to humans. The background noise level along the corridor under existing conditions exceeds the acceptable noise levels for most uses except agriculture and industrial activities.

Theoretically, wildlife that is typically inactive at night may be less adversely impacted by nighttime noise than humans, at least to the extent that noise “competition” from trains occurring outside of times when a species is active wouldn’t typically impact communication, navigation, danger avoidance and/or food locating. Conversely, wildlife such as bats would be expected to be primarily sensitive to nighttime noise levels. The proposed increase in passenger trains would occur mostly during the daylight hours, and thus would predominantly impact species that vocalize during the day. Given that trains have traveled the corridor proposed for improvement for a century, an argument can be made that fish and wildlife adversely impacted by train noise and vibration have already been impacted and further impacts from the small increment of noise added by the proposed project would be insubstantial.

In the noise analysis in Subchapter 4.7 of this Draft PEIR, it is concluded that regardless of the small increment of noise added to the Corridor by the proposed project, that increment must be considered a cumulatively considerable adverse impact because the existing high background noise level is considered to be a significant impact to sensitive noise uses adjacent to the Corridor. Where sensitive fish and wildlife and their habitats occur with the project BAA, future analysis will occur for each facility improvement as design and APE areas are established. As stated previously, once a particular facility APE is established, a detailed second-tier evaluation to assure resource impacts are quantified, and site specific measures are identified. Resource impacts should include an evaluation of the potential for noise and vibration impacts to sensitive species. Where potentially significant impacts may occur, but specific mitigation outlined below can reduce such impacts to a less than significant level, future documentation may rely upon the procedures outlined in Sections 15162 and 15168 of the State CEQA Guidelines to determine the required level of CEQA documentation for future infrastructure projects. Caltrans will perform these analyses at the time individual infrastructure improvements are considered for funding.

4.3.4.1 Cumulative Impacts

Cumulative biological resource impacts can only occur when such resources are not avoided, protected or mitigated as outlined above. The mitigation requirements outlined in Section 4.3.4 are identified to ensure that biological resources are avoided or otherwise protected or mitigated, such that no cumulatively considerable impacts to significant biological resources are forecast to occur if the proposed project is implemented as analyzed in this Draft PEIR. These impacts may include direct impacts such as the removal or modification of local hydrology, the redirection of flow, and the placement of fill material. Potential indirect impacts on jurisdictional waters include a number of water-quality-related impacts: erosion and transport of fine sediments or fill downstream of construction to unintentional release of contaminants into jurisdictional waters that are outside of the project footprint. Temporary impacts on jurisdictional waters include the placement of temporary fill during construction in both man-made and natural jurisdictional waters. Temporary fill could be placed during the construction of access roads and staging/equipment storage areas. The temporary fill would result in a temporary loss of jurisdictional waters and could potentially increase erosion and sediment transport into adjacent areas.

In the case of man-made features, these impacts would remove or disrupt the limited biological functions that these features provide. In natural areas, these activities would remove or disrupt the hydrology, vegetation, wildlife use, water quality conditions, and other biological functions provided by the resources. Therefore these impacts should be quantified and analyzed in a subsequent tier document.

Regardless, until these designs are brought forth and the ultimate impacts are quantified and analyzed, Caltrans concludes that a cumulatively considerable adverse biological resources impact will occur from implementing the proposed project.

4.3.4.2 Unavoidable Significant Adverse Impacts

There are certain areas within the overall project area of potential impact where the resource impacts from constructing new infrastructure may cause unavoidable significant adverse impacts on biological resources. These areas are: within the UPRR segment between Oakland and Martinez where extensive fill into San Pablo Bay may be required to install a third main track; within the UPRR Fresno Subdivision segment between Stockton and Sacramento where

the construction of a second track could cause direct or indirect loss of the Consumnes River Preserve area; within the BNSF track segment between Port Chicago to Oakley where the Dow Chemical Mitigation area occurs and at the Nichols curve location where substantial loss of wetlands may occur (dependent upon the final design) that cannot be reasonably or feasibly offset; and within other critical habitat areas for specific species identified in the PNES.

The ultimate design of these referenced improvements must be based on sound track engineering, but it may be possible to avoid certain impacts by designs that avoid such impacts. For example, in UPRR's segment between Oakland and Martinez it may be possible to avoid fill into San Pablo Bay by placing the third track inland against the existing bluff. Alternatively, additional modeling can be conducted to determine if it may be possible to expand other segments of the track in less sensitive locations and avoid impacts to highly sensitive areas by leaving particular track segments in the current configuration (single or double track). Final determination of impacts can only occur after new track engineering and design are completed and avoidance measures are incorporated. Where avoidance cannot be achieved, the residual impact may be unavoidable.

Regardless, until these designs are brought forth the significance of biological resources at the above referenced segments is quantified and analyzed, Caltrans concludes that an unavoidable significant adverse biological resource impact will occur from implementing the proposed project.

4.3.5 Avoidance, Minimization and Mitigation Measures

Because the project could result in potentially significant impacts on biological resources, mitigation measures were designed to avoid or reduce the impacts on these resources. The mitigation strategy includes avoidance of impacts on biological resources to the extent possible: field verification of sensitive resources and filling data gaps; the formulation of alternative designs (minimization and avoidance); limiting modifications to access and egress points to facilities (minimization); designing cuts and fills to minimize the area of disturbance; and where necessary, and compensation to offset unavoidable impacts to individual species or sensitive habitat.

The following mitigation measures are required to reduce impacts associated with future San Joaquin Corridor Rail Improvement program site-specific projects to a less than significant level. Each stakeholder implementing specific project-related specific capital improvement projects shall implement the measures outlined below, as needed, when the impact being mitigated will be caused by such project. Not every measure will apply to a specific project. Therefore, selecting the suite of measures that do apply to a future specific project is a critical step in the review of such a project.

To reduce or prevent activities that may adversely affect sensitive species, the following mitigation measures will be incorporated into any specific projects and/or contractor specifications for future project-related impacts to protect sensitive resources and habitat.

4.3-1 Where future project-related impacts will affect undisturbed land with native vegetation, site surveys shall be conducted by a qualified biologist/ecologist. If sensitive species are identified as a result of the survey for which mitigation/compensation must be provided in accordance with regulatory requirements, the following subsequent mitigation actions will be taken:

a. ***The project proponent shall provide compensation for sensitive habitat acreage lost by acquiring and protecting in perpetuity (through property or mitigation bank credit acquisition) habitat for the sensitive species at a ratio of not less than 1:1 for habitat lost. The property acquisition shall include the presence of at least one animal or plant per animal or plant lost at the development site to compensate for the loss of individual sensitive species.***

b. ***The final mitigation may differ from the above values based on negotiations between the project proponent and USFWS and CDFW for any incidental take permits for listed species. The project proponent shall retain a copy of the incidental take permit as verification that the mitigation of significant biological resource impacts at a project site with sensitive biological resources has been accomplished.***

c. ***Preconstruction botanical surveys for special-status plant communities and special-status plant species will be conducted. in areas that were not previously surveyed because of access or timing issues or project design changes, preconstruction surveys for special-status plant communities and special-status plant species will be conducted before the start of ground-disturbing activities during the appropriate blooming period(s) for the species.***

4.3-2 ***Biological Resources Management Plan: During final design, a BRMP will be prepared to assemble the biological resources mitigation measures for each specific infrastructure improvement in the future. The BRMP will include terms and conditions from applicable permits and agreements and make provisions for monitoring assignments, scheduling, and responsibility. The BRMP will also discuss habitat replacement and revegetation, protection during ground-disturbing activities, performance (growth) standards, maintenance criteria, and monitoring requirements for temporary and permanent native plant community impacts. The parameters of the BRMP will be formed with the mitigation measures from the project-level EIR/EIS, including terms and conditions as applicable from the USFWS, USACE, SWRCB/RWQCB, and CDFW.***

To reduce or prevent activities that may adversely affect rivers, streambeds or wetlands, the following mitigation measures will be incorporated into any specific projects and/or contractor specifications for future project-related impacts to protect sensitive resources and habitat.

4.3-3 ***Prior to discharge of fill or streambed alteration of jurisdictional areas, the project proponent shall obtain regulatory permits from the U.S. Army Corps of Engineers, local Regional Water Quality Control Board and the California Department of Fish and Wildlife. Any future project that must discharge fill into a channel or otherwise alter a streambed shall be minimized to the extent feasible, and any discharge of fill not avoidable shall be mitigated through compensatory mitigation. Mitigation can be provided by restoration of temporary impacts, enhancement of existing resources, or purchasing into any authorized mitigation bank or in-lieu fee program; by selecting a site of comparable acreage near the site and enhancing it with a native riparian habitat or invasive species removal in accordance with a habitat mitigation plan approved by regulatory agencies; or by acquiring sufficient compensating habitat to meet regulatory agency requirements. Typically, regulatory agencies require mitigation for jurisdictional waters without any riparian or wetland habitat to be mitigated at a 1:1 ratio. For loss of any riparian or other wetland areas, the mitigation ratio will begin at 2:1 and the ratio will rise based on the type of habitat, habitat quality, and presence of sensitive or listed plants or animals in the affected area. A Habitat Mitigation and Monitoring Proposal shall be prepared and reviewed and approved by the appropriate regulatory agencies. The project proponent will also obtain permits from the regulatory agencies (U.S. Army Corps of Engineers, Regional Water Quality Control Board, CDFW and any other applicable regulatory agency with jurisdiction over the proposed facility improvement) if any impacts to jurisdictional areas will occur. These agencies can impose greater mitigation requirements in their permits, but Caltrans will utilize the ratios outlined above as the minimum required to offset or compensate for impacts to jurisdictional waters, riparian areas or other wetlands.***

4.3-4 Jurisdictional Water Preconstruction Surveys: A jurisdictional water preconstruction survey will be conducted at least six months before the start of ground-disturbing activities to identify and map all jurisdictional waters in the project footprint and if possible within a 250-foot buffer. The purpose of this survey is to confirm the extent of jurisdictional waters in areas where permission to enter was not previously granted and where aerial photograph interpretation was used to estimate the extent of these features. If possible, surveys would be performed during the spring, when plant species are in bloom and hydrological indicators are most readily identifiable. These results would then be used to calculate impact acreages and determine the amount of compensatory mitigation required to offset the loss of wetland functions and values.

Regarding active bird nests, the following mitigation measure will be applied to this program.

4.3-5 It is illegal to "take" active bird nests of native birds, and if such nests are present at a project site, no take is allowed. To avoid an illegal take of active bird nests, any grubbing, brushing or tree removal will be conducted outside of the State identified nesting season (nesting season is approximately from February 15 through September 1 of a given calendar year). Alternatively, coordination with the CDFW to conduct nesting bird surveys will be completed, and methodology of surveys will be agreed upon. All nesting bird surveys will be conducted by a qualified biologist prior to initiation of ground disturbance to demonstrate that no bird nests will be disturbed by project construction activities.

The following mitigation can reduce the impact to burrowing owl to a less than significant level.

4.3-6 Prior to commencement of construction activity in locations that are not fully developed, protocol burrowing owl survey will be conducted using the 2012 survey protocol methodology identified in the "Staff Report on Burrowing Owl Mitigation, State of California, Natural Resources Agency, Department of Fish and Wildlife, March 7, 2012", or the most recent CDFW survey protocol available. Protocol surveys shall be conducted by a qualified biologist to determine if any burrowing owl burrows are located within the potential area of impact. If occupied burrows may be impacted, an impact minimization plan shall be developed and approved by CDFW that will protect the burrow in place or provide for passive relocation to an alternate burrow within the vicinity but outside of the project footprint in accordance with current CDFW guidelines. Active nests must be avoided with a 250-foot buffer until all nestlings have fledged.

The following mitigation can ensure consistency with any HCP or MSHCP.

4.3-7 Prior to commencement of construction activity on a project facility within a MSHCP/HCP plan area, consistency with that plan, or take authorization through that plan, shall be obtained. Through avoidance, compensation or a comparable mitigation alternative, each project shall be shown to be consistent with a MSHCP/HCP.

Implementation of the above measures is protective of the environment. Should the regulatory agencies determine an alternative, equivalent mitigation program during acquisition of regulatory permits, such measure shall be deemed equivalent to the above measures and no additional environmental documentation shall be required to implement a measure different than outlined above. Note that if impacts cannot be mitigated or avoided in the manner outlined in the measures above, then subsequent environmental documentation would have to be prepared in accordance with procedures outlined in Section 15162 of the State CEQA Guidelines.

Implementation of the following mitigation measures will ensure that project design and site selection reduce impacts to sensitive biological resources to the extent feasible.

4.3-8 Place primary emphasis on the preservation of large, unbroken blocks of natural open space and wildlife habitat area, and protect the integrity of habitat linkages. As part of

this emphasis, incorporate programs for purchase of lands, clustering of development to increase the amount of preserved open space, and assurances that the construction of railroad track and other facilities or infrastructure improvements meet standards identical to the environmental protection policies applicable to the specific facilities improvement.

4.3-9 Require facility designs to be planned to protect habitat values and to preserve significant, viable habitat areas and habitat connection in their natural conditions.

a. Within designated habitat areas of rare, threatened or endangered species, prohibit disturbance of protected biotic resources.
b. Within riparian areas and wetlands subject to state or federal regulations, riparian woodlands, oak and walnut woodland, and habitat linkages, require that the vegetative resources which contribute to habitat carrying capacity (vegetative diversity, faunal resting sites, foraging areas, and food sources) are preserved in place or replaced so as not to result in an measurable reduction in the reproductive capacity of sensitive biotic resources.
c. Within habitats of plants listed by the CNDDB or CNPS as "special" or "of concern," require that new facilities not result in a reduction in the number of these plants, if they are present.

4.3-10 Maximize the preservation of individual oak, sycamore and walnut trees within proposed development sites.

4.3-11 Require the establishment of buffer zones adjacent to areas of preserved biological resources. Such buffer zones shall be of adequate width to protect biological resources from grading and construction activities, as well as from the long-term use of adjacent lands. Permitted land modification activities with preservation and buffer areas are to be limited to those that are consistent with the maintenance of the reproductive capacity of the identified resources. The land uses and design of project facilities adjacent to a vegetative preservation area, as well as activities within the designated buffer area are not to be permitted to disturb natural drainage patterns to the point that vegetative resources receive too much or too little water to permit their ongoing health. In addition, landscape adjacent to areas of preserved biological resources shall be designed so as to avoid invasive species which could negatively impact the value of the preserved resource.

Implementation of the following mitigation measures will ensure that project construction impacts to sensitive biological resources, including the potential effects of invasive species, are reduced to the extent feasible.

4.3-12 Following construction activities within or adjacent to any natural area, the disturbed areas shall be revegetated using a plant mix of native plant species that are suitable for long term vegetation management at the specific site, which shall be implemented in cooperation with regulatory agencies and with oversight from a qualified biologist. The seeds mix shall be verified to contain the minimum amount of invasive plant species seeds reasonably available for the project area.

4.3-13 Clean Construction Equipment. During construction, equipment will be washed before entering the project footprint to reduce potential indirect impacts from inadvertent introduction of nonnative invasive plant species. Mud and plant materials will be removed from construction equipment when working in native plant communities, near special-status plant communities, or in areas where special-status plant species have been identified.

4.3-14 Contractor Education and Environmental Training. Personnel who work onsite will attend a Contractor Education and Environmental Training session. The environmental training is likely to be required by the regulatory agencies and will cover general and specific biological information on the special-status plant species, including the distribution of the resources, the recovery efforts, the legal status of the resources, and the penalties for violation of project permits and laws.

The Contractor Education and Environmental Training sessions will be given before the initiation of construction activities and repeated, as needed, when new personnel begin work within the project limits. Daily updates and synopsis of the training will be performed during the daily safety ("tailgate") meeting. All personnel who attend the training will be required to sign an attendance list stating that they have received the Contractor Education and Environmental Training.

4.3-15 ***Biological Monitor to Be Present during Construction Activities in areas where impacts to Riparian, Riverine, Wetland, Endangered Species or Endangered Species Critical habitat occurs. A biological monitor (or monitors) will be present onsite during construction activities that could result in direct or indirect impacts on sensitive biological resources (including listed species) and to oversee permit compliance and monitoring efforts for all special-status resources.***

A biological monitor (qualified biologist) is any person who has a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field and/or has demonstrated field experience in and knowledge about the identification and life history of the special-status species or jurisdictional waters that could be affected by project activities. The biological monitor(s) will be responsible for monitoring the Contractor to ensure compliance with the Section 404 Individual Permit, Section 401 Water Quality Certification and the Lake and Streambed Alteration Agreement. Activities to ensure compliance would include performing construction-monitoring activities, including monitoring environmental fencing, identifying areas where special-status plant species are or may be present, and advising the Contractor of methods that may minimize or avoid impacts on these resources. Biological monitor(s) will be required to be present in all areas during ground disturbance activities and for all construction activities conducted within or adjacent to identified Environmentally Sensitive Areas, Wildlife Exclusion Fencing, and Non-Disturbance Zones.

4.3-16 ***Food and Trash: All food-related trash items (e.g., wrappers, cans, bottles, food scraps) will be disposed of in closed containers and removed at least once a week from the construction site.***

4.3-17 ***Rodenticides and Herbicides: Use of rodenticides and herbicides in the project footprint will be restricted. This measure is necessary to prevent poisoning of special-status species and the potential reduction or depletion of the prey populations of special-status wildlife species.***

4.3-18 ***Wildlife Exclusion Fencing: Exclusion barriers (e.g., silt fences) will be installed at the edge of the construction footprint and along the outer perimeter of Environmentally Sensitive Areas and Environmentally Restricted Areas to restrict special-status species from entering the construction area. The design specifications of the exclusion fencing will be determined through consultation with the USFWS and/or CDFW. Clearance surveys will be conducted for special-status species after the exclusion fence is installed. If necessary, clearance surveys will be conducted daily.***

4.3-19 ***Equipment Staging Areas: Staging areas for construction equipment will be located outside sensitive biological resources areas, including habitat for special-status species, jurisdictional waters, and wildlife movement corridors, to the maximum extent possible.***

4.3-20 ***Plastic mono-filament netting (erosion-control matting) or similar material will not be used in erosion control materials to prevent potential harm to wildlife. Materials such as coconut coir matting or tackified hydroseeding compounds will be used as substitutes.***

4.3-21 ***Vehicle Traffic: During ground-disturbing activities, project-related vehicle traffic will be restricted within the construction area to established roads, construction areas, and other designated areas to prevent avoidable impacts. Access routes will be clearly flagged and off-road traffic will be prohibited.***

4.3-22 ***Entrapment Prevention: All excavated, steep-sided holes or trenches more than 8 inches deep will be covered at the close of each working day with plywood or similar materials, or a minimum of one escape ramp constructed of earth fill for every 10 feet of trenching will be provided to prevent the entrapment of wildlife. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals.***

All culverts or similar enclosed structures with a diameter of 4 inches or greater will be covered, screened, or stored more than 1 foot off the ground to prevent use by wildlife. Stored material will be cleared for common and special-status wildlife species before the pipe is subsequently used or moved.

4.3-23 ***Weed Control Plan: A Weed Control Plan will be prepared and implemented to minimize or avoid the spread of weeds during ground-disturbing activities. In the Weed Control Plan, the following topics will be addressed:***

- ***Schedule for noxious weed surveys.***
- ***Weed control treatments, including permitted herbicides, and manual and mechanical methods for application; herbicide application will be restricted in Environmentally Sensitive Areas.***
- ***Timing of the weed control treatment for each plant species.***
- ***Fire prevention measures.***

4.3-24 ***Dewatering/Water Diversion: Open or flowing water may be present during construction. If construction occurs where there is open or flowing water, a strategy that is approved by the resource agencies (e.g., USACE, SWRCB/RWQCB, and CDFW), such as the creation of cofferdams, will be used to dewater or divert water from the work area. If cofferdams are constructed, implementation of the following cofferdam or water diversion measures is recommended to avoid and lessen impacts on jurisdictional waters during construction:***

- ***The cofferdams, filter fabric, and corrugated steel pipe are to be removed from the creek bed after completion of the project.***
- ***The timing of work within all channelized waters is to be coordinated with the regulatory agencies.***
- ***The cofferdam is to be placed upstream of the work area to direct base flows through an appropriately sized diversion pipe. The diversion pipe will extend through the Contractor's work area, where possible, and outlet through a sandbag dam at the downstream end.***
- ***Sediment catch basins immediately below the construction site are to be constructed when performing in-channel construction to prevent silt- and sediment-laden water from entering the main stream flow. Accumulated sediments will be periodically removed from the catch basins.***

Implementation of the above mitigation measures is considered adequate to minimize construction-related impacts to the extent feasible, including the potential for invasive species occupancy caused by project-related disturbance of natural areas.

Impacts on biological resources will be permitted or authorized through consultation with the various natural resource regulatory agencies (USFWS, USACE, SWRCB/RWQCB, and CDFW). Both formal and informal consultation with these agencies may result in additional project-specific avoidance and minimization measures.

4.4 CULTURAL RESOURCES

4.4.1 Introduction

Cultural resources are the physical remains of past human activities that are addressed in the CEQA process in a manner similar to natural resources. The term "cultural resources" encompasses archaeological resources of historic and prehistoric origin. Such resources include artifacts, refuse, and other features, in both surface and subsurface contexts, that are greater than 50 years in age and/or meet other established criteria to qualify as historic in nature. Prehistoric resources differ from historic resources in that they date from before written records were kept by a culture. Prehistoric and historic resources may occur together on the same site. Paleontological resources, the fossil remains or traces of past life forms, are also addressed in this section because like archaeological resources, paleontological resources can be exposed during grading, trenching or other ground disturbing activities. A brief explanation of each type of resource follows.

- **Prehistoric archaeological resources** in California typically include the remains of villages and campsites, food processing locations, lithic (stone) resource procurement and tool-making locations, and burial and cremation areas. They may also consist of trails, rock art and geoglyphs (ground figures) and isolated artifacts. Prehistoric archaeological resources are the result of activities of the ancestors and predecessors of contemporary Native Americans who occupied the area of potential effect (APE) prior to European recordation of history for the area. In many cases, these resources retain special traditional and sacred significance for contemporary Native Americans.

- **Historic archaeological resources** include refuse deposits such as can and bottle dumps, filled-in privy pits and cisterns, melted adobe walls and foundations, collapsed structures and associated features, and roads and trails. They may relate to mission activities, travel and exploration, early settlement, homestead activities, cattle and sheep herding, lumbering, and mining, among other themes. Historical archeological resources date from the earliest Spanish Mission activities (ca. 1770) when the first Europeans arrived and began to record historical activities in the project area.

- **Historic built environment resources** include intact structures of any type that are 50 years or more of age. These resources include houses or other structures, bridges, irrigation works, and engineering features, among other items.

- **Paleontological resources** are the fossil remains or traces of past life forms, including both vertebrate and invertebrate species, as well as plants. These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. All vertebrate fossils are considered to be significant; other kinds of paleontologic resources must be evaluated individually for significance depending on their potential scientific value.

Known cultural resources are those which have been identified through formal recognition on one or more of the following inventories: National Register of Historic Places, California Archaeological Inventory, California Historic Resources Inventory, California Historical Landmarks, Points of Historic Interest and others.

The purpose of the Cultural Resources section of the San Joaquin Corridor Amtrak California Service DRAFT PEIR is to provide Caltrans and other interested parties with the necessary information and analysis to determine whether the proposed operational modifications and supporting infrastructure improvements required to support intercity passenger train operations within the San Joaquin Corridor through the 2035 planning period would have any adverse effects on archaeological resources, as defined by the National Historic Preservation Act (NHPA) Section 106 and CEQA, that may exist within the APE, or on paleontological resources; collectively termed “cultural resources” in this Draft PEIR.

The only written comment received in response to the Notice of Preparation (NOP) specific to cultural resources was from the California State Lands Commission (CSLC; Comment Letter #3).
A comment received at the Richmond Scoping Meeting on November 26, 2012 raised a cultural resource impact issue. Information is provided in this Subchapter to address the concerns expressed regarding cultural resource impacts. Refer to the summary list of comments and responses in Chapter 2 and also to copies of the comment letters themselves in Chapter 8, Appendix 8.2.

The cultural resources reports prepared for the project by CRM TECH detail the correspondence initiated by the firm with the State of California's Native American Heritage Commission (NAHC) and Native American Tribes, provided in the Appendix 5a of Volume 2 of this DRAFT PEIR. CRM TECH reviewed NAHC’s Sacred Lands file and contacted 73 Native American representatives in writing and by telephone between March 25, 2012, and March 22, 2013, to solicit local Native American input regarding cultural resource concerns over the proposed undertaking. Among the specific concerns expressed, 11 of the tribal representatives stated that the APE is extremely sensitive for Native American cultural resources, such as village and burial sites, and are concerned these sites may be disturbed. One representative expressed concerns regarding burial sites along the proposed secondary rail alternative from Fresno to Visalia. In addition, some tribal representatives requested that if archaeological/cultural monitoring is required during the ground-disturbing activities for the undertaking, monitors representing the various tribes that are indigenous to the area should rotate monitoring responsibilities. For detailed information regarding the correspondence, please refer to the Appendix 5a of Volume 2 of this DRAFT PEIR.

The following analysis relies upon the CRM TECH Preliminary Historical/Archaeological Resources Study for the San Joaquin Corridor Amtrak California Service Programmatic Environmental Impact Report dated September 13, 2013 (Technical Appendix 5a); the Historic Property Survey Report for the Proposed Railway Station in the City of Elk Grove Sacramento County, California dated March 13, 2014 (Technical Appendix 5b); the HPSR Re: Identification of Historic Properties for the Proposed Railway Station in the City of Hercules in Contra Costa County, California dated 2014 (Technical Appendix 5c); the Historic Property Survey Report for the San Joaquin Corridor Amtrak California Service Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno in San Joaquin, Merced, and Fresno Counties, California dated May 1, 2013 (Technical Appendix 5d); and the Letter Report Re: Paleontological Sensitivity Assessment for the San Joaquin Corridor Amtrak California Service Programmatic EIR in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California dated February 23, 2014 (Technical Appendix 5e).

4.4.2 Regulatory Setting

The National Historic Preservation Act of 1996 (NHPA), as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings structures and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800).

The Archaeological Resources Protection Act (ARPA) applies when a project may involve archaeological resources located on federal or tribal land. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place. Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the Ause@ of land with historic properties.

Historical resources are considered under the California Environmental Quality Act (CEQA), as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires the Department of Transportation to inventory state-owned structures in its right-of-way.

4.4.3 Affected Environment

The proposed project involves the possible construction and/or modification of both new and/or existing facilities as summarized in Subchapter 2.1 and detailed in Chapter 3. The nature and potential location of projects within the project area is relatively well defined at this time. In most cases, infrastructure would be installed within the existing railroad rights-of-way and easements where development has already occurred, thus generally reducing the potential for uncovering previously unidentified cultural resources. During the construction of new structures that would require the disturbance of native soil, the chance of encountering cultural resources is generally greater. However, the actual potential for discovery of resources is highly site/project specific. The Cultural Resources reports prepared for the project identify areas of heightened sensitivity for cultural resources based upon cultural resources records searches, archaeological and historical background research, consultations with Native American representatives, and field reconnaissance along the project route and at proposed station locations.

4.4.3.1 Prehistoric Period

Archaeological records indicate that human occupation in what is now the State of California began 8,000-12,000 years ago. From the northern end to the southern end, the project alignment traverses the traditional territories of at least eight Native American groups: Nisenan, Miwuk, Costanoan, Northern Valley Yokuts, Southern Valley Yokuts, Kitanemuk, Serrano, Tataviam, and Gabrielino. While contact with explorers occurred as early as 1542, Native American communities in the Project Area were generally intact until between 1770 and 1850 when “missionization,” exposure to European diseases, and displacement due to the arrival of non-native trappers, gold miners and settlers combined to devastate traditional communities. There has been a renaissance of Native American activism and cultural revitalization among a number of groups in recent decades. A summary of the known Native American groups that

historically inhabited the project area, and modern tribal affiliation of the descendents when known, is provided in the Cultural Resources report.

4.4.3.2 Historic Period

While the first European explorers had contact with coastal Californian Native American communities earlier, explorers generally didn't reach the project vicinity until the 1770s or later. During the Mission era (~1770-1834), religious and military outposts established primarily on the coast were the first major European colonization effort in California. The Missions introduced European livestock (cattle and horses), fruits and vegetables. After Mexico gained independence from Spain in 1821, the new authorities dismantled the mission system and granted divided mission landholdings into large ranchos to prominent citizens. Due to its inland location far from the centers of colonization along the coastline, most of the project vicinity was not colonized until territorial disputes between the U.S. and Mexico ended in 1848. Also in 1848, gold was discovered in a stream east of Sacramento on the western slope of the Sierra Nevadas, bringing hundreds of thousands of people to California as prospectors or to provide services to prospectors.

Agriculture replaced mining as a primary economic driver in the region by the 1860s. Many cities along the project alignment developed in large part as a result of railroad development in the 1870s. The Central Pacific Railroad (now UPRR) line linked Sacramento to the Bay Area in 1870 and Oakland to Tracy in 1878. The Southern Pacific Railroad (SPRR, now UPRR) was constructed through the San Joaquin Valley in the 1870s, followed by the San Francisco and San Joaquin Valley Railway (now BNSF) in the 1890s. Through the 1920s, the Delta region continued to grow as a passenger and freight hub. Seasonal workers in the Central Valley picked crops and additional workers in the Delta cities packed and loaded the harvest onto boxcars for shipment to the eastern markets. Shortly after World War II the invention of refrigerated trucks meant crated vegetables could be picked up at the field, bypassing the packing sheds located in the Delta cities and diminishing the industry. While agriculture remains a critical component of the San Joaquin Valley economy, portions of the project alignment closest to the industrial and commercial centers in San Francisco, Sacramento and Los Angeles have experienced intense suburbanization.

4.4.3.3 Paleontologic Resources

The San Joaquin Valley occupies the southern portion of the Great Valley geomorphological province and is filled with over 30,000 feet of Tertiary sediment. The Sacramento Valley occupies the northern portion of this province and is filled with over 20,000 feet Tertiary of Cretaceous and Tertiary sedimentary rocks.

4.4.3.4 Impact Evaluation Criteria

Due to the programmatic nature of the project, the purpose of the "Preliminary Historical/Archaeological Resources Study," the "Historic Property Survey Report for the Proposed Railway Station in the City of Elk Grove Sacramento County, California," and the HPSR "Identification of Historic Properties for the Proposed Railway Station in the City of Hercules in Contra Costa County, California" all prepared by CRM TECH for this Draft PEIR is to review past survey coverage of the APE, inventory previously identified "historic properties" or "historical resources" located within or partially within the APE for future statutory/regulatory compliance considerations, and assess the potential of the APE for as-yet undocumented historical/archaeological sites. The scope of the studies include cultural resources records

searches, archaeological and historical background research, consultations with Native American representatives, and a field reconnaissance along the project route. This analysis assists Caltrans in determining whether any such resources meet the official definitions of "historic resources" or "historic properties" as provided in the California Public Resources Code or would otherwise be considered significant resources.

According to PRC §5020.1(j),

> *historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." Specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing the California Register of Historical Resources, included in the local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 CCR §15064.5(a) (1-3)).*

"Historic property," as defined by 36 CFR 800.16(l), means

> *any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.*

Regarding the proper criteria for the evaluation of historical significance, CEQA guidelines mandate that "a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

The purpose of the *Paleontological Sensitivity Assessment for the San Joaquin Corridor Amtrak California Service Programmatic EIR in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California* prepared by CRM Tech (dated February 23, 2014) was to identify, on a programmatic level, areas along the project route where ground-disturbing activities associated with the proposed project have a high potential for encountering significant, nonrenewable paleontological resources, based upon the geologic formations present. CRM Tech reviewed the Geologic Maps of California series published by the California Division of Mines and Geology (now the California Geological Survey) at a scale of 1:250,000. In some areas, the data from these maps were compared to and supplemented by those from the Dibblee Geologic Map series, which were printed at scales of 1:62,500 and 1:24,000.

A significant cultural resource impact would be any one impact that resulted in the damage, disturbance or destruction of an archeological, paleontological, or other historic/cultural resource. Within this analysis a "site" refers to a historical/archaeological resource that has been recorded into the California Historical Resources Inventory, and an "isolate" indicates a cultural locality with fewer than three artifacts. Isolates by definition do not qualify as archaeological sites due to the lack of contextual integrity, and thus require no further consideration in the Section106- and CEQA-compliance process.

Activities requiring the excavation or movement of soil material at any location within the project area have the potential to adversely impact cultural resources. Additionally, some of the proposed improvements have the potential to damage or cause the loss of historical structures. The impact evaluation presented below focuses on the proposed physical changes within the area of impact and any potential adverse impacts these changes may have on the cultural resources that exist within the area of impact.

4.4.4 Environmental Consequences

Would the project cause a substantial adverse change in the significance of a historical resource or an archaeological resource as defined in Section 15064.5? Would the project disturb any human remains, including those interred outside of formal cemeteries?

As detailed in the Cultural Resources reports prepared for the San Joaquin Corridor Amtrak California Service PEIR (provided in Technical Appendix 5d), records searches of the California Historical Resource Information System encompassed the area within a quarter-mile radius of the existing railroad rights-of-way within the area of impact. More than 1,000 previous cultural resources studies have been conducted within the scope of the records search, including more than three dozen specifically focused on the railroads. Previously recorded historic resources within the APE include many linear features such as pipelines, transmission lines, canals, levees, roadways and railways. Previously recorded archaeological resources within the APE include occupations sites (most of which have been destroyed or were mapped inaccurately as they are not currently detectable; however, sites in Kern County and Sacramento County are likely to be highly sensitive for subsurface resources), shell mounds (at least one with burials that is believed likely to extend under UPRR tracks in Contra Costa County) and isolates (flakes). A county-by-county search of the CSLC shipwreck database yielded no submerged cultural resources within or adjacent to any segment of the APE.

The records searches revealed that there are 13 previously recorded historical/archaeological sites located at least partially within the APE that are currently listed in the National Register of Historic Places or the California Register of Historical Resources, have been determined eligible for listing, are designated California Historical Landmarks, or have been found eligible for local historical designations. These 13 sites meet the definition of "historic properties" and/or "historical resources," and project impacts to these sites should be avoided, if feasible, or mitigated to a level less than significant. These 13 sites are detailed in Table 4.4-1 below. In addition to these 13 sites, there are additional previously recorded historical/archaeological sites located in or near the APE that are not eligible for a historical significance designation according to the records search results, but the presence of which could indicate areas of heightened sensitivity along the alignment. Site records for cultural resources previously recorded at least partially within the APE boundaries but determined not to qualify as a “historic property” or “historic resource” are provided in the Preliminary Historical/Archaeological Resources Study (Technical Appendix 5a).

Table 4.4-1
KNOWN HISTORIC PROPERTIES / HISTORICAL RESOURCES IN TIHE APE

Site Number	Description	Status
07-000149	Shell mound	3D
10-002960 / 10-004675 / 10-004678 / 10-004679	Component of Washington Colony canal system	3B
15-007061	Tehachapi Loop on SPRR	CHL #508
16-000126	Melga Canal	5D2
16-000127	Settlers Ditch	5D2
19-001534	Palmdale Ditch	3S
19-186112	Segments of SPRR	3S
19-187053	San Fernando Railroad Tunnel (SPRR Tunnel 25)	2S2
19-888229	Buena Vista Viaduct	2S2
24-000648	Bradley Overhead Bridge	3S
34-000505	First transcontinental railroad (SPRR)	CHL #780
39-004246	South San Joaquin Irrigation District main canal	3CS
50-000074	Hetch Hetchy Aqueduct	3S

* Status codes:
2S2 Determined eligible for the National Register (NR); listed in the California Register (CR).
3B Appears eligible for NR both individually and as a contributor to a NR-eligible district.
3D Appears eligible for NR as a contributor to a NR-eligible district.
3S Appears eligible for NR as an individual property.
3CS Appears eligible for CR as an individual property.
5D2 Contributor to a district that is eligible for local listing or designation.
CHL California Historical Landmark.

The existing BNSF, UPRR, and SCRRA railroad tracks mostly rest on raised berms of earth (high fill) and crushed rock (ballast). The ground surface along the rail lines has been extensively disturbed in the past, making it unlikely for any subsurface archaeological deposits, especially those of prehistoric origin, to have survived intact within the APE. No evidence of any of prehistoric cultural materials or features was encountered. During the field reconnaissance, several railroad depots and bridges that are more substantial than the typical minor open-deck wooden trestles or simple concrete culverts were noted within or adjacent to the APE, along with a number of other buildings of industrial nature. Some of these features will need to be recorded and evaluated individually if the proposed project will potentially impact their current conditions.

Based on these findings, the most likely historical/archaeological sites to be encountered in the APE are the railroad lines themselves and associated features, along with a host of irrigation canals that crisscross the APE, many of which may be considered important in local and regional history. Under current regulatory guidelines, however, in most cases cultural resources studies for linear transportation infrastructure projects may exclude these irrigation canals from the APE since such projects generally have little potential to affect their overall historical characteristics and significance.

Most of the railroad lines within the APE, as parts of the first transcontinental railways to reach California, certainly played important roles in the rapid growth of the state during the late 19th and early 20th centuries. However, as working components of the modern transportation infrastructure, these rail lines typically do not retain sufficient historic integrity to be considered eligible for listing in the National Register or the California Register. Exceptions to this are usually special railroad features that have acquired significance from other aspects of their

history, such as engineering feats, such as Sites 15-007061 (Tehachapi Loop) and 19-187053 (San Fernando Railroad Tunnel).

Only one of the 13 historical/archaeological sites listed above in Table 4.4-1 is of prehistoric origin. However, the presence of the known prehistoric sites in relatively concentrated clusters in or near certain segments of the APE suggests a heightened probability for similar cultural remains to be encountered in subsurface deposits at these locations. Native American representatives contacted during this study also expressed concerns over some of these locations. These areas of heightened prehistoric archaeological sensitivity are detailed below according to the County in which they are located.

Contra Costa County

- Near UPRR Mile Post 14.2 in the City of Richmond, between Parr Avenue and San Pablo Creek, where Site 07-000149 (a shell midden with burials and a contributor to the Lower San Pablo Creek Archaeological District) was previously noted as being likely to extend into the APE.

- Along the eastern shore and promontories of the San Pablo Bay, where four prehistoric sites were recorded in the APE during early 20th century, along with several other sites nearby.

Sacramento County

- Where the APE crosses the Mokelumne River watershed near the Sacramento-San Joaquin County line.

Kern County

- Around the location of Site 15-002507, a Native American village site that ostensibly was obliterated by the construction of the railroad in the 1890s, which reportedly encompasses the APE at the eastern end of the BNSF yard in Bakersfield.

- Where the APE traverses Site 15-002553, a large Native American village site that occupies most the southeast quarter of Section 18, T32S R33E, Mount Diablo Baseline and Meridian.

Los Angeles County

- Around Site 19-001575, a large, multi-component archaeological site recorded near the Los Angeles Union Station Passenger Terminal, where potentially significant cultural remains are likely to extend in subsurface deposits beyond the established site boundaries.

Based upon the previous archaeological discoveries outlined above and concerns expressed by the Native American representatives, the portions of the APE at and near these locations should be considered archaeologically sensitive. If any ground disturbing activities are necessary at these locations, further archaeological investigations will be required to determine whether any potentially significant archaeological remains are present within or adjacent to the APE. Please refer to Section 4.4.4 Mitigation Measures for more details.

If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

SITE-SPECIFIC EVALUATIONS

In addition to the Corridor-wide Cultural Resources evaluation, evaluations of proposed stations and lay over facilities have been completed. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

Hercules Station

The following information is excerpted from the *HPSR Re: Identification of Historic Properties for the Proposed Railway Station in the City of Hercules in Contra Costa County, California* dated 2014 prepared by CRM TECH (Technical Appendix 5c).

The entire APE of the proposed Hercules Station was covered by a cultural resources study completed for the Hercules Intermodal Transit Center (ITC) Final Environmental Impact Statement (FEIS), which was prepared in 2012 by the Federal Transit Administration (FTA) and the City of Hercules under Section 106 provisions (FTA and City of Hercules 2012). The scope of the study included records searches at the Northwest Information Center and the Native American Heritage Commission, historical background research, consultation with local community and Native American representatives, and an intensive-level field survey that encompassed the proposed Hercules Station APE in its entirety. In addition, a large portion of the APE was also covered by a Caltrans-format historic property survey report prepared in 2012 by the Far Western Anthropological Research Group of Davis, California, for the San Francisco Bay Trail project, a component of the Hercules ITC project. The scope of that study included the same research procedures as those completed for the overall FEIS. CRM TECH reviewed both of the previous studies, and concluded that the Hercules Station APE proposed as part of the San Joaquin Corridor Amtrak California Service Program EIR has been adequately surveyed for "historic properties"/"historical resources" in the recent past, and the findings of those studies are sufficient to support the identification and evaluation of "historic properties"/"historical resources" within or adjacent to the APE. Therefore, no further research procedures were necessary and the conclusions and recommendations herein are based on the results and findings of the 2012 studies.

The records searches conducted for the 2012 studies identified three known historical/archaeological sites lying within or partially within the current APE, namely Site 07-002570/CA-CCO-750, a prehistoric shell midden; Site 07-001006/CA-CCO-818H, the Hercules Powder Company; and Site 07-000813, the Southern Pacific Railroad (now the Union Pacific Railroad; see Fig. 2 of Hercules cultural document in Technical Appendix 5c. During the archaeological field survey for the Hercules ITC FEIS, several features associated with the railroad grade and the former powder works operation were identified within the project boundaries, including foundations, signal markers, culverts, pipes, and a wooden railroad bridge.

The Native American Heritage Commission's Sacred Lands Files did not identify any Native American cultural resources within the Hercules ITC project area, nor did correspondence with eight local tribal representatives recommended by the Commission. Nevertheless, the contacts with tribal representatives produced one response, containing a request for Native American monitoring and for specific actions to be taken if Native American remains are encountered during the project.

Subsequent to the field survey, additional archaeological investigations determined that Site 07-002570 lay in the railroad right-of-way at a minimum depth of 2.89 feet below the ground surface and contained such diverse artifacts as bone tool, stone tool debris, and subsistence remains from shellfish, birds, fish, and plants. In light of these findings, the FEIS concluded that

Site 07-002570 appeared eligible for the National Register of Historic Places, but that the site would be avoided by limiting ground disturbances in the vicinity to a maximum depth of two feet. Since the Hercules ITC project had the potential to affect Site 07-002570 during construction, the FEIS recommended the following mitigation measure at that location, and it is included as mitigation measure 4.4-8 in Section 4.4.4 below.

> *To ensure successful avoidance, both an archaeological and tribal monitor will be present during construction within 100 feet of the known location of the archaeological deposit. In the event intact archaeological deposits are exposed, construction at the find location will be stopped and new measures will be designed and implemented in consultation with the SHPO and tribes.*

The two historic-period sites, 07-000813 and 07-001006, including the associated features found during the field survey, were determined to be ineligible for any historic designation. Therefore, the FTA and the City of Hercules concluded that the Hercules ITC project would not have an adverse effect on any "historic properties". Responding to the findings and conclusions of the FEIS, California State Historic Preservation Officer Milford Wayne Donaldson indicated in a letter dated April 13, 2013, that he could not concur with the determination that Site 07-001006 as a whole was not eligible for the National Register at the time, but he did concur that the features within the project boundaries lacked sufficient historic integrity to represent the qualities for which the whole property might be considered eligible. Ultimately, Donaldson stated in the letter:

> *Pursuant to 36 CFR 800.5(c)(1), I concur with the FTA's finding that the undertaking will have No Adverse Effect to historic properties, with the condition that an archaeological monitor be present during ground disturbance within and adjacent to the horizontal boundaries of CA-CCO-750 [07-002570].*

As stated above, please refer to mitigation measure 4.4-8 in Section 4.4.4 below.

Based on a careful review of the existing documentation, CRM TECH concluded that the findings of the 2012 FEIS and the State Historic Preservation Officer's conditional concurrence are valid and appropriate for the present undertaking as well. The conclusions and recommendations of the 2012 FEIS are thus adopted for this undertaking as follows:

- No "historic properties" or "historical resources" will be affected by the proposed undertaking as long as the maximum depth of ground disturbance at or near the location of Site 07-002570 (see Fig. 2 of Hercules cultural document in Technical Appendix 5c) is limited to two feet or less. If ground disturbance at that location is expected to exceed two feet in depth, additional archaeological investigations, primarily data recovery excavations to mitigate potential effect to the site, will become necessary.

- Archaeological and Native American monitoring should be required during any grading, trenching, excavation, or other earth-moving activities within 100 feet of the established boundaries of Site 07-002570.

<u>Elk Grove Station</u>

The following information is excerpted from the *Historic Property Survey Report (HPSR) for the Proposed Railway Station in the City of Elk Grove Sacramento County, California* dated March 13, 2014 prepared by CRM TECH prepared as part of the proposed San Joaquin Corridor Amtrak California Service PEIR (Technical Appendix 5b). Additional information is excerpted

from the *Elk Grove Intermodal Rail Station Master Plan Draft Recirculated Initial Study/Mitigated Negative Declaration* (IS/MND) dated January 2010. The CRM TECH report included an Archaeological Survey Report (ASR), provided as Attachment B to the Elk Grove Station HPSR. The field survey of the APE was carried out on October 2, 2013, by project archaeologist/historian Terri Jacquemain, M.A., under the direction of principal investigator Michael Hogan, Ph.D. In addition to the archaeological field survey, the scope of the study included a historical/archaeological resources records search, historical background research, and consultations with Native American and local community representatives.

The records search indicated that the APE was the focus of a historic building study in 1992, and that the southern portion of the proposed Elk Grove Station APE was covered by cultural resources studies completed for the *Elk Grove Intermodal Rail Station Master Plan Recirculated IS/MND.* The IS/MND lists a Cultural Resource Report prepared by the City of Elk Grove dated May 2007 and a Cultural Resources Study prepared by Pacific Legacy, Inc dated October 2009. As a result of these studies, the residence and associated buildings in the APE were identified as part of the circa 1911-1957 Stohlgren/Olson Ranch, which was determined not to be eligible for listing in the National Register of Historic Places, the California Register or for designation as a local historical resource pursuant to the City of Elk Grove Historic Preservation Ordinance. The ranch complex was not formally recorded into the California Historical Resources Inventory during these previous studies. The Stohlgren/Olson Ranch was determined not to constitute a "historic property" under Section 106 or a "historical resource" under CEQA. However, the City of Elk Grove planned to mount a commemorative plaque on the property if the railway station project studied in 2010 materialized. Because a Notice of Determination apparently was not filed for the aforementioned MND, the CEQA process was never completed, and the conclusions stated in the IS/MND as provided above are for reference only. No other cultural resources were identified within the APE by the records search conducted as part of the proposed San Joaquin Corridor Amtrak California Service PEIR. As a result of the current study, it is determined that the Stohlgren/Olson Ranch was exempt from evaluation because of a lack of integrity, and the site does not qualify as a historic property under Section 106 or a historical resource under CEQA, as documented in the Elk Grove Station HPSR Attachment C.

Outside of the APE but within a quarter-mile radius, six additional studies have been completed on various tracts of land and linear features, and three historical/archaeological sites were previously recorded into the California Historical Resources Inventory, including a segment of the UPRR, a commercial building, and Elk Grove Florin Road. The commercial storage facility (34-001250), recorded to the north of the site near Sheldon Road, was built in 1980 and was previously determined to be ineligible for the National Register. The other two sites, Elk Grove Florin Road outside of the eastern boundary of the APE (34-000700) and a segment of the Southern Pacific Railroad (now UPRR; 34-001302) located at its intersection with Sheldon Road, were previously found not to qualify for any historical designation due to the loss of integrity.

No prehistoric (Native American) cultural remains have been recorded in or near the APE.

The archaeological field survey conducted for the San Joaquin Corridor Amtrak California Service PEIR recorded the remnants of an early 20th century farm, including three surviving buildings, within the APE consistent with previous studies. Historic sources suggest that the APE was developed as a farm by Carl Stohlgren around 1911, and the farm was expanded and converted to a dairy ranch around 1947. The dairy remained in operation until 1964. Of the nine buildings extant on the property in 1992, three survived as of 2010, including a residence dating to the 1910s-1920s, a barn that was remodeled to serve as a Grade A dairy barn around 1947,

and a small wooden storage shed. These three buildings, still present in the APE, were collectively recorded into the California Historical Resources Inventory as part of the current study (site number pending). The current study concurred with the previous findings that the site does not qualify as a "historic property" under Section 106 or a "historical resource" under CEQA, as documented in the Elk Grove Station HPSR Attachment C.

Sites 34-000700 (Elk Grove Florin Road) and 34-001302 (UPPR) were observed during the archaeological survey conducted for the San Joaquin Corridor Amtrak California Service PEIR just outside of the APE boundaries. Based on their current condition and appearance as working components of the modern infrastructure, the archaeological survey conducted for the San Joaquin Corridor Amtrak California Service PEIR concurred with the previous findings that the sites do not constitute "historic properties" or "historical resources."

Stockton Station

The San Joaquin Corridor Amtrak California Service Project components under consideration include the development of a new or rehabilitated passenger railway station in the City of Stockton, San Joaquin County. CRM TECH prepared a *Historic Property Survey Report for the San Joaquin Corridor Amtrak California Service Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno in San Joaquin, Merced, and Fresno Counties, California,* including an ASR and Historical Resources Evaluation Report (HRER) both dated May 1, 2013 and provided as Attachments. The following analysis is excerpted/summarized from the previously referenced Historic Property Survey Report, which is available in Technical Appendix 5d, Stockton, Merced and Fresno to this Draft PEIR.

The ASR and HRER included a standard historical/archaeological resources records search, historical and geoarchaeological background research, consultations with local community and Native American representatives, and a systematic field survey. A total of four built-environment features of historical origin were identified within or partially within the APE, but no archaeological features or artifact deposits, either prehistoric or historic in origin, were encountered, and the subsurface sediments in the Stockton APE are considered low in sensitivity for buried cultural remains.

The records search on the APE in Stockton was completed on November 3, 2011, by the Central California Information Center (CCIC). The records search results indicate that the entire APE except for the new station site had been covered by previous surveys. A total of 14 cultural resources studies were previously completed within the scope of the records search in Stockton, including two that focused on the two existing Amtrak stations in the APE. The Southern Pacific Stockton Downtown Station (now the Robert J. Cabral Amtrak/ACE Station) at 949 East Channel Street was surveyed in 2003, prior to the restoration of the 1930 depot building. However, CCIC records yielded no evidence that the depot was formally recorded into the California Historic Resources Inventory or evaluated for historical significance during that study.

The only historic-period site previously recorded within the APE is the circa 1900 Stockton Santa Fe Depot (39-002409) at 735 South San Joaquin Street, which was previously recorded into the California Historical Resources Inventory, was previously determined eligible for listing in the National Register of Historic Places, and is designated as City of Stockton Historical Landmark No. 12. The Mission-Revival style depot has been renovated, included painting and many interior upgrades.

Also among the previous studies was a 2000 community-wide survey covering much of the downtown area. As a result of that study, the East Channel/North Aurora Historic District was recorded in close proximity to the APE and designated Site 39-004683, which encompasses a group of 1890s Queen Anne cottages located across Channel Street from the Robert J. Cabral Amtrak/ACE Station. Other previously recorded sites near the APE include segments of the Southern Pacific Railroad (39-000002/39-004643) and the Central California Traction Company Railroad (39-004457). Including the four sites noted above, a total of 28 historical/archaeological resources were recorded within the scope of the records search, as listed in Table 1 of Technical Appendix 5d, Stockton, Merced and Fresno. Additionally, the Caltrans Historic Bridge Inventory identifies at least seven bridges within the records search scope.

While no prehistoric sites were formally recorded within the scope of the records search in Stockton, the CCIC records contain a 1996 report of four human skulls that were discovered east of the UPRR near the Robert J. Cabral Amtrak/ACE Station. Further investigation reveals that the skulls were likely part of a Native American artifact collection left behind by a prolific relic hunter and later found by amateur archaeologists seeking to uncover valuables in a suspected subsurface midden (Fitzgerald 1996). In 1997, per request of the designated Most Likely Descendent, the remains were re-buried where they had been discovered.

As part of the research of site conditions, geoarchaeological analysis was conducted using existing literature on surface geology and soil types in the vicinity of the APE and pertinent geological and soil maps. The purpose of this analysis was to assess the APE's potential for the deposition and preservation of subsurface cultural deposits from the prehistoric period, which cannot be detected through a standard archaeological survey. Geoarchaeological analysis suggests that, in light of the Pleistocene age of the exposed sediments and the extensively disturbed state of the surface soils, the APE appears relatively low in sensitivity for potentially significant archaeological remains in buried deposits, especially those from the prehistoric era.

The field survey verified the presence of the Stockton Santa Fe Depot (39-002409), and resulted in the recordation of two historic-period buildings (39-005141 and 39-005143) and an industrial complex (39-005142). Altogether, four non-archaeological cultural resources were identified within or partially within the APE.

Of the three sites recorded during this study, 39-005141 represents a circa 1958 commercial building at 711 South San Joaquin Street (Marble Palace, Inc.), within the portion of the APE adjacent to the Stockton Santa Fe Depot Site, and 39-005142 consists of an early to mid-20th century industrial complex at 1110 East Scotts Street (Geiger Manufacturing, Inc.), in the portion of the APE at the BNSF and UPRR junction. These two sites were evaluated against the criteria for listing in the National Register and the California Register, and were found to be ineligible. Neither meets the definitions of a "historic property" or a "historical resource."

Site 39-005143 represents the circa 1930 Southern Pacific Stockton Downtown Station (now the Robert J. Cabral Amtrak/ACE Station) at 949 East Channel Street. Despite being the focus of a cultural resources study prior to a restoration project in 2003, this two-story red brick building with Italian Renaissance and Spanish Revival design elements apparently had not been formally recorded into the California Historical Resources Inventory prior to the present survey. Because of its architectural merits and close association with the crucial role that railroad transportation played in the development of Stockton in the late 19th and early 20th centuries, and in light of the faithful restoration of the building to its 1930s appearance, Site 39-005143 was found to be eligible for listing in the National Register, under Criteria A and C, as well as the California Register under Criteria 1 and 3, with a local level of significance.

No archaeological features or artifact deposits, either prehistoric or historic in origin, were encountered during the survey. Accordingly, the present report concludes that no archaeological resources exist within or immediately adjacent to the APE.

Layover Facility in Merced or Fresno

The San Joaquin Corridor Amtrak California Service Project components under consideration include the development of a new layover facility in either the City of Merced, Merced County, or the City of Fresno, Fresno County. CRM TECH prepared a *Historic Property Survey Report for the San Joaquin Corridor Amtrak California Service Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno in San Joaquin, Merced, and Fresno Counties, California,* including an ASR and HRER both dated May 1, 2013 and provided as Attachments. The following analysis is excerpted/summarized from the HPSR, which is available as Technical Appendix 5d, Stockton, Merced and Fresno to this Draft PEIR.

The ASR and HRER included a standard historical/archaeological resources records search, historical and geoarchaeological background research, consultations with local community and Native American representatives, and a systematic field survey. Terri Jacquemain performed the field inspection of the APE on October 15-18, 2012. The APE was found to be located almost entirely within the extensively disturbed railroad rights-of-way and fully developed urban areas near the historic downtown core of each city. As part of the survey, Jacquemain attempted to locate and inspect all previously recorded sites within the APE, and completed field-recording procedures on all unrecorded buildings and built environment features encountered within the APE that appeared to be more than 45 years old, including detailed notations and preliminary photo-documentation of their characteristics and current conditions. In conjunction with the field inspection, Jacquemain also conducted a reconnaissance-level survey of the surrounding area to assess the physical context of the APE. A total of two built-environment features of historical origin were identified within or partially within the Merced and Fresno APE, but no archaeological features or artifact deposits, either prehistoric or historic in origin, were encountered, and most of the subsurface sediments in the APE have been found to be relatively low in sensitivity for buried cultural remains.

Geoarchaeological analysis was conducted to assess the APE's potential for the deposition and preservation of subsurface cultural deposits from the prehistoric period, which cannot be detected through a standard archaeological survey. Geoarchaeological analysis suggests that, in light of the Pleistocene age of the exposed sediments and the extensively disturbed state of the surface soils, the Merced APE appears relatively low in sensitivity for potentially significant archaeological remains in buried deposits, especially those from the prehistoric era. However, in the Fresno portion of the APE older sediments are mixed with Holocene sediments; therefore, the potential for buried archaeological deposits in the Fresno portion of the APE is slightly higher.

Merced

The records search on the APE in Merced was completed on November 3, 2011, by the Central California Information Center (CCIC). Five surveys were reported to the CCIC within a quarter-mile radius of the APE, including a citywide historic building reconnaissance in 1985 and two surveys along segments of the BNSF railroad (Fig. 2). Seven sites were previously recorded within the scope of the records search, all dating to the historic period. Of these seven, the only site lying partially within the APE consists of a 16.5-mile segment of the BNSF railroad (formerly the Atchison, Topeka, and Santa Fe Railway; Site 24-001881), which was found not to be eligible for listing in the National Register of Historic Places or the California Register of

Historical Resource during a 2009 study due to the lack of historic integrity. Among the other six known sites located within the scope of the records search, the nearest to the APE are two residential historic districts delineated between G and Canal Streets. One district lies between 18th and 23rd Streets (24-000838), and the other between 25th Street and 27th Street (24-000735), which leaves an approximate one-block buffer between the districts and the APE. Both districts were determined to be eligible for the National Register of Historic Places in 1985. Also recorded near the APE was Site 24-001880, representing four date palm trees associated with the former site of the Merced Santa Fe Depot, located approximately 150 feet northwest of APE. A bridge in the APE, crossing G Street, was not found in the Caltrans Historic Bridge Inventory.

No other historic-period buildings or structures, historic districts, historic landscapes, locally designated sites, or properties of traditional cultural value were encountered within or immediately adjacent to the APE as part of the field survey conducted for the project. No archaeological features or artifact deposits, either prehistoric or historic in origin, were encountered during the survey. Accordingly, the present report concludes that no archaeological resources exist within or immediately adjacent to the APE.

Fresno

The records search on the Fresno APE was completed on December 6, 2011, by the South San Joaquin Valley Information Center (SSJVIC). All of the Fresno APE except the southern portion was previously surveyed by at least one of three previous surveys, two conducted in 1995 and the third in 2001, focusing on the Fresno Santa Fe Depot and other nearby historic buildings (Figure 3 of Technical Appendix 5d, Stockton, Merced, Fresno). As a result of the previous surveys, the main depot building and a former freight office were recorded as Site 10-004412, and a freight-loading platform on the north side of the depot was recorded as Site 10-005266, all located within the APE. The Mission Revival-style depot was built around 1899 and is listed in the National Register of Historic Places and the City of Fresno's local historical resources register. The freight office, added about 100 feet to the east of the depot around 1926, was determined to meet the criteria for listing in the National Register with a local level of significance during the 2001 study. Both buildings may be contributors to the Santa Fe Warehouse District, a potentially National Register-eligible historic district proposed in 1995 but apparently yet to be recorded as such. The BNSF freight-loading platform added to the depot in the mid-1950s (Site 10-005266) was determined ineligible for any historical designation, including the National Register of Historic Places and the California Register of Historical Resources.

The SSJVIC records indicate four additional surveys within the quarter-mile scope of the records search, and a total of 16 previously recorded sites lying within the scope of the records search but outside of the APE. One other property of note within the quarter-mile radius is the circa 1920 Central Packaging Supply Company building at 2534 San Benito Street, near the southern end of the APE, which is listed in the City's historical resources register.

As a result of the field survey, it was discovered that the previously recorded BNSF loading platform, site 10-005266, which had previously been determined ineligible for any historical designation, has been completely removed from within the APE. Meanwhile, the field survey verified the presence of the Fresno Santa Fe Depot and freight office (site 10-004412) within the Fresno APE. The depot was found to be busy with passenger traffic, but the freight office was found not to be in use.

The Fresno Santa Fe Depot is currently listed in the National Register, while the freight office was previously deemed eligible for listing. By virtue of their National Register status, these three sites meet Section 106 definition of "historic properties" and CEQA definition of "historical resources." The destruction of or significant alteration to these sites (site 10-004412), therefore, will potentially constitute an adverse effect on the significance and integrity of a historic property as well as a substantial adverse change in a historical resource.

No other historic-period buildings or structures, historic districts, historic landscapes, locally designated sites, or properties of traditional cultural value were encountered within or immediately adjacent to the APE.

It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during the undertaking, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional surveys will be required if the project changes to include areas not previously surveyed.

Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The existing BNSF, UPRR, and SCRRA railroad tracks mostly rest on raised berms of earth and crushed rock. The ground surface along the rail lines has been extensively disturbed in the past by railroad construction and maintenance activities, making it unlikely for any subsurface paleontological deposits to have survived intact within the APE of rail line improvements.

The proposed support infrastructure (stations and layover facilities) lie among industrial, commercial, residential and agricultural properties in the vicinity of existing rail infrastructure. Within the APE boundaries of identified locations detailed in this Draft PEIR (Stockton Station, Elk Grove Station, Merced/Fresno Layover Facility and Hercules Station), the ground surface at each location has been extensively disturbed. At the Elk Grove Station locations, ground disturbance is attributed primarily to agricultural activities. At the Stockton Station and Merced/Fresno Layover Facility locations, ground disturbance is attributed primarily to construction activities along the railroad. At the Hercules Station, ground disturbance is attributed primarily to past industrial development and construction activities along the railroad. Where the APE is not paved or occupied by buildings, the ground surface consists mostly of compacted soil with scattered gravel and sporadic growth of weeds.

As detailed in the cultural resource documents prepared for this project by CRM TECH for the Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno in San Joaquin, Merced, and Fresno Counties, California, the San Joaquin Valley occupies the southern portion of the Great Valley geomorphological province and is filled with over 30,000 feet of Tertiary sediment. The Sacramento Valley occupies the northern portion of this province and is filled with over 20,000 feet Tertiary of Cretaceous and Tertiary sedimentary rocks.

The geoarchaeological analysis of the Stockton, Merced and Fresno sites analyzed for the aforementioned report found that the extensively disturbed state of the surface soils combined with the Pleistocene age of the exposed sediments at the Stockton and Merced locations renders most of the areas analyzed low in sensitivity for potentially significant archaeological remains in buried deposits. At the Fresno location the sediments were found to be a mix of Pleistocene and Holocene age sediments. The extensively disturbed state of the soils also substantially decreases the potential for potentially significant paleontological resources within

the APE. However the Pleistocene age of the exposed sediments would favor, rather than preclude the possibility of paleontological resources.

According to the Hercules ITC Draft EIR/EIS, fossilized bivalves and a gastropod were noted in a railroad cut and bayshore exposure near the eastern portion of the Hercules Station project area. No evidence of vertebrate fossils was noted. The Hercules ITC EIR/EIS concluded, "There are no known significant paleontological remains (vertebrate) located within the Project area, and the ground surface is largely disturbed and largely covered with fill. Regardless, construction activities at the proposed project could result in adverse impacts to undiscovered paleontological resources. Impact would be less than significant with mitigation measures incorporated." After the completion of construction activities, operation of the proposed San Joaquin Corridor Program improvements would not expose buried paleontological resources and would not result in an impact to any such resources. Mitigation is incorporated to reduce the potential for adverse impacts to paleontological resources from construction activities to a less than significant level.

CRM Tech conducted a programmatic level paleontological sensitivity assessment for the San Joaquin Corridor APE (Technical Appendix 5e). The purpose of this study was to identify areas along the project route where ground-disturbing activities associated with the proposed project have a high potential for encountering significant, nonrenewable paleontological resources, based upon the geologic formations present. The region-by-region assessment was conducted in two linear patterns, one from Oakland to Stockton and the other from Sacramento to Los Angeles. Only the areas resting on sediments that are considered potentially fossiliferous are listed specifically in the discussion below. The other portions of the project area appear to be low in sensitivity for significant paleontological remains because of their locations upon Holocene-age sediments, geologic formations of igneous origin, or metamorphic rocks.

Oakland to Stockton

Along this generally east-west alignment in the San Francisco Bay and Sacramento-San Joaquin River Delta area, the following segments of the project route are found to be situated in areas of high potential for paleontological resources:

- From San Pablo northerly for approximately two miles: the project route runs through rocks of Pliocene age.
- From the northern end of the previous segment to the area near Martinez: the BNSF alternative alignment of the project route runs through Tertiary sedimentary rocks.
- In the same area, the preferred project alternative on UP tracks along the shoreline: traverses mostly Holocene-age sediments of low paleontological sensitivity, but parts of this alignment may cut into Tertiary sediments of a high paleontological sensitivity.
- From the vicinity of the San Joaquin River to Stockton: the route runs through Pleistocene-age sediments.

Sacramento to Los Angeles

This alignment traverses from the heart of the Central Valley to the southern California coastal plain, through the length of the San Joaquin Valley and across the Tehachapi and San Gabriel Mountain Ranges, along with the western tip of the Mojave Desert. The following segments of the alignment are considered to be of higher sensitivity for paleontological resources:

- From New Hope to approximately two miles north of the Fresno River: the APE runs mainly through the Pleistocene-age Modesto Formation.
- From the southern end of the last segment to the Fresno River: the sediments are mapped as Pleistocene-age non-marine sediments.
- From the area between Storey and Trigo (west of Madera) to Calwa: the APE lies upon Pleistocene-age non-marine sediments, which could contain significant paleontological resources.
- From Shafter to the north side of the Kern River: the project route runs along the edge of Pleistocene-age non-marine sediments.
- From the southeast side of the Kern River to the base of the Tehachapi Mountains: the project route runs upon sediments of Tertiary or Pleistocene origin.
- From Tehachapi to the Garlock Fault in the Tehachapi Pass: the project route lies mainly upon the Holocene-age **Qal** formation, which is low in paleontological sensitivity, but also cuts through some Pleistocene-age non-marine sediments (**Qc**), which are buried underneath the **Qal** at an unknown depth. Thus, this portion of the project area is considered sensitive if excavations are deep enough to reach the **Qc** formation.
- From the Tehachapi Pass area to the floor of the Antelope Valley: the project route cuts through both igneous rock and **Qc**. The igneous rock has a low paleontological sensitivity, but the **Qc** is highly sensitive. Since both of these are present along the route in a mixed pattern, this segment is assigned a high paleontological sensitivity in general.
- Within the Antelope Valley, the project route passes over the Rosamond Hills. On the south side of the hills, for approximately two miles the route runs upon Miocene-age non-marine sediments and tuffaceous sediments.
- From about a mile north of the Palmdale Reservoir to San Fernando, the project route runs mainly upon Holocene-age sedimentary rocks of low paleontological sensitivity. There are, however, a few areas where it may cut into rocks of Tertiary age.

As stated above, only the segments identified above are located on sediments with high paleontological sensitivity. All portions of the project area that are not detailed above are generally considered to be of low sensitivity for significant, nonrenewable paleontological resources. Mitigation is provided in Section 4.4.4 below to reduce potentially significant impacts to a less than significant level.

4.4.4.1 Cumulative Impact

Cumulative cultural resource impacts can only occur when such resources are not avoided or are not recovered, evaluated and their data value placed in the broader context of such resources. Based on the requirement to ensure that such resources are avoided or otherwise protected and evaluated, no cumulative significant cultural resource impacts are forecast to occur from implementation of the proposed project.

4.4.4.2 Unavoidable Adverse Impact

The cultural resource evaluation presented above indicates that, with implementation of appropriate mitigation measures, the proposed project will not cause any significant unavoidable adverse impacts. Therefore, no significant adverse cultural resource impacts are forecast to occur if the proposed project is implemented.

4.4.5 Avoidance, Minimization and Mitigation Measures

The following archaeological resource mitigation measures are prescribed for these various activities of the San Joaquin Corridor Amtrak California Service project.

Project plans should be carefully crafted and reviewed to avoid direct or indirect effects that would compromise the significance and integrity of the 13 historical/archaeological sites, identified in Section 4.4.3.2 of this Draft PEIR, that constitute "historic properties" and/or "historical resources," if feasible. If avoidance proves infeasible, further analysis will be necessary to ascertain the level and aspect of significance for the affected sites. Mitigation measure 4.4-1 establishes a performance threshold for subsequent cultural resource evaluations conducted as part of follow-on reviews. It is Caltrans' policy to avoid cultural resources whenever possible.

4.4-1 ***Where a Cultural Resources evaluation has determined resources occur within the APE for a proposed project improvement, an assessment of the resources will be required prior to approval of a specific second-tier project. The following outlines a minimum acceptable level of evaluation to assess resources.***

Properties shall be evaluated using a well-understood cultural context that describes the cultural development of an area and identifies the significant patterns that properties represent. This same historic (or prehistoric) context is used to organize all identification, registration, and preservation decisions within the planning framework. To be useful in subsequent stages of the planning process, evaluation decisions must make clear the significance of the property with the historic (or prehistoric) context. Potential preservation treatments should not influence the evaluation of significance (National Park Service n.d.:35).

The nature and type of assessment will depend on the particular resource(s) and level of information for a particular region. Consequently, it is not possible to prescribe specific methods to be utilized. However, there are certain basic elements that should be included and are as follows:

a. Preparation of a Research Design - Archaeological documentation can be carried out only after defining explicit goals and a methodology for reaching them. The goals of the documentation effort directly reflect the goals of the preservation plan and the specific needs identified for the relevant historic (or prehistoric) contexts.

b. Field Studies - The implementation of the research design in the field must be flexible enough to accommodate the discovery of new or unexpected data classes or properties, or changing field conditions. An important consideration in choosing methods to be used in the field studies should be assuring full, clear, and accurate description of all field operations and observations, including excavation and recording techniques and stratigraphic or inter-site relationships.

c. Report - The assessment report should contain the following information:

(1) Description of the study area;
(2) Relevant historical (or prehistoric) documentation/background research;
(3) The research design;
(4) The field studies as actually implemented, including any deviation from the research design and the reason for the changes;
(5) All field observations;
(6) Analysis and results, illustrated as appropriate with tables, maps, and graphs;
(7) Evaluation of the study in terms of the goals and objectives of the investigation, including discussion of how well the needs dictated by the planning process were served;

(8) Information on where recovered materials are curated and the satisfactory condition of those facilities to protect and to preserve the artifacts and supporting data.

4.4-2 Once the specific APE for each project under the proposed program is established, it should be treated with a standard Phase I, project-level historical/archaeological resources assessment, including an intensive-level field survey, especially in the areas of high archaeological sensitivity, unless such an assessment has already occurred that analysis by a cultural resources professional has determined is applicable to the proposed project. The following outlines a minimum acceptable level of evaluation to inventory resources.

a. Literature and Records Search - Existing maps, site reports, site records, and previous EIRs in the region of the subject area should be researched to identify known archaeological sites and works completed in the region. All maps, EIRs, historical maps and documents, and site records should be cited in text and references. Local historical societies should also be contacted and referenced. State Information Centers will provide the bulk of this information. The Cultural Resources Reports prepared for this PEIR may include sufficient literature and records search for covered locations if project development occurs within a reasonable time frame, as determined by a qualified cultural resource professional.

b. Field Reconnaissance - Conduct a surface survey to obtain comprehensive examination of current status of the area and gather general understanding of the kinds of cultural and related phenomena present. At a minimum, all ground surfaces chosen for survey should be walked over in such a way that every foot of ground can be visually scanned. All previously recorded cultural resources should be revisited to determine their current status, and all newly discovered sites should be recorded as appropriate. Trinomial designations will be obtained from the Information Center.

c. Report - A technical report should be prepared which fully describes both the methods and results of all efforts. Research sources should be listed, and the information summarized. The field work should be presented in detail, with all appropriate maps and graphics. Any areas not inspected with full intensity should be specified, preferably using clear, easily understood maps, and the reasons for the deficiency presented. Site records should be prepared for all new discoveries, and amendments prepared to update old records where necessary; since locational data are shielded from public access, the actual forms should be provided in the separable appendix, but the sites should be described in the main text. Each resource description should include a professional opinion of significance, with reference to the qualities or research potential which make it worthy of further consideration. Archaeological sites which need test excavation to confirm significance, integrity, and boundaries should be identified, and a sampling program recommended.

For each potentially significant cultural resource, possible impacts should be listed and mitigating measures developed. All standards for compliance with the CEQA requirements and those of the lead agencies should be addressed.

4.4-3 Prior to construction, construction personnel shall be briefed regarding what to do in the event buried cultural materials are encountered. If buried cultural resources (historic or pre-historic) are discovered during any earth-moving associated with the program, all work in the area of the find shall cease, and a qualified professional retained by the Project Proponent shall investigate the find and make recommendations on the disposition of any buried resources. This shall include assessing the value of objects, determining whether the resource deserves curation, and preparing and implementing a curation plan to protect such resources. The qualified professional shall compile a report of findings and make it available to peers for review and use of the information.

4.4-4 ***If human remains are accidentally exposed during construction activities, all work shall cease in the area of discovery and the appropriate County Coroner's Office shall be contacted pursuant to procedures set forth in Section 7050.5 of the Health and Safety Code. Any discoveries of Native American human remains will be address under the procedures in PRC Section 5097.98 et al.***

4.4-5 ***In situations where resources are potentially subject to direct or indirect impact and testing or data recovery is not proposed, an archaeological/paleontological monitor and Native American observer/consultant should be present during subsurface work. One circumstance under which this might occur would be if a known resource was close to an area of impact and the site boundaries were ambiguous. Monitors help insure that exposed data or materials are collected and that if potentially significant cultural materials or features are encountered, they will be preserved either by realignment of the proposed facilities or by prompt evaluation and recommendations for any necessary mitigative measures.***

If archaeological/cultural monitoring is required during the ground-disturbing activities for the undertaking, monitors representing the various tribes that are indigenous to the area should rotate monitoring responsibilities.

The extensively disturbed state of the surface soils and extremely altered landscapes within the project APE area reduce the potential for encountering significant paleontological resources during construction activities. It is possible to discover significant fossil deposits even in areas thought to have low potential. Construction excavation could expose and have an adverse impact on undiscovered paleontological resources. After construction activities are concluded, no further disturbance of buried paleontological resources, if present, would occur. Implementation of the following mitigation measures can reduce impacts to a less than significant level.

4.4-6 ***Prior to construction, construction personnel shall be briefed regarding what to do in the event buried paleontological materials are encountered. If paleontological materials (bones, shells, leaf prints, etc.) are uncovered, all work in the area of the find shall cease, and a qualified professional retained by the Project Proponent shall investigate the find and make recommendations on the disposition of any buried resources. This shall include assessing the value of objects, determining whether the resource deserves curation, and preparing and implementing a curation plan to protect such resources. The qualified professional shall compile a report of findings and make it available to peers for review and use of the information.***

4.4-7 ***If an archaeological or paleontological resource is found to be significant and no other preservation option is possible, mitigation of adverse effects by scientific data recovery, including analysis and reporting is the method of last resort. Such a mitigation program is usually only developed after an assessment test has been completed to identify physical parameters and cultural complexity, and formulate a research design. Each specific program would have to be developed in response to the site and potential impact, with the concurrence of the appropriate agencies and in consultation with Native American representatives. The project would provide sufficient funding to document, collect and curate significant resources.***

<u>Hercules Station</u>

The following mitigation measures are proposed specifically for the Hercules Station.

4.4-8 ***To ensure successful avoidance of cultural resources in the vicinity of Site 07-002570, both an archaeological and tribal monitor will be present during initial ground disturbance activities within 100 feet of the known location of the archaeological deposit. In the event intact archaeological deposits are exposed, construction at the find location will be stopped and new measures will be designed and implemented in consultation with the SHPO and tribes, and will at a minimum meet the standards outlined in mitigation measures 4.4-3 through 4.4-7 above.***

The following paleontological resource mitigation measure is prescribed for activities that require disturbance of native soil or sediment greater than 10 feet in depth. Please note that in all cases, monitoring may be reduced if potentially-fossiliferous units are not encountered, or upon exposure and following examination by qualified paleontologic personnel, these units are determined to have low potential to contain fossil resources.

4.4-9 ***At all locations where project impacts will extend to depths below 10 feet or where transitions occur to older sediments, spot monitoring by a qualified paleontologist shall be carried out to determine if high sensitivity deposits are being excavated. If high sensitivity deposits are being disturbed, then continuous paleontological monitoring will be required for all ground disturbing activities within these deposits. If paleontological resources are located during construction within sensitive deposits, construction in that area must stop, the resources must be protected, and treatment by a qualified paleontologist must occur following professional procedures.***

4.5 GREENHOUSE GASES / GLOBAL CLIMATE CHANGE

4.5.1 Introduction

Lead Agency Climate Change Policy

While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the projects direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing the measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document. (Source: SER, Chapter 13, Energy, Climate Change).

Caltrans does consider climate change to be a potential threat to safety and mobility. Consideration of climate change is required for all state transportation projects per policy as follows:

Adaptation: Adjustment to transportation infrastructure in response to actual or expected climatic effects includes the development of methods to protect people, places, and resources from the impacts of global climate change. This can include, but is not limited to, taking future climate change impacts such as sea level rise into consideration, and planning and implementing appropriate design changes to bridges and other appropriate transportation infrastructure. (Source: Directors Policy, DP-30, June 22, 2012).

Background

The Earth's climate has changed many times during the planet's history, with events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the Earth's orbit, and the amount of energy released from the Sun have affected the Earth's climate. The term "climate" refers to the long-term average weather that is experienced at a site location or specific area.

The atmosphere's greenhouse effect is a natural occurrence that helps regulate the temperature of our planet. When the Sun heats the Earth, much of this heat escapes back to space. The rest of the heat, also known as infrared radiation, is trapped in the atmosphere by clouds and greenhouse gases (GHGs), such as water vapor and carbon dioxide (CO_2), which occur naturally. If all of these GHGs were to suddenly disappear, our planet would be about 60°F colder and would not support life as we know it. However, beginning in the late 18th century human activities associated with the Industrial Revolution have enhanced the natural greenhouse effect by adding GHGs to the natural background mix at a faster rate than at any other time on record.[2] Today, fossil fuel combustion continues to be one of the primary sources of CO_2 emissions. The five major fuel consuming sectors contributing to CO_2 emissions are electricity generation, transportation, and industrial, residential, and commercial uses.

Scientists have observed a global warming trend beginning around the late 1800s. The global temperature record shows an average warming of about 1.3°F over the past

[2] Environmental Protection Agency (EPA), *Frequently Asked Questions About Global Warming and Climate Change: Back to Basics, http://www.epa.gov/climatechange/downloads/Climate_Basics.pdf. Accessed 12/13/11.*

century. The most rapid warming has occurred in recent decades. According to the National Oceanic and Atmospheric Administration (NOAA), seven of the eight warmest years on record have occurred since 2001. Within the past 30 years, the rate of warming across the globe has been approximately three times greater than the rate over the last 100 years. Past climate information suggests the warmth of the last half-century is unusual in at least the previous 1,300 years in the Northern Hemisphere. The preponderance of scientific evidence indicates that most of this recent warming is very likely the result of human activities.

4.5.2 Regulatory Setting

4.5.2.1 Climate Change and Global Warming

The term climate change is often used interchangeably with the term global warming, but according to the National Academy of Sciences, "the phrase 'climate change' is growing in preferred use to 'global warming' because it helps convey that there are [other] changes in addition to rising temperatures." When used in this analysis, the term climate change refers to any distinct change in measures of climate lasting for a long period of time. In other words, “climate change” means major changes in temperature, rainfall, snow, or wind patterns lasting for decades or longer. Global warming is an average increase in temperatures near the Earth’s surface and in the lowest layer of the atmosphere. Increases in temperatures in our Earth’s atmosphere can contribute to changes in global climate patterns. Global warming can be considered part of climate change along with changes in precipitation, sea level, etc. Global change is a broad term that refers to changes in the global environment, including climate change, ozone depletion, and land use change.

4.5.2.2 Primary Greenhouse Gas Emissions

According to the US Environmental Protection Agency (EPA), a GHG is any gas that absorbs infrared radiation in the atmosphere. This absorption traps heat within the atmosphere creating a greenhouse effect that is slowly raising global temperatures. California state law defines GHG to include the following: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydro-fluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (Health and Safety Code, Section 38505g).

Although CO_2 is the most common of these gases, the other gases generally have a higher global warming potential (GWP). CO_2 equivalent (CO_2e) is a measure of GHG emissions that compares the global warming potential (GWP) of the individual greenhouse gases with the GWP of CO_2. CO_2e emissions are calculated by multiplying the metric tons of a gas by the appropriate GWP factor and are commonly expressed as metric tons of carbon dioxide equivalents ($MTCO_2e$). Below is a description of each GHG, as described by the California Climate Action Registry (CCAR) General Reporting Protocol, including their sources of emissions and GWP.

Carbon Dioxide (CO_2)

Consisting of a single carbon and two oxygen atoms, CO_2 is the most common of the six GHGs and provides the reference point for the GWP of other gases. Thus, the GWP of CO_2 is equal to one. CO_2 is emitted in a number of ways, including naturally through the carbon cycle, and through human activities, most notably the burning of fossil fuels. Carbon dioxide emissions are also produced as a by-product of various non-energy related industrial activities including

production of metals such as steel, production of mineral products such as cement, and chemical production.

Nitrous Oxide (N_2O)
Consisting of two nitrogen atoms and a single oxygen atom, N_2O possesses a GWP of 310, and is typically generated as a result of soil cultivation practices, particularly the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.

Methane (CH_4)
Consisting of a single carbon atom and four hydrogen atoms, CH_4 possesses a GWP of 21, and is produced through the anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

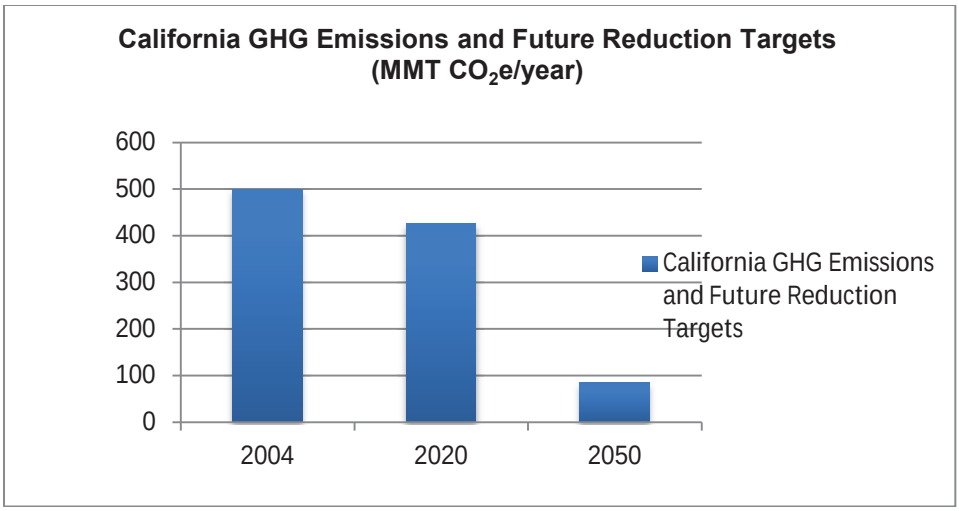
Hydrofluorocarbons (HFCs)
Primarily used as refrigerants, HFCs consist of a class of gases containing hydrogen, fluorine, and carbon that possess a range of high and very high GWP values from 120 to 12,000. HFCs can slowly leak out of air conditioning systems by permeation through hoses, or leakage due to deterioration of seals and fittings. In mobile air conditioning systems, larger leaks may occur during traffic accidents, maintenance and servicing, and vehicle disposal.

Perfluorocarbons (PFCs)
PFCs consist of a class of gases containing carbon and fluorine that possess a very high GWP range from 5,700 to 11,900. PFCs were originally introduced as alternatives to ozone depleting substances and are typically emitted as by-products of industrial and manufacturing processes.

Sulfur Hexafluoride (SF_6)
Consisting of a single sulfur atom and six fluorine atoms, SF_6 possesses a very high GWP of 23,900 and is primarily used in electrical transmission and distribution systems.

4.5.2.3 Regulatory Framework

California Executive Order S-3-05
In 2005, Governor Arnold Schwarzenegger issued California Executive Order S-3-05 establishing the following emission targets for California: 1) reduce GHG emissions to 2000 levels by 2010; 2) reduce GHG emissions to 1990 levels (427 MMT CO_2e) by 2020; and 3) reduce GHG emissions to 80 percent below 1990 levels (85 MMT CO_2e) by 2050. Executive Orders are binding on State agencies. Accordingly, S-3-05 will guide State agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local efforts.



California Global Warming Solutions Action of 2006 (AB 32)

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the *California Global Warming Solutions Act of 2006*. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide greenhouse gas (GHG) emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also includes guidance to institute emission reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions. AB 32 demonstrates California's commitment to reducing the rate of GHG emissions and the State's associated contribution to climate change, without intending to limit population or economic growth. Although AB 32 did not amend the California Environmental Quality Act (CEQA), it identifies the environmental problems in California caused by global warming (Health and Safety Code, Section 38501a).

Pursuant to AB 32, on December 16, 2010, CARB endorsed a regulation implementing California's GHG cap-and-trade program. Subject to a variety of final actions by the Executive Director and approval by the Office of Administrative Law (OAL), the regulations will be included within Title 17 of the California Code of Regulation, sections 95800-96022, entitled "California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms."

The cap-and-trade program covers approximately 80 percent of the State's total GHG emissions and is considered a key element in achieving the overall strategy set forth in the Scoping Plan. The program, as implemented through the regulation, "caps" GHG emissions by issuing annual allowances to regulated entities. Covered entities include those that meet the inclusion threshold of 25,000 metric ton of carbon dioxide equivalent ($MTCO_2e$) per year and engage in: cement production, cogeneration, glass production, hydrogen production, iron and steel production, lime manufacturing, nitric acid production, operation of oil and natural gas facilities, petroleum refining, paper and pulp manufacturing, electricity generation (including electricity importers), and the supplying of natural gas.

The regulation also allows entities that engage in the above production and manufacturing activities to opt-in even if they do not meet the 25,000 metric ton inclusion threshold. Others may also voluntarily associate into the program. By opening the program to non-covered entities, CARB hopes to create a trading market in which investment banks, citizens groups and the general public would be allowed to hold allowances and would be subject to the registration

and reporting requirements. The first compliance phase is from January 1, 2012 through December 31, 2014, and will cover all major industrial sources, including the electricity industry and large industrial plants that manufacture glass, paper, concrete, and other products. The second compliance phase will run from January 1, 2015 through December 31, 2017, and will cover distributors of transportation fuels, natural gas and other fuels. A third compliance period will run from January 1, 2018 through December 31, 2020.

CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. In order to advise the Board, CARB staff convened an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee.

Senate Bill (SB) 97

Senate Bill (SB) 97, enacted in 2007, amends the CEQA statute to establish that GHG emissions and their effects is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency (Resources Agency) guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions by July 1, 2009. On April 13, 2009, OPR submitted to the Resources Agency proposed amendments to the state CEQA Guidelines for GHG emissions. The Natural Resources Agency adopted amendments to the CEQA Guidelines for greenhouse gas emissions that became effective on March 18, 2010. These new CEQA Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents.

As an interim step toward development of required guidelines, OPR published a technical advisory entitled, *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review*, in June 2008. OPR recommends that lead agencies make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, and to mitigate the impacts where feasible. OPR acknowledges in the referenced document that the most difficult part of the climate change analysis will be the determination of significance. OPR also asked the California Air Resources Board (ARB) technical staff to recommend a method for setting thresholds, which would encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state.

State of California Climate Change Proposed Scoping Plan

In October 2008, ARB published its *Climate Change Proposed Scoping Plan* (*Proposed Scoping Plan*), which is the State's plan to achieve GHG reductions required by AB 32. The *Proposed Scoping Plan* states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. The plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation regulation to fund the program. The *Proposed Scoping Plan* was approved at the Board hearing on December 12, 2008. In August 2011, the Scoping Plan was re-approved by the Board.

In addition to the Scoping Plan, ARB has also released the Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (ARB Draft Staff Proposal). The ARB Draft Staff

Proposal includes potential interim performance standards for project types and emissions sources including construction, energy, water use, waste, transportation, and total mass GHG emissions. Specific thresholds and performance criteria for these categories have yet to be developed.

Implementation of the adopted Scoping Plan was put on hold as a result of a lawsuit filed by the Association of Irritated Residents (AIR) against the Air Resources Board (ARB). The suit claimed that the Scoping Plan, in conjunction with its market-based cap-and-trade program, violated AB-32 and that it constitutes a "project" for which CEQA clearance must be performed. In 2011, the San Francisco Superior Court ruled that the ARB violated CEQA but did not violate AB-32. ARB prepared an addendum that went through the CEQA process. On June 19, 2012, the First District Court of Appeal upheld the ARB's Scoping Plan. Cap-and-trade was scheduled to begin in 2013.

Senate Bill (SB) 375

SB 375 was signed in September 2008 and aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). It also establishes new streamlining opportunities for compatible projects under CEQA.

With the approval of the SCS, governments within the SCAG region will now be able to streamline the CEQA processing requirements for selected projects. CEQA streamlining is only available to projects that are at least 50 percent residential, and which meet other requirements.

CALGreen Program

In November 2008, the California Building Standards Commission established the California Green Building Standards Code (CALGreen) which sets performance standards for residential and nonresidential development to reduce environmental impacts and encourage sustainable construction practices. When the CALGreen code went into effect in 2009, compliance through 2010 was voluntary. As of January 1, 2011, the CALGreen code is mandatory for all new buildings constructed in the State. The CALGreen code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality (California 2010 Green Building Standards Code, California Code of Regulations Title 24, Part 11).

4.5.2.4 Impact Evaluation Criteria

As noted above, the State Natural Resources Agency adopted amendments to the CEQA Guidelines for GHG emissions that became effective on March 18, 2010. These new CEQA Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents. According to the amendments made to Appendix G of the CEQA Guidelines, the project would have a significant impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purposed of reducing the emissions of GHGs.

The adopted CEQA amendments require a lead agency to make a good-faith effort based, to the extent possible, on scientific and factual data in order to describe, calculate, or estimate the amount of GHG emissions resulting from a project. They give discretion to the lead agency in whether to:

1) Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use; and/or
2) Rely on a qualitative analysis or performance-based standards.

In addition, a lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:

1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The amendments call on lead agencies to establish significance thresholds for their respective jurisdictions and clarify that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impact analysis.

Because the criteria for assigning impact significance to a given quantity of project-related GHG emissions vary, there has been a diverse response that varies throughout the state. Air quality management agencies throughout California have addressed GHG impact significance, but no clear consensus has been reached.

Along the San Joaquin Corridor alignment, the BAAQMD has adopted a significance threshold level of 1,100 MT of CO_2e per year for project operations. The SMAQMD has proposed, but not yet adopted, a threshold of 900-1100 MT per year for development projects. The SJUAPCD has recommended that development projects either comply with an approved GHG emissions reduction plan or that they implement Best Performance Standards (BPS). These thresholds all seem oriented toward long-term project operations. The BAAQMD specifically exempts construction activity impacts from GHG emissions significance determination. The Sacramento Metro and the San Joaquin Valley air pollution agencies are focused on land development impacts without any discussion of construction impacts.

As detailed below, the "carbon footprint" of passenger train travel and of private automobiles with an average vehicle occupancy of 2.0 persons is almost identical. Any GHG impacts unique to the proposed project derive almost exclusively from construction. There are technically no GHG impact thresholds for construction-related emissions in any corridor air quality jurisdictions. Except perhaps that 20 years of proposed improvements might constitute a functionally chronic GHG emissions source, the only requirement is to quantify those emissions without making a significance determination.

4.5.3 Affected Environment

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific, technical, and

socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation. In February 2007, the IPCC issued a report on global climate change. The IPCC concluded that warming of the Earth's climate system is now "unequivocal" (i.e., "definite") and that changes in climate are now affecting physical and biological systems on every continent. The IPCC bases these conclusions on observations of increases in average air and ocean temperatures, melting of snow and ice, and rising average sea level across the globe.

The IPCC's best estimates are that the average global temperature rise between years 2000 and 2100 could range from 0.6 degrees Celsius (1.08 degrees Fahrenheit) with no increase in GHG emissions above 2000 levels, to 4.0 degrees Celsius (7.2 degrees Fahrenheit) with a substantial increase in GHG emissions (IPCC, 2007). Large increases in global temperatures could have massive deleterious impacts on the natural and human environments.

Climate change could impact the natural environment in California by triggering, among others things:

- Rising sea levels along the California coastline;
- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- Increase in heat-related human deaths, an increase in infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- Changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems could occur at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission, 2005).

In 2004, total worldwide greenhouse gas emissions were estimated to be 20,135 Million Metric Tons (MMT) CO_2 equivalents (CO_2e), excluding emissions/removals from land use, land use change, and forestry (Association of Environmental Professionals AEP, 2007). In 2004, greenhouse emissions in the U.S. were 7074.4 MMT CO_2e (Association of Environmental Professionals, 2007). California is a substantial contributor of greenhouse gas as it is the second largest contributor in the U.S. and the sixteenth largest in the world (California Energy Commission, 2006). In 2004, California produced approximately 500 MMT CO_2e, which is approximately seven percent of U.S. emissions (California Energy Commission, 2006). The major source of greenhouse gas in California is transportation, contributing 41 percent of the State's total greenhouse emissions. Electricity generation is the second largest source, contributing 22 percent of the State's greenhouse gas emissions. In 2009 the United States GHG emissions were 6,633.2 MMT CO_2e (US Environmental Protection Agency, 2011), indicating a decreasing trend. With vegetative carbon "sinks" (which absorb atmospheric carbon) taken into account, this number is reduced to 5,618.2 MMT CO_2e.

4.5.4 Environmental Consequences

As detailed below, the "carbon footprint" of passenger train travel and of private automobiles with an average vehicle occupancy of 2.0 persons is almost identical. Any GHG impacts unique to the proposed project derive almost exclusively from construction. There are technically no GHG significance thresholds for construction-related emissions in any corridor air quality jurisdictions. Except perhaps that 20 years of proposed improvements might constitute a functionally chronic GHG emissions source, the only requirement is to quantify those emissions without making a significance determination.

4.5.4.1 Operational GHG Emission Impact

Although train travel is often reported to be environmentally "friendly" in terms of minimizing greenhouse gas emissions, it is only slightly preferred over private automobiles when realistic assumptions are made as to the vehicle occupancy. According to studies by Amtrak and by energy agencies, the following CO_2 emissions are generated per million miles of travel:

	Existing	2035
20 passenger bus [a]	54.3	72.2
2 passenger auto [b]	177.8	111.1
100 passenger train [c]	176.8	-
155 passenger train [d]	-	114.1

[a] 6 mpg existing 7 mpg future
[b] 25 mpg existing 40 mpg future
[c] 1.07 million passengers @ 12 trains existing
[d] 3.04 million passengers @ 22 trains future

At close to 2.0 persons per automobile, train and car GHG emissions for the same travel distance are essentially identical. With assumed continued automobile fuel efficiency and with an increased train occupancy factor, car and train travel will remain fairly close in terms of GHG emissions per passenger mile. There is no advantage, nor any penalty in terms of GHG emissions for train travel versus the automobile. Any GHG emissions impact differences would derive primarily from construction activities.

The proposed project would, however, implement the California Rail Master Plan (2013). The comparison also does not take into account various secondary GHG impacts associated with auto travel (fuel distribution, safety, or shorter equipment life) not experienced by passenger train travel. Regardless, a high occupancy bus is the best GHG emissions minimization alternative.

By converting the stated Amtrak average fuel expenditure of 2.435 BTU per passenger mile to CO_2-equivalent GHG emissions of 10.16 kg per gallon of diesel fuel burned, the San Joaquin Corridor carrying 400,000 passenger miles per day generates 70.7 metric tons (MT) of GHG per day. The future 2035 condition of 1,140,000 passenger miles results in 130.0 MT per day. By comparison, if the same future mile of travel occurs by a 20-passenger bus at 7 mpg or a 2-passenger automobile averaging 40 mph, daily GHG emissions would be as follows:

	Daily GHG Emissions (MT/day)		
Scenario	**Trains**	**Cars**	**Buses**
Existing	70.7	71.1	33.7
2035	130.0	126.6	82.3

With assumed improved automobile fuel economy and increased train ridership per individual train, cars and trains remain almost identical in terms of daily GHG emissions for intercity travel.

By way of perspective, the San Joaquin Corridor generates only a minute fraction of the daily statewide GHG burden. Amtrak calculates that the three state-supported rail systems carry around 515 million passenger miles per day. The passenger travel on the four interstate lines is not separately calculated, but combining the track length within the state by the published ridership produces another estimated 210 million passenger miles carried each year. The resulting comparison shows Amtrak to be a minor contributor the state GHG burden as follows:

Source	Daily GHG	% of State
San Joaquin Corridor	70.0 MT/day	0.006%
All CA Amtrak	351.0 MT/day	0.029%
All CA Trains	6,822 MT/day	0.056%
All California	1,277,700 MT/day	100%

The corridor train travel is, and will continue to be, a very small increment of the state GHG burden.

4.5.4.2 Construction GHG Emission Impact

CO_2–equivalent emissions were calculated for a generic set of activities related to track and ancillary structures and for stationary facility construction. The CalEEMod predicts that each mile of track improvements (double track, drainage, bridges, etc.) will entail the release of 84 metric tons (MT) of CO_2e GHGs. Each fixed facility will cause 165 MT of CO_2e to be generated. Total project GHG emissions for 250 miles of track improvement and four fixed facilities (three stations in Stockton, Elk Grove and Hercules and one lay-over facility) over 20 years of build-out will cause an average of 1,095 MT per year to be released as follows:

(250 miles x 85 ton/mile + 4 facilities x 165 ton/facility)/20 years of build-out
= 1,096 MT per year

As previously stated, there are no numerical significance thresholds for construction activities. The standard is that project activities should not create a substantial increase compared to the no project alternative. “Substantial” is a qualitative term when related to GHG emissions. By way of comparison, the BAAQMD CEQA GHG threshold is 1,100 MT per year. The annual average construction activity emissions are almost exactly 1,100 MT per year. Construction activities were presumed to be temporary. For a 20-year project build-out, however, construction activity emissions would be chronic rather than temporary. It would be fair to say that project construction GHG emissions would border on being substantial in years of extensive construction activity. If more than 12.5 miles of track improvement are installed in any year, a GHG reduction program should be implemented as identified in the following section.

4.5.4.3 Cumulative Impact

As described in the preceding text, GHG emissions are assumed to be cumulative. Thus, as a result of forecast increased ridership in the future on the San Joaquin Corridor passenger trains GHG emissions were forecast to be less than comparable automobile traffic that would result from not implementing the proposed project, i.e., a reduction in cumulative GHG emissions relative to business as usual. Regarding construction emissions, most jurisdictions do not consider such emissions to be permanent and significant. However, based on the more

stringent threshold established by the BAAQMD of 1,100 metric tons per year and implementation of mitigation measure 4.5-1, the potential construction GHG emissions can be controlled to a less than significant impact level. Thus, project-related GHG emissions are not considered to be cumulatively considerable or a significantly adverse impact.

4.5.4.4 Significance of GHG Impacts

Based on the evaluation presented above, project-related GHG emissions will result in less than significant GHG emission during operations, and with implementation of mitigation measure 4.5-1, construction emissions will also cause a less than significant impact on global climate change.

4.5.5 Avoidance, Minimization and Mitigation Measure

4.5-1 In any year when track improvement installation is expected to exceed 12.5 miles, a GHG reduction program shall become part of construction specifications. The program shall document that through the use of alternative fuels or cleaner equipment or other equally effective measures, annual GHG emissions from construction activities will be at least 28.9% less than for the business-as-usual condition (the AB-32 compliance goal).

GHG emissions from project alternatives cannot be quantified with sufficient certainty because the engineering has not adequately progressed as to facilitate construction activity quantification. If a connection from the corridor terminus in Bakersfield to the Los Angeles Basin becomes a viable option, supplemental or subsequent environmental documentation would likely address this issue.

This page left intentionally blank for pagination purposes.

4.6 HYDROLOGY AND UTILITIES / SERVICE SYSTEMS

4.6.1 Introduction

The Hydrology and Water Quality analysis in the Initial Study (Chapter 8, Appendix 8.1) concluded that with the exception of flood hazards all hydrology and water quality impacts from implementing the San Joaquin Rail Program could be mitigated to a less than significant impact. However, as a long, linear feature that traverses the central portion of the State, the train tracks cross many water features that expose the alignment to 100-year and greater flood hazards. To fully characterize these flood hazards and evaluate the potential environmental effects on rivers and creeks from future infrastructure improvements, this section will evaluate the available information about the background flood hazards along the Corridor and forecast the type of impacts that may occur, and more importantly, to identify mitigation measures that can ensure potential impacts from constructing and operating facilities in these hazard areas will not reach a level of significant impact.

Because the UPRR and BNSF Railway tracks have been in place for over 100 years (since the 1880s), there is a long history and experience with the flood hazard areas along the alignment from Bakersfield to Oakland. When the tracks were originally installed, civil engineering methods for determining flood hazard areas were in their infancy and when bridges were installed in areas exposed to flooding, the simple method was to install bridges that would span from the highest terrace on each side of a channel. In some cases this construction method required small bridges that could clear span a stream channel and in other instances it required major bridge structures with numerous piers had to be installed to avoid flood hazards. In some instances the bridges were not sufficient to avoid flooding and new bridges had to be installed following a major flood.

The current track(s) is typically well above flood hazard areas and the potential for damage to the existing track infrastructure is relatively low. But the exposure to flood hazards is not the only issue of concern where flood hazards occur. When new bridge infrastructure is installed within 100-year flood hazard areas in the future, there is also a potential impact regarding the effect of the new structure(s) on downstream flood hazards. For example, will the new bridge structure raise the flood elevation downstream of the bridge due to channel modifications? Although it is not possible to define such downstream impacts without a specific bridge design, it is possible to anticipate such impacts and provide programmatic mitigation to control downstream flood hazard impacts to a less than significant level.

The only direct comment received on hydrology and water quality issues was submitted by the Central Valley Flood Protection Board. Refer to the summary list of comments and responses in Chapter 2. A copy of this letter is presented as Comment Letter #4 of Chapter 8, Appendix 8.2. The reader is referred to the comments in this letter and the following evaluation includes information to fully respond to the hydrology comments in Comment Letter #4.

4.6.2 Regulatory Setting

The federal regulatory component that addresses flood control includes control of development within 100-year flood hazard areas, as designated by the Federal Emergency Management Agency (FEMA). Local and regional land use jurisdictional agencies participate in the National Flood Hazard Insurance Program. Under this program, flood hazards have been determined based on 500-year and 100-year storm events. General Plans identify, and specific projects are reviewed in light of, the 100-year flood hazard zones which could create hazardous conditions if

they are developed. The 100-year flood areas are generally adjacent to creek and drainage channels.

4.6.3 Affected Environment

The focus of this analysis is on those locations where the San Joaquin Corridor tracks intersect stream channels where significant flooding can occur. As mentioned above, the Corridor tracks represent a long, linear infrastructure feature that intersects many flood hazard areas between Oakland and Bakersfield. Many of the areas identified in the project description that will require construction of a second (or third) track in order to support future passenger train operations will intersect flood hazard zones and will require some form of protection against these hazards, ranging from elevated and reinforced high fills to new bridges. There are three sources of flood hazard information. The broadest and most specific flood hazard data base is provided by the federal government Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map FIRM panels. The FEMA FIRM panels typically rely upon United State Geological Survey (USGS) topographical maps, ranging from 7.5 minute (7.5') to 15' maps along the alignment. These maps are compiled at a scale that shows the specific location of flood hazards designated as greater the 100-year floods. A second source of flood hazard information is provided by County General Plan Safety Element maps that show the general location of 100-year flood hazards within each county. A third source of flood hazard information is typically available from each County public works department. Because the latter source of information is typically very detailed, this Draft PEIR relies upon the first two data sources to define flood hazard areas for future consideration when second-tier environmental documents are prepared for specific infrastructure improvements being considered for funding by the State of California.

4.6.3.1 FEMA FIRM Panels

From Oakland (Alameda County) and Sacramento (Sacramento County) to Bakersfield (Kern County) the San Joaquin Corridor crosses 135 FEMA FIRM Panels. Each Panel is numbered and Table 4.6-1 provides the list of Panels per County. Copies of the pertinent FEMA FIRM Panels are provided as Appendix 6 of Volume 2 of this DRAFT PEIR (CD only). The Panels are periodically updated, so the copies provided represent the most current Panels available. Prior to initiating future second-tier projects, it will be necessary to consult the Panel list and verify that these Panels represent the most current version.

The FEMA FIRM Panels contain a Legend that defines Special Flood Hazard Areas (SFHAs) subject to inundation by the 1% annual chance flood. For planning purposes the 1% annual chance flood, or 100-year flood, has become the standard tool used in evaluating flood hazards in the United States and is described on the Panels as, "*The 1% annual chance flood (100-year flood) also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood."* The Areas of Special Flood Hazard are defined as follows:

Zone A: No Based Flood Elevation determined.
Zone AE: Based flood Elevations determined.
Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

Zone AO: Flood depths of 1 to 3 feet (usually sheet flow or sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

Zone AR: Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

Zone A99: Area to be protected from 1% annual chance flood by a Federal flood protection system under construction, no Base Flood Elevations determined.

Zone V: Coastal flood zone with velocity hazard (wave action); no Base Flood Elevation determined.

Zone VE: Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

Floodway Areas in Zone AE: The floodway is the channel of a stream plus any adjacent floodplain area that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

Other Flood Areas: Zones in areas of 0.2% annual chance of flood (500 year flood) either with an average depth of less than 1 foot; areas protected by levees so that the 1% annual chance flood can be carried without substantial increases in flood heights. This includes Zone X areas.

Each of the 135 FEMA FIRM Panels was evaluated to identify the potential flood hazard areas that occur along the San Joaquin Corridor track alignments (Oakland to Bakersfield and Sacramento to Stockton). The findings are presented in the Table 4.6-1. Over one hundred flood hazard areas occur within the existing Corridor track alignments. Table 4.6-1 identifies the locations where the flood hazard areas occur and the general character of these hazards as summarized in the preceding definitions. The specific flood hazard locations are shown on the FEMA FIRM panels presented in Appendix 6 of Volume 2 of this DRAFT PEIR.

4.6.3.2 County Flood Hazard Areas

Each County General Plan is mandated to contain a Safety Element and one of the natural hazards addressed in this Element is “Flood Hazards.” Although the FEMA FIRM Panels provide a more detailed data base than the County Flood Hazard maps, these County-wide maps provide a better overview of the flood hazard areas located within each County. The following County Flood Hazard maps are presented on the following pages. Maps of potential dam inundation areas are not included below and the reader is referenced to the respective general plans for maps of these hazard areas.

Figure 4.6-1 Alameda County: This map does not show the flood hazards in the cities of Oakland and Berkeley. There is no reason provided for this exclusion in the Safety Element; however, based on the FEMA FIRM Panels, only two stream channels along the San Joaquin Corridor alignment in Berkeley and Oakland (Cordiornices Creek and Cerrito Creek).

Figure 4.6-2 Contra Costa County: All flood hazard areas in Contra Costa County are shown on this map of Flood Hazard Areas. This map also shows the alignment of both the UPRR tracks and BNSF tracks through the County. The extensive 100-year flood hazard areas in the eastern portion of the County are related to the portions of the Sacramento/San Joaquin Delta located within this area.

Table 4.6-1
FEMA FIRM PANEL DETAIL

County	FEMA FIRM Panel #	Type of Flood Hazard	Other Information
Alameda	06001C0018G, UPRR	100-year floodplain, Cordiornices Creek 100-year floodplain, Cerrito Creek	Zone AO, 1'-3' depth Zone AE
	06001C0056G, UPRR	500-year floodplain	Berkeley to Albany
	06001C0058G, UPRR	No flood hazards identified	
	06001C0066G, UPRR	No flood hazards identified	
Contra Costa	06013C0039F, UPRR	100-year floodplain, Garrity Creek	Zone AE
	06013C0040F, UPRR	No flood hazards identified	
	06013C0042F, UPRR	100-year floodplain, Rodeo Creek 100-year flood hazards, San Pablo Bay	Zone AE, extends beyond bridge to encompass tracks Zone VE
	06013C0043F, UPRR	100-year flood hazards, San Pablo Bay, near Pinole Creek 100-year flood hazards, Pinole Creek 100-year flood hazards, Refugio Creek, near Wilson Point	Zone VE Zone AE Zone AE
	06013C0044F, UPRR	No flood hazards identified	
	06013C0069F, UPRR	500-year flood zone, Alhambra Creek	Zone X
	06013C0075F, UPRR	100-year flood zone, Sacramento River, Carquinez Bridge 100-year floodplain, near Erskine Street	Zone VE Zone AE and VE, extends to UPRR tracks
	06013C0090F, UPRR	100-year floodplain, extends from Payton Slough to Pachecho Creek	Zones A and AE
	06013C0095F, UPRR & BNSF	Hastings Slough at the western edge of Concord Naval Weapons Station	Zone A
	06013C0112F, BNSF	100-year floodplain, Shore Acres Creek and area to the east of this creek	Zone AE at several locations, including across the track
	06013C0115F, BNSF	100-year flood hazard area north of Nichols Curve	Zone A, north of track
	06013C0118F	100-year flood hazard areas at two locations, Lawlor Creek and Willow Creek	Zones AE and A
	06013C0119F, BNSF	100-year flood hazard where tracks cross Willow Creek	Zone A
	06013C0120F	No flood hazards identified	
	06013C0138F, BNSF	100-year flood hazard west of Loveridge Road and east of Loveridge Road at Kirker Creek and Old Kirker Creek	Zone A and AE
	06013C0139F, BNSF	Several 100-year flood hazard areas: Los Medanos Waste-way; north of Somersville Road/10th Street; West	Zones A and AE

County	FEMA FIRM Panel #	Type of Flood Hazard	Other Information
		Antioch Creek, and north of First Street/ I Street	
	06013C0143F, BNSF	100-year flood zone, San Joaquin River bridge and East Antioch Creek crosses track in Fulton Shipyard Road	Zone AE
	06013C0144F, BNSF	No 100-year flood hazard areas	
	06013C0165F, BNSF	No 100-year flood hazard areas	
	06013C0226F, UPRR	100-year flood hazard north of Parr Boulevard, Zone AH east of tracks; north of Richmond Parkway Zone VE encroaches but does not cross tracks	Zone AH
	06013C0228F, UPRR	100-year flood hazards at Wildcat and San Pablo Creeks	Zones A and AE
	06013C0240F, UPRR	100-year flood hazards at Cerrito Creek extending north to Fleming Avenue	Zones A, AE and VE
	06013C0355F, BNSF	100-year flood hazards at Oakley Road and Marsh Creek	Zones A and AE
	06013C0360F, BNSF	100-year flood hazard at Sunset Road	Zone AH
	06013C0380F, BNSF	No 100-year flood hazard areas	
	06013C0385F, BNSF	100-year flood hazard zone in the Delta up to the San Joaquin County line	Zone AE
Fresno	06013C1535H, BNSF	100-year floodplain, San Joaquin River	Zone AE
	06013C1555H, BNSF	No 100-year flood zones	
	06013C1565H, BNSF	No 100-year flood zones	
	06013C1570H, BNSF	100-year flood zone, Dry Creek Canal just north of SR 180	Zone AE
	06013C2110H, BNSF	100-year flood zone on both sides of tracks just north of Jensen Avenue	Zone AH
	06013C2125H, BNSF	No flood hazards zones	
	06013C2130H, BNSF	No flood hazards zones	
	06013C2140H, BNSF	100-year floodplain, Central Canal	Zone AE
	06013C2625H, BNSF	No flood hazards zones	
	06013C2650H, BNSF	No flood hazards zones	
	06013C2925H, BNSF	100-year flood zone from the Kings River and Murphy Slough	Zone A

County	FEMA FIRM Panel #	Type of Flood Hazard	Other Information
Kern	06029C0200E, BNSF	100-year flood zone, located at the boundary between Tulare and Kern counties	Zone A
	06029C0725E, BNSF	100-year floodplain, Poso Creek and south along east side of tracks	Zone A
	06029C1275E, BNSF	100-year flood hazards, continuation of Poso Creek on east side of track; City of Wasco and City of Shafter	Zones Z and AH
	06029C1775E, BNSF	100-year flood hazards, continuation of City of Shafter	Zone AH
	06029C1800E, BNSF	100-year flood zone, north of Seventh Standard Road and around Reina Road	Zone A
	06029C1818E, BNSF	No flood hazards zones	
	06029C1825E, BNSF	No flood hazards zones	
	06029C2281E, BNSF	100-year floodplain, Kern River channel	Zone AE
	06029C2282E, BNSF	No flood hazards zones	
Kings	06031C0075C, BNSF	100-year flood hazard zone, tracks cross the Kings River floodplain	Zone A
	06031C0185C, BNSF	No flood hazards zones	
	06031C0350C, BNSF	No flood hazards zones	
	06031C0375C, BNSF	100-year flood hazard zone, tracks cross Cross Creek floodplain	Zones AE and A
	06031C0525C, BNSF	No flood hazards zones	
Madera	06039C0625E, BNSF	100-year flood hazards, Chowchilla River, Ash Slough, and Berenda Slough	Zone A
	06039C0900E, BNSF	100-year flood hazard, unnamed stream in the NE corner of the Panel	Zone A
	06039C0905E, BNSF	100-year flood hazard, Berenda Creek	Zone A
	06039C0915E, BNSF	100-year floodplain, tracks cross Dry Creek and Schmidt Creek channel	Zone AE
	06039C0920E, BNSF	100-year flood hazard, tracks cross Schmidt Creek tributary	Zones A and AE
	06039C1160E, BNSF	100-year flood hazard, tracks cross the Fresno River	Zone A
	06039C1180E, BNSF	100-year flood hazard areas, tracks cross Cottonwood Creek and Little Dry Creek	Zones AE and Zone AO
	06039C1190E, BNSF	100-year flood hazard areas, tracks cross unnamed channel and Root Creek	Zone AO
	06039C1195E, BNSF	No flood hazard zones	
	06039C1360E, BNSF	100-year floodplain, tracks cross San Joaquin River	Zone AE

County	FEMA FIRM Panel #	Type of Flood Hazard	Other Information
Merced	06047C0175G, BNSF	No flood hazard zones	
	06047C0200G, BNSF	100-year floodplain, tracks cross Merced River	Zone A
	06047C0225G, BNSF	No flood hazard zones	
	06047C0405G, BNSF	100-year flood hazard, tracks cross Canal Creek	Zone A
	06047C0406G, BNSF	100-year flood hazard, tracks cross Canal Creek and Main Ashe Lateral Canal	Zones A and AO
	06047C0408G, BNSF	No 100-year flood hazard zones	
	06047C0409G, BNSF	100-year flood hazards, Black Rascal Creek and El Capitan Canal	Zone AE
	06047C0428G, BNSF	100-year flood hazards, North Bear Creek	Zones AE and AO
	06047C0440G, BNSF	100-year flood hazards, Bear Creek	Zone AO
	06047C0445G, BNSF	100-year flood hazards, Bear Creek	Zone AH
	06047C0465G, BNSF	100-year flood hazards, Bear Creek and Miles Creek	Zones AO and AH
	06047C0470G, BNSF	100-year flood hazards, Miles Creek and Owens Creek	Zones AH and AO
	06047C0700G, BNSF	100-year flood hazards, unnamed creek floodplain	Zones A and AO
	06047C0725G, BNSF	100-year flood hazards, Dutchman Creek, Chowchilla River and unnamed creek	Zone A
Sacramento	0602620305F, UPRR	100-year floodplain, tracks cross Laguna Creek	Zone AE
	0602620310F, UPRR	100-year floodplains, tracks cross Florin Creek, Elder Creek, Unionhouse Creek and Strawberry Creek	Zones AE and A
	0602620315D, UPRR	100-year floodplains, tracks cross unnamed creek channel south of Elk Grove Road and north of Bilby Road	Zone AE
	0602620340D, UPRR	100-year floodplains, tracks cross Whitehouse Creek, Laguna Creek, and Grove Creek	Zone AE
	0602620440D, UPRR	Sacramento Sub, eliminated	
	0602620445D, UPRR	Sacramento Sub, eliminated	
	0602620475E, UPRR	100-year flood hazard, encompasses Deer Creek, Consumnes River and Badger Creek; then Laguna Creek and Deadman Gulch	Zone A
	0602620625D, UPRR	100-year floodplain, Day Creek	Zone AE
	0602640002C, UPRR	100-year floodplain, Day Creek	Zone AE
	0602660180G, UPRR	No flood hazard zone	
	0602660185G, UPRR	No flood hazard zone	
	0602660190G, UPRR	Sacramento Sub, eliminated	
	0602660195G, UPRR	100-year floodplain, Morrison Creek	Zones AE and A

County	FEMA FIRM Panel #	Type of Flood Hazard	Other Information
	0602660305G, UPRR	No 100-year flood hazard zone	
San Joaquin	06077C0020F, UPRR	Sacramento Sub, eliminated	
	06077C0135F, UPRR	Sacramento Sub, eliminated	
	06077C0145F, UPRR	Sacramento Sub, eliminated	
	06077C0160F, UPRR	100-year floodplain, tracks cross Dry Creek, and Jahant Slough	Zones AE and A
	06077C0165F, UPRR	Sacramento Sub, eliminated	
	06077C0169F, UPRR	100-year floodplain, tracks cross Mokelumne River	Zone AE
	06077C0170F, UPRR	No 100-year flood hazard zone	
	06077C0305F, UPRR	Sacramento Sub, eliminated	
	06077C0307F, UPRR	No 100-year flood hazard zone	
	06077C0310F, UPRR	100-year floodplain, tracks cross South Main Canal	Zone A
	06077C0315F, UPRR	100-year floodplain, tracks cross Pixley Slough and Bear Creek	Zone A
	06077C0320F, UPRR	100-year floodplain, tracks cross Bear Creek, and Mosher Slough, and an unnamed basin adjacent to track	Zones A and AH
	06077C0410F, BNSF	100-year floodplain, Old River and Middle River	Zone AE
	06077C0430F, BNSF	No 100-year flood hazard zone	
	06077C0440F, BNSF	No 100-year flood hazard zone	
	06077C0445F, BNSF	100-year flood hazard, Delta Levee	Zone AE
	06077C0455F, BNSF	No 100-year flood hazard zone	
	06077C0460F, BNSF & UPRR	100-year flood hazard, Mormon Slough	Zone A
	06077C0465F, BNSF	100-year flood hazard, San Joaquin River	Zone AE
	06077C0480F, BNSF	No 100-year flood hazard zone	
	06077C0490F, BNSF	100-year floodplain, tracks cross Duck Creek, Branch Creek and North Littlejohns Creek	Zones AE and AO
	06077C0495F, BNSF	100-year floodplain, tracks cross Weber Slough, Potter Creek and South Littlejohns Creek	Zones AE and AO
	06077C0515F, BNSF	100-year flood hazard, tracks cross unnamed creek	Zone AO
	06077C0655F, BNSF	100-year flood hazard, tracks cross Temple Creek	Zones AE and AO
	06077C0660F, BNSF	100-year flood hazard, tracks cross Lone Tree Creek	Zones AE and AO
	06077C0670F, BNSF	No flood hazard zones	
	06077C0690F, BNSF	100-year flood hazard, tracks cross South San Joaquin Main Channel	Zone AE
	06077C0830F, BNSF	100-year floodplain, tracks cross Stanislaus River	Zone AE

County	FEMA FIRM Panel #	Type of Flood Hazard	Other Information
Stanislaus	06099C0330E, BNSF	100-year floodplain, tracks cross Stanislaus River	Zone AE
	06099C0335F, BNSF	100-year flood hazard, tracks cross Modesto Main Canal and South San Joaquin Main Canal	Zone AE
	06099C0340F, BNSF	No flood hazard zones for tracks	
	06099C0345F, BNSF	100-year floodplain, tracks cross Dry Creek	Zone A
	06099C0560F, BNSF	100-year floodplain, tracks cross Tuolemne River	Zone AE
	06099C0600F, BNSF	100-year floodplain, track crosses Upper Lateral No. 4	Zone A
Tulare	06107C1550E, BNSF	100-year floodplain, tracks cross Tule River	Zone A
	06107C1575E, BNSF	100-year flood hazard, tracks cross zone south of Poplar Avenue, unnamed stream	Zone A
	06107C1900E, BNSF	100-year flood hazards, most of panel Homeland Canal and Deer Creek	Zones A, AE and AO
	06107C2250E, BNSF	100-year flood hazard, north-eastern corner of panel, unnamed stream	Zones A and AO
	06107C2275E, BNSF	100-year flood hazard, at about Avenue 24, unnamed stream	Zone A

	FEMA FIRM Panel #
Not published because no flood hazards within those specific maps	06001C0245F
	06031C0195C
	06099C0825E

Figures 4.6-3 and 4.6-4 San Joaquin County: All flood hazard areas in San Joaquin County are shown on this map of 100 Year Flood zones. The continuation of the Delta is clearly shown on the west side of the County. Because this is such an extensive area, a second map showing those Delta islands that have been flooded since 1930 is also provided. This slightly larger scale map clearly shows the segment of the BNSF track within the San Joaquin Corridor. The only island flooded since 1930 within the BNSF alignment is the Upper and Lower Jones Tract, which flooded in 1980. BNSF maintains an elevated track throughout the alignment across the Delta.

Figure 4.6-5 Sacramento County: All flood hazard areas in Sacramento County are shown on this map of the 100-year floodplains. This map did not show the alignment of the UPRR Fresno Subdivision, so it has been added to the maps. The Consumnes and Mokelumne Rivers have extensive floodplains that cross the UPRR track in Sacramento County. The Delta areas within the County are located to the west and south of the track.

Figure 4.6-6 Stanislaus County: The Stanislaus County General Plan contains several maps showing inundation areas, but only one map that shows the Designated Flood Way for the San Joaquin and Tuolumne Rivers. The BNSF track crosses both rivers along its alignment. The BNSF track alignment is not shown on the County's base map, so it has been added to the map. Although not shown on this map, the northern boundary of Stanislaus County is the Stanislaus River and based on the data obtained from the pertinent FEMA FIRM Panel, this River is also considered to be a Flood Way and contains a 100-year floodplain (Zone AE).

Figure 4.6-7 Merced County: The Merced County General Plan contains several maps showing flood management and hazard areas. Although the map provided does not identify all of the flood hazard areas, it does identify the large number of streams that flow from the Sierra Nevada across Merced County to intercept the San Joaquin River. The BNSF track alignment was not shown on any of the flood hazard base maps, so it has been added to the map. The BNSF tracks cross all of the main creek channels shown on Figure 4.6-7.

Figure 4.6-8 Madera County: The Madera County 100-Year Floodplain map shows those locations exposed to the 100-year flood hazard areas. The BNSF track alignment was not shown on this base map, so the track alignment has been added to the map. The BNSF tracks cross all of the main creek channels (Chowchilla River, Fresno River and San Joaquin River) shown on Figure 4.6-8.

Figure 4.6-9 Fresno County: In contrast to Merced County, Fresno County has a limited number of streams and areas exposed to flood hazards. The Fresno County 100 Year Flood Inundation Areas map identifies all of the hazard areas, including the San Joaquin and Kings Rivers. The BNSF track alignment was not shown on Figure 4.6-9, so it has been added to the map.

Figure 4.6-10 Kings County: The dominant flood hazard feature in Kings County is the Tulare Lake Bed, which encompasses the central portion of the County. The BNSF tracks enter the County north of Hanford and traverse directly south to the Santa Rosa Rancheria where it turns to the southeast. The BNSF track alignment was not shown on this base map, so the track alignment has been added to the map. The BNSF tracks cross the Kings River (the boundary between Fresno and Kings County) and skirts the northeastern edge of the Tulare Lake Bed just north and east of Corcoran.

Figure 4.6-11 Tulare County: The BNSF track crosses the southwestern portion of Tulare County adjacent to State Route 43. The dominant flood features along this alignment are the Tule River, Deer Creek and the White River. The BNSF track alignment was not shown on this base map, Figure 4.6-11, so the track alignment has been added to the Map.

Figure 4.6-12 Kern County: The BNSF track enters Kern County just north of Wasco and traverses southeast through Shafter, Rosedale and into the Amtrak Station in Bakersfield, the terminus of the San Joaquin Corridor passenger trains. The BNSF track alignment was not shown on this base map, Figure 4.6-12, so the track alignment has been added to the Map. The BNSF track crosses two flood hazard areas in Kern County, Poso Creek in the Wasco area and the Kern River in the Bakersfield area.

4.6.3.3 Bus System Modifications

The proposed Project would require future additions to the Amtrak Bus Service which connects Amtrak Rail to much of the rest of California and portions of Nevada. Amtrak Bus Service currently utilizes the existing Interstate and State Routes to transport passengers between outlying areas and the Amtrak passenger rail system. Although additional buses will be added to the system, the number of trips per day on the existing highway system will be small, and there are no proposed highway infrastructure improvements envisioned to support the additional buses required to transport passengers to and from the passenger train stations for transfer to the trains.

4.6.3.4 New Stationary Facilities

The proposed project envisions the installation of the following new stationary facilities over the planning period: new stations at Hercules, Stockton and Elk Grove; and a new layover facility at either Fresno or Merced. The proposed Hercules Station site is located directly adjacent to San Pablo Bay. The applicable FEMA FIRM Panel is Panel 0043F. Two flood hazard zones affect the Hercules station site. Zone VE affects the site to the west where San Pablo Bay is located adjacent to the proposed site. Zone X (0.2%, 500-year flood hazard zone) affects the area to the east where Rodeo Creek enters San Pablo Bay.

The proposed Elk Grove Station is located just south of Whitehouse Creek which is a 100-year floodplain area. Portions of the Elk Grove Station site are located within Zone X. This information is available on FEMA FIRM Panel 060262340D. The whole of the downtown area of Stockton, where the three potential station sites are located, is designated Zone X. This information is available on FEMA FIRM Panel 06077CO460F.

The proposed Fresno Layover site is located in an area designated as Zone X. This information is available on FEMA FIRM Panel 0619C2110H. The propose Merced Layover site is located in an area designated AO, which consists of areas flooded to depths of 1 to 3 feet (usually sheet flow or sloping terrain); average depths determined. This information is available on FEMA FIRM Panel 0619C2110H.

4.6.3.5 Significance Criteria

The Initial Study evaluated and eliminated several of the standard checklist items with respect to hydrology and water quality impacts. The following items were carried over to the EIR from the Initial Study and these issues will serve as the proposed impact evaluation criteria for assessing and determining significant drainage impacts from implementing the proposed project.

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?

e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, such as from areas of material storage, vehicle or equipment maintenance (including washing or detailing), waste handling, hazardous materials handling or storage, delivery areas, loading docks, or other outdoor areas?

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

The following issue was identified in the Utilities/Service System category of the Initial Study as having potentially significant impacts and has been carried forward into this DRAFT PEIR for review.

c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impact?

Because this issue is so closely related to the Hydrology/Water Quality evaluation contained in this Subchapter, the Utilities/Service System issues cited above have been integrated into this subchapter. All of the above drainage issues are proposed as impact evaluation criteria for assessing and determining the potential impacts of the proposed project on areas downstream of rail infrastructure facilities located within 100-year flood hazard zones. This does not indicate a lack of concern for areas with lower flood hazards, but only those rail infrastructure locations exposed to 100-year flood hazards appear to pose a threat to existing or future rail infrastructure under the assumption that track design, including bridges, has been implemented to pass the 100-year storm water runoff without damage to the infrastructure.

4.6.4 Environmental Consequences

As is the case with any long, linear project, the San Joaquin Corridor tracks cross many water features that pose significant flood hazards to infrastructure located within the 100-year floodplain. As previously indicated, many of the railroad tracks and bridges within the Corridor have been in place for more than 100-years and in some instances bridges in flood hazard zones have been washed out and replaced by the rail companies, BNSF and UPRR, or their predecessors. As private companies, these two railroads are directly responsible for maintaining the rail system infrastructure if it is damaged by a flood. This is in contrast to roadways or other infrastructure systems installed and operated by public agencies. Perhaps the best comparisons are interstate and state highways. However, because the cost of infrastructure repairs and/or replacement is borne by the private railroads, this cost is not directly passed on to the public. When rail system infrastructure is damaged, it is immediately repaired by the railroads in order to maintain daily train operation commitments. Thus, in the following analysis the key flood hazard issue is not the cost of repair and replacement of the rail system infrastructure located within 100-year flood hazard zones, it is the effect of these repairs and replacement on the downstream flood flows and the land uses adjacent to the flood hazard areas.

4.6.4.1 Potential Hydrology Impacts Proposed Project

The proposed project components that have a potential to adversely impact hydrology or be exposed to 100-year flood hazards include the following:

- Install a second or third main track along (maximum area of impact):
  - 188.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  - 22.11 miles of the Port Chicago to Oakland segment of UP track;
  - 43.61 miles of the Stockton to Sacramento segment (Fresno Subdivision) of UPRR track. (Figures 3-2a through 3-2d depict where the installation of second or third track is proposed. Figure 3-3a reflects the current BNSF track structure. Figures 3-3b through 3-3g depict the proposed track structure for BNSF and UPRR in order to improve the efficiency of train movements and ensure that passenger train service can operate on a reliable schedule.)
- Install new sidings, or passing track, in order to facilitate train flow on both tracks.
- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations.
- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures.
- Install or update passenger train infrastructure, such as layover or station facilities, to support expansion of future train operations.

<u>Place Structures Within 100-year Flood Hazard Areas: Impede or Redirect Flood Flows</u>
Both railroads already have extensive track facilities that are located within 100-year flood hazard areas. The list of 100-year flood hazard areas on Table 4.6-2 includes more than 100 locations where the tracks intersect San Pablo Bay, stream channels, canals or floodplain areas from Oakland to Bakersfield. An estimated 15 additional stream channels and floodplain areas intersect the Fresno Subdivision tracks between Sacramento and Stockton. Under the proposed project new track is proposed to be constructed between Oakland and Martinez (22.11 miles of UP track) and between Sacramento and Stockton (43.61 miles of UP track). In addition, between Port Chicago and Bakersfield, an additional 188.5 miles of new BNSF second track is proposed to be installed. At each of the 100-year flood hazard zones, new bridges or levees will need to be installed to elevate the tracks above the 100-year floodplain or hazard zone. In a few instances it may be possible to clear span 100-year flood hazard zones (for example Rheem Creek in the City of Richmond, but in most instances bridge piers (columns), wing walls or abutments may need to be installed within the 100-year flow line of a channel or floodplain.

Thus, it is clear that the proposed project will place structures within 100-year flood hazard areas that can impede or redirect flood flows. Since future bridges or levees are not yet designed along the track alignments, it is not possible to assess the level of impact for each location. The range of impacts includes site specific disturbances that would impede or redirect flood flows (bridge piers or columns). Such channel or floodplain modifications can also alter flood flows in a manner that could change (increase) downstream flood hazards, including flooding offsite, or cause flood flows to exceed existing or planned downstream storm water drainage facilities. In most instances, such impact can be avoided through incorporation of specific design mitigation measures, ranging from avoidance (clear span) of the 100-year flood hazard area; alignment of new piers with existing bridge piers to minimize downstream changes in flow; and other design measures that can be defined during future review of bridges or other structures in the 100-year flood plain. As part of the project level analysis, a Location Hydraulic Study would need to be prepared as each project segment is funded for construction. The study would be needed wherever a project segment encroaches on a 100-year floodplain.

To mitigate potential impacts from placing new structures/facilities within 100-year flood hazard areas, the mitigation measures outlined in the following section shall be implemented. These measures are structured as a sequence of actions that will need to be implemented to ensure

that new infrastructure facilities, which must be located within a 100-year flood hazard zone, are designed to achieve minimal change to flows downstream of the new infrastructure location. With implementation of these measures, future projects within 100-year flood hazard zones will not substantially impede or redirect flood flows, or if the future evaluations document an unavoidable adverse impact on downstream flood hazards, a follow-on or second-tier EIR would be prepared and subject to public review.

4.6.4.2 Cumulative Impacts

Examining cumulative impacts from flood hazards or from downstream modifications to such hazards is complicated for the proposed project because of the indefinite period of construction and the lack of available development data for each specific 100-year flood hazard area. For example, each flood hazard zone creates a constraint on development and development affects either the amount of surface runoff within a watershed or the path in which the surface runoff flows. Within each County there exists a fairly sophisticated review process when any project has a potential to alter either the volume or floodplain of a 100-year flood hazard zone. Both the FEMA FIRM Panels and the County flood hazard maps are indicative of the resources that have been expended to define such areas. These document are planning tools to ensure that future development, be it the proposed project, a residential subdivision, or the proposed Hi-Speed Rail Project, does not result in exposure to significant flood hazards or a cumulative contribution to areas designated as 100-year flood hazard zones. These institutional protections, along with the mitigation measures identified in this Subchapter, are deemed sufficient to prevent cumulatively considerable or significant impacts to the identified 100-year flood hazard areas along the proposed project alignment.

4.6.4.3 Unavoidable Adverse Impacts

Implementing the proposed San Joaquin Corridor Program over the next 22 years is not forecast to cause any direct or indirect significant adverse hydrology (flood hazard) impacts with implementation of the required mitigation measures. The proposed project will result in unavoidable short-term changes in the flows within the identified 100-year flood hazard areas, but the identified mitigation measures will reduce these potential changes to a less than significant level. Long-term (permanent) changes in storm flows will be controlled to a less than significant impact level.

4.6.5 <u>Avoidance, Minimization and Mitigation Measures</u>

The potentially significant adverse hydrology impact identified in the evaluation presented above consists of an alteration of flood flows within 100-year flood hazard areas that could impede or redirect downstream flood flows. Modifications to floodplains also have an indirect potential to cause significant downstream erosion/sedimentation or require modifications to existing drainage facilities that may cause further adverse environmental effects. Mitigation of such impacts is most often accomplished through one or a combination of the following methods: avoidance, minimization, restoration or rectification, and compensation. The following measures focus on avoidance, minimization and rectification.

4.6-1 Where site specific data verify that a 100-year flood hazard zone can be clear spanned, Caltrans shall avoid installing infrastructure within the 100-year flood hazard zone. This requirement can be waived in an instance where installing a clear-span bridge causes some other unavoidable significant adverse impact that Caltrans deems of greater concern (such as a significant seismic hazard). Under such a case the bridge design shall be reviewed under the following mitigation measures.

4.6-2 When a future bridge or levee design is completed for implementation within a 100-year flood hazard zone, Caltrans shall ensure that modeling, equivalent to standard HEC-RAS models, is conducted to determine modifications in downstream flows. This modeling shall be coordinated with local County public works or flood control agencies, and for those new infrastructure facilities located within the Central Valley, the Central Valley Flood Protection Board shall also be notified and consulted. If the modeling demonstrates that the proposed new infrastructure will substantially impede or redirect flood flows, alternative infrastructure designs must be considered and implemented that minimize such changes to a less than significant impact level, or downstream flood control facilities shall be modified to reduce or minimize potential indirect impacts to a less than significant impact level.

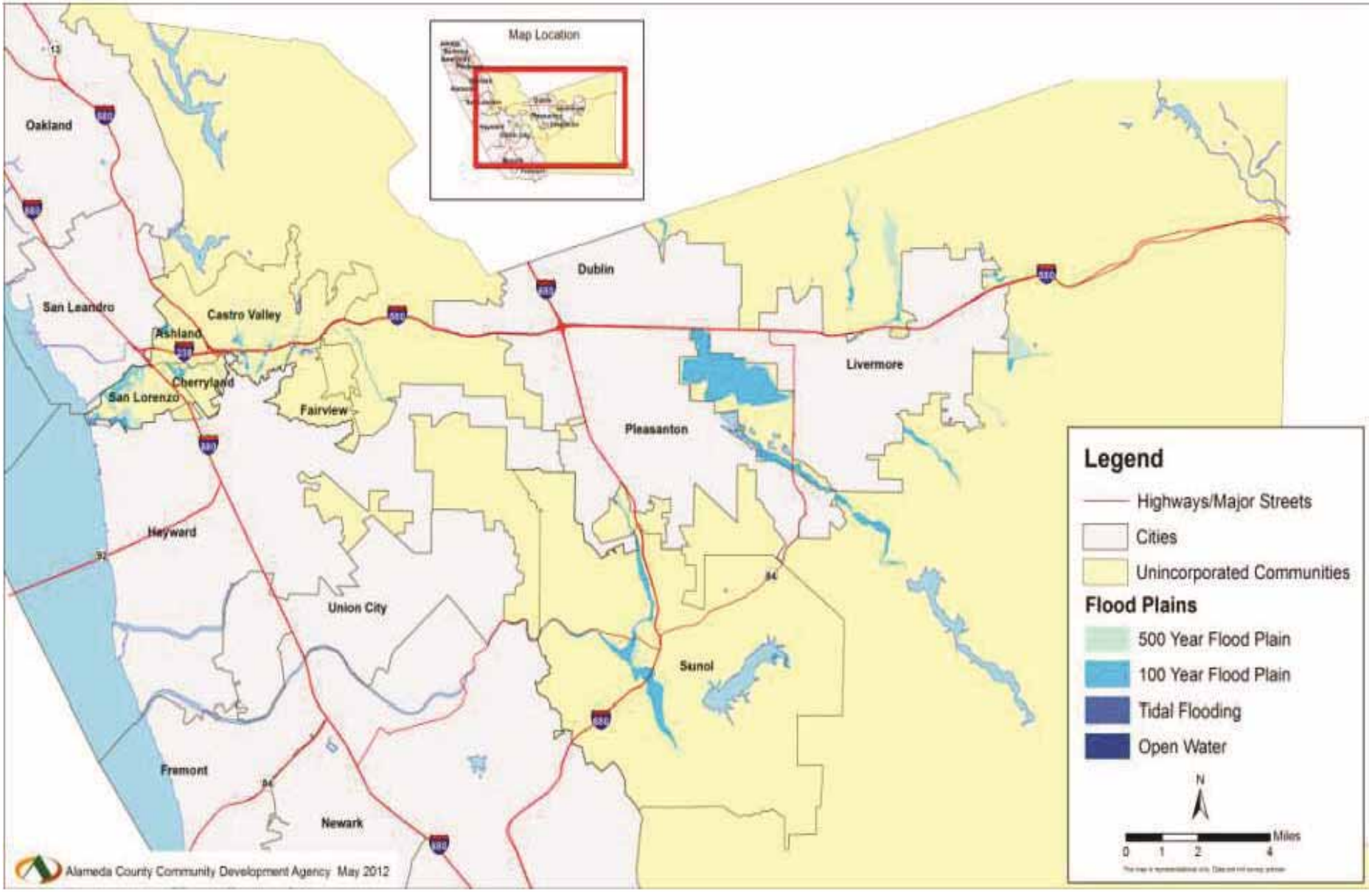
4.6-3 Adequate freeboard shall be incorporated in all new bridges to pass the 100-year flood flow with a minimum of one foot of freeboard above the maximum elevation of the flood flow at a specific location.

Implementation of the above mitigation measures can avoid or minimize direct exposure to significant flood hazards or to the indirect impact on downstream flood hazards. If modeling demonstrates that indirect downstream effects of a proposed infrastructure improvement may cause other potential significant impacts from construction of new or expanded storm water drainage facilities, it will then be necessary conduct a follow-on CEQA document to address these impacts. This is not deferral of an evaluation because in a program where specific facility designs are not available, any evaluation at this time would be considered speculative. In accordance with Section 15145 this issue will not be given further consideration until sufficient information is available to perform an adequate evaluation of such potential environmental effects.

Also, note that specific mitigation measures to address temporary construction activities or permanent facilities within waters of the United States or State of California are addressed in the Biology Subchapter of this report, Section 4.2.

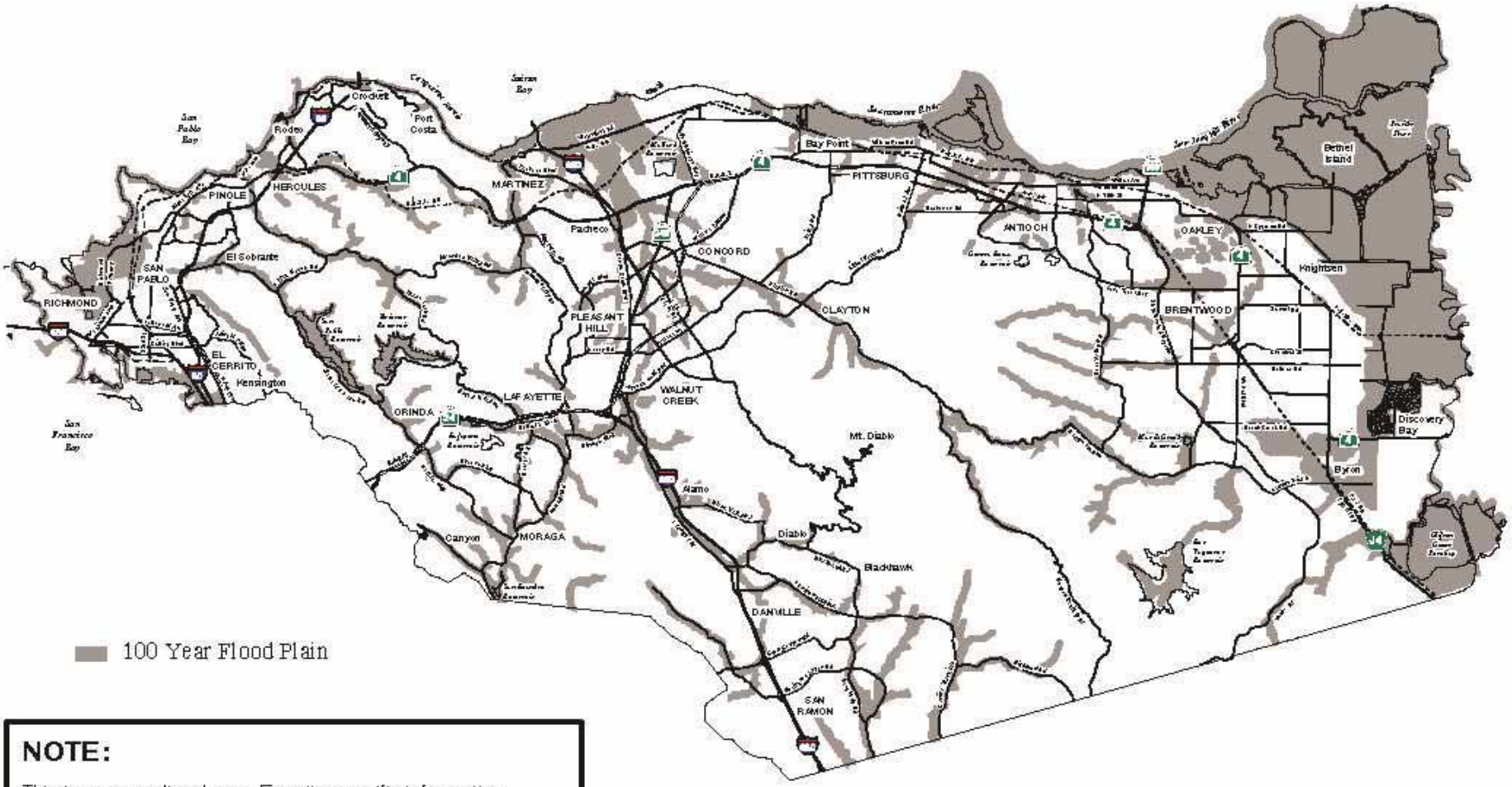
This page left intentionally blank for pagination purposes.

Figure 4.6-1: Alameda County Flood Hazard Areas



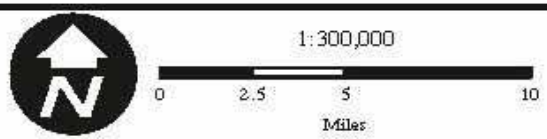
Source: Safety Element of the Alameda County General Plan

Figure 4.6-2: Contra Costa County Flood Hazard Areas



NOTE:

This is a generalized map. For site specific information please refer to Flood Insurance Rate (FIRM) maps prepared by the Federal Emergency Management Agency (FEMA).



ANTIOCH Incorporated Areas
Alamo Unincorporated Areas

Freeways and Highways
Major Roads
Bay Area Rapid Transit
Railroads

CONTRA COSTA COUNTY

Map Created on August, 23 2004
Contra Costa County Community Development
651 Pine Street, 4th Floor - N. Wing, Martinez, CA 94553-0095
37°59'48.455"N 122°36'35.384"W

Source: Contra Costa County General Plan

Figure 4.6-3: San Joaquin County 100-Year Flood Areas

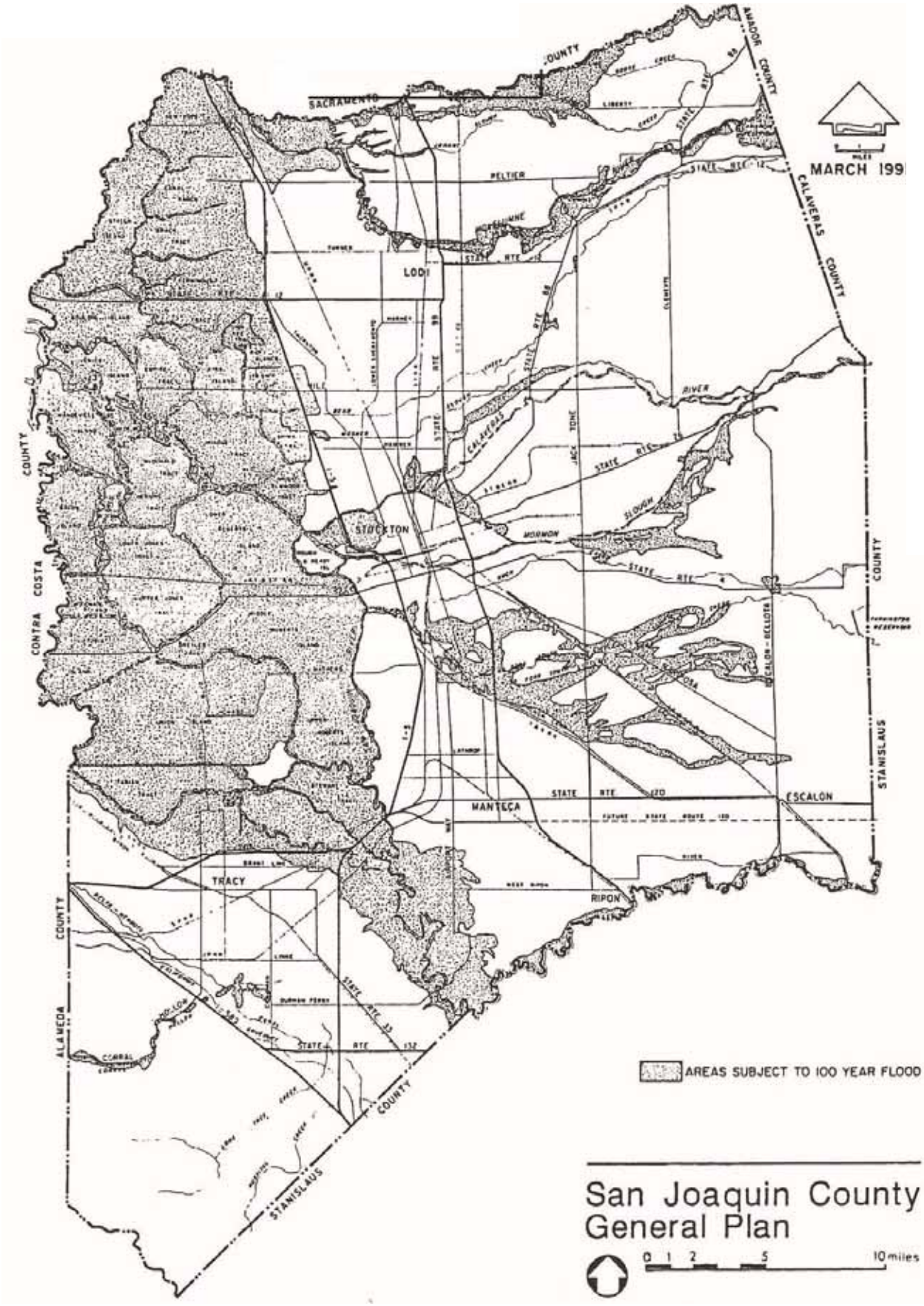


Figure 4.6-4: Delta Island Flooded Since 1930

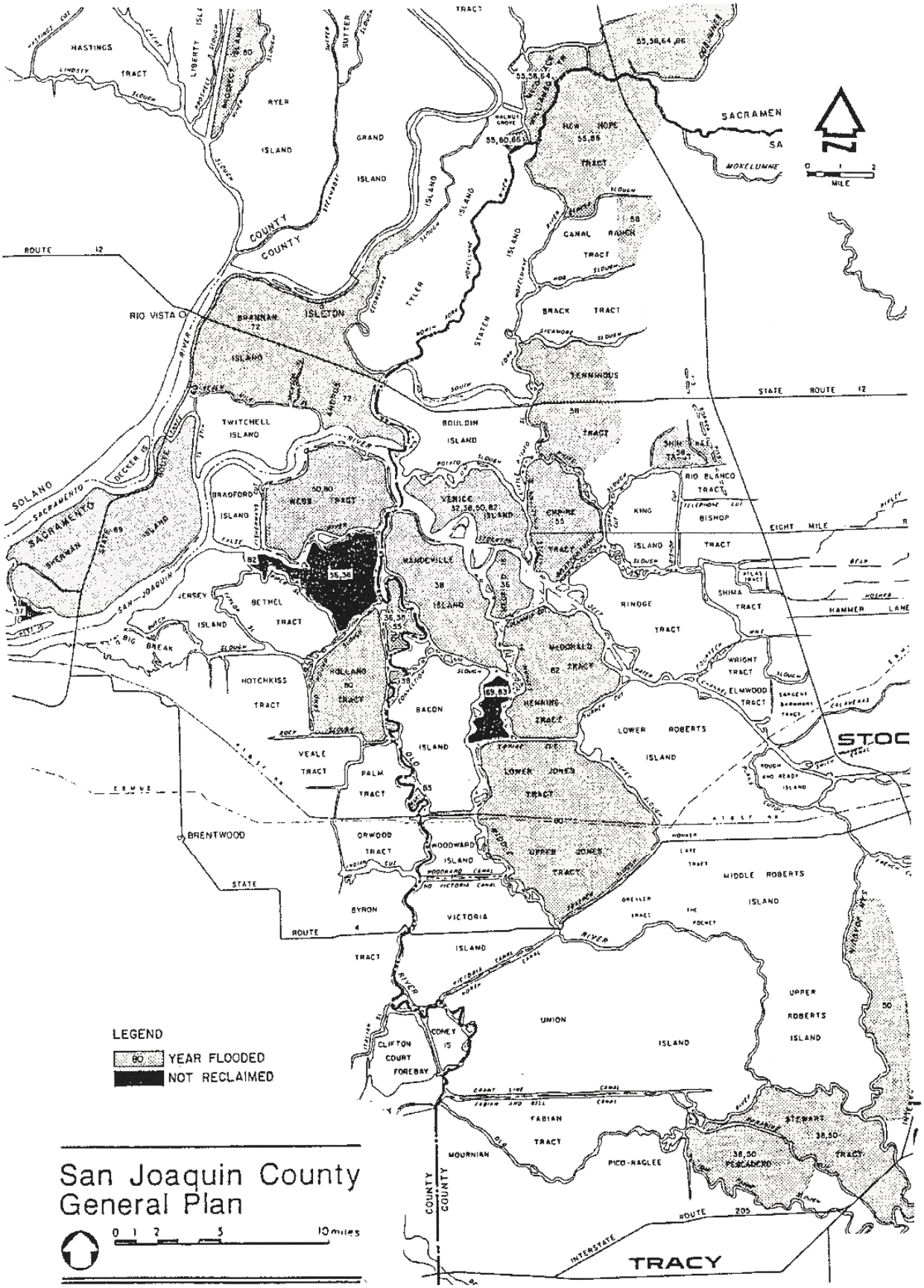


Figure 4.6-5: Sacramento County 100-Year Floodplain Areas

Flood Protection Component

FEMA and CA DWR 100 Year Floodplain

Streams

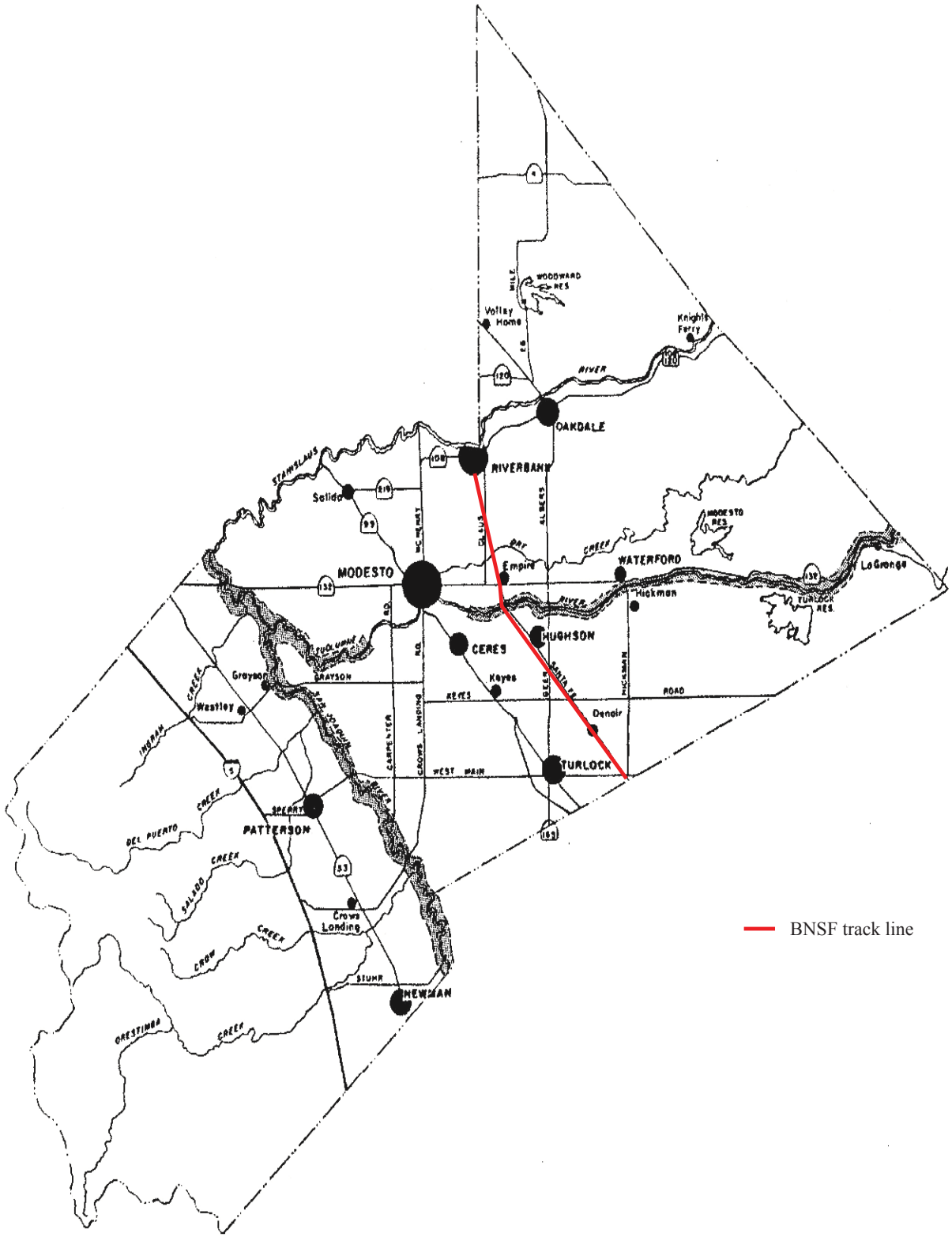
Urban Services Boundary (USB)

BNSF track line

October 14, 2011

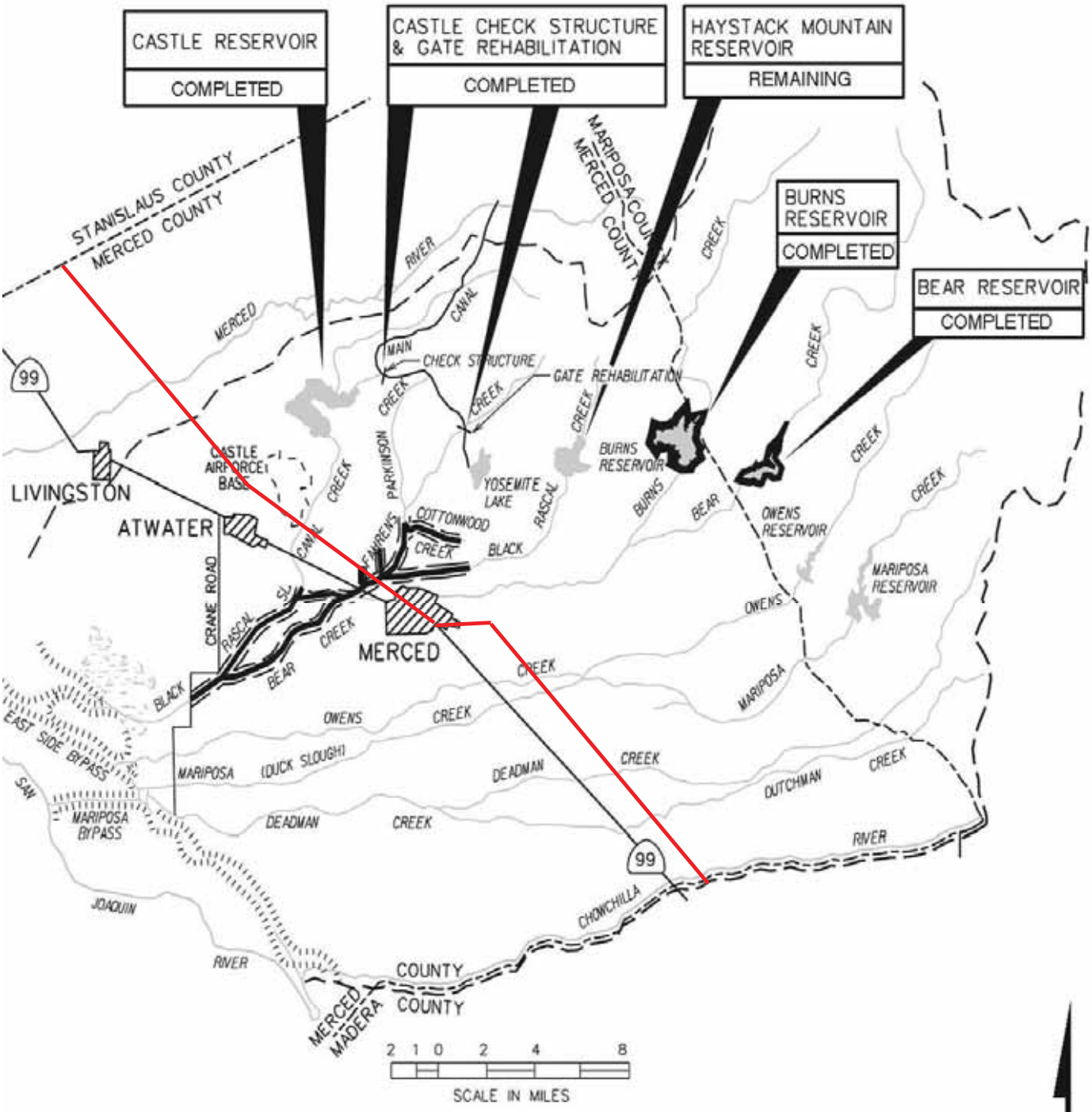
Source: Sacramento County General Plan

Figure 4.6-6: Stanislaus County Designated Flood Ways



Source: Safety Element of the Stanislaus County General Plan

Figure 4.6-7: Merced Streams Group Flood Project Status Map

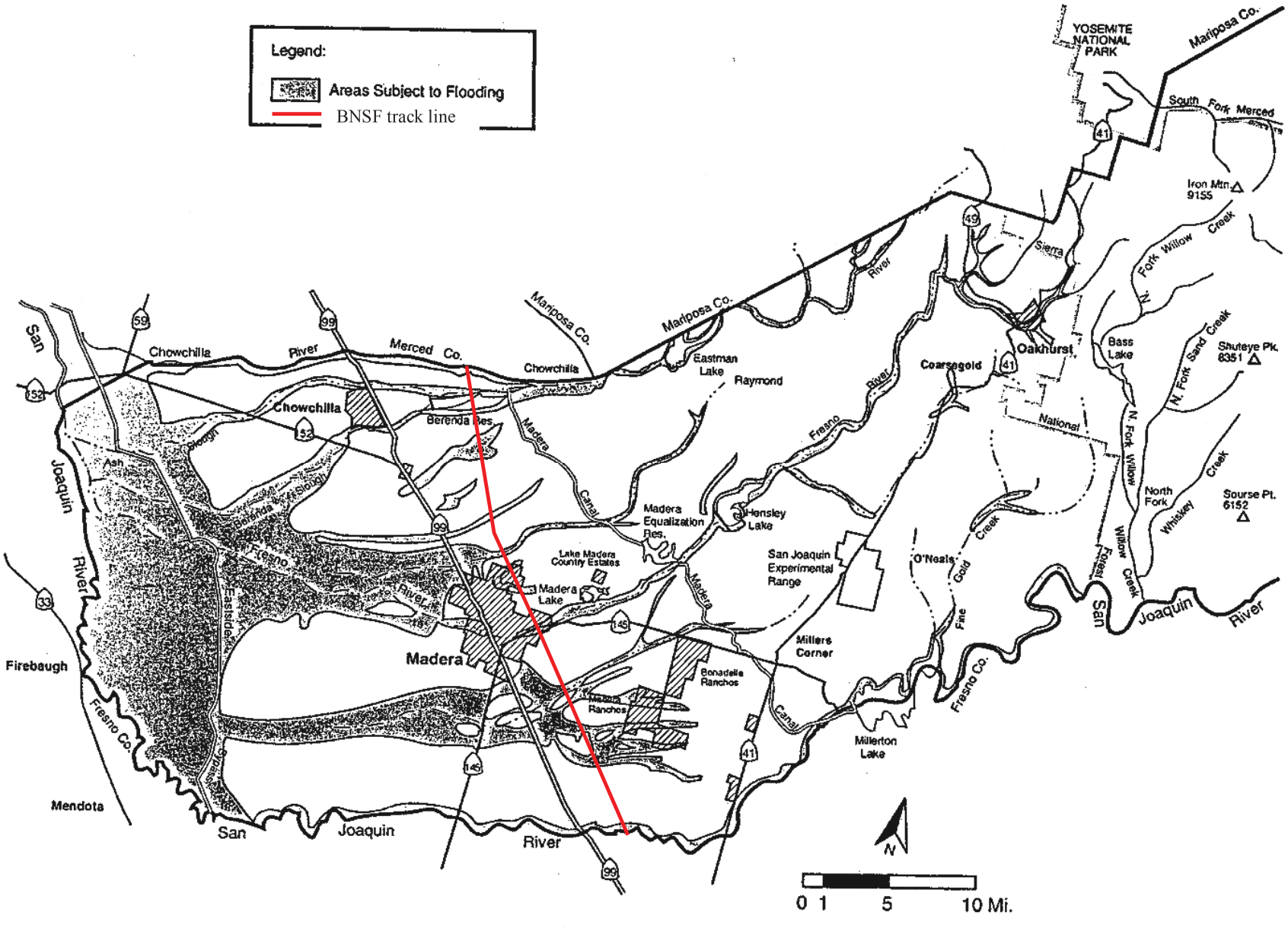


Source:
Modified from USACE 2006

BNSF track line

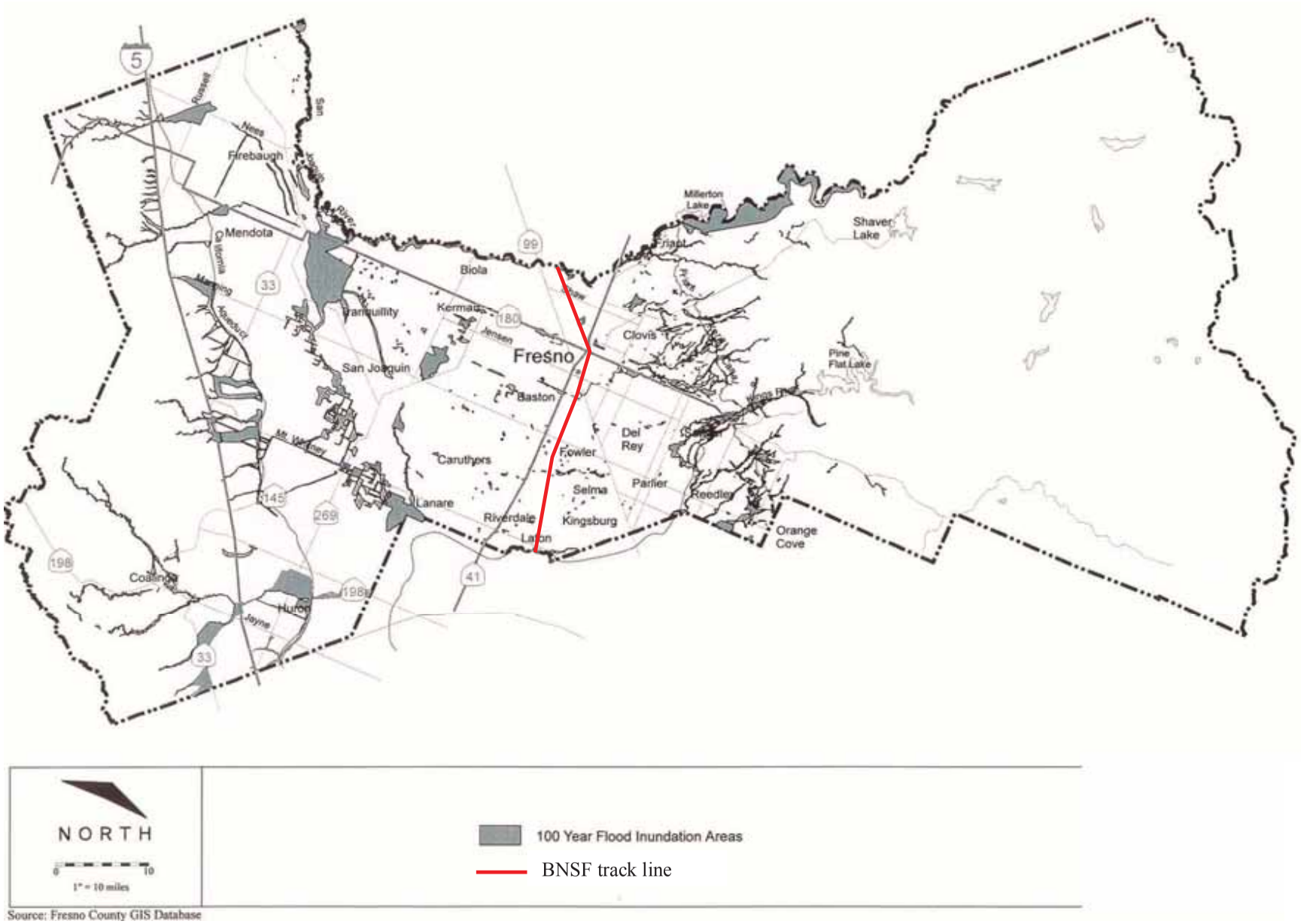
Source: Mintier & Associates, Merced County General Plan

Figure 4.6-8: Madera County 100-Year Floodplain Map



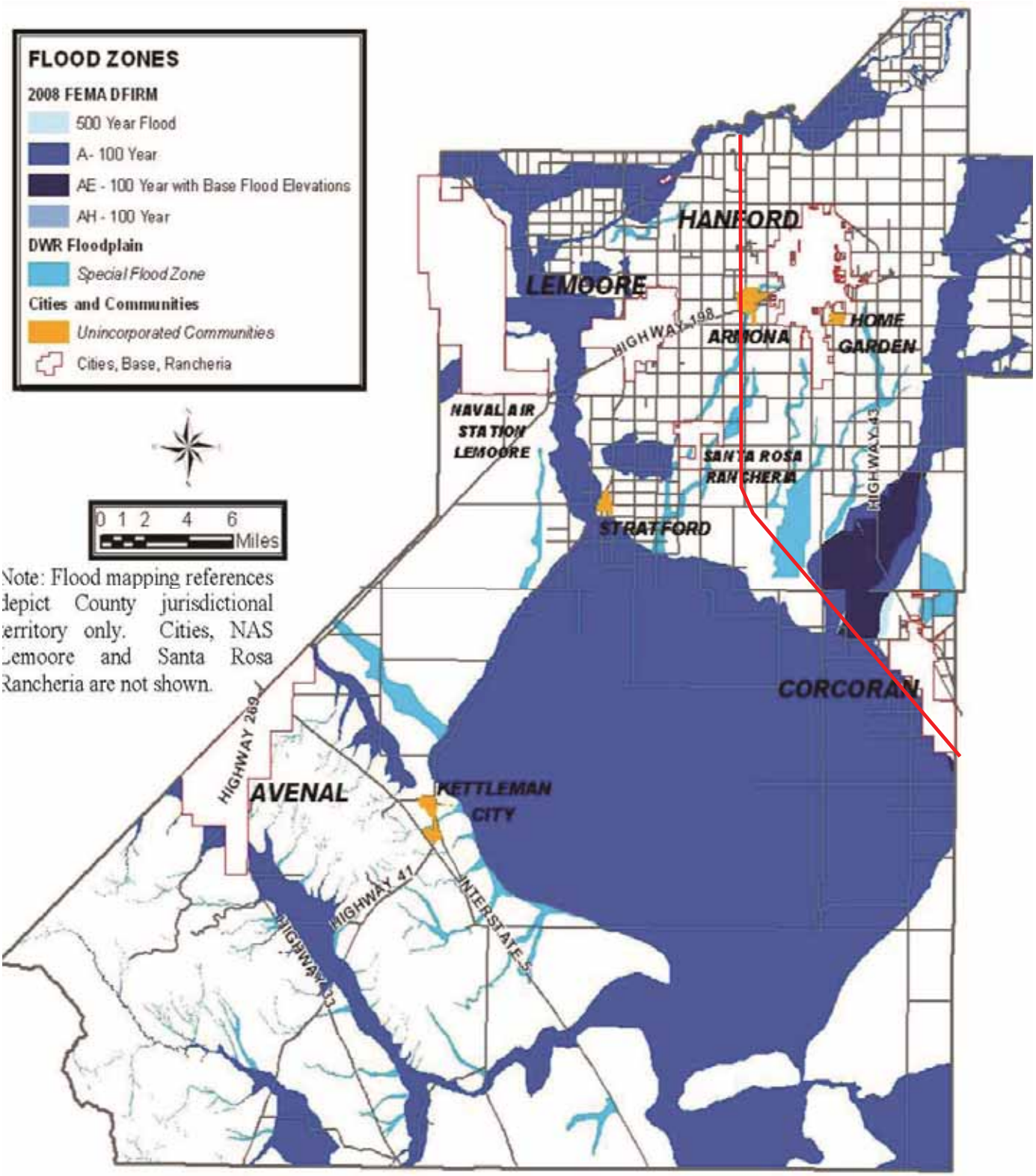
Source: Madera County General Plan

Figure 4.6-9: Fresno County 100-Year Floodplain Inundation Map



Source: Fresno County General Plan

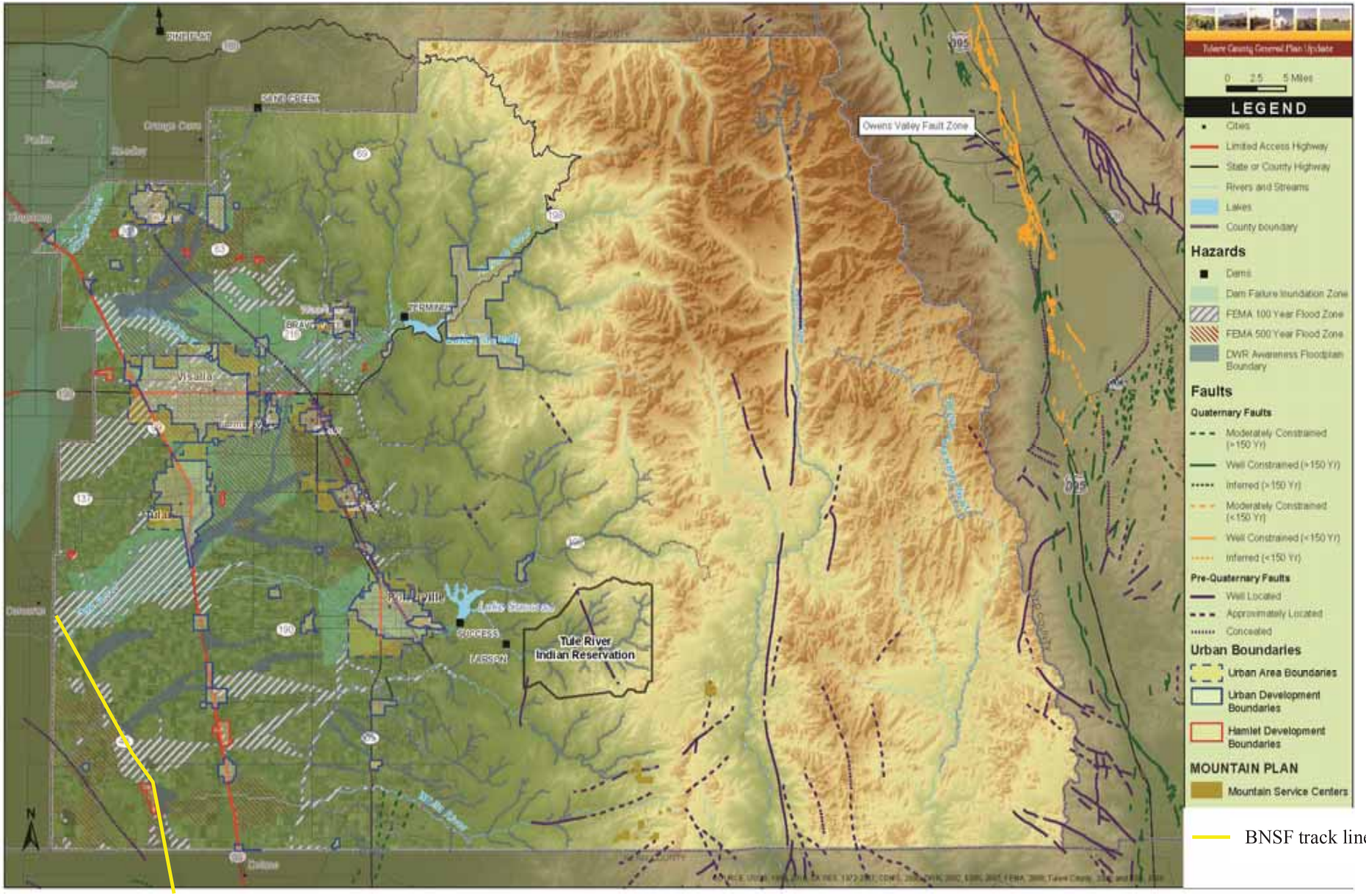
Figure 4.6-10: Kings County Flood Hazard Areas



BNSF track line

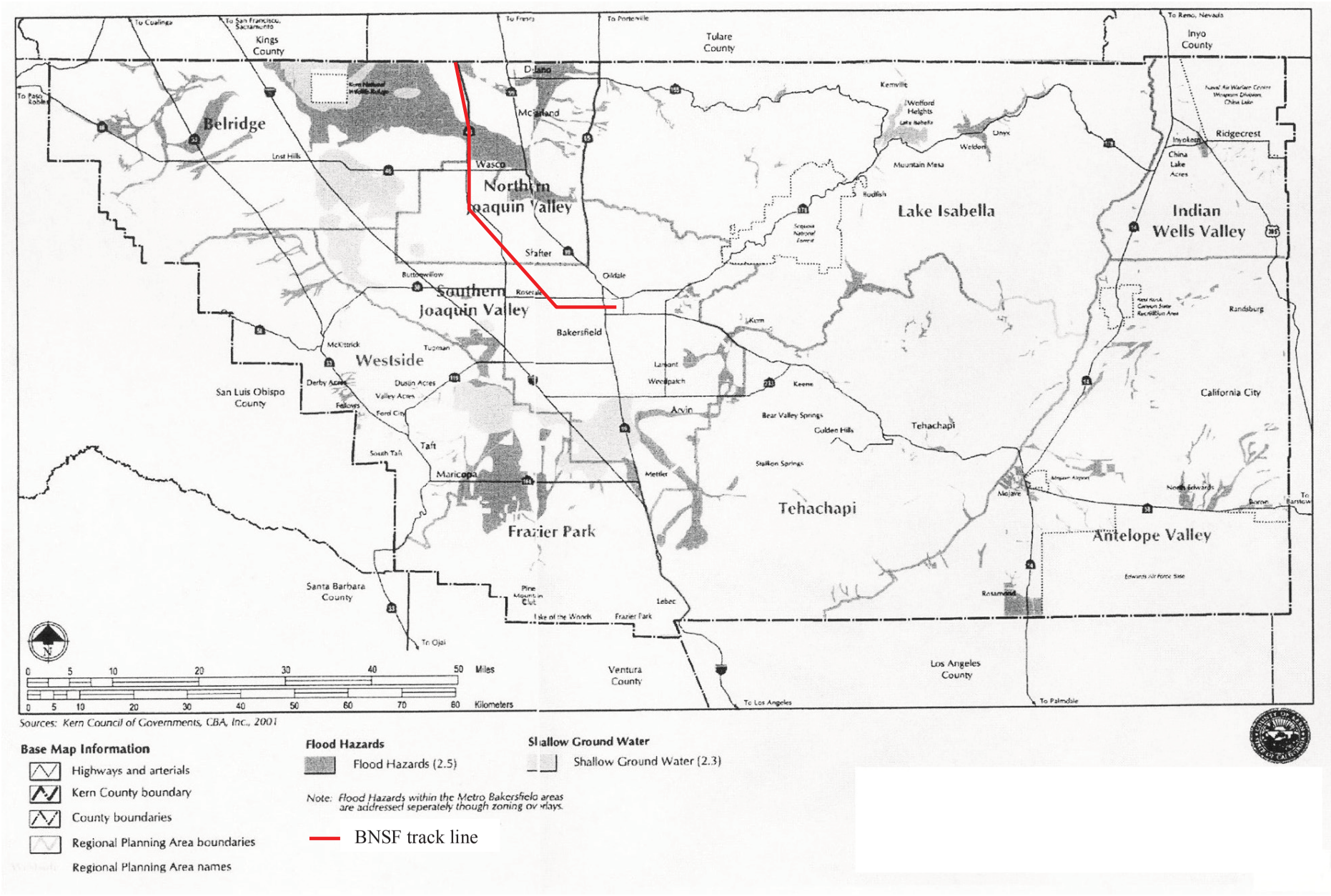
Source: County of Kings 2035 General Plan

Figure 4.6-11: Tulare County Hazards Map



Source: Tulare County General Plan Update

Figure 4.6-12: Kern County Flooding and Shallow Ground Water Map



Source: Kern County General Plan

4.7 NOISE

4.7.1 Introduction

Caltrans, in cooperation with multiple local agencies located within 11 California counties, propose to fund expansion of the existing rail system within the BNSF Railway Company (BNSF) and Union Pacific Railroad (UP) rights-of-way along three segments of passenger rail corridor in the San Joaquin Valley and portions of the San Francisco Bay area. A noise impact study was prepared to meet CEQA requirements for the proposed action. If federal funding becomes available in the future, a separate document for compliance with NEPA will be prepared at that time. The noise technical study is titled "Noise and Vibration Impact Analyses San Joaquin Corridor Project Central Valley and Bay Area, California," prepared by Giroux & Associates January 2014 (Appendix 7 of Volume 2 of this DRAFT PEIR). The expansion of this system would serve to accommodate existing and future passenger rail demand and projected increases in ridership through 2035.

Specific project objectives include

- Install a second or third main track along:
  - 188.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  - 22.11 miles of the Port Chicago to Oakland segment of UP track; and
  - 43.61 miles of the Stockton to Sacramento segment (Fresno Subdivision) of UP track.
- Install new sidings, or passing track, in order to facilitate train flow on both tracks.
- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations.
- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures.
- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems.
- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas.
- Increase the maximum operating speed of passenger trains in all existing segments of the San Joaquin Corridor from 79 miles per hour (mph) to 90 mph.
- Obtain additional operating equipment (rolling stock i.e., locomotives and passenger cars) to meet the forecasted customer demand for passenger trains.
- Install or update passenger train infrastructure, such as layover or station facilities, to support expansion of future train operations.
- Increase the number of daily passenger trains from 6 round trips (12 trains) to 11 round trips (22 trains).

Only one comment was received in response to the Notice of Preparation regarding noise. The Sierra Club California, Energy-Climate Committee requested that a noise evaluation between current operations and future operations be provided in the PEIR. The analysis that follows responds to most of the concerns raised in the Committee's noise comment, except for the topic of horn noise where trains pass through at-grade crossings. The Committee suggested that alternatives to horns be considered at such locations. As noted in the response to this comment, FRA regulations require this type of warning, and the only current option to eliminate the horn requirement is to either create a grade separated crossing or to install "quiet zone" at-grade crossings. As previously discussed, this Draft PEIR does not address the installation of any grade separations as these infrastructure facilities are beyond the scope of this program

document. With regard to quiet zones, the establishment of such zones is regulated directly by FRA and proposals for quiet zones must come directly from the local jurisdiction, such as a city or county. These requests are considered on a case-by-case basis and the establishment of quiet zones is not considered in this Draft PEIR as it is beyond the scope of Caltrans and must be initiated by a local jurisdiction with the FRA.

4.7.2 Regulatory Setting

4.7.2.1 Noise and Vibration Terminology

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, special frequency-dependent rating scales have been devised to relate noise to human sensitivity. The A-weighted decibel scale dB performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. A-weighted decibels are written as “dBA” or “dB(A)”. Any reference to decibels in this Draft PEIR written as “dB” should be understood as being A-weighted.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquake intensity. In general, a 1-dB change in the sound pressure levels of a given sound is detectable only under laboratory conditions. A 3-dB change in sound pressure level is considered a "just detectable" difference in most ambient situations. A 5-dB change is readily noticeable and a 10-dB change is considered a doubling (or halving) of the subjective loudness. It should be noted that, generally speaking, a 3-dB increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume. Because few rail projects individually cause a doubling or halving of the train volumes on already heavily traveled railways, most train activity noise impacts tend to be cumulative in nature.

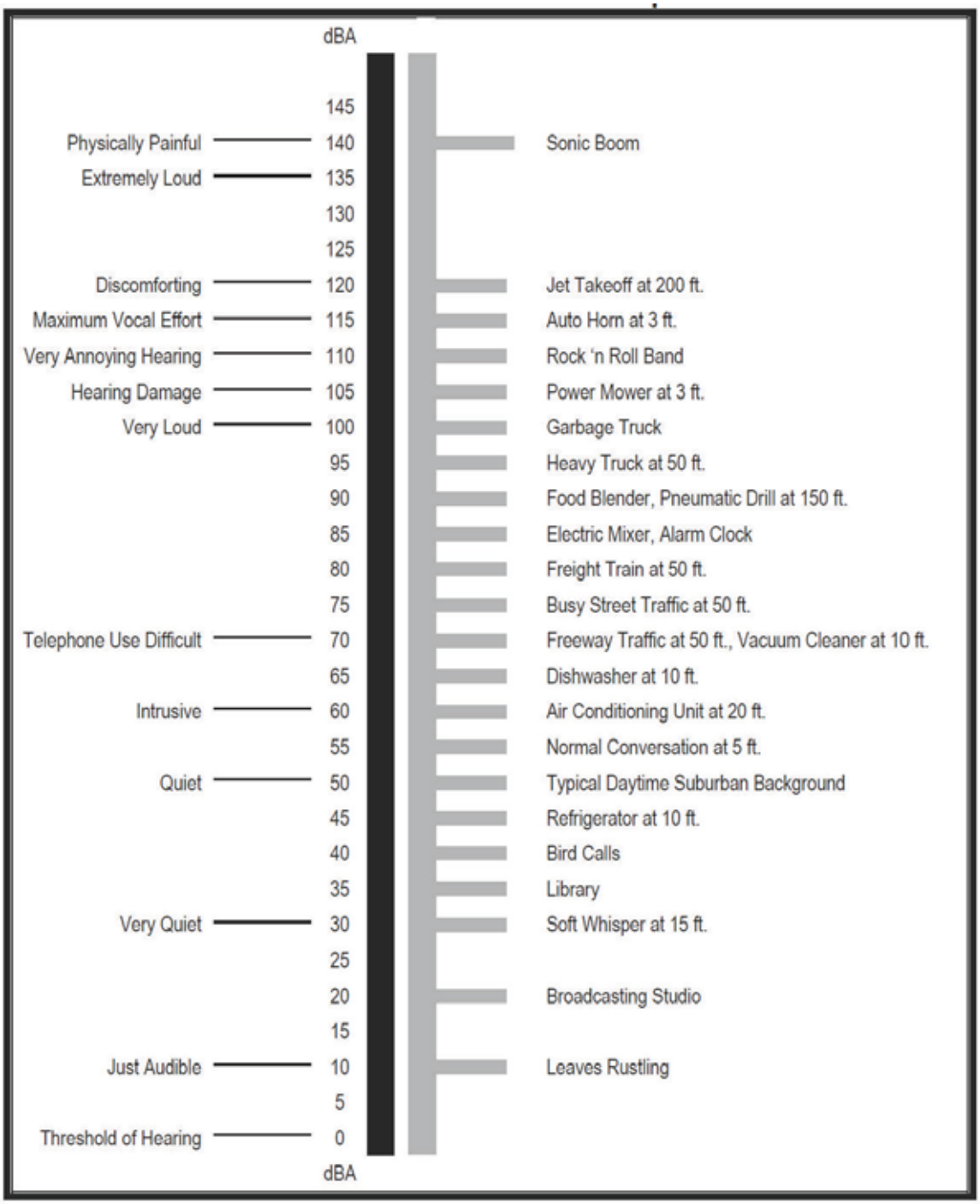
In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; 20 dB higher, four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud.) Examples of various sound levels in different environments are shown in Figure 4.7-1, Sound Levels and Human Response.

4.7.2.2 Noise Scales

There are three general methods used to measure sound over a period of time: the Community Noise Equivalent Level (CNEL), the equivalent energy level (LEQ), and the Day/Night Average Sound Level (DNL).

CNEL: The predominant community noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL reading represents the average of 24-hourly readings of equivalent levels, known as LEQs, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dB in the evening (7:00 p.m. to 10:00 p.m.), and +10 dB for the night (10:00 p.m. to 7:00 a.m.). CNEL may be indicated by "dB *CNEL" or just "CNEL."

Figure 4.7-1: Sound Levels and Human Response



Source: Adapted from William Bronson, *"Ear Pollution,"* California Health (October 1971), p. 29.

Leq: The LEQ is the sound level containing the same steady-state total energy over a given sample time period as a continuously varying ambient level. The LEQ can be thought of as the steady (average) sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. LEQ is typically computed over 1, 8, and 24-hour sample periods.

DNL: Another commonly used method is the day/night average level or DNL. The DNL is a measure of the 24-hour average noise level at a given location. It was adopted by the United States Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the LEQ. The DNL is calculated by averaging the LEQs for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 p.m. to 7:00 a.m.), by a 10 dB to account for the increased sensitivity of people to noises that occur at night. In most applications, CNEL and DNL are generally indistinguishable.

The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L_{90}, L_{50}, L_{10}, etc.). L_{50} equals the level exceeded 50 percent of the time.

4.7.2.3 Vibration Technology

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration velocity is usually the most common descriptor. The average foot-mean-square (RMS) is often used in ambient vibration descriptors because human response to rolling-type motion encompasses one or more full vibration cycles. Vibration damage to physical objects is more closely coupled to short-term jolts best described by the peak particle velocity. As with sound, the wide range of possible vibration velocities is compressed into a more manageable logarithmic scale expressed as VdB relative to one micro-inch per second. The Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Analysis (DOT-T-95-16, Updated 2006) states that background vibration velocity levels in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans which is around 65 VdB. The upper range for rapid transit vibration is around 80 VdB and the high range for passenger and freight rail vibration is 85 VdB (U.S. FTA, 2006) close to the tracks.

The FTA Assessment states that in contrast to airborne noise, ground-borne vibration is not a common environmental problem. Although the motion of the ground may be noticeable to people outside structures, without the effects associated with the shaking of a structure, the motion does not provoke the same adverse human reaction to people outside. Within structures, the effects of ground-borne vibration include noticeable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The maximum vibration amplitudes of the floors and walls of a building often will be at the resonance frequencies of various components of the building. However, the FTA Assessment states that noticeable vibration inside a building is typically caused by equipment or activities within the building itself, such as heating and ventilation systems, footsteps or doors closing.

FTA Assessment states that it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. However, some common sources of vibration are trains, trucks on rough roads, and construction activities, such as blasting, pile driving, and heavy earth-moving equipment. Train-induced vibration depends upon a wide

variety of factors. Because train speed, track condition, soil structure, suspension stiffness, wheel maintenance and other variables all affect train-caused vibration, it is very difficult to generalize the relationship of all the variables in any vibration impact assessment.

4.7.2.4 Noise Standards

The federal government sets noise standards for transportation-related noise sources that are closely linked to interstate commerce, such as aircraft, locomotives, and trucks, and, for those noise sources, the state government is preempted from establishing more stringent standards. The state government sets noise standards for those transportation noise sources that are not preempted from regulation, such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies.

Federal Agencies and Regulations

Code of Federal Regulations (CFR)
Federal regulations for railroad noise are contained in 40 CFR Part 201 and 49 CFR Part 210. The regulations set noise limits for locomotives and are implemented through regulatory controls on locomotive manufacturers.

Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck pass-by noise standard is dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers. The Federal Highway Administration (FHWA) regulations for noise abatement must be considered for federal or federally-funded projects involving the construction of a new highway or significant modification of an existing freeway when the project would result in a substantial noise increase or when the predicted noise levels approach or exceed the “Noise Abatement Criteria.”

Federal Transit Administration
The Federal Transit Administration has prepared guidance noise and vibration impact assessments for proposed mass transit projects: Transit Noise and Vibration Impact Assessment (U.S. FTA, 2006). The May 2006 version is the second edition of a guidance manual originally issued in 1995, which presented procedures for predicting and assessing noise and vibration impacts of proposed mass transit projects. The guidance is required to evaluate the noise and vibration impacts in the environmental review process for project proponents seeking funding from FTA. All types of bus and rail projects are covered. Although the focus of the guidelines is on transit noise, intercity passenger and freight rail projects often rely on the analysis methodology detailed in that document. The guidance contains procedures for assessing impacts at different stages of project development, from early planning before mode and alignment have been selected through preliminary engineering and final design. The focus is on noise and vibration impacts during operations, but construction impacts are also covered. The guidance describes a range of measures for controlling excessive noise and vibration.

Department of Housing and Urban Development (HUD)
The noise regulation 24 CFR Part 51 Subpart B, Noise Abatement and Control presents the HUD noise program. Within the HUD Noise Assessment Guidelines, potential noise sources are examined for projects located within 15 miles of a military or civilian airport, 1,000 feet from a road or 3,000 feet from a railroad. HUD exterior noise regulations state that 65 dBA DNL noise

levels or less are acceptable for residential land uses and noise levels exceeding 75 dBA DNL are unacceptable. HUD's regulations do not contain standards for interior noise levels. A goal of 45 decibels is set forth for interior noise and the attenuation requirements are based upon this level. HUD's standards assume that internal noise levels would be met if exterior standard are met under standard construction practices.

Federal Vibration Policies

The FRA and FTA have published guidance relative to vibration impacts. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The RMS amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. The decibel notation, VdB, is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration. According to the FRA, fragile buildings can be exposed to groundborne vibration levels of 0.5 inches per second PPV without experiencing structural damage. The FTA has identified the human annoyance response to vibration levels as 80 VdB (U.S. FTA, 2006).

State Agencies and Regulations

California Department of Transportation (Caltrans) The State of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state pass-by standard is consistent with the federal limit of 80 dB. The state pass-by standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline. For new roadway projects, Caltrans employs the Noise Abatement Criteria, discussed above in connection with the FHWA.

California Noise Insulation Standards

The California Noise Insulation Standards found in the California Code of Regulations, Title 24, set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is DNL 45 dB in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dB. DNL is the average noise level over a 24 hour period. The noise between the hours of 10:00 p.m. and 7:00 a.m. is artificially increased by 10 dB. This takes into account the decrease in community background noise during nighttime hours.

State Vibration Policies

There are no adopted state policies or standards for ground-borne vibration. However, Caltrans recommends that extreme care be taken when sustained pile driving occurs within 7.5 meters (25 feet) of any building, and 15 to 30 meters (50 to 100 feet) of a historic building or a building in poor condition.

Local Agencies and Regulations

To identify, appraise, and remedy noise problems in the local community, each county and city along the San Joaquin Corridor has adopted a noise element as part of its General Plan. Each noise element is required to analyze and quantify current and projected noise levels associated with local noise sources, including, but not limited to, highways and freeways, primary arterials and major local streets, rail operations, air traffic associated with the airports, local industrial

plants, and other ground stationary sources that contribute to the community noise environment. Beyond statutory requirements, local jurisdictions are free to adopt their own goals and policies in their noise elements, although most jurisdictions have chosen to adopt noise/land use compatibility guidelines that are similar to those recommended by the state. The state model noise/land use compatibility guidelines have some flexibility in offering over-lapping options for noise exposure acceptability. The overlapping DNL ranges indicate that local conditions (existing noise levels and community attitudes toward dominant noise sources) should be considered in evaluating land use compatibility at specific locations. The model guidelines for noise exposure are shown in Figure 4.7-2.

In addition to regulating noise through noise element policies, local jurisdictions regulate noise through enforcement of local ordinance standards. These standards generally relate to noisy activities (e.g., use of loudspeakers and construction) and stationary noise sources and facilities (e.g., air conditioning units and industrial activities).

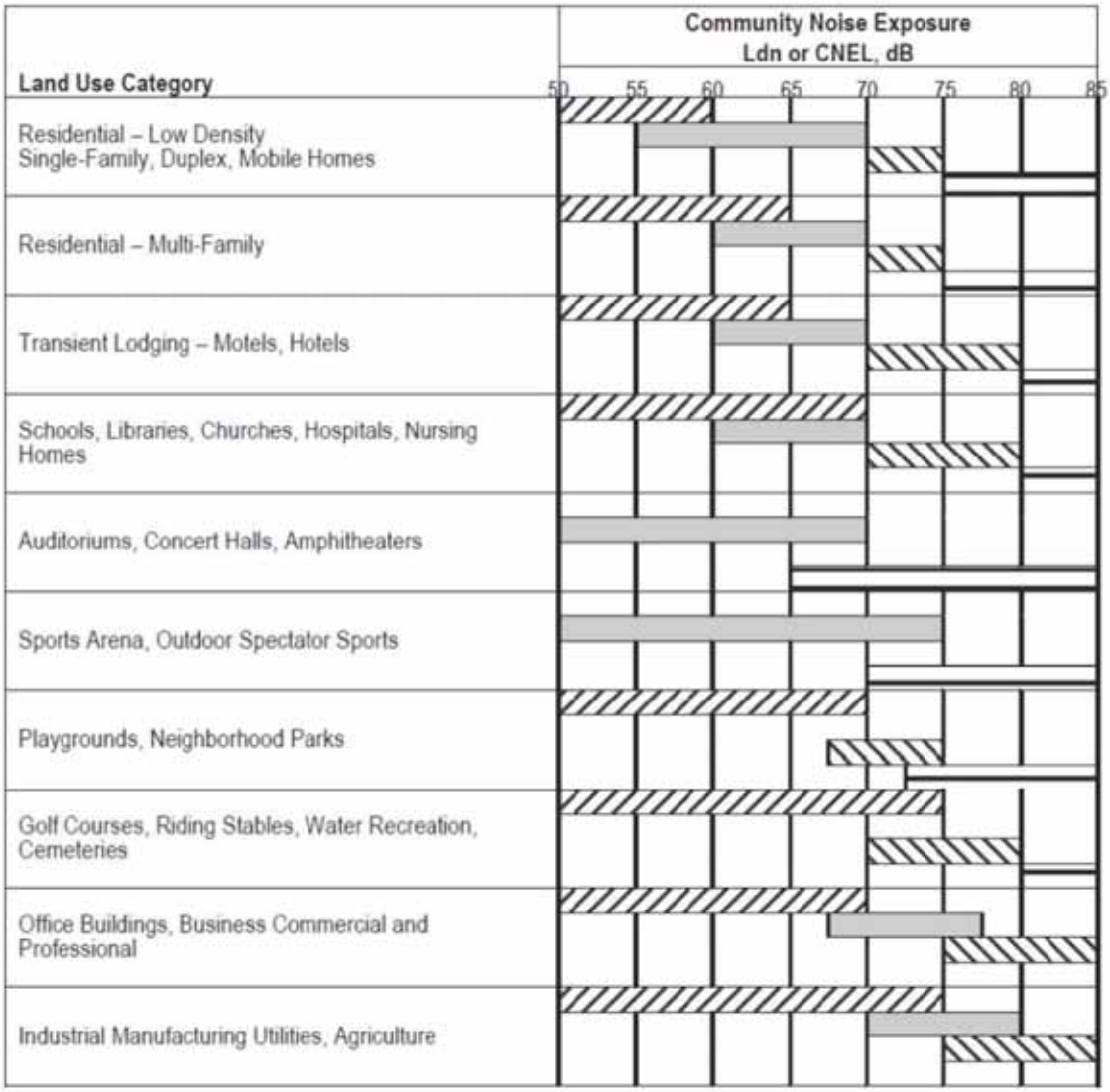
The proposed project includes 20 years of construction activities. However, except for a small number of fixed facilities (stations and one lay-over facility), construction noise will occur at any single location for only a very brief period. In recognition that heavy construction normally cannot be done without making noise, almost all noise ordinances exempt such activities from noise performance standards as long as they occur during hours of lesser noise sensitivity.

4.7.3 Affected Environment

The proposed project site covers a wide expanse of the Central Valley and a small portion of the Bay Area. As the nation's breadbasket, much of the Central Valley is agricultural. Agriculture is not a noise-sensitive activity. However, the San Joaquin Corridor passes through most substantial cities in the valley. While land uses closest to the track in developed areas are mainly commercial or industrial, older residential communities are found near the tracks in many valley metropolitan areas. Because track proximity is considered less than desirable, the residential uses are often populated by people of lower socio-economic status. Impacts to such communities from increased train traffic could have environmental justice implications. If federal funds are acquired in the future, increased noise resulting from the proposed project should be highlighted as part of the Environmental Justice evaluation. The impact analysis below considers the potential for impacts to noise sensitive land uses and provides mitigation to reduce noise impacts to a less than significant level when available.

Noise from existing train operations varies substantially with train travel speed. In heavily developed areas, speeds are restricted to around 35 mph. In wide open spaces travel speeds of 70 mph are quite common. The use of train horns near at-grade intersections is another variable that determines baseline train activity noise. There are some grade-separated crossings in cities, but most train/road intersections in open country are at grade. Progress is being made on creating "quiet zones" in some cities, but safety must not be compromised if train horn use is minimized.

Figure 4.7-2: Land Use Compatibility for Community Noise Environments



INTERPRETATION

Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of norm conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the nois reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: State of California Governor's Office of Planning and Research, General Plan Guidelines, 1990.

Train activity noise was monitored in 2002 near four grade crossings south of Escalon. Although these data are 10+ years old, the amount of train traffic has changed little in a decade. A similar study was conducted in 2013 at four crossings in the southern portion of the corridor between Shafter and Corcoran. Table 4.7-1 shows the 24+ hours of readings near Escalon. Table 4.7-2 shows the same breakdown for the four southern sites. The two data sets are very similar. Train passages, inferred from maximum (Lmax) levels of 90 dB or more, occurred on 18-20 hours per day. The weighted 24-hour CNEL close to the track ranged from 77-81 dB near Escalon. Along the southern portion of the corridor, the observed CNEL was 77-83.

Freight trains are the predominant noise contributor. They are longer than passenger trains, are pulled by more engines, and most critical for CNEL calculations, a large number of freights run at night. Each train from 10 p.m. to 7 a.m. is the noise-equivalent of ten daytime trains. As a result of this noise sensitivity "penalty", almost every weighted CNEL was louder than the single noisiest hour of the day.

The state model noise/land use guideline considers 75 dB CNEL to be the upper acceptable limit for residential uses. All measurements in close proximity to existing BNSF tracks exceed this threshold. Achieving even marginally acceptable levels for residential uses requires increased set-back or creation of intervening barriers between the source and receiver. Because engine noise from trains emanates from a substantial source height, barriers must be very tall. The undesirable aesthetics of noise walls at railroad tracks generally makes set-back or placement of intervening less noise-sensitive uses the preferred methods of minimizing railroad noise intrusion.

Table 4.7-1
BNSF NOISE MONITORING SUMMARY (dBA)
SOUTH OF ESCALON

Time	Site 1(70')		Site 2 (35')		Site 3 (60')		Site 4 (30')	
	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
00-01	72	84	50	61	47	61	59	77
01-02	76[a]	96	77[a]	96	74[a]	96	77[a]	96
02-03	46	61	47	60	42	60	56	78
03-04	69[a]	91	73[a]	94	72[a]	96	74[a]	96
04-05	66[a]	92	68[a]	93	69[a]	96	71[a]	96
05-06	55	69	55	67	51	61	62	82
06-07	73[a]	96	74[a]	96	73[a]	95	77[a]	96
07-08	70[a]	94	71[a]	93	70[a]	91	75[a]	96
08-09	60[b]	87	62[b]	88	62[b]	90	67[b]	92
09-10	69[a]	91	72[a]	89	71[a]	95	75[a]	94
10-11	61[b]	88	63[b]	91	60[b]	85	66[b]	91
11-12	71[a]	93	73[a]	94	70[a]	91	76[a]	96
12-13	66[a]	90	71[a]	95	69[a]	93	74[a]	94
13-14	70[a]	96	72[a]	95	71[a]	92	75[a]	93
14-15	68[a]	92	71[a]	96	71[a]	96	70[a]	93
15-16	69[a]	93	72[a]	96	71[a]	92	73[a]	93
16-17	68[a]	94	70[a]	87	70[a]	92	74[a]	90
17-18	65[b]	93	68[b]	94	63[b]	87	69[b]	93
18-19	73[a]	96	76[a]	95	74[a]	95	77[a]	96
19-20	57[b]	82	61[b]	87	62[b]	88	67[b]	91
20-21	72[a]	95	75[a]	96	74[a]	95	77[a]	96

Time	Site 1(70')		Site 2 (35')		Site 3 (60')		Site 4 (30')	
	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
21-22	53[b]	70	67[b]	96	65[b]	93	65[b]	91
22-23	66[a]	89	69[a]	94	67[a]	92	73[a]	96
23-24	74[a]	94	77[a]	96	76[a]	96	79[a]	96
24-Hr. CNEL	77	-	79	-	78	-	81	-

Table 4.7-2
BNSF NOISE MONITORING SUMMARY (dBA)
SHAFTER-CORCORAN

Time	Site 1(70')		Site 2 (35')		Site 3 (60')		Site 4 (30')	
	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
00-01	74	94	80	96	65	85	75	96
01-02	70	94	75	96	73	91	75	94
02-03	48	68	78	96	68	87	74	96
03-04	72	93	63	84	63	83	77	95
04-05	54	69	74	96	70	93	75	96
05-06	73	92	77	94	71	93	74	96
06-07	72	92	81	96	73	95	76	94
07-08	71	93	72	95	73	96	72	91
08-09	74	93	76	91	73	95	75	93
09-10	57	69	67	89	74	92	77	95
10-11	72	93	72	96	69	86	73	92
11-12	69	92	68	94	69	87	67	85
12-13	57	73	69	90	72	93	74	96
13-14	70	94	72	93	72	96	70	90
14-15	70	94	68	93	72	96	72	91
15-16	68	93	77	93	72	91	71	87
16-17	70	94	68	93	70	88	69	84
17-18	71	92	70	95	88	96	64	77
18-19	70	93	63	86	70	89	71	93
19-20	58	69	70	95	67	90	67	88
20-21	70	91	58	76	65	83	71	96
21-22	67	93	75	95	71	96	70	91
22-23	74	93	75	96	68	89	69	95
23-24	59	85	75	96	69	90	71	93
24-Hr. CNEL	77	-	83	-	78	-	82	-

4.7.3.1 Noise Impact Criteria (Thresholds)

CEQA Thresholds

A project is considered to have a significant noise impact where it causes an adopted noise standard to be exceeded for the project site or for adjacent sensitive receivers. A substantial increase in an environment where noise standards are already exceeded would also be considered a significant impact. In addition to being concerned about the absolute noise level that might occur when a new source is introduced into an area, it is also important to consider the existing noise environment. If the existing noise environment is quiet and the new noise source greatly increases the noise exposure, even though a criterion level might not be

exceeded, an impact may occur. Lacking adopted standards for evaluating such impacts, general rules of thumb for community noise environments are that a change of 5 dB or more is readily noticeable and, therefore, is considered a significant impact. Changes between 3 and 5 dB may be noticed by some individuals and are, therefore considered to constitute a substantial increase since under these conditions sporadic complaints may occur. Changes in community noise levels of 3 dB(A) or less are normally less noticeable and therefore considered less-than-significant with respect to CEQA guidelines.

An interior CNEL of 45 dB is mandated by the State of California Noise Insulation Standards (CCT, Title 24, Part 6, Sections T25-28) for multiple-family dwelling units. Since normal noise attenuation within residential structures with closed windows is about 20 dB, an exterior noise exposure of 65 dB CNEL allows that interior standard to be met without any specialized structural attenuation (dual-paned windows, etc.) features. The noise standards used in this analysis are, therefore, 65 dB CNEL exterior use and 45 dB CNEL interior.

Federal Thresholds

This noise/vibration impact study is in support of CEQA environmental clearance. Federal noise analysis guidelines differ somewhat from CEQA requirements in that they are based upon a different noise metric. Although an impact analysis based upon federal guidelines is not currently required, federal impact criteria are presented as an additional frame of reference.

The Federal Transit Administration (FTA) has developed guidelines for noise/vibration impact assessment from heavy rail projects. In the absence of definitive guidance for general rail project impact assessment, the FTA's Transit Noise and Vibration Impact Assessment (DOT-T-95-16, updated 2006) has been presumed applicable to the proposed project as well.

FTA guidelines define three classes of land uses where noise exposure should be evaluated, and the guidelines specify the change in noise levels that would have no impact, limited impact and definite impact. The corridor has Category 2 land uses within its potential noise impact corridor of 375 feet (FTA Manual, Table 4-1, Rail Mainline). Category 2 uses are residences. Category 1 uses (amphitheaters, concert pavilions, etc) do not occur near the track. Category 3 uses (schools, libraries, churches, etc) occur at few locations. However, any noise impacts are addressed in terms of the more stringent Category 2 noise standards.

Federal guidelines classify noise impacts as negligible, moderate or severe as a function of baseline conditions and the project increment. The measured peak hour Leq at 50 feet from the BNSF track centerline was 80 dB. If hourly baseline noise levels exceed 77 dB Leq at any Category 2 sites, a project increment of 66-75 dB Leq is classified as a moderate impact. A project increment individually exceeding 75 dB Leq is to be considered a severe impact.

4.7.4 Environmental Consequences

The San Joaquin Corridor project will generate three possible operational sources of noise along its alignment. Operational noise emissions impacts would derive from a slight relocation of the rail center-line in areas of double tracks; from possible speed increases associated with improved trackage; and from anticipated future rail passenger traffic growth. Fixed facilities (new stations and lay-over yard) may experience changes in local traffic patterns that may affect patterns of noise.

Project implementation would also require an extensive amount of construction activities over the next two decades. Construction will affect any individual receiver for only a brief period.

Baseline noise along the corridor is markedly elevated such that short-term construction noise will not likely be perceived as a substantial “new” noise intrusion.

4.7.4.1 Short-Term, Construction Activity Impacts

Implementation of the proposed project would involve the addition of new railroad tracks next to existing tracks for about 250 miles and improvements to bridges, drainages and crossings. Construction activities would also occur at several fixed facilities (new or relocated depots and a lay-over yard). Activities associated with such construction may be a noticeable temporary noise source. Noise from construction activities would be generated by two primary sources during the construction phase: the on-road transport of construction materials and workers and, off-road construction itself. Since transportation of personnel and materials will occur on already traveled roadways, background noise conditions will mask any project on-road contributions. Some heavy materials delivery for track improvements is proposed to be via trains such that on-road truck noise will be limited.

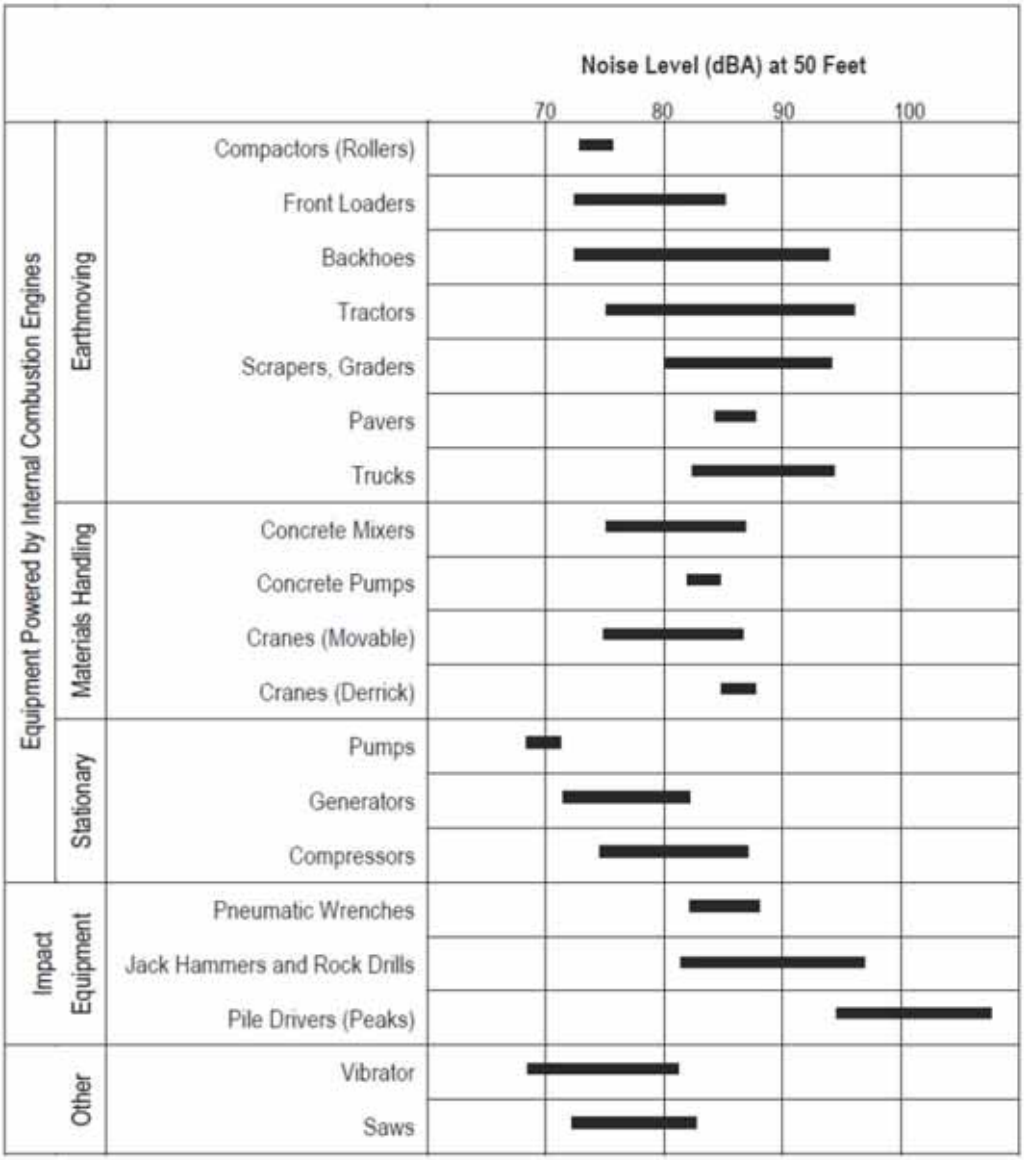
Construction activities occur in various steps, each of which involves different types of equipment with distinct noise characteristics. These steps would alter the character of the noise levels surrounding the construction sites as the project is developed. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise to be categorized according to discrete work phases, as discussed below.

Figure 4.7-3 shows the typical range of construction activity equipment noise. For track improvements, the first work phase category, earth moving and materials handling equipment to establish a new track bed would include typical machinery such as small dozers, front loaders, etc. Typical operating cycles may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels at 50 feet from earth moving equipment typically range from 73 to 96 dB. Although noise ranges during all phases of construction are similar in level, the second phase, track laying, typically varies from 85 to 90 dB at 50 feet from the source. This activity has the potential to temporarily create clearly audible noise levels at the closest receptors due to the various power tools and equipment used in track and tie placement, welding and finishing the track. Such temporary noise levels are similar in magnitude to those already occurring many times per day from passing trains. They are not “new” noise sources within the existing acoustic environment. With implementation of recommended mitigation measures, such as limiting construction hours in accordance with the City or County Codes in each project jurisdiction, and the temporary nature of construction, impacts from construction activities would be reduced to a less-than-significant level.

4.7.4.2 Long-Term, Operational Activity Impacts

The proposed project would add 10 daily train trips to a corridor currently carrying an estimated 46 freight trains and 12 Amtrak passenger trains per day. The build-out scenario would carry 22 Amtrak trains (11 in each direction) with an existing speed of around 60 mph to speeds as high as 90 mph where feasible. The ten Amtrak passenger trains would increase the frequency of train horn use for at-grade crossings by a proportionate amount.

Figure 4.7-3: Typical Construction Equipment Noise Generation Levels



Source: EPA PB 206717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment and Operations."

The noise level change associated with increased passenger traffic was analyzed using the FRA's "CREATE Freight Noise and Vibration Model" (2006). Although the model is oriented toward freight trains, it contains modules for calculating noise generation from passenger rail, buses, shops, layover tracks and other facilities.

Existing (and future) freight traffic is somewhat equally split between daytime and nocturnal movements. Because of the penalty applied to noise events from 10 p.m. to 7 a.m., CNEL/DNLs are dramatically elevated along the San Joaquin Corridor close to the tracks. Passenger traffic is primarily during the day with only one train before 7 a.m. Input parameters for the train noise assessment were as follows:

Existing	**Freight**	**Amtrak**
Trains/day	46	12
Day/night split (%)	50/50	90/10
Travel Speed (mph)	50	60
Locomotives	3	1
Cars	50	5
Future	**Freight**	**Amtrak**
Trains/day	48	22
Day/night split (%)	50/50	90/10
Travel Speed (mph)	50	90
Locomotives	3	1
Cars	50	7

Because of the intrinsic dominance of freight movements versus passenger trains in terms of noise, the planned addition of 5 passenger trains in each direction plus two passenger cars for existing trains, the speed increase to 90 mph engenders minimal noise impacts. The results of the CREATE Model are as follows (dB) at 50 feet from the tracks:

Existing	**CNEL/DNL**	**Peak Leq**
Freight	80	74
Passenger	58	57
Total	80	74
Future	**CNEL/DNL**	**Peak Leq**
Freight	80	74
Passenger	63	62
Total	80	74

The change in passenger traffic train noise is not enough to measurably increase the total noise level by more than 0.5 dB even for a 90 mph travel speed. The CEQA significance threshold of +3.0 dB will not be exceeded. The federal guidelines of what constitutes a severe or even a moderate noise impact will similarly not be met.

Increased train traffic will be accompanied by a greater frequency of train horn use. The 58 events per day are forecast to increase to 70 per day with 10 more passenger trains and 2 additional freights by 2035. With increased train speed, a small shift in horn sounding distance may also result to give on-road traffic enough warning time. Horn volume of freight and passenger trains is not substantially different. The change in average daily noise levels from

increased horn activity can thus be estimated from a logarithmic ratio of future versus existing events as follows:

$$\triangle = 10 \times \log (70/58) = 0.8 \text{ dB}$$

The average daily noise level increase from train horn use will be less than +1 dB. Such a change will not be perceived by residents near the tracks as a substantial increase, particularly since Amtrak noise events will be primarily in the daytime.

Noise level changes due to construction and use of a second track would shift the noise generation "centroid" closer to the location of the nearest track. The effective noise generation distance (DEFF) is currently the distance to the nearest track. The addition of another track closer to the nearest noise-sensitive land use would change the effective generation location (DNEW) as:

$$DNEW = SQRT\ [DEFF \times (D-25)]$$

Application of this formula to the observed noise level would change noise levels as follows:

Distance to Nearest Existing Track (feet)	Noise Increase at Closest Homes	Net Decrease at Farther Homes
50	+1.5 dB	-0.9 dB
60	+1.2 dB	-0.8 dB
70	+1.0 dB	-0.7 dB
80	+0.8 dB	-0.6 dB
90	+0.7 dB	-0.6 dB
100	+0.6 dB	-0.5 dB
125	<0.5 dB	-0.4 dB

Any sensitive (Category 2) land use would experience an "impact" (+0.5 dB or more) if the receiver is located within 125 feet of the nearest track, and the new track is added on the receiver's side of the existing track. A noise reduction would occur on the side of the tracks father away from the new addition by shifting a portion of the train traffic a few feet farther away.

In the countryside, there are few Category 2 land uses within 125 feet of the existing track that would be within the zone of possible noise impact from second track installation. In developed communities, there are areas of residences close to the tracks, but most of these are not proposed for additional track or future track location shifts. Implementation of the proposed additional track program is not expected to cause any significant train noise impacts from track shifts. However, mitigation measures 4.7.9 and 4.7.10 are provided to reduce any potential impacts to sensitive uses to a less than significant level. Operational activity noise impacts from track utilization will not have a significant noise impact that would require mitigation.

4.7.4.3 Physical Support Facilities

While most noise effects from expanded passenger rail would occur from mobile sources (trains, buses, station access traffic, etc.), the proposed project includes several fixed facilities. These include two new depots (Hercules and Elk Grove), a new or refurbished depot in Stockton, and a lay-over yard with light maintenance facilities in Merced or Fresno. Mobile source noise regulation is typically pre-empted from local control. Although mobile sources will

move in/out of these “stationary” sources, there may be non-mobile activities that are amenable to local noise regulation. Presumably, any such non-mobile noise sources would comply with any applicable noise ordinances of any affected jurisdictions. These ordinances vary slightly from one city or county in terms of numerical performance standards. However, they are all crafted to insure that noise generated by a stationary source does not adversely impact the surrounding community. Ordinance compliance is presumed to create a less-than-significant noise impact from stationary sources.

The CREATE computer noise model does contain a number of modules that calculate the noise levels associated with rail support activities. These algorithms were run for a park-and-ride lot with 50 cars and 2 buses per hour, for a bus transit center accessed by 5 buses per hour, and a lay-over yard with one train in by day and leaving before 7 a.m. the next morning. The calculation was performed for a distance of 500 feet from the center of the activity to the nearest off-site noise sensitive use. The CNEL/DNL and the peak hourly Leq were evaluated with the following results (dB):

Facility	CNEL/DNL	Peak Leq
Lay-over yard	45	38
Park and Ride Lot	37	31
Bus Transit Center	41	34

CNEL-based (general plan) standards for residential uses are typically 65 dB. Weighted 24-hour noise impacts from support facilities are substantially below maximum allowable levels. Similarly, noise-ordinance standards for non-preempted sources are typically 45-50 dB for peak hourly impacts. The physical passenger train support facilities would have noise “footprints” that will be well within acceptable community levels.

Stockton Station Alternative Locations

The above calculations demonstrate that a train depot and ancillary facilities do not generate enough noise as to impact noise-sensitive uses with reasonable set-back distances. All candidate Stockton Station alternatives are in commercial or industrial zones with no immediate residential uses. In terms of noise impacts from station location selection, there is no preferred alternative.

Lay-Over Alternative Locations

The primary noise impact from lay-over tracks is from an idling engine providing head end power (HEP). At base electrical load, the engine has a low-pitched hum that remains reasonably steady. At low volumes and minimum rise and fall, the nearest receivers at either location will be generally unaware of the train’s presence. At either the Fresno or Merced location, variable activity noise from braking or accelerating trains, at-grade crossing horns, couplers banging, loudspeaker announcements, etc., will overwhelm the idling hum of a lay-over train. Neither candidate location is a preferred alternative in terms of minimizing noise impacts.

4.7.4.4 Vibration Assessment

Vibration is oscillatory movement which can be described in terms of distance displacement, vibration velocity or acceleration. The vibration velocity is perhaps the most common vibration descriptor. The peak particle velocity (PPV) during one vibration cycle is the maximum instantaneous peak in the vibration signal. It is a good indicator of possible structural damage. The root-mean-squared (RMS) velocity is a smoothed representation of the average level of

"shaking" during each vibration cycle. The human body is more sensitive to a continuous rolling or shaking motion (RMS) than it is to a single jolt (PPV).

For ease of representation, a decibel scale is used for vibration similar to the scale used for sound. The most common vibration velocity reference level in the United States is one-millionth inch/second as follows:

Vibration Velocity (in/sec)	Vibration Decibels (VdB)	Typical Source/Effect
0.000001	0	Undetectable by humans
0.000001	20	Undetectable by humans
0.0001	40	Undetectable, isolated house in the country
0.001	60	Almost perceptible, typical suburban residence
0.01	80	Annoying, loaded truck going over large bump
0.03	90	Very annoying, bulldozer operating nearby
0.1	100	Building damage, construction blasting nearby

Human Perception

The commonly accepted human threshold of perception for vibration is 65 VdB (re: 10^{-6} in/sec). The dividing line between vaguely perceptible and clearly perceptible is around 75 VdB. At 85 VdB, the vibration becomes intrusive for sleeping, reading or most other "quiet" activities. There are no adopted vibration impact criteria that have been developed and approved by appropriate agencies for purposes of environmental assessment. The Federal Transit Administration, in "Transit Noise and Vibration Impact Assessment" (2006) has developed recommended impact criteria for transit projects. In the absence of definitive standards for train activity vibration, these guidelines have been incorporated into the following discussion.

The FTA's suggested vibration impact criteria are as follows:

Land Use	Threshold		
	Frequent[1] (VdB)	Occasional (VdB)[2]	Infrequent[3] (VdB)
Precision manufacturing or research	65	65	65
Residences with sleeping areas	72	75	80
Schools and other daytime-only uses	75	78	83

1 More than 70 events per day.
2 Between 30 to 70 events per day.
3 Less than 70 events per day.

The FTA Manual provides a screening distance for vibration effects. Unless there are unusual vibration propagation conditions, passage of a heavy rail passenger, or commuter or freight train moving at moderate speed (50 mph) will have no perceptible impact to residences beyond 200 feet from tracks. The FTA Manual notes that these screening distances include a 5 VdB margin of safety to account for variable vibration propagation effects. Measurements have shown that freight trains typically have vibration levels that are 5 VdB higher than passenger rail. The 200-foot screening distance may thus apply to freight trains, but with a lower level of confidence due to the lack of any margin of safety.

Project-Related Vibration Impact

The proposed project will add 5 passenger trains in each direction of travel at build-out. The vibration effect of 5 passenger trains is equal to one freight train. The vibration equivalence of increased passenger service is adding one freight train in each direction. The plan to ultimately achieve a 90 mph travel speed where feasible has potentially more serious vibration implications. The increased travel speed to 90 mph would add +5 VdB of vibration at near-track uses. A 90 mph passenger train is the vibration equivalent of a 50 mph freight train. To be sure, the 90 mph travel speed would only be achieved in open country where there are few Category 2 uses near the tracks. However, while the addition of 5 Amtrak trains in each direction has very minimal vibration impacts, the travel speed increase has a potentially more noticeable effect.

Figure 10-1 of the FTA Manual shows that the generalized ground surface vibration curves for passenger train at 50 mph is 78 VdB at 100 feet from the track centerline. The figure also suggests that the same value should be used for freight trains at the same travel speed and distance. As noted above, vibration measurements consistently show that freights create +5 VdB more shaking under the same travel speed and set-back conditions than passenger trains. A reference level of 83 VdB at 100 feet has therefore been assigned to existing freight traffic. That same reference level has been used to determine vibration effects of achieving a 90 mph passenger train travel speed.

Existing corridor train traffic totals 58 events. The addition of 10 passenger trains and 2 freights would increase movements to 70 per day. Corridor train use is, and would remain, within the "occasional" category of 70 events or less. The recommended vibration standard for occasional events is 75 VdB. This standard is for vibration nuisance perception. Any structural damage (cracked stucco or plaster) requires vibration levels exceeding 100 VdB. Any discussion of impact therefore relates only to nuisance.

Application of the point source decay assumption to the reference VdB, i.e.,

$$\text{VdB (at distance D)} = \text{VdB ref} - 20 \log (D/100)$$

produce the following vibration drop-off from the tracks (VdB):

Distance	Freight	Ex Amtrak	90 mph Amtrak
100'	83	78	83
128'	81	76	81
140'	80	75*	80
160'	79	74	77
200'	77	72	77
250'	75*	70	75*
320'	73	68	73

* meets 75 VdB FTA standard

Existing passenger train activity creates a possible vibration perception nuisance in uncarpeted areas of homes to a distance of 140 feet from the track centerline. Freight trains have a possible vibration impact envelope of 250 feet. Project implementation would increase the number of such events, but not the magnitude. Increasing passenger train travel speed could similarly increase the number of times vibration effects that extend as far as 250 feet. However, since freight train vibration already is felt that far, it would not be a "new" change and they would

remain classified as occasional. Vibration effects from project implementation are considered less-than-significant.

Double tracking may slightly change the location of vibration generation. Assuming equal use of both tracks, addition of a second mainline track will slightly change the maximum location of vibration perception, and may slightly increase the severity of individual vibration events toward the side of new track construction. The centroid of vibration generation (mainly from train locomotive) will shift by +12.5 feet for a 25-foot separation between the existing and proposed track. The potential vibration perception distance will increase toward the track side of new construction. Conversely, the number of perceptible vibration events on the side away from the new track near the fringe of the perception threshold will decrease as one-half of existing traffic is assumed to be shifted to the new track away from the closest receivers. The increased vibration magnitude of individual passbys is expressed as follows (VdB):

Existing Dist. from New Track C.L. (feet)	Toward New Track Construction	Away from New Track Construction
100	+1.2 max.	-1.0 avg.
150	+0.8 max.	-0.7 avg.
200	+0.6 max.	-0.5 avg.

An increase of +1.2 VdB is not considered a substantial increase even at 100 feet from the existing nearest track. Most existing residences are 150 feet or more from the nearest track in areas where a second track is proposed. The maximum increase of less than 1.0 VdB is likely an imperceptible change from current conditions. Addition of a second mainline track will not have a substantially adverse vibration effect on the closest residences along several portions of the project. Vibration impacts from track improvements and track utilization is not forecast to be substantial enough to require mitigation.

4.7.4.5 Cumulative Impact

The existing background noise setting along the San Joaquin Corridor is a classic example of a cumulative impact. Existing background noise along the corridor varies between 77 dBA CNEL and 83 dBA CNEL. This background is based on a current volume of train traffic that includes 46 freight trains and 12 passenger trains. Based on the analysis presented in the preceding sections, the addition of ten (10) additional passenger trains within the San Joaquin Corridor is not forecast to cause cumulatively considerable adverse noise impacts. However, the reason for this circumstance is that the background noise level along the corridor is already cumulatively considerable (77-83 dBA CNEL), exceeding the acceptable noise levels for most uses except agriculture and industrial activities. A substantial portion of the cumulatively considerable noise impact within the Corridor is caused by night time freight train activities which incur substantial penalties between 7 pm and 7 am. The additional proposed ten passenger trains in the Corridor add approximately 0.5 dBA to the existing background noise levels in the Corridor.

Regardless of the small increment of noise added to the Corridor by the proposed project, the existing high background noise level is considered to be a significant impact to sensitive noise uses adjacent to the Corridor. Therefore, Caltrans concluded that small increment added by the proposed project must be considered a cumulatively considerable adverse impact. Since the nexus between the proposed project and the significant noise within the Corridor is minimal, Caltrans has not identified any “feasible or reasonable” mitigation that the project can implement

within the whole Corridor. However, it may be possible to address site specific noise sensitive land uses, such as existing hospitals or other similar existing uses. Mitigation measure 4.7-10 will be implemented on a case-by-case basis in the future where new infrastructure will be constructed adjacent to existing sensitive uses. Such limited mitigation may be feasible and may reduce noise impacts at specific locations, but the Corridor-wide cumulatively considerable noise remains an unavoidable significant adverse impact within the Corridor.

4.7.4.6 Unavoidable Significant Adverse Impact

Based on the evaluation presented in the preceding noise sections, the proposed project will not result in any project specific significant noise impacts during future construction or operations. The existing high background noise environment related to overall rail operations within the San Joaquin Corridor are considered to be cumulatively considerable and constitutes an unavoidable significant adverse impact. Caltrans has concluded that no feasible or reasonable mitigation is available for future passenger rail operations to reduce this Corridor cumulative noise impact to a less than significant impact level. The proposed project will implement mitigation measures 4.7-1 through 4.7-10 to address future site specific noise impacts, but as noted, there are no Corridor-wide measures that Caltrans can implement to reduce the cumulatively considerable background noise levels to a less than significant impact and this cumulative noise impact is considered to be an unavoidable adverse impact.

4.7.5 Avoidance, Minimization and Mitigation Measure

Noise and vibration impacts from the operation of 10 additional passenger trains and any support facilities on the San Joaquin Corridor are considered less-than-significant. Such impacts are not completely negligible, but do not exceed generally accepted CEQA significance thresholds within the content of the existing near-track acoustic and vibration environment.

Construction activities may have a very brief noise or vibration impact near any individual receiver. However, local jurisdictions and Caltrans require compliance with a variety of best management practices (BMPs) to minimize noise impacts to any off-site noise-sensitive land uses. These “standard” measures on any grading permits include the following measures. For each future project Caltrans will select those specific best management practices to control construction noise for the given environmental setting, i.e., apply more mitigation in areas where noise sensitive uses occur.

4.7-1 ***Construction shall be limited to the hours of 7 a.m. to 7 p.m. on Monday through Friday, and between 9 a.m. to 6 p.m. on Saturday, and shall be prohibited on Sundays and federal holidays. Exceptions for work outside of these hours can occur for declared emergency circumstances. Applicable local agency noise standards may be used instead of the threshold(s) identified in this measure if such local measures provide equal or greater construction noise mitigation/attenuation.***

4.7-2 ***All construction vehicles and fixed or mobile equipment shall be equipped with properly operating and maintained mufflers.***

4.7-3 ***All employees that will be exposed to noise levels greater than 75 dB over an 8-hour period shall be provided with adequate hearing protection devices to ensure no hearing damage will result from construction activities.***

4.7-4 ***If equipment is being used that can cause hearing damage at adjacent noise receptor locations (distance attenuation shall be taken into account), portable noise barriers shall be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds.***

4.7-5 ***Project design will include measures which assure adequate interior noise levels as required by Title 25 (California Noise Insulation Standards****).*

4.7-6 ***Utilize construction methods or equipment that will provide the lowest level of noise impact, i.e., use newer equipment that will generate lower noise levels.***

4.7-7 ***Schedule the construction such that the minimum number of pieces of equipment will be operating at the same time.***

4.7-8 ***Maintain good relations with the local community where construction is scheduled, such as keeping people informed of the schedule, duration, and progress of the construction, to minimize the public objections of unavoidable noise. Communities should be notified in advance of the construction and the expected temporary and intermittent noise increases during the construction period.***

4.7-9 ***Where San Joaquin Corridor equipment or facilities will be installed adjacent to sensitive noise receptors in support of this program, a site specific noise/ vibration study will be conducted to ensure that local jurisdictional noise standards will be met. Where noise attenuation is required, the facility design shall incorporate the specific noise attenuation best management practices required to mitigate noise impacts to a less than significant level.***

4.7-10 ***Where a future new track will be installed within urban areas that contain noise sensitive uses, a project specific noise study shall be compiled and feasible mitigation measures identified in the study to attenuate increased rail noise shall be implemented by Caltrans.***

This page left intentionally blank for pagination purposes.

4.8 TRAFFIC / TRANSPORTATION

4.8.1 Introduction

The proposed project rail alignment improvements would be located within existing railroad rights-of-way and would be designed to improve the efficiency of train movements, which would increase the capacity of the existing rail system to carry more frequent passenger trains and ensure that passenger train service can operate on a reliable schedule. The proposed project would serve to improve rail safety and operation and provide increased availability of public transportation, which would, in turn, help to reduce emissions from vehicular travel and achieve the goals of State and local plans.

The majority of comments received on the NOP were related to traffic or transportation issues, as would be expected given that the proposed Project primarily relates to transportation. An extensive summary of the comments related to Traffic/Transportation is provided in Chapter 2, and all comment letters and responses are provided in Chapter 8, Appendix 8.2 for reference. Information is provided in this Subchapter to address the concerns expressed regarding traffic and transportation impacts.

4.8.2 Regulatory Setting

The Federal Highway Administration (FHWA) directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (23 CRF 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

The involved agencies of the state of California and the FHWA are committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

4.8.2.1 Significance Criteria

The Initial Study evaluated and eliminated several of the standard checklist items with respect to traffic and transportation related impacts. The NOP determined that the proposed project would not significantly adversely impact the Transportation and Traffic issues of alternative forms of transportation, air traffic, or emergency access and would not substantially increase hazards due to a design feature or incompatible uses with implementation of the proposed mitigation measures. These issues are not carried forward to the PEIR. The Initial Study determined that there is potential for the proposed project to impact roadways and intersections that are currently deficient or are expected to operate at deficient levels in the future. Conflicts between operations of the local circulation system and rail operations along the San Joaquin Corridor will be evaluated in the PEIR. Roadways and intersections are evaluated for their proximity to the San Joaquin Rail Corridor in general and to at-grade crossings along the Corridor in particular in the PEIR. The impact of new or increased passenger-generated traffic on circulation systems surrounding stations serving the San Joaquin Corridor is also evaluated.

The Transportation and Traffic issues regarding the potential for the proposed project to significantly adversely impact the performance of the circulation system or conflict with an applicable congestion management program were found to be potentially significant. These Transportation and Traffic issues are addressed herein and will serve as the impact evaluation criteria for assessing and determining significant transportation impacts from implementing the proposed project.

The following specific transportation system impact evaluation criteria are brought forward from the Initial Study.

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

In addition, one comment requested consideration of bicycle parking at stations and transport on trains. As stated in the response to this comment, Amtrak accommodates bicycles to the extent feasible and will continue to do so. Many existing stations provide bicycle parking infrastructure, and new stations proposed herein include bicycle parking infrastructure. The Amtrak website identifies if a station sells bicycle boxes for transporting bicycles on the train. Further accommodation of bicycles is beyond the scope of this Draft PEIR.

4.8.3 Affected Environment

The proposed project involves the possible construction and/or modification of both new and/or existing facilities as identified in Chapter 3 Project Description. The nature and potential location of projects within the project area is relatively well defined at this time. In most cases, infrastructure would be installed within the existing railroad rights-of-way and easements where development has already occurred. For example from Bakersfield (MP 885) to Port Chicago (MP 1165) on the BNSF alignment, there are a total of 536 grade crossings, including approximately 468 at-grade crossings, many of these within the urban areas along the track alignment. As each future segment of double or triple track is installed in the future, an additional track will have to be installed within each at-grade crossing. Each local jurisdiction (city or county) will need to be consulted and permit(s) will have to be obtained from the CPUC. It is anticipated that all modifications to at-grade crossings will be installed within the existing railroad rights-of-way. The San Joaquin Corridor Program does not address the issue of the need or planning for future grade separated crossings. It is assumed that local and regional agencies will carry out the planning and funding of individual grade separation projects in the future.

4.8.3.1 Potential Traffic and Transportation Impacts from At-Grade Crossings and Pertinent Regulatory Setting

There are hundreds of active at-grade crossings along the San Joaquin Rail Corridor. BNSF provided data on all crossings (including grade separated) between Bakersfield and Port Chicago. Similar information was not available from UPRR. Based on the crossing data provided in Appendix 8 of Volume 2 of this DRAFT PEIR, there are approximately 468 at-grade

crossings within the 280 miles between Bakersfield and Port Chicago. The proposed San Joaquin Corridor Amtrak California Service project would allow for faster train movements, which would decrease the amount of time trains block at-grade crossings; however, the proposed project would increase the number of passenger trains that pass through at-grade intersections by up to 10 trains in 2035. Each train would also potentially be lengthened from the typical 6 cars (including the locomotive) to 7 cars, which would require slightly more time to move through intersections and would potentially slow the speed of the train. Assuming the typical at-grade crossing is about 700-feet long, even a 7 car passenger train moving slowly through an at-grade crossing would take less than a minute to pass through the intersection, including the time required for safety gates to drop and rise. The proposed project would add, at most, a cumulative 10 additional minutes spread throughout the day when passenger trains occupy at-grade crossings.

In general, a maximum of 10 additional minutes per day of trains occupying an at-grade crossing would not represent a substantial impact, particularly given that along most of the alignment passenger trains pass through an intersection less than once every one-half hour. Refer to Chapter 8, Appendix 8.1 (Passenger Demand Forecast Modeling) which provides a theoretical San Joaquin Corridor Amtrak California Service schedule that includes 10 additional passenger trains. Note that at most locations there is one time during the day when a northbound and southbound train pass an intersection less than 10 minutes apart. The San Joaquin Corridor shares the rail alignment with the Capitol Corridor between the cities of Oakland and Martinez in Contra Costa County. Combined passenger train traffic on this portion of the rail alignment is much more frequent (30 to 32 trains per day) than elsewhere on the San Joaquin Corridor and spacing between passenger trains would be closer.

However, anywhere along the proposed project corridor there is potential for the proposed project to impact roadways and intersections that are currently deficient or are expected to operate at deficient levels in the future. Potential conflicts between operations of the local circulation system and rail operations along the San Joaquin Corridor are identified by reviewing County and City planning documents (general plans, general plan EIRs, background technical reports, etc) to identify intersections and roadway segments that currently (or are projected to) operate at a deficient level of service (LOS). Deficient roadways and intersections were then evaluated for their proximity to the San Joaquin Rail Corridor in general and to at-grade crossings along the Corridor in particular. Intersections and roadways with deficiencies in the vicinity of at-grade Corridor crossings are listed by county or city for further evaluation. Because the currency of the available roadway functionality data is highly variable and it will be necessary to analyze whether future passenger trains will actually pass through an at-grade intersection during a period of deficient LOS, the need for creating grade separations between rail and other uses will ultimately be determined on a case-by-case basis in consultation with the local jurisdictions.

Contra Costa County

The Contra Costa County General Plan includes policies in support of rail, including Policy 5-78 which calls for increasing rail ridership by increasing awareness of service, improving access (seamless transfers with other modes of travel, additional train service), increasing LOS (supporting service-increase recommendations called for in the Caltrans' California Passenger Rail System 20-Year Improvement Plan) and improving on-time performance, reducing transit time and improving stations. Policy 5-79 calls for improving rail efficiency by improving tracks and stations to help increase the capacity of the rail system.

The Contra Costa County Transportation Authority's 2009 Countywide Transportation Plan (CTP) includes Action Plans for each part of the County. The Action Plans identify roadway LOS goals by specific segments of roadway as well as by general character of roadways. For example, the East County Action Plan identifies LOS D as the minimum standard for unsignalized rural roads and identifies a peak hour volume to capacity maximum on suburban roadways, unless they are specifically named as having a different standard.

The CTP includes a new Capitol Corridor station planned at Hercules. The proposed project includes a new station at Hercules that would serve the San Joaquin Corridor in addition to serving the Capitol Corridor (both Amtrak routes travel the same rail at this location.) A search of the Authority's Comprehensive Transportation Project List (http://www.ccta.net/EN/main/planning/1241/translist.html accessed 1/26/2014) found only one transportation project along the project alignment that would impact an at-grade crossing. The City of Richmond is in the planning stages of improvements to the Cutting Blvd and Carlson Blvd UPRR grade crossing to improve the signal and intersection configuration and add safety features.

Sacramento County

The County of Sacramento General Plan identifies acceptable LOS on rural roadways as LOS D and on urban roadways as LOS E. Plate TC-3 *Existing Conditions Roadway Level of Service – Unincorporated Sacramento County* of the Sacramento County General Plan Update EIR shows that the proposed San Joaquin Corridor Amtrak California Service alignment between Stockton and Sacramento has an at-grade crossing that has the potential to impact LOS on Calvine Road west of Elk Grove Road where the LOS is currently F. An at-grade crossing on Gerber Road located about 250 feet west of French Road has the potential to further deteriorate the existing LOS of F on French Road north of Gerber Road. Plate TC-6 shows the 2030 LOS for roadways in the unincorporated County with the General Plan Update, shows that Calvine Road where the at-grade crossing is located would function at an acceptable LOS with the Update, but that the aforementioned Gerber Road segment where there is an at-grade crossing that has the potential to impact LOS on French Road would itself deteriorate to LOS F. A segment of Florin Road where there is an at-grade crossing that has the potential to impact LOS would also deteriorate to LOS D. The Sacramento County General Plan EIR states that "congestion levels could be reduced at a number of critical intersections by adding turning lanes to the major roadway and/or the cross street." No reference in the County EIR can be found to at-grade rail crossings contributing significantly to LOS deficiencies; however mitigation measure 4.8-1 is provided that requires future review at deficient intersections and action to reduce such deficiencies where feasible.

The City of Sacramento identifies a LOS C as acceptable. A review of roadway segments operating at a deficient LOS, shown graphically in Figure 6.12-3 and listed in Table 6.12-3 and Table 6.12-4 of the City of Sacramento 2030 General Plan Master EIR Certified March 3, 2009 found that no deficient roadway segments are located in the vicinity of at-grade San Joaquin Rail Corridor Amtrak California Service crossings.

San Joaquin County

According to the San Joaquin County Public Review Draft Background Report (July 2, 2009) for the General Plan, a LOS C is the acceptable standard for local roadways in San Joaquin County. LOS E or F is considered unacceptable for state highways. According to the Draft Background Report, State Route 120 from French Camp Rd. to Main St. functioned at LOS E in the north or eastbound direction during the afternoon peak hour of traffic as measured in 2007. The San Joaquin Rail Corridor Project includes an at-grade intersection along this deficient

roadway segment in Escalon (along the BNSF alignment) that has the potential to impact LOS. No other at-grade San Joaquin Rail Corridor Amtrak California Service Project crossings are located in the vicinity of state highways that function at an unacceptable LOS in San Joaquin County.

The analysis in the Draft Background Report indicates a total of 16 segments of 14 roadways exceeded the County's Average Daily Traffic (ADT) volume thresholds for LOS C as of August 2008 (based on data collected between 2005 and 2008.). None of the roadway segments where ADT thresholds are exceeded are located in the vicinity of a San Joaquin Rail Corridor Amtrak California Service Project at-grade crossing.

The Draft Background Report also analyzed LOS at key intersections in San Joaquin County, and found that seven signalized intersections were deficient (LOS E or F during at least one peak hour) and two non-signalized intersections were deficient. None of the deficient intersections are located in the vicinity of the San Joaquin Rail Corridor Amtrak California Service Project.

According to the City of Stockton General Plan 2035 Background Report, most intersections currently operate at LOS D or better, which is the threshold for acceptable operations in Stockton. None of the six intersections within the City that operated at LOS E or LOS F as of the preparation of the Stockton General Plan Background Report (2007) are located within proximity of the proposed project infrastructure improvements. Likewise, none of the deficient roadway segments include San Joaquin Rail Corridor at-grade crossings or are in the close proximity to at-grade crossings.

The City of Stockton is in the process of constructing several grade separations in the northern portion of the City. Along the project alignment, an overpass is under construction to replace an at-grade crossing of the UPRR alignment from Stockton to Sacramento on Eight Mile Road east of North Pearson Road.

<u>Stanislaus County</u>
Stanislaus County has identified the minimum acceptable LOS as C or better on all roadways. Cities within the County with differing LOS standards include Turlock, which has adopted LOS C standards for freeways and expressways, and LOS D for arterials and collector streets and Modesto, which has a minimum threshold of LOS D.

The Traffic Analysis of Stanislaus County's Circulation Element prepared by Dowling Associates, Inc. dated November 26, 2005 identifies several roadway segments project to operate at deficient LOS in the vicinity of San Joaquin Rail Corridor Amtrak California Service Project at-grade crossings.

- Geer Road between Yosemite Blvd and Santa Fe is projected to operate between LOS D and F, depending on the segment, in 2030. Figure 3 of the Traffic Analysis shows that the segment just north of Santa Fe Ave, which runs parallel to the north of the BNSF rail alignment, would operate at a LOS D in 2030. The roadway segment south of Santa Fe Ave, which includes the at-grade rail crossing, is not projected to operate at a deficiency. The Traffic Analysis recommends upgrading Geer Road between Oakdale and Santa Fe to a 6-lane Class C Expressway or to a Class A Expressway to address the deficiency. Given that the segment that includes the at-grade rail crossing is not deficient or projected to be deficient, it seems unlikely that rail contributes significantly to LOS deficiency at this location.

- Gratton Road between East Ave and E. Monte Vista Ave in Denair, CA is projected to operate at a LOS D in 2030. Gratton Road does not cross the rail alignment, but the intersection of Gratton Road and E. Monte Vista Ave is approximately 450 feet west of an at-grade rail crossing. Given that there is no existing or projected deficiency on E. Monte Vista Ave, and that there is 450 feet of roadway between the at-grade crossing and the northern end of the deficient roadway segment, it seems unlikely that rail contributes significantly to LOS deficiency at this location. The Traffic Analysis recommends enhancing intersection operations on Gratton Road between East Ave. and E. Monte Vista Ave. to address the deficiency.

- Finally, Highway 108 between Riverbank and Oakdale is projected to operate at a LOS E in 2030. This highway segment crosses the rail alignment with an elevated roadway, such that there is no potential for rail traffic to impact Highway 108 LOS.

No other LOS deficiencies are identified in Stanislaus County that are the in the vicinity of the proposed San Joaquin Rail Corridor Amtrak California Service Project.

According to the City of Modesto Final Urban Area General Plan, the City supports continued passenger rail service to the Modesto area including the rerouting of San Joaquin rail service to provide service to the downtown area and creation of passenger commuter rail service from Modesto to San Joaquin County, Sacramento and the Bay Area. The San Joaquin Rail Corridor is located along the eastern boundary of City of Modesto. The General Plan states that the City supports the construction of grade-separated crossings for all new crossings, but that existing at-grade crossings shall be maintained, and new developments shall be evaluated to ensure that railroad crossing operations are not compromised. The City of Modesto has identified a minimum acceptable threshold of LOS D on all streets and intersections.

According to the City of Modesto Final Master Environmental Impact Report for the Urban Area General Plan Update dated October 2008 Figure V-1-3a *Year 2005 PM Peak Hour Roadway Segment Level of Service* and Figure V-1-3b *Year 2005 Daily Roadway Segment Level of Service,* only the Yosemite Blvd. at-grade rail crossing is located within a deficient (LOS F) roadway segment under existing conditions. The Master EIR identifies a need for two additional lanes of traffic to improve this roadway segment to a LOS D under existing conditions. Given that the LOS could be raised to acceptable levels without changes to the rail crossing, it seems unlikely that rail contributes significantly to LOS deficiency.

The Traffic Study prepared for the Master EIR identified the following LOS deficiencies projected for the year 2025:

- Kiernan Avenue/Claribel Road is projected to function at a LOS E/F between Chapman Road and Santa Fe Avenue in 2025. A San Joaquin Rail Corridor at-grade crossing that has the potential to impact LOS is located within the deficient roadway segment just west of the intersection of Claribel Road and Santa Fe Avenue.

- Pelandale Avenue/Claratina Avenue is projected to function at a LOS E/F between Prescott Road and Santa Fe Avenue in 2025. This is a planned roadway segment; Claratina Avenue currently terminates about 1.8 miles west of Santa Fe Avenue. The area where the roadway segment is planned is currently agricultural land. Currently, there is no rail crossing where the planned roadway segment would extend to Santa Fe Avenue.

- Yosemite Boulevard is projected to function at a LOS E/F between Riverside Drive and Santa Fe Avenue in 2025. A San Joaquin Rail Corridor at-grade crossing with 3 tracks that has the potential to impact LOS is located within the deficient roadway segment.

- Claus Road is projected to function at a LOS E/F between Sylvan Avenue and Yosemite Boulevard in 2025. A San Joaquin Rail Corridor at-grade crossing is located about 800 feet north of the deficient roadway segment. There is extensive development to the south along the segment and agricultural land to the north. The at-grade crossing is not likely to contribute significantly to the projected poor LOS based on existing development pattern. Claus Road is proposed for relocation to the west of the rail, which would either eliminate the rail crossing or would reroute the predominate traffic pattern such that it would not cross the tracks.

- Briggsmore Avenue is projected to function at a LOS E between Claus Road and Held Drive in 2025. A San Joaquin Rail Corridor at-grade crossing is located about 600 feet west of the segment on Briggsmore Avenue.

There are no other roadway segments in the immediate vicinity of a San Joaquin Rail Corridor at-grade rail crossing identified as operating at deficient LOS under existing or projected (2025) scenarios.

Merced County

According to the 2007 Merced County General Plan Background Report, Merced County has adopted minimum roadway LOS standards of C in rural areas and D in urban areas, and most area roadways function within acceptable standards. The only State Highway identified as operating at a LOS deficiency within the immediate vicinity of a San Joaquin Rail Corridor active at-grade crossing is SR 59 between 16th Street and Santa Fe Drive. This segment functions at LOS E-F per 2006 data, and there is an active at-grade crossing at Snelling Highway within this stretch.

Major County roads identified in the Background Report with a LOS deficiency in the immediate vicinity of a San Joaquin Rail Corridor active at-grade crossing include the following segments:

- Santa Fe Drive between Chestnut Lane and Shaffer Road and between Shaffer Road and Wallace Road operates at a LOS D. There is an at-grade crossing on Shaffer Road that has the potential to impact LOS on Santa Fe Drive.

- Santa Fe Drive between Bellevue Road and Franklin Road and between Franklin Road and SR 59 operates at a LOS D. There are at-grade crossings on Bellevue Road and Franklin Road that have the potential to impact LOS on Santa Fe Drive, but Santa Fe Drive (Co Rd 37) parallels the rail line and carries the bulk of traffic. Only vehicles turning on or off of Bellevue Road or Franklin Road would contribute to a poor LOS along these segments.

There are no other Merced County roadway segments in the immediate vicinity of a San Joaquin Rail Corridor at-grade rail crossing identified as operating at deficient LOS under existing conditions.

The City of Merced Vision 2030 General Plan establishes a LOS D as the desired minimum threshold for peak hour roadway functioning; however, it acknowledges that in some areas of

the existing City roadway network, LOS D is not attainable without sacrificing other General Plan goals. The downtown area of the City, where the Amtrak station is located, is identified as an area where LOS E or F may have to be acceptable at peak hours because acquiring additional right-of-way required for widening streets is prohibitive/it would disrupt established development. The General Plan notes that heavier traffic can encourage greater transit use and pedestrian access and accordingly the Plan promotes a Complete Streets system that provides for non-motorized travel and transit as well as motorized vehicles.

According to the City of Merced General Plan, until recently the only road crossing in the Merced urban area that was not at-grade was the State Route 140 Bradley Overpass crossing the BNSF tracks. The City recently completed the grade separation along the San Joaquin Rail Corridor at G Street and the BSNF railroad where the Merced Layover Facility alternative would be located. This grade separation was prioritized to provide a central corridor through the City that allows emergency access unimpeded by rail operations. The General Plan states that long freight trains passing through the City create significant traffic congestion and vehicles delays, especially during peak hour traffic along the City's major north-south routes (G, M and R Streets). Congestion at rail crossings results both from standard train traffic and from special switching operations on portions of tracks within central Merced, during which trains pass each other at reduced speeds, creating longer delays. Amtrak passenger trains are 6 to 7 cars in length (including the locomotive) and the referenced switching is conducted by freight trains, not passenger trains. Assuming the typical at-grade crossing is about 700-feet long, even a 7 car passenger train moving slowly through an at-grade crossing would take less than a minute to pass through the intersection, including the time required for safety gates to drop and rise. The proposed project would add, at most, a cumulative 10 additional minutes spread throughout the day when passenger trains occupy at-grade crossings.

Madera County

The City of Madera has adopted minimum LOS standards of C for all roadways and intersections except "on arterial roadways or roadways with at-grade railroad crossings that were experiencing congestion exceeding LOS C during peak hour travel times as of the date this General Plan Update" where the minimum standard is LOS D. The BNSF rail alignment, and thus the San Joaquin Rail Corridor at this location, is located on the eastern edge of town.

According to City of Madera *General Plan Update Final Environmental Impact Report* dated August 2009, no LOS deficiencies occur currently or are projected to occur in 2030 in the vicinity San Joaquin Rail Corridor Amtrak California Service at-grade crossings.

The County of Madera General Plan identifies the minimum acceptable threshold of LOS D. The County of Madera *Southeast Madera County Existing Characteristics Analysis* dated April 19, 2010 includes information regarding the portion of the County adjacent to the BNSF rail alignment from the southern County boundary north roughly to the City of Madera. Major roads that cross the BNSF alignment are identified as Avenue 9, Avenue 12 and Avenue 15. The Avenue segments located West of Road 36, which include at-grade San Joaquin Rail Corridor crossings, function at LOS C, C and B, respectively, during the peak traffic hour.

The 1995 Madera County *General Plan Background Report* identified Avenue 26 and 21 as County Roads of Regional Significance that cross the San Joaquin Rail Corridor in the northern portion of the County, which is not covered by a more recent community plan or the City of Madera General Plan. The County General Plan Background Report identifies which roads were not functioning at an acceptable LOS and states that most of the roadway system

operated at a very high LOS. Neither Avenue 26 nor 21 is identified as having LOS deficiencies.

Fresno County

According to the County of Fresno General Plan Background Report dated October 3, 2000, the County goal is to maintain LOS C on all roadways and intersections. According to the Background Report, traffic data from 1995 identified Ashlan Avenue west of N Palm Avenue as a deficient roadway segment (LOS F). A San Joaquin Rail Corridor at-grade crossing that has the potential to impact LOS is located within this segment of Ashlan Avenue.

No other LOS deficiencies were identified by the 1995 data in vicinity of a San Joaquin Rail Corridor at-grade crossing.

The 2025 City of Fresno General Plan goal is to maintain LOS D or better for roads on major streets, but acknowledges that the standard will not always be accessible. The City of Fresno General Plan and Development Code Update Working Paper 4: Transportation and Connectivity lists street segments that have existing congestion levels that exceed the LOS D standards. None of the street segments listed is in the vicinity of a San Joaquin Rail Corridor at-grade crossing. The Transportation Working Paper relies on 2011 Fresno Council of Government Regional Transportation Plan (RTP) forecasts for LOS in the year 2035. The "No Build" Scenario evaluated in the RTP EIR included only those infrastructure improvements that were already approved in the Transportation Improvement Program through the Year 2010. The "Build" Scenario includes the proposed funded roadway system improvements described in the 2011 RTP.

According to the Transportation and Connectivity Working Paper, Figure 2-4 *2035 Peak Hour LOS – No Build*, roadway segments with deficient LOS in the vicinity of an at-grade San Joaquin Rail Corridor crossing:

- West Avenue between Shaw and Ashlan Avenue is projected to function at LOS D, at-grade crossing in West Ave in this segment.
- East Shields Avenue between West Avenue and Highway 41 is projected to function at LOS D, at-grade crossing in E Shields Ave in this segment.
- East McKinley Avenue between Highway 41 and the UPRR is projected to function at LOS D, at-grade crossing in McKinley Ave in this segment.
- East North Avenue between Highway 99 and East Chestnut Avenue is projected to function at LOS E and F, there are adjacent UPRR and BNSF at-grade crossings in East North Ave in this segment.
- East Central Avenue between Highway 99 and South Peach Avenue is projected to function at LOS E, BNSF at-grade crossings in East Central Ave in this segment.
- East American Avenue between Highway 99 and South Peach Avenue is projected to function at LOS D, BNSF at-grade crossings in East American Ave in this segment.

According to the Transportation and Connectivity Working paper, Figure 2-5 *2035 Peak Hour LOS – Build* diagram, there would be continued deficiencies in East Shields Avenue, East

McKinley Avenue and East American Ave. The Build scenario also results in a new deficiency in N Blackstone Avenue between Highway 180 and East McKinley Avenue, which would be projected to function at LOS D. There is a San Joaquin Rail Corridor at-grade crossing in East American Ave in this segment. At-grade rail crossings in the vicinity of all of the segments in the Build and No-Build scenarios listed above have the potential to impact LOS.

The Transportation and Connectivity Working paper discusses the limitations of traditional LOS based circulation planning, which emphasizes the functionality of the street system for automobile travel while disregarding impacts to pedestrians, bicycles and transit. It also notes that traditional LOS planning can contribute to urban sprawl because development within urban areas has more difficulty meeting LOS standards than development on urban or suburban fringes. The paper recommends alternative methods of evaluating roadway functioning that consider movement of more than just automobiles and includes tiered tolerance for traffic delay based upon time of day and surrounding land uses.

Tulare County

The County of Tulare 2030 General Plan dated 2010 includes Policy TC-2.3 which states, "The County shall encourage Amtrak to add passenger service to the Union Pacific corridor in the County." If the Visalia-Hanford-Fresno or Visalia-Fresno Route were implemented, either would provide increased passenger rail access to Tulare County residents. However, due to the proximity of the existing Hanford Amtrak station to Visalia, Caltrans eliminated this alternative from further consideration.

The General Plan identifies LOS D as the minimum desirable for the roadway segments and intersections. The Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report dated February 2010 indicates that most roadways and intersections within the County are functioning at an acceptable LOS. According to the 2007 data evaluated as part of the EIR, there are no LOS deficiencies in the vicinity of San Joaquin Rail Corridor at-grade crossings, including Visalia-Hanford-Fresno or Visalia-Fresno Route alternatives.

Kings County

The Kings County General Plan EIR identifies the minimum standard for roads in urban areas within the County as LOS E and for roads in rural areas as LOS D. According to the EIR, most roadways and intersections within the county currently (according to the 2006 data) function at an acceptable LOS. No LOS deficiencies are identified in the EIR in the vicinity of San Joaquin Rail Corridor at-grade crossings. SR 198 operates at a LOS F between 6th Avenue and the Tulare County line (to the east). There is an at-grade crossing on 6th Avenue, but it is located about one mile north of SR 198 and is not expected to contribute to the poor LOS on SR 198.

Projected LOS deficiencies within Kings County in 2035 include SR 43 between Corcoran Bypass and Kansas Avenue. There are no at-grade crossings on SR 43 along this segment, but an at-grade crossing on Nevada Avenue is located about 200 feet west of SR 43 along this segment, and traffic impeded by this crossing could contribute to the poor LOS. There is also an at-grade crossing at Orange Avenue in Corcoran in the general vicinity of this segment of SR 43, but roadway configuration is such that it is unlikely to contribute to the projected poor LOS. No other projected LOS deficiencies are located in the vicinity of San Joaquin Rail corridor at-grade crossings.

The City of Hanford General Plan adopted on June 18, 2002 circulation element describes locations where grade separated crossings of the San Joaquin Valley Railroad right-of-way are desired by the City to fulfill the circulation element. The General Plan states that future rail

crossings at 9th Avenue, Campus Drive, and at approximately 12 ½ Avenue are of particular importance to the City.

Kern County

The Kern County General Plan identifies the minimum standard for all roads throughout the County as LOS D. The General Plan includes a policy calling for Kern County and Caltrans to reconstruct railroad grade crossings according to the Railroad Crossing Priority reports.

Kern County Council of Governments 2011 Regional Transportation Plan identifies short and long-term transportation priorities. The only short-term project involving the San Joaquin Corridor is the completed Hageman Road grade separation with the BNSF rail alignment in Bakersfield. The long-term projects (beyond 2035) include a grade separation at Route 46 and at Kimberlina Road and the BNSF rail alignment in Wasco. Route 46 is located about four blocks north of the Amtrak station in Wasco whereas Kimberlina Road is approximately 2.5 miles south of the station. Long-term projects (beyond 2035) in Bakersfield include a proposed grade separation of "L" St at the BNSF rail alignment, which is located about 0.5 miles west of the Amtrak Station in Bakersfield. Additional long-term grade separations are proposed at Renfro Road and at Kratzmeyer Road at the BNSF rail alignment west of Bakersfield as well as at Lerdo Hwy / Beech Ave and at Burbank Street and the BNSF rail alignment in Shafter.

The Kern County RTP projects congestion on Union Avenue several blocks east of the Amtrak Station in the year 2035. Both the BNSF tracks and Truxton Avenue, the road on which the Station is located, are already grade separated from Union Avenue. Union Avenue is projected to perform at LOS "F" if improvements proposed in the RTP are not constructed and to function at LOS "E" with improvements proposed in the RTP.

The Metropolitan Bakersfield Area General Plan dated December 11, 2007 identifies congestion locations as of the year 2000, including the intersection of California Ave and Union Avenue. The nearby San Joaquin Rail Corridor crossing of Union Ave is grade separated and thus not a cause for congestion, but the Bakersfield Amtrak station is also located nearby and both an increase in passengers driving to the station and an increase in bus service between the station and other locations could contribute to LOS deficiencies. No other LOS deficiencies are identified in the vicinity of San Joaquin Rail corridor at-grade crossings.

The Greater Tehachapi Area Specific Plan Traffic Analysis prepared by Urban Crossroads for the County of Kern dated May 28, 2010 found that no roadways in the Tehachapi Specific Plan Area currently operate at a deficient LOS. The City of Tehachapi designates an acceptable LOS as C or better. The three roadway segments expected to operate at deficient levels in 2035 (LOS D or worse) are not located in the vicinity of a San Joaquin Rail Corridor at-grade crossing.

4.8.3.2 Potential Traffic and Transportation Impacts from Station and Layover Facilities

Expansion of Amtrak California Service on the San Joaquin Corridor is beneficial to the overall transportation goals of the cities, counties and region that it serves because it reduces dependence on single-occupancy vehicle trips, thereby generally reducing congestion. However, at the proposed new or upgraded stations, the proposed project has the potential to impact the availability of parking for passengers and the ability of roadway infrastructure to handle new or increased traffic to and from the stations in the immediate vicinity of the station. Similarly, the projected increase in ridership has the potential to impact parking and roadway access infrastructure in the immediate vicinity of existing stations. Because ridership growth at

existing stations is expected to occur slowly and incrementally, and because existing conditions and capacity vary from station to station, the majority of infrastructure improvements, if required, will be addressed in follow-on environmental documents tiered from this Program EIR. Caltrans DOR will need to periodically monitor parking capacity at existing stations and will need to work with local jurisdictions to identify intersections or roadway segments where San Joaquin Corridor Amtrak train stations contribute substantially to deficient or worsening level of service. Annual ridership on the entire San Joaquin Corridor is projected to increase from just over 1,000,000 passengers today to just over 3,000,000 passengers in 2035 (Refer to Table 3-1.) The incremental increase in passengers at existing stations between current and project conditions would be roughly 200% if passenger growth were spread evenly across stations.

Caltrans forecast the typical number of passengers boarding and exiting trains in the year 2020 under 79 MPH and 90 MPH train scenario for each proposed train at existing stations (refer to Chapter 8, Appendix 8.1). In general, the number of passengers arriving or departing on any given train at most stops would have a negligible impact on the surrounding transportation infrastructure because typically only a modest number of passengers board or exit a train (often fewer than 50 people); arrivals for and departures from the same train are staggered; some percentage of passengers access public transit, walk or bike; and most trains arrive/depart outside of the peak traffic hours in the vicinity of stations. Further, some percentage of passengers would transfer between the Amtrak train station and an Amtrak bus. Amtrak buses currently transfer passengers at 10 of the 17 existing San Joaquin Corridor Amtrak rail stations. Finally, at existing stations all of passenger movements to and from the station would not be "new" because roughly one-third of the movements occur under existing conditions, so the total projected maximum number of passenger movements discussed below includes those that already occur. The increase in passenger movements at existing stations would be spread among existing trains and new trains.

Existing Stations

As Bakersfield is the first or last train stop on the San Joaquin Corridor trains, all passengers at this station either arrive or depart. The San Joaquin Corridor trains are projected to generate more passenger movements at the Bakersfield Amtrak Station than at any other station on a typical peak day in 2020. Twenty (20) trains would start/stop at the Bakersfield Amtrak station under the proposed operating scenario. On a typical day, nine of the trains would generate more than 150 passengers boarding or exiting, while the remaining 11 would generate 100 or fewer. Six of the trains are projected to have a typical maximum of about 220-240 people arriving or departing the station. In comparison, the only other station at which any given San Joaquin train would generate more than 200 passenger movements is Fresno. Stations where any San Joaquin train would generate more than 100 passenger movements are Sacramento, Stockton and Hanford.

The Bakersfield Amtrak station at 601 Truxtun Avenue is located southeast of downtown adjacent to the convention center. The station, which opened in 2000, is an intermodal center with a loading area for local and regional busses that serve the station and offers 206 long-term parking spaces. n estimated 75% of passengers arrive at the Bakersfield Station or continue on from the Bakersfield Station via Amtrak bus. Seven different Amtrak bus connections continue south, east or west from the Bakersfield Station connecting passengers to bus routes that serve Oxnard, Santa Barbara, Van Nuys, Torrance, Los Angeles, Long Beach, Indio, Hemet, Victorville, Barstow and Las Vegas (as well as other towns along these routes). The Amtrak bus to Los Angeles Union Station provides passengers access to Amtrak Pacific Surfliner (service from San Luis Obispo to San Diego), Sunset Limited/Texas Eagle (service to San Antonio and New Orleans), Southwest Chief (service to Albuquerque) and Coast Starlight

(service to Seattle) trains. Los Angeles Union Station also provides connections to local Metrolink commuter train service and light rail service as well as bus connection service to Los Angeles International Airport.

As noted previously, both an increase in passengers driving to the Bakersfield Amtrak station and an increase in bus service between the station and other locations could contribute to LOS deficiencies projected to occur in the year 2035 on Union Avenue and at the intersection of California Ave and Union Avenue several blocks east of the Amtrak Station. Mitigation measures 4.8-1 through 4.8-3 are provided to ensure that the proposed project does not contribute to significant adverse impacts on the transportation infrastructure/network surrounding the Bakersfield Amtrak Station.

At Lodi, Turlock/Denair, Madera, Corcoran and Wasco fewer than 16 passengers are projected to arrive and depart (for example, 6 on and 5 off) on a given train on a typical day in the year 2020. At a maximum, the proposed project would add 16 roundtrip vehicle trips within a 10 minute time period accessing an existing station. There is no typical scenario in which such a small number of vehicle trips would overwhelm a local circulation system; therefore, the proposed project would not significantly adversely impact the surrounding transportation infrastructure/network at these five stations.

At Richmond and Antioch/Pittsburg 35 or fewer passengers are projected to arrive and depart on a given train on a typical day in the year 2020. At a maximum, the proposed project would add 35 roundtrip vehicle trips within a 10 minute time period accessing an existing station. At both of these stations, all or almost all of the passengers are presumed to be traveling in the same direction at the same time. For example, in Antioch/Pittsburg a projected maximum of 27 passengers would exit Train 715 at ~5:25pm whereas only 4 passengers would board Train 715. In Richmond, 35 passengers are projected to exit westbound Train 715 at ~6:15pm, but no passengers are projected to board Train 715. In this case, if all 35 passengers exit the Train at the same time and each passenger walks directly to their own parked car and leaves, there is potential for congestion in the parking lot. While there is no Amtrak Bus connection at either of these stations, there are local transit options serving these stations. The Richmond Amtrak Station is also a Bay Area Rapid Transit (BART) station and a local bus station. The Antioch/Pittsburg station is served by local buses. While it seems unlikely that the number of vehicle trips generated at either of these stations in a typical scenario would overwhelm a local circulation system or significantly adversely impact the surrounding transportation infrastructure/network at these two stations, mitigation measures 4.8-1 through 4.8-3 are provided to ensure no significant impacts occur.

In Oakland and Modesto fewer than 60 passengers are projected to arrive and depart on a given train on a typical day in the year 2020. In Emeryville, Martinez and Merced fewer than 80 passengers are projected to arrive and depart on a given train on a typical day in the year 2020. These passenger estimates reflect the highest number of passenger movements projected for any train during the day, often many trains generate far fewer passengers. For example, about half the trains stopping in Merced have 30 or fewer passengers boarding or exiting from the train, but the train with the highest projected passenger movements has 65.

As Oakland is the first or last train stop on the San Joaquin Corridor trains that serve this station (Jack London Square), all passengers either arrive or depart the train at this station. Year 2020 projections estimate a maximum of 52 passengers exiting Train 715 at ~6:43pm. Other trains would generate similar or fewer numbers of passengers. Amtrak buses connect passengers at the Oakland Station with San Francisco, and Oakland Station is a stop on the Amtrak Coast

Starlight trains between Los Angeles and Seattle and on the Amtrak Capitol Corridor trains between Auburn and San Jose. The San Joaquin Corridor Oakland Amtrak Station is a stop for local bus routes with frequent service and is located ~0.5 miles from the Lake Merritt BART station and the Oakland Ferry Terminal. The Jack London Square Amtrak Station is also adjacent to a bicycle trail. There are numerous fee-based parking options in the vicinity of the station. Given the numerous transit options available at or near this station, combined with the disincentives to drive and park (fees) and the somewhat dispersed nature of parking options, it seems unlikely that the number of vehicle trips generated at this station in a typical scenario would overwhelm the local circulation system or significantly adversely impact the surrounding transportation infrastructure/network. However, mitigation measures 4.8-1 through 4.8-3 are provided to ensure no significant impacts occur.

In Modesto fewer than 60 passengers are projected to arrive and depart on a given train on a typical day in the year 2020. Arrivals for and departures from the same train are staggered as about one-quarter to one-half of passengers using this station arrive or depart on any given train. For example, on a typical peak day in the year 2020 northbound Train 715 is projected to generate the most passenger movements with 25 boarding and 33 exiting at ~4:22pm. While there is no Amtrak Bus connection at this station, one local bus route (the Modesto Area Express) and dial-a-ride provide connecting service between the Station and the City. The Modesto Amtrak Station, opened to passengers in 1999, is located on the western edge of the City of Modesto and has 72 short-term and 50 long-term parking spaces. The Modesto Station is located on Held Drive, a ~700 foot long access road that only serves the Amtrak Station north of E. Briggsmore Avenue. There are turn lanes for vehicles entering Held Dr from the east or west. The Modesto Traffic Flow Map of 2007 Counts prepared by the City shows that E. Briggsmore Avenue east of Claus Road, where the station is located, carried fewer than 6,000 vehicles in both directions during a 24 hour period. In a worst case scenario, if all 33 passengers exit the Station at the same time and each passenger walks directly to their own parked car and leaves, there is potential for congestion in the parking lot and a queue on Held Drive waiting to turn onto E. Briggsmore Avenue; however, given the low volume of traffic on these roads, it seems unlikely that the number of vehicle trips generated at this station in a typical scenario would overwhelm the local circulation system or significantly adversely impact the surrounding transportation infrastructure/network. However, mitigation measures 4.8-1 through 4.8-3 are provided to ensure no significant impacts occur.

In Emeryville fewer than 75 passengers are projected to arrive and depart on a given train on a typical peak day in the year 2020. All of the passengers accessing the train at this station are presumed to be traveling in the same direction at the same time. For example, a projected maximum of 73 passengers would board eastbound Train 716exp at ~1:30pm, but no passengers are projected to exit Train 716 in Emeryville. Amtrak buses connect passengers at the Emeryville Station with San Francisco. Emeryville is also the westernmost connection point for the Amtrak California Zephyr trains heading east towards Chicago and is a stop on the Amtrak Coast Starlight trains between Los Angeles and Seattle and on the Amtrak Capitol Corridor train between Auburn and San Jose. The San Joaquin Corridor Emeryville Amtrak Station opened in 1994 and is a stop for local bus routes with frequent service, including the free Emery-Go-Round shuttle that serves the local area and the MacArthur BART station in Oakland. In this case, if all 73 passengers exit the Train at the same time and each passenger walks directly to their own parked car and leaves, there is potential for congestion entering and exiting the parking lot. However, this scenario seems unlikely given the many transit connections available. The City of Emeryville adopted the Emeryville Sustainable Transportation Plan in March 2012 and received a Federal Transit Administration grant to identify and evaluate transit options for the Emeryville-Berkeley-Oakland Transit Study. These

Plans and Studies are focused on improving transit connections, availability and awareness, including Amtrak. It seems unlikely that the number of vehicle trips generated at this station in a typical scenario would overwhelm the local circulation system or significantly adversely impact the surrounding transportation infrastructure/network. However, mitigation measures 4.8-1 through 4.8-3 are provided to ensure no significant impacts occur.

In Martinez fewer than 80 passengers are projected to arrive and depart on a given train on a typical day in the year 2020. Amtrak buses connect passengers at the Martinez Station with coastal northern California towns along Highway 101 north to McKinleyville. Martinez Station is also a stop on the Amtrak Capitol Corridor train between Auburn and San Jose, the Coast Starlight train between Los Angeles and Seattle and the California Zephyr trains between Emeryville and Chicago. Most of the passengers accessing the train at Martinez are presumed to be traveling in the same direction at the same time. For example, a projected maximum of 67 passengers would board Train 712 eastbound at ~8:59am whereas 12 passengers would exit. The Martinez Station was built in 2001 and station provides parking for 160 vehicles and has bicycle lockers, ten bus bays, carpool and vanpool lots and provides a shuttle to the Martinez waterfront and downtown. Local buses serve the Amtrak Station, including a bus that conveys passengers to the North Concord/Martinez BART station. It seems unlikely that the number of vehicle trips generated at this station in a typical scenario would overwhelm the local circulation system or significantly adversely impact the surrounding transportation infrastructure/network. However, mitigation measures 4.8-1 through 4.8-3 are provided to ensure no significant impacts occur.

At the Merced Station, 65 or fewer passengers are projected to arrive and depart on a given train on a typical peak day in the year 2020. Passenger arrivals for and departures from the same train are staggered at the Merced Station as a projected maximum of 30 passengers would board southbound Train 716exp at ~4:02pm and 35 would exit. Amtrak buses connect passengers at the Merced Station with Yosemite National Park (as well as other towns along these routes). The Station, completed in 2000, is located in downtown Merced and is served by local bus routes with stops at or within a few blocks of the Station. Merced Station is the current location where on-board train personnel begin and end their shifts along the San Joaquin Corridor. A maximum of ten employees may exit or board the train at this location. The proposed project would add up to 10 additional trains that would result in up to 10 additional staff shift changes. The Merced Station has 12 short-term and 34 long-term parking spaces. It seems unlikely that the number of vehicle trips generated at this station in a typical scenario would overwhelm the local circulation system or significantly adversely impact the surrounding transportation infrastructure/network. However, mitigation measures 4.8-1 through 4.8-3 are provided to ensure no significant impacts occur.

Planning for the Merced Layover Facility alternative on the San Joaquin Corridor has not advanced beyond a conceptual level. Detailed review of the impacts of a Layover Facility in Merced will be conducted as part of a follow-on CEQA document when specific facility designs are available. This is not deferral of an evaluation because, given that specific facility designs are not available, any evaluation at this time would be considered speculative. In accordance with Section 15145 this issue will not be given further consideration until sufficient information is available to perform an adequate evaluation of such potential environmental effects.

At Fresno Station a maximum of 233 passengers are projected to arrive and depart on a given train on a typical peak day in the year 2020. Passenger arrivals for and departures from the same train are typically, but not always, predicted to be staggered at the Fresno Station. For example, southbound Train 716exp is projected to generate the most passenger movements,

with 113 passengers boarding at ~4:54pm and 120 exiting. The trains that are projected to have much more lopsided arrivals and departures generate fewer passenger movements in any direction than the busiest trains. The Fresno Station is located in downtown Fresno one block south of City Hall and a few blocks east of the Fresno County government center. The renovated station was rededicated in 2005. An Amtrak bus connects passengers at the Fresno Station to Bakersfield and point south, east and west via the Amtrak bus connections in Bakersfield. Many local bus routes stop at or within a few blocks of the Amtrak Station. Parking at the Station includes 11 short-term and 98 long-term parking spaces, and various other parking options are available in the vicinity. Mitigation measures 4.8-1 through 4.8-3 are provided to ensure that the proposed project does not contribute to significant adverse impacts on the transportation infrastructure/network surrounding the Fresno Amtrak Station.

Planning for the Fresno Layover Facility alternative on the San Joaquin Corridor has not advanced beyond a conceptual level. Detailed review of the impacts of a Layover Facility in Fresno will be conducted as part of a follow-on CEQA document when specific facility designs are available. This is not deferral of an evaluation because, given that specific facility designs are not available, any evaluation at this time would be considered speculative. In accordance with Section 15145 this issue will not be given further consideration until sufficient information is available to perform an adequate evaluation of such potential environmental effects.

At Hanford Station a maximum of 119 passengers are projected to arrive and depart on a given train on a typical peak day in the year 2020. Passenger arrivals for and departures from the same train are typically, but not always, predicted to be staggered at the Hanford Station. For example, southbound Train 716exp is projected to generate the most passenger movements, with 30 passengers boarding at ~5:31pm and 89 exiting. The trains that are projected to have much more lopsided arrivals and departures generate fewer passenger movements in any direction than the busiest trains.

The Hanford Station is located in downtown Hanford a few blocks southwest of the King County Courthouse and the Civic Auditorium. The Station was rehabilitated in the 1990s and a passenger platform and open-air pavilions with seating were added in 2006 when the BNSF Railway right-of-way through Hanford was double-tracked. The City subsequently improved bus bays adjacent to the Station that accommodate local and regional bus lines, including Amtrak buses. Amtrak buses connect Hanford Station with Visalia to the east and San Luis Obispo and Santa Maria to the west (as well as other towns along these routes). In 2009 a new transit center was developed adjacent to the Hanford Amtrak Station to provide sufficient space for consolidated local and regional bus services. Hanford Station offers 5 short-term and 41 long-term parking spaces, and various other parking options are available in the vicinity. The City of Hanford 2010 Downtown Improvement Plan cites congestion on W 7th Street as a concern, and identifies restriping with dedicated turn lanes as a possible solution. The Hanford Amtrak Station is bordered by W 7th Street on the south side, and there is an at-grade rail crossing on W 7th Street. Mitigation measures 4.8-1 through 4.8-3 are provided to ensure that the proposed project does not contribute to significant adverse impacts on the transportation infrastructure/network surrounding the Hanford Amtrak Station.

As Sacramento is the first or last train stop on the San Joaquin Corridor trains that serve this station, all passengers either arrive or depart the train at this station. Year 2020 projections estimate a maximum of 198 passengers would exit “new train #5” at ~3:45pm. Other trains would generate ~100 to 200 passengers each. The Sacramento Station is also a stop on the Amtrak Capitol Corridor train between Auburn and San Jose, the Coast Starlight train between Los Angeles and Seattle and the California Zephyr trains between Emeryville and Chicago.

Amtrak buses connect passengers at the Sacramento Station to the north, east and west via five different bus lines that serve Davis, Fairfield, Redding, Reno, Sparks, Placerville and Stateline Casinos (as well as other towns along these routes).

The City of Sacramento, along with private partners, is in the process developing the Sacramento rail station into a regional intermodal transportation center. Relocation of the railroad tracks and passenger platforms has been recently completed to facilitate development of adjacent parcels. The transit-oriented development proposed adjacent to the station would include residential, commercial, office and hotel development. The Sacramento Amtrak Station is located within the center of the city and is a stop for light rail and local bus routes with frequent service. The station has 45 short-term and 288 long-term fee parking spaces. Given the numerous transit options available at or near this station, combined with the disincentives to drive and park (fees), it seems unlikely that the number of vehicle trips generated at this station in a typical scenario would overwhelm the local circulation system or significantly adversely impact the surrounding transportation infrastructure/network. However, mitigation measures 4.8-1 through 4.8-3 are provided to ensure no significant impacts occur.

Proposed New or Relocated Stations

Stockton Station

At the Stockton Station, a maximum of 188 passengers are projected to arrive and depart on a given train on a typical peak day in the year 2020. Passenger arrivals for and departures from the same train are typically, but not always, predicted to be staggered at the Stockton Station. For example, northbound Train 715 is projected to generate the most passenger movements, with 58 passengers boarding at ~4:50pm and 130 exiting. The earliest southbound and latest northbound trains that serve Stockton Station are projected to have all passenger movements concentrated in the same direction (respectively: 57 board and 1 exits; 1 boards and 32 exits), but the number of passengers arriving or exiting is projected to be well below the number generated maximum by a train. Amtrak buses connect passengers at the Stockton to the north and west via three different bus lines that serve Santa Cruz, San Jose, Livermore, Oakland, Sacramento, Davis, Fairfield and Redding (as well as other towns along these routes) with additional Amtrak bus connections available at Sacramento and Oakland.

According to the City of Stockton General Plan 2035 Background Report, most intersections currently operate at LOS D or better, which is the threshold for acceptable operations in Stockton. None of the six intersections within the City that operated at LOS E or LOS F as of the preparation of the Stockton General Plan Background Report (2007) are located within close proximity to any of the proposed Stockton Station alternative locations. Likewise, none of the deficient roadway segments are located within close proximity to any of the proposed Stockton Station alternative locations.

The City of Stockton is in the process of intersection improvements at Aurora Street and BNSF Railroad located one block west of the preferred alternative for the Stockton Amtrak Station Relocation. The intersection improvements include installation of a median island on the north crossing approach to prevent vehicles from going around the railroad gate arms and installation of sidewalk on westerly side of the intersection, both of which are designed to improve pedestrian, train and vehicle safety.

Planning for relocation or upgrade of the San Joaquin Corridor Amtrak Station in Stockton has not advanced beyond a conceptual level. Detailed review of Stockton Station changes will be

conducted as part of a follow-on CEQA document when specific facility designs are available. Mitigation measures 4.8-1 through 4.8-4 are provided to ensure no significant impacts occur.

This is not deferral of an evaluation because, given that specific facility designs are not available, any evaluation at this time would be considered speculative. In accordance with Section 15145 this issue will not be given further consideration until sufficient information is available to perform an adequate evaluation of such potential environmental effects.

Elk Grove Station

The proposed Elk Grove Station in the City of Elk Grove, Sacramento County would be located south of the Sheldon Road/Elk Grove Florin Boulevard intersection on the west side of Elk Grove Florin Road at the UPRR tracks. Because exact design details of many of the project's features have not been determined at this point in the planning process, and because the surrounding traffic situation will need to be evaluated at the time that funding for a station becomes available, specific traffic impacts will require an evaluation in a follow-on environmental document tiered from this Program EIR.

The California Department of Transportation 2004 Interregional Transportation Improvement Program (2004) and City of Elk Grove Master Plan include the proposed Elk Grove Station as part of their multi-modal system. The following City Policies support implementation of the proposed station.

Policy CI-5: The City shall encourage the use of transportation alternatives that reduce the use of personal motor vehicles.

Policy CI-26: The City shall encourage commuter rail transportation by providing for a potential train station location for Amtrak and/or other rail service providers along the Union Pacific Rail road near southwest of the intersection of Sheldon Road and Elk Grove-Florin Road.

Based upon the previous Draft MND prepared by the city of Elk Grove, the proposed Elk Grove Station would include an 800 foot long rail platform, approximately 110 parking spaces, two entrances from Elk Grove-Florin Road (including primary access via a new signalized intersection with right-turn and left turn pockets at Elk Grove-Florin Road just south of Sheldon Road), bus drop off/loading zone, passenger drop off/loading zone, frontage improvements along Elk Grove-Florin Road (curb, sidewalk and landscaping), bus turnout along Elk Grove-Florin Road, a multi-use trail along Whitehouse Creek, bicycle lockers, a bridge over Whitehouse Creek and landscaping. In addition to the proposed designated parking areas, an area within the development boundaries would be reserved for future parking to be developed as demand necessitates. As envisioned by the City, the project would also include the addition of third through-traffic lane and bicycle lane along southbound Elk Grove-Florin Road beginning at the northern limits of the project area. From a point approximately 100 feet south of where Elk Grove-Florin Road crosses the UPRR tracks, the proposed southbound sidewalk, bike lane, and traffic lane would connect with an existing widened portion of Elk Grove-Florin Road south to Camden Road.

The proposed multi-use pedestrian/bicycle trail would run along the north side of Whitehouse Creek and pass under both the proposed Whitehouse Creek Bridge and the existing UPRR railroad bridge over Whitehouse Creek to provide bicycle/pedestrian access to the passenger platform and to connect Elk Grove-Florin Road to an existing unpaved pedestrian/bicycle path through the residential development west of the UPRR tracks.

The San Joaquin Corridor Amtrak California Service currently passes through Elk Grove in the southbound direction at approximately 7:00 a.m. (Train 702) and 5:15 p.m. (Train 704) and in the northbound direction at approximately noon (Train 701) and 11:00 p.m (Train 703) (San Joaquin Schedule dated January 13, 2014). The 2007 Traffic Study prepared for the City of Elk Grove Draft MND for an Elk Grove Station at this location estimated that approximately 385 vehicles trips and seven transit bus trips would originate or depart from the site on a daily basis (based on a very similar Amtrak schedule). Assuming that each train would generate similar vehicle activity, each train stop would result in a total of approximately 50 passenger vehicles and one transit bus accessing and departing from the site. The approximately 100 trips generated by each train would be spread over 15-20 minutes as passengers would arrive prior to train arrival and depart after train departure. With implementation of the proposed Project to increase train trips along this route, two additional trains (one northbound and one southbound) would serve the proposed Elk Grove Station.

Vehicles commuting to and from the proposed rail station would result in a slight increase in vehicle traffic on area roadways. The 2007 Traffic Study found that the largest increase in vehicle traffic is anticipated to occur along the adjoining segment of Elk Grove-Florin Road, which provides access to the site. Traffic volumes along this roadway segment averaged approximately 22,125 vehicle trips per day at the time the Study was conducted. Installation of an Elk Grove Station would result in an estimated increase of approximately 385 vehicle trips per day under the current rail schedule (based on the 2007 Traffic Study). Implementation of the proposed project, including the proposed increase from a total of four to a total of six passenger trains along this portion of the San Joaquin Corridor would also result in an estimated total of 600 vehicle trips per day, contributing less than 3% to the total volume of vehicle traffic.

The City of Elk Grove has established a level of service standard of LOS D. The Draft MND for the Elk Grove Station considered any with a LOS less than D as potentially adversely impacted. Under Existing Conditions at the time of the 2007 Traffic Study, all study intersections operated at LOS D or better. Under Cumulative (2025) Conditions without the project, all study intersections were expected to continue operating acceptably, with the exception of the intersection of Elk Grove-Florin Road and Bond Road, which was expected to operate at LOS F during the a.m. peak hour and LOS E during the p.m. peak hour. When the proposed Elk Grove Station was added to the Cumulative (2025) Conditions, all study intersections were expected to continue operating acceptably, with the exception of the intersection of Elk Grove-Florin Road and Bond Road, which was still expected to operate at LOS F during the a.m. peak hour and LOS E during the p.m. peak hour. The 2007 Traffic Study attributed the below-standard levels of service almost entirely to background traffic growth and concluded that since the proposed Elk Grove Station would not contribute a significant number of trips to the study intersections, impacts should be considered less than significant.

As stated previously, because exact design details of many of the project's features have not been determined at this point in the planning process, and because the surrounding traffic situation will need to be evaluated at the time that funding for a station becomes available, specific traffic impacts will require an evaluation in a follow-on environmental document tiered from this Program EIR. Mitigation measures 4.8-1 through 4.8-4 are provided to ensure no significant impacts occur.

Hercules Station

Pursuant to the California Environmental Quality Act (CEQA) and to the National Environmental Policy Act (NEPA), the City of Hercules and the Federal Transit Administration (FTA) completed

a Final Environmental Impact Report (EIR) and a Final Environmental Impact Statement (EIS) for the Hercules Intermodal Transit Center (ITC) in August 2011 and June 2012, respectively. These documents are incorporated by reference here and the following analysis, excerpted from those documents (including attachments) assumes the proposed Hercules Station would be developed in accordance with the design provided in the Hercules ITC EIS and EIR.

In the City of Hercules, LOS D or better (LOS A, B, C or D) is the citywide standard for traffic operating conditions during peak hours on arterial streets and at signalized intersections, with the exception of signalized intersections on San Pablo Avenue, where the City has adopted LOS E as the target service level. The City of Hercules defines a traffic impact as significant if the addition of the project traffic causes an intersection operating at an acceptable LOS to operate at a lower LOS. The Traffic Study prepared for the Hercules ITC Final EIR/EIS found that all study intersections operate at acceptable LOS under the existing conditions. All study intersections would continue to operate at acceptable levels of service under the future baseline scenario (without the proposed Hercules Station) with the exception of the Sycamore Avenue/Bayberry Avenue intersection, which would operate at LOS E during the A.M. peak hour and LOS F during the P.M. peak hour.

Rail ridership forecast projections estimate the daily rail ridership would produce 837 daily trips, with 232 A.M. peak period boardings and 292 P.M. peak period daily departures. The Final EIR/EIS explains that the trip generation assumed that peak period ridership would consist of commuters based in the Hercules area traveling to and from work in the San Francisco area. Analysis estimated that the 232 morning peak period train boardings would generate approximately 157 automobile trips while the 292 afternoon peak period trips would generate 196 automobile trips. The Traffic Study prepared for the Hercules ITC Final EIR/EIS determined that all study intersections would continue to operate at acceptable LOS for the project scenario with the exception of Sycamore Avenue/Bayberry Avenue. The Study found that the addition of project-related traffic would contribute to an already deficient LOS at this intersection. However, these project-related impacts were not considered significant, and therefore, it was determined that the addition of project generated traffic would not result in a significant impact. The proposed Hercules ITC Final EIR/EIS determined that the proposed Hercules Station would not cause a substantial increase in traffic relative to the existing traffic load and capacity of the street system under the Future Baseline conditions and determined that the impact to circulation was less than significant.

The Hercules ITC Final EIR/EIS Traffic and Transportation Systems evaluation determined mitigation was required to reduce potentially significant impacts with respect to proposed parking capacity, bicycle infrastructure and construction-related traffic hazards. With incorporation of the proposed mitigation measures, all Traffic and Transportation related impacts were forecast to be less than significant.

Beyond the impacts proposed by the Hercules ITC Final EIR/EIS, the proposed Project would increase the number of passenger trains serving the proposed Hercules Station. Currently eight (8) San Joaquin Corridor Amtrak California passenger trains pass through the City of Hercules, four (4) “northbound” (westward) and four (4) “southbound” (eastward) as identified on the San Joaquin Schedule dated January 13, 2014. The proposed Project would double the number of San Joaquin Corridor Amtrak California trains serving the Oakland to Stockton segment to a total of 16 one-way trains [8 “northbound” (westward) and 8 “southbound” (eastward)] Mitigation measure **TRANS-4** provided in the Hercules ITC Final EIR/EIS addresses parking concerns:

The 150-space surface parking lot proposed under Alternative 1 shall be expanded or alternative parking capacity, such as shared or off-site parking, shall be identified to accommodate the expected demand of 189 park-and-ride vehicles during afternoon peak hours. Alternatively, measures to reduce parking demand, such as bus or shuttle service from the Hercules ITC or remote lots shall be implemented.

4.8.4 Environmental Consequences

This Program EIR evaluates the potential environmental impacts of the proposed operational modifications and supporting infrastructure improvements required to support intercity passenger train operations within the San Joaquin Corridor through the 2035 planning period. The program is designed to meet the forecasted increase in intercity passenger demand through 2035, the expanded number of passenger train operations required to meet the demand, and the specific infrastructure improvements required to support future operations.

Development of the San Joaquin Corridor Amtrak California Service program as described in Chapter 3 of this DRAFT PEIR will result in the creation of short-term construction-related circulation system impacts and related generation of additional short-term volumes of traffic which could adversely affect local circulation systems. After development, the San Joaquin Corridor Amtrak California Service project will result in localized traffic impacts where new or upgraded stations or facilities require access and parking for passengers and employees. The projected increase in ridership has the potential to impact parking and roadway access infrastructure at existing stations. Because ridership growth at existing stations is expected to occur slowly and incrementally, and because existing conditions and capacity vary from station to station, those infrastructure improvements that may affect local circulation system traffic will be addressed in follow-on environmental documents tiered from this Program EIR.

4.8.4.1 Cumulative Impacts

Development of the San Joaquin Corridor Amtrak California Service project as described in Chapter 3 of this DRAFT PEIR will result in the creation of short-term construction-related circulation system impacts and related generation of additional short-term volumes of traffic which could adversely affect the areas circulation system. After development, the San Joaquin Corridor Amtrak California Service project will result in localized traffic impacts where new or upgraded stations or facilities require access and parking for passengers and employees. The projected increase in ridership has the potential to impact parking and roadway access infrastructure at existing stations. Because ridership growth at existing stations is expected to occur slowly and incrementally, and because existing conditions and capacity vary from station to station, the majority of infrastructure improvements will be addressed in follow-on environmental documents tiered from this Program EIR.

The proposed project would serve to improve rail safety and operation and provide increased availability of public transportation, which would, in turn, help to reduce emissions from vehicular travel and achieve the goals of State and local plans. Examining cumulative impacts to traffic and transportation is complicated for the proposed project because of the indefinite period of construction and the changing circulation system conditions and constraints. Within each City and County there exists a review process when any project has a potential to impact local circulation levels of service. These institutional protections, along with the mitigation measures identified in this Subchapter, are deemed sufficient to prevent cumulatively considerable or significant impacts to traffic and transportation systems along the proposed project alignment.

4.8.4.2 Unavoidable Adverse Impacts

Implementing the proposed San Joaquin Corridor Program over the next 22 years is not forecast to cause any direct or indirect significant adverse traffic or transportation impacts with implementation of the required mitigation measures. The proposed project will result in unavoidable short-term impacts on traffic and circulation systems during project construction, but identified mitigation measures will reduce these potential changes to a less than significant level. Long-term (permanent) changes in circulation systems and contributions to traffic will be controlled through implementation of mitigation measures 4.8-1 through 4.8-4 to a less than significant impact level.

4.8.5 Avoidance, Minimization and Mitigation Measures

Mitigation measures 4.8-1 through 4.8-4 are provided to ensure no significant impacts occur.

Operational Impact Management

Failure to implement the proposed San Joaquin Rail Corridor improvements would have a negative effect because train traffic congestion along the Corridor would continue to occur. Further, if train operations increase in the future, the slower train movement in the Corridor as occurs under existing conditions would cause greater accumulations of traffic, which would in turn result in related increases in air emissions, noise and congestion on the local circulation system. However, the following mitigation is required to address the potential for adverse impacts to LOS at specific locations as identified in the above discussion.

4.8-1 ***Where local jurisdictions determine that an at-grade rail crossing is contributing to unsatisfactory roadway functionality, the local jurisdiction shall initiate consultation with Caltrans DOR regarding separating rail and non-rail uses.***

4.8-2 ***Where local jurisdictions determine that vehicles accessing an Amtrak Station are contributing to unsatisfactory roadway functionality, the local jurisdiction shall initiate consultation with Caltrans DOR regarding fair share contribution to infrastructure upgrades of the surrounding transportation infrastructure.***

4.8-3 ***Caltrans DOR will periodically review parking capacity at Amtrak stations and shall initiate parking management plans when 85% of the station parking spaces are routinely occupied. Parking management plans shall be developed in conjunction with the local jurisdiction.***

4.8-4 ***Where a new or relocated station or layover facility is proposed, potential circulation impacts will be evaluated based upon project specific design when funding becomes available. Where a traffic study has already been completed, review in conjunction with the local jurisdiction shall determine if the existing study is sufficient based upon final project design and applicability of circulation assumptions. Specific measures shall be identified by the traffic study to ensure that local circulation system standards can be met. Where this is not possible, a follow-on EIR shall be prepared.***

The mitigation identified is designed to reduce potential long-term operational adverse circulation impacts. Therefore, with implementation of the mitigation measures identified, it is concluded that the proposed project can be implemented without causing any unavoidable adverse circulation system effects over the long-term.

This is not deferral of an evaluation because in a program where specific facility designs are not available, any evaluation at this time would be considered speculative. In accordance with Section 15145 this issue will not be given further consideration until sufficient information is available to perform an adequate evaluation of such potential environmental effects.

Construction Management

The proposed San Joaquin Rail Corridor Amtrak California Service project would create construction-related short-term circulation system impacts and related generation of additional short-term volumes of traffic which could adversely affect the areas circulation system. Construction related impacts on roadway LOS are not quantitatively assessed in this Draft PEIR because it is too difficult to determine how local traffic patterns will be affected for the short periods during which construction will occur at each location. However any impacts which may occur due to construction activities are temporary in nature. That is, after the construction of the project is completed, any impacts associated with these construction activities will be eliminated. Short-term access disruptions would occur when the proposed infrastructure is installed, particularly where new tracks are installed through existing at-grade road crossings. It typically requires about a year to install two miles of new track from initial grading to final inspection, with some variation in construction time depending upon if there are at-grade crossings and/or bridges included in the segment. Impacts to at-grade cross streets would be managed to minimize the amount of time that cross traffic would be impacted, but short term impacts would occur. The following mitigation is required to minimize the potential for significant adverse traffic impacts related to construction activities.

4.8-5 ***Prior to initiating roadway impacts at each affected at-grade crossing, a construction traffic management plan must be developed, approved by the County or City and fully implemented by the construction contractor to minimize adverse effects on the flow of traffic during construction. At a minimum this plan shall address, but is not limited to, such items as:***

- ***How to minimize disruption of vehicle and alternative modes of traffic at all times, but particularly during periods of high traffic volumes.***
- ***Provision of adequate access to meet safety and emergency vehicle access.***
- ***Adequate signage and other controls, including flagpersons, to ensure that traffic can flow adequately during construction.***
- ***The identification of alternative routes that can meet the traffic flow requirements of a specific area, including communication (signs, webpages, etc.) with drivers and neighborhoods where construction activities will occur.***
- ***Time of construction activities (e.g., off-peak hours).***
- ***Truck/Haul routes.***
- ***Construction employee parking.***
- ***Construction equipment staging.***
- ***Potential lane closures.***
- ***Work zone traffic control.***
- ***Control of traffic at any location where short-term hazards cannot be avoided.***

The construction traffic management plan is viewed as mitigation for short-term circulation system impacts and must be designed to minimize many of the anticipated impacts associated with the construction activities of the project.

4.8-6 ***The construction contractor will ensure that traffic safety hazards, such as uncovered or unfilled open trenches, will not be left in roadways during period of time when construction personnel are not present, such as nighttime and weekends.***

4.8-7 ***The construction contractor will repair all roads adequately after construction to ensure that traffic can move in the same manner as before construction.***

The traffic management mitigation identified above can reduce potential short-term unavoidable adverse circulation impacts during construction. Therefore, with implementation of the mitigation measures identified, it is concluded that the proposed project can be implemented without causing any unavoidable adverse circulation system effects over the short-term.

Again, this is not deferral of an evaluation because in a program where specific facility designs are not available, any evaluation at this time would be considered speculative. In accordance with Section 15145 this issue will not be given further consideration until sufficient information is available to perform an adequate evaluation of such potential environmental effects.

Chapter 5 Alternatives

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) and the State CEQA Guidelines require an evaluation of alternatives to the proposed action. The purpose of the alternatives evaluation under CEQA is to determine whether one or more feasible alternatives is capable of reducing potentially significant impacts of a preferred project to a less than significant level. The applicable text in the State CEQA Guidelines occurs in Section 15126 as follows:

> Section 15126.6 (a): *Alternatives to the Proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.*
>
> Section 15126.6 (b) *Purpose. Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly.*

The project objectives are defined in Chapter 3 as follows: *A project's "need" is an identified transportation deficiency or limitation, and it's "purpose" is the set of objectives that will be met by addressing the transportation deficiency. A reasonable solution or range of solutions is developed and evaluated based on the objectives. A project's purpose and need statement is designed to meet the requirements of federal and state statutes and regulations by providing a basis for selection of reasonable and practicable alternatives, a comparison of those alternatives, and the selection of an alternative for implementation.*

The purpose of the proposed project improvements is to accommodate existing and future California intercity passenger rail demand and projected increases in ridership through 2035. The proposed project would also serve to improve rail safety and operation and provide increased availability of public transportation, which would, in turn, help to reduce emissions from vehicular travel and achieve the goals of State and local plans.

The need for increased rail capacity and the proposed improvements to the San Joaquin Corridor is demonstrated by ridership increases that have resulted in both sold out trains and an increased number of standees on board the corridor trains. Travel demand is projected to grow threefold over the course of this planning period, well exceeding current capacity.

One of the alternatives that must be evaluated in an EIR is the "no project alternative," regardless of whether it is a feasible alternative to the proposed project, i.e. would meet the project objectives or requirements. Under this alternative, the environmental impacts that would occur if the proposed Project is not approved and implemented are identified. In addition to the

no project alternative, there is one comprehensive alternative to the proposed project, to serve as a feeder and connector system for High Speed Rail, and two partial route alternatives to the proposed San Joaquin Corridor Route, including an express train that would shift to the BNSF track in Richmond, instead of passing through Martinez, and a single train per day from Bakersfield to Los Angeles Union Station through Tehachapi, Mojave and Lancaster. There are also three alternative station locations in the City of Stockton. No other alternatives to the proposed project are given consideration or evaluated in this chapter due to the relatively fixed Corridor Route and the lack of any other practical or feasible alternatives to the service provided by San Joaquin Corridor Amtrak passenger trains. Thus, the alternatives considered in this chapter include:

1. No Project Alternative
2. California High Speed Train System (CHSTS) Feeder Service
3. One Amtrak train per day on BNSF tracks from Richmond to Port Chicago
4. One Amtrak Train per day from Bakersfield to Los Angeles on UPRR and Metrolink tracks
5. Stockton Station Alternative Sites

The following evaluation also includes identification of an environmentally superior alternative as required by the State CEQA Guidelines. The five alternatives were developed based on information abstracted from the San Joaquin Corridor Strategic Plan and the comments received on the Notice of Preparation distributed for public review on November 9, 2012. No other plausible alternatives were identified during the review process for consideration in this PEIR.

5.2 NO PROJECT

5.2.1 Overview of No Project Alternative

The No Project Alternative (NPA) is required under CEQA to evaluate the environmental effects associated with no action on the part of the Lead Agency. The NPA for this project assumes that there would be no increase in the number of San Joaquin Corridor Amtrak passenger trains beyond the existing six roundtrips per day. None of the rail infrastructure improvements would be constructed over the next 20 years and forecast travel demand within the Corridor would be met by use of automobiles. Assuming two persons per vehicle and an increase in potential ridership of two million persons per year, the future increase in on-highway traffic within the San Joaquin Corridor would be approximately one million additional trips per year with an estimated average vehicle miles traveled (vmt) of 100 miles per trip. Thus, this alternative evaluates the environmental impacts resulting from a hypothetical continuance of the existing environmental circumstances through the year 2035, with the passenger increase forecast for the San Joaquin Corridor being diverted to the regional and local circulation systems. There are obviously other travel scenarios that could be implemented by future passenger demand, including ultimate use of High Speed Rail or more buses. However, the most plausible alternative at this time is the use of personal vehicles for travel within the Corridor, as other alternatives, although they may be under consideration, are not presently available as part of the existing environment.

Aesthetic Resources

Aesthetic issues were addressed in the Initial Study for the San Joaquin Corridor rail project and with mitigation it was concluded that all potential aesthetic impacts of implementing the project, both during construction and operations, could be reduced to a less than significant impact level. Refer to Appendix 8.1 of this PEIR. The proposed project includes installation of rail infrastructure over approximately 225 miles of BNSF and UP track, future operations up to

22 trains per day, and certain new stations and layover facilities in various communities. The NPA would not result in any change to the current aesthetics of the track alignments on the BNSF and UPRR systems; no change in operations would occur; and no new stations or layover facilities would be installed to support rail operations. The short-term construction impacts on visual quality would be avoided, but improvements to or new stations in Stockton, Elk Grove and Hercules would not be implemented under the NPA. However, the NPA would have a possible indirect effect because of the shift of up to 1,000,000 trips to the regional and local circulation system could require additional roadway construction on roads from Oakland and San Francisco to Bakersfield and points south and east. Because the NPA will avoid any new aesthetic impacts within the Corridor, the NPA aesthetic impacts would be less than those of the proposed project. A potential for indirect aesthetic construction impacts along regional and local roadways would persist under this alternative.

Agricultural and Forestry Resources

Based on the ability of the proposed project to be implemented within the existing BNSF and UPRR track rights-of-way and the lack of any agricultural or forestry resources within these rights-of-way, the potential adverse impacts to these resources were determined to be less than significant. Refer to the discussion of agricultural and forestry resources in the Initial Study, Appendix 8.1 of this PEIR. Under the NPA no direct changes to any agricultural or forestry resources would occur within the rail rights-of-way. As was the case with aesthetic issues, by shifting up to 1,000,000 annual trips to regional and local roadways, a potential indirect effect would be the loss of agricultural (not forestry) resources adjacent to these roadways if future construction is required. Thus, direct impacts from the NPA within the San Joaquin Rail Corridor would be comparable to those of the proposed project, but the NPA would have a potential for indirect effects on agricultural resources due to the shift in mode of transportation (trains to automobiles).

Air Quality

Since no construction activity would occur within the railroad rights-of-way, the NPA would not have any direct, short-term impacts on air quality. Indirectly, some unquantifiable amount of roadway construction could result from addition up to 1,000,000 vehicle trips to the regional and local circulation systems. This is considered an unquantifiable indirect effect of implementing the NPA instead of the proposed project.

As the air quality data in Chapter 4.2 indicates, car travel generates less air pollution for most pollutants than any other mode of travel. The analysis in Chapter 4.2 indicates that the increase in train emissions under the proposed project will not be significant, but based on Table 4.2-5, Transportation Emission Factors (gram/passenger mile), current locomotives emit more pollutants per passenger mile than automobiles for all pollutants (HC, NOx, PM-10, PM-2.5 and CO2), except CO. Once Tier 4 locomotives are introduced and additional cars are added by 2035, the emissions from trains per passenger mile are closer to automobiles, except for CO and CO2, but still exceed autos for HC, NOx (particularly), and PM-10 and PM-2.5 in grams/passenger mile. Thus, even though future train emissions are not considered a significant impact to air quality, the NPA would reduce air emissions relative to the proposed project.

Biological Resources

Biological resource impacts of implementing the proposed project are forecast in Chapter 4.3 of the PEIR. There are several locations along the BNSF and UPRR tracks (such as near the Consumnes River Preserve) where the cumulative impact from loss of habitat can be considered a significant adverse impact. By eliminating future construction in support of the

proposed project, the NPA would eliminate these potentially significant impacts. Thus, the NPA is clearly biologically superior to the proposed project in these specific areas. With regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts on biological resources, but the significance of such indirect NPA impacts cannot be determined until specific improvements can be identified in the future.

Cultural Resources

Cultural resources are evaluated in Chapter 4.4 and the impact analysis concluded that with mitigation potential cultural resource impacts can be reduced to a less than significant level. The NPA would eliminate all construction within the BNSF and UPRR rail alignment and therefore, would not cause any adverse cultural resource impacts. Thus, the NPA is environmentally superior to the proposed project in terms of direct impacts. With regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts on cultural resources, but the significance of such indirect NPA impacts cannot be determined at this time.

Geology and Soils Resources

Geology and soil resource issues are addressed in the project Initial Study provided in Appendix 8.1 of this PEIR. These issues were not brought forward into the PEIR because sufficient mitigation was provided to ensure the geology and soil issues could be mitigated to a less than significant impact level. The NPA would eliminate construction related erosion and control impacts, and it would also eliminate future permanent facilities from being exposed to potentially significant geotechnical (seismic, slope failure, etc.) constraints. With regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts on or from geology and soil resources, but the significance of such indirect NPA impacts cannot be determined at this time.

Greenhouse Gases / Climate Change

The Greenhouse Gas (GHG)/Climate Change issue is addressed in Chapter 4.5 of this PEIR. The impact evaluation concluded that the GHG emissions of the proposed project will be less than the NPA based upon future assumed rates of emission per passenger mile. Refer to Table 4.2-2. In this instance the proposed project is the environmentally superior alternative.

Hazards and Hazardous Materials

The proposed project will continue the same uses that already exist within the San Joaquin Corridor. The rail support infrastructure within the Corridor will be expanded and the number of daily passenger trains is forecast to increase from 12 to 22 by 2035. Both during construction and future operations, a slightly greater potential exists for accidental release of hazardous materials and accidents to occur. This potential for hazard impacts to occur is discussed in the Initial Study, Appendix 8.1, and it was concluded that with mitigation this increased potential for hazards does not rise to a level of significant impact. Under the NPA all existing operations would continue without any change and there would be no direct impact due to either construction or operation changes in activities within the Corridor. There will be some potential adverse impacts as a result of implementing the proposed project as well as some improvements in existing safety of operations along the Corridor. Regardless, within the Corridor the NPA is considered to be the environmentally superior alternative. However, with regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts related to hazards and hazardous materials, but the significance of such indirect NPA impacts cannot be determined at this time.

Hydrology / Water Quality Resources
Hydrology and water quality impacts are addressed in Appendix 8.1 of this document and Chapter 4.6 of this PEIR. All hydrology and water quality impacts that will be caused by the proposed project can be mitigated to a less than significant impact level. Under the No Project Alternative, the existing rail structures are already located within the 100-year flood hazard zones and even with some of the bridges being very old, no major flood damage has been incurred. The proposed project includes construction activities that will pose erosion and sedimentation potential and result in new structures that could alter storm runoff flows downstream of these features within 100-year flood hazard areas. Mitigation has been identified to control these potential impacts to a less than significant impact level, but the NPA eliminates most of these impacts totally. The NPA is the environmental superior alternative within the BNSF and UPRR alignments. However, with regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts related to hydrology and water quality issues, but the significance of such indirect NPA impacts cannot be determined at this time.

Land Use / Planning
Land use and planning issues are addressed in the Initial Study, Chapter 8.1. In most instances the BNSF and UPRR track alignments have been in place longer than land use and planning regulations have been in operations. The land use will not be altered within the Corridor, but the use will be intensified. Under the NPA, the existing rail operations would remain unchanged and no intensification of passenger rail use would occur. Given the improvements that come with constructing new infrastructure, the NPA alternative may be considered less environmentally superior for land use and planning issues. However, with regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts related to intensification of uses within local and regional roadways, but the significance of such indirect NPA impacts on circulation systems cannot be determined at this time.

Mineral Resources
Mineral resource issues are addressed in the Initial Study, Chapter 8.1. The proposed project was determined not to cause any significant conflicts with mineral resources or resource values within the Corridor due to changes in infrastructure and future operations. The NPA would eliminate any changes within the Corridor, but the impact to mineral resources and resource values would be equivalent to the proposed project. Therefore, both alternatives are considered environmentally superior with regard to direct mineral resource impacts. However, with regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts related to future improvements to local and regional roadways, but the significance of such indirect NPA impacts on mineral resources and values cannot be determined at this time.

Noise
Noise impacts are addressed in Appendix 8.1 of this document and Chapter 4.7 of this PEIR. The proposed project will add short-term construction noise and long-term operational noise to the Corridor. Due to the existing high background noise environment, the small project incremental addition of noise is not considered to be significant, but combined with the high background condition, the proposed project is considered to contribute to a cumulatively considerable noise environment. Since it is the existing background, in particular numerous freight trains that transit the Corridor during night time when penalties are added to operations, the NPA also experiences a cumulatively considerable noise environment, only slightly less than that which will be generated by the incremental addition of new trains. Also, since the NPA eliminates all proposed construction activities, short-term noise impacts would be less than the

proposed project. As a result, the NPA will be the environmentally superior alternative to the proposed project. However, with regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts related to intensification of uses within local and regional roadways, but the significance of such indirect NPA impacts on the background noise environment cannot be determined at this time.

Population / Housing Resources

The proposed project population and house impacts were determined to be less than significant within the Initial Study, Chapter 8.1. The proposed project will expand as demand from future population within its service area grows. With the NPA, the Corridor Amtrak operations will not be able to expand and this alternative does not provide the region's future population with adequate intercity mass transit operations. The NPA would not meet the future forecast demand for passenger train capacity and it will therefore have a greater adverse impact on future population than the proposed project. By forcing more travel on congested regional and local roadways, the NPA has an overall adverse impact on future population resources. Neither alternative has any known direct or indirect on future housing resources.

Public Services

Public service impacts for the proposed project are discussed in the Initial Study, Chapter 8.1, and all public service impacts associated with the proposed project are considered to be less than significant with mitigation incorporated. However, the proposed project will generate some unquantifiable additional demand for fire and law enforcement services simply due to the increased number of passengers and trains in the future. The NPA eliminates these direct impacts within the Corridor. However, with regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts related to intensification of uses within local and regional roadways, but the significance of such indirect NPA impacts on public service systems cannot be determined at this time.

Recreation Resources

Recreational resource issues are addressed in the Initial Study, Chapter 8.1. The proposed project was determined not to cause any significant conflicts with recreational resources or resource values within the Corridor due to changes in infrastructure and future operations. The NPA would eliminate any changes within the Corridor, but the impact to recreational resources and resource values would be equivalent to the proposed project. Therefore, both alternatives are considered environmentally superior with regard to direct recreational resource impacts. However, with regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts related to future improvements to local and regional roadways, but the significance of such indirect NPA impacts on recreational resources and values cannot be determined at this time.

Transportation / Traffic

The Transportation/Traffic issues are addressed in the Initial Study, Appendix 8.1, and in Chapter 4.8 of this PEIR. The proposed project will generate more train traffic along the Corridor where at-grade crossings occur and more vehicle trips at station locations. The analysis indicates that mitigation will be available to reduce the proposed project's transportation and traffic impacts to a less than significant impact at these locations. The NPA would cause any direct increase in vehicle traffic within the Corridor (where at-grade crossings occur) nor near existing and future train stations. Therefore, the NPA is the environmentally superior alternative because it will not generate new construction or passenger traffic. However, with regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts related to future improvements to local and regional

roadways, but the significance of such indirect NPA impacts on circulation system roadways used by automobiles (from passengers unable to use trains) cannot be determined at this time.

Utilities and Service Systems
With the exception of flood control systems, the utilities and service system issues are addressed in the Initial Study, Appendix 8.1. The proposed project's effects on flood control systems are addressed in Chapter 4.6 of the PEIR. The proposed project will affect utilities that parallel or cross the railroad tracks throughout the Corridor. Mitigation is identified to address all utilities and service system impacts from the proposed project to a less than significant level. Regardless, the NPA eliminates any activities that could cause direct adverse impacts to utilities and service systems. It is therefore the environmentally superior alternative for this issue. However, with regard to future roadway improvements associated with additional on-road traffic, a potential does exist for indirect impacts related to future improvements to local and regional roadways, but the significance of such indirect NPA impacts on utilities and service systems due to roadway construction cannot be determined at this time.

5.2.2 Summary of No Project Alternative

With respect to the NPA, proposed project objectives are not attained because no development would mean that future passenger train service within the San Joaquin Corridor could not be met and this is assumed to cause individuals that would ride the train to shift to automobiles to travel the typical distance, 100 miles, that a passenger presently travels on Corridor Amtrak trains. It is also unlikely that the NPA is a feasible or reasonable alternative based on the growth forecast that is verified by annual passenger growth on the Corridor since 2009.

With respect to the significant unavoidable impacts of Project, the NPA would avoid most of the unavoidable significant impacts of the Project such as the forecast incremental noise increase. In addition, much needed regional mass transit facilities would not be realized under this alternative. Under the NPA the new facilities, and the increase in safety that they would provide, would not be developed and demand for intercity mass transit in the project area would incur a significant loss due to a lack of sufficient regional mass transit resources. The NPA is considered environmental superior for many of the impact categories, but this does not include a detailed evaluation of the impact from shifting up to 1,000,000 new annual trips within the region to the regional and local automobile circulation system. Only as these new annual trips impact the circulation system will it be possible to identify roadways where the Level of Service degradation requires new infrastructure to be installed. This is an unquantifiable and indirect adverse impact of the No Project Alternative.

5.3 CALIFORNIA HIGH SPEED TRAIN SYSTEM (CHSTS) FEEDER SERVICE PROJECT ALTERNATIVE

5.3.1 Description of CHSTS Feeder Service Alternative

This alternative analyzes the relationship between the proposed project in conjunction with the possible future development of the California High Speed Train System (CHSTS) operations within the San Joaquin Valley. By 2022 the CHSTS Project envisions a high speed rail operation extending from the San Fernando Valley to a northern terminus near the City of Merced. Operations between these endpoints is known as the IOS, or initial operating segment. For the purposes of evaluating this alternative it is assumed that the San Joaquin Corridor Amtrak operations will be restructured to serve as a feeder/collector system to support CHSTS IOS operations. The following information is abstracted from the Project Description in Chapter

3 and this information is brought forward to establish a framework for describing the potential environmental effects from implementing this alternative.

Amtrak California's San Joaquin Corridor is an intercity rail (ICR) operation that serves as a key alternative transportation mode for the residents of California. Train stations are located in many communities between the San Francisco Bay Area, Stockton, Sacramento, and Bakersfield along the Corridor. The rail line is integrated with an extensive feeder bus system that provides most San Joaquin Valley and Sacramento Valley residents with access to a safe and efficient alternative mode of transportation throughout the State.

The California High Speed Rail Authority (CHSRA) plans to construct a statewide high speed rail network between San Francisco and Los Angeles. The first phase, known as the First Construction Segment (FCS), will be constructed from a point north of Bakersfield to Madera on an alignment that is roughly parallel to the State Route 99 highway corridor.

One operational scenario alternative considered by CHSRA prior to 2022 is to create a "blended" rail system on the FCS. Under the blended system, ICR trains traveling from Sacramento or the Bay Area would travel on the existing track alignment to Madera, where some of the passengers would switch to the FCS. Once on the FCS, passengers would travel between Madera and Bakersfield , where they would switch back to the Amtrak train or bus system.

When Caltrans published the project Notice of Preparation (NOP) in November of 2012, there was very little published information available regarding how a blended system would operate. As a result, the description of the blended system concept in the NOP and scoping meetings was very general. Several requests for more detail on the operation of a blended system along the San Joaquin Corridor were received in response to the NOP and during scoping meetings.

In early March 2013 Caltrans released a draft Service Development Plan (SDP) for the San Joaquin Corridor, which described future service as follows:

> *The Service Development Plan (SDP) for improved intercity passenger rail service in the San Joaquin Corridor (Corridor) describes the Corridor and identifies proposed service expansion and operational improvements. Additionally, the SDP presents the rationale for improved and expanded services, and identifies candidate rail infrastructure investments needed to support growth and deliver improved operations….Analysis of the Corridor reflects the proposed implementation of the California High-Speed Rail (HSR) first construction section of the Initial Operating Segment (IOS) between Madera and just north of Bakersfield, which is scheduled for completion in 2018. The first construction section of the IOS will connect the Central Valley to the Los Angeles Basin with addition of the Bakersfield to Palmdale section scheduled for completion in 2022 per the California High-Speed Rail Program Revised 2012 Business Plan (Business Plan 2012). It will bring high-speed, electric passenger operations to California tying together the Central Valley with the Los Angeles Basin as a first step toward a statewide high-speed rail system…The San Joaquin service will be restructured to operate some trains over the California HSR first construction section of the IOS as part of the blended system approach described in the Business Plan 2012. Blended service and operations refers to the integration of high-speed trains with existing intercity passenger and commuter/ regional rail systems by way of coordinating infrastructure investment, scheduling, ticketing, and other means. The SDP for the San Joaquin will focus on near-term*

improvements between now and 2018 and will reflect a high level of coordination and integration between the two services to maximize utility.

The SDP provided sufficient detail of a blended system alternative to permit an evaluation in the Program EIR.

On May 31, 2013, however, representatives from BNSF Railway Company (BNSF) met with CHSRA staff to confirm details of the blended system concept as outlined in the SDP. During the meeting, BNSF was informed that blended service as outlined in the SDP on the FCS was unlikely to be pursued.

Subsequent discussions with CHSRA staff indicate that a number of possible "shuttle" operations along the FCS are being considered, but no specific operational scenarios are available for these alternatives. Therefore, an evaluation of a "blended service" along the FCS will not be included as an alternative. However, should the CHSRA define an operational scenario on the FCS involving blended service or passengers transferring from HSR to San Joaquin trains, Caltrans is prepared to evaluate such a scenario.

Further, while there is no blended service currently planned for the FCS, CHSRA indicates that there will need to be connections between the ICR and operations on an Initial Operating Section (IOS) that CHSRA envisions as consisting of CHSTS operations between the San Fernando Valley and Merced. Under such operations, Caltrans envisions future connections between the ICR and IOS. It is also possible that Thruway buses could serve as feeders to the IOS at Merced or San Fernando.

Based upon the assumption that the ICR will serve as a feeder/collector to CHSTS when the IOS becomes operational, potential alternative scenarios were reviewed and the following was selected as the most reasonable option for evaluation: No passenger interface is envisioned between ICR trains and CHSTS until 2022 or the actual date that CHSRA begins revenue service over the IOS. Once CHSTS operations are initiated, passenger connections between ICR trains and CHSTS will be established at a station north of Bakersfield and Madera. ICR train operations will serve as both a collector and feeder to the CHSTS system at both locations. Once operational, passengers would take ICR trains or buses to defined interchange points, which could include joint ICR/CHSTS stations or bus connections.

The scenario described in the preceding paragraphsassumes the 11 train, 90 mph ICR train schedule is in place by 2035 (supported by completed capital projects as currently proposed), unless passenger demand justifies the 11 train scenario at an earlier date. This is in contrast to the CHSRA proposal, which assumes that all ICR system improvements would be completed in 2022, prior to scheduled CHSTS operations. The CHSRA proposal would require all identified modifications to the ICR infrastructure and feeder bus system to be funded and in place. The CHSRA proposal could also include modifications to existing bus routes, potential development of additional bus routes, and improvements to bus facilities. The modifications to the bus system infrastructure identified in the SDP appear achievable by 2022. Modifications include capital facilities such as drop off and loading areas, layover facilities, transfer centers, and other necessary improvements. Bus route modifications include rerouting existing lines, adding routes to service secondary segments, adding bus stops, and increasing train frequencies. Bus improvements specifically impact connections in Bakersfield and Stockton, as well as possible new connections in Merced and a new station north of Bakersfield.

The implementation of the interconnection scenario between CHSTS and ICR operations assumes close communication between Caltrans and CHSRA in the future to ensure that an adequate feeder/collector system can be funded and installed prior to initiating scheduled CHSTS operations. It is anticipated that additional environmental documentation (second tier documentation) will be required if substantial changes are made to the scenario outlined in the preceding text.

Based on the alternative outlined in the preceding text, the net change in the environment under the CHSTS feeder service alternative relative to the proposed project would be to speed up construction of infrastructure improvements to allow the 11 roundtrip operations and 90 mph ICR operating scenario by 2022. The CHSTS feeder service alterative would also require modifications to existing bus routes, potential development of additional bus routes, and improvements to bus facilities. New or modified facilities required would include new bus stops, drop off and loading areas, layover facilities, and transfer centers. ICR operations would be comparable to that envisioned for 2035. As currently envisioned, Amtrak buses would deliver (feed) passengers to CHSTS stations in San Fernando Valley, near Bakersfield and near Merced for travel on the CHSTS. Amtrak trains would collect travelers at these locations and deliver them north to the Bay Area, Stockton and Sacramento and south and east to southern California destinations beyond the San Fernando Valley. Amtrak trains from near Bakersfield and Merced would collect travelers at these stations and deliver them to towns and cities along the Amtrak alignment through the San Joaquin Valley. It should be noted that as the CHSTS operations become better defined, Caltrans is ready to compile additional second-tier CEQA documentation as needed to support these operations. The analysis of the CHSTS feeder service alternative only evaluates the net change in the environment to shift the focus of ICR from a stand alone service to a feeder service. The CHSTS project itself is a separate project that is not evaluated herein.

Aesthetic Resources

The CHSTS feeder service alternative will speed up the changes in the visual setting of the Corridor. Under this alternative the aesthetic environment will be fully modified by 2022. However, the ultimate aesthetic setting described in the Project Description (Chapter 3) and summarized in the Initial Study (Chapter 8.1) will be the same as that outlined for the proposed project by 2035. The short-term construction activities, and the associated disruption of the visual setting within the San Joaquin Corridor, will be compressed into an eight year period instead of 21 years. Mitigation measures outlined in Chapter 8.1 will be implemented under this alternative. Further it is assumed that any future CHSTS/ICR station and/or interconnect facility, bus stop or other required transfer facility would meet local design requirements and would result in a less than significant aesthetic impact. It is also assumed that any new or modified bus routes would be located along major roads that currently serve buses such that the addition of less than ~one bus per hour along most routes would not result in a significant change in the aesthetic environment. Thus, for aesthetic resource issues the proposed project and CHSTS feeder service alternative are environmentally comparable.

Agricultural Resources

Based on the ability of the proposed project to be implemented within the existing BNSF and UPRR track rights-of-way and the lack of any agricultural or forestry resources within these rights-of-way, the potential adverse impacts to these resources were determined to be less than significant. Refer to the discussion of agricultural and forestry resources in the Initial Study, Appendix 8.1 of this PEIR. With regard to future infrastructure installation in support of the CHSTS feeder service alternative, this same conclusion is valid, except for one potential area of impact. The areas around the proposed station north of Bakersfield Rosedale and Merced

contain significant agricultural resources. It is possible that a new CHSTS/ICR station and/or interconnect could have a limited adverse impact on agricultural resources. It is assumed that any new or modified bus routes associated with the CHSTS feeder service would be located along major roads that would not require anything other than very minimal improvements, such as bus shelters or loading curbs that could generally be constructed within the road right-of-way. Therefore, the proposed project is considered to be environmentally superior relative to the CHSTS feeder service alternative.

Air Quality

As might be anticipated, the construction emissions generated over a shorter period of time (8 years versus 21 years) will be increased. Based on the construction air quality analysis in Chapter 4.2, it is highly likely that, even after mitigation, construction-related emissions will exceed local thresholds and cause a short-term unavoidable significant adverse air quality impact. Over the long-term operational emissions should remain approximately the same as for the proposed project. If adjustments in schedules or number of train operations result in a potential for increased emissions under this alternative in the future, a follow-on environmental document will be prepared by Caltrans to inform the public of any change in air quality impacts. Any new CHSTS/ICR station and/or interconnect could have a limited adverse impact on air quality, but the construction of such a facility would also be evaluated in a follow-on environmental document. Any new or modified bus routes and related facilities (bus stops, bus loading areas, etc) associated with the CHSTS feeder service would also have the potential to increase emissions and would be included for analysis in any follow-on environmental document. Thus, for air quality the proposed project is the environmentally superior alternative.

Biological Resources

The CHSTS feeder service alternative would result in comparable impacts on biological resources within the San Joaquin Corridor alignment. If portions of the alignment with highly sensitive biology resource locations are not avoided or fully compensated, the impacts under the CHSTS feeder service alternative would also be cumulatively significant. The limited number of potential additional facilities, a CHSTS/ICR station and/or interconnect and bus stop infrastructure could cause additional adverse biological resource impacts, but in most cases such impacts can be fully mitigated. As it is assumed that any new or modified bus routes would be located along major roads and would not require major roadway improvements, it is expected that significant adverse biological resources impacts associated with increased or modified bus service could be avoided or mitigated below a level of significance. However because of this additional potential impact, for biological resources the proposed project is the environmentally superior alternative.

Cultural Resources

Cultural resources are evaluated in Chapter 4.4 and the impact analysis concluded that with mitigation potential cultural resource impacts of the proposed project can be reduced to a less than significant level. This same conclusion applies to the CHSTS feeder service alternative, including installation of a new CHSTS/ICR station and/or interconnect. As it is assumed that any new or modified bus routes would be located along major roads and would not require major roadway improvements, it is expected that significant adverse cultural resource impacts associated with increased or modified bus service could be avoided or mitigated below a level of significance. Thus, for cultural resource issues the proposed project and CHSTS feeder service alternative are environmentally comparable.

Geology and Soils Resources
Geology and soil resource issues are addressed in the project Initial Study provided in Appendix 8.1 of this PEIR. These issues were not brought forward into the PEIR because sufficient mitigation was provided to ensure the geology and soil issues could be mitigated to a less than significant impact level for the proposed project. This same conclusion applies to the CHSTS feeder service alternative, including installation of a new CHSTS/ICR station and/or interconnect and new or modified bus routes and associated improvements. Thus, for geology and soil resource issues the proposed project and CHSTS feeder service alternative are environmentally comparable.

Greenhouse Gases / Climate Change
The Greenhouse Gas (GHG)/Climate Change issue is addressed in Chapter 4.5 of this PEIR. The impact evaluation concluded that the GHG emissions of the proposed project will be less than significant. This same conclusion applies to the CHSTS feeder service alternative, including installation of a new CHSTS/ICR station and/or interconnect and new or modified bus routes and associated improvements. Thus, for GHG/Climate Change issues the proposed project and CHSTS feeder service alternative are environmentally comparable. Note that this conclusion relates to the feeder/collector role of the San Joaquin Corridor Amtrak operations, not to a direct comparison of the emissions generated per passenger mile.

Hazards and Hazardous Materials
The proposed project will continue the same uses that already exist within the San Joaquin Corridor, as would the CHSTS feeder service alternative. The rail support infrastructure within the Corridor will be expanded and the number of daily passenger trains is forecast to increase from 12 to 22 by 2022. Both during construction and future operations, a slightly greater potential exists for accidental release of hazardous materials and accidents to occur. This potential for hazard impacts to occur is discussed in the Initial Study, Appendix 8.1, and it was concluded that with mitigation this increased potential for hazards does not rise to a level of significant impact. This same conclusion applies to the CHSTS feeder service alternative, including installation of a new CHSTS/ICR station and/or interconnect and new or modified bus routes and associated improvements. Thus, for hazard and hazardous materials issues the proposed project and CHSTS feeder service alternative are environmentally comparable.

Hydrology / Water Quality Resources
Hydrology and water quality impacts are addressed in Appendix 8.1 of this document and Chapter 4.6 of this PEIR. All hydrology and water quality impacts that will be caused by the proposed project can be mitigated to a less than significant impact level. This same conclusion applies to the CHSTS feeder service alternative, including installation of a new CHSTS/ICR station and/or interconnect and new or modified bus routes and associated improvements. Thus, for hydrology and water quality issues the proposed project and CHSTS feeder service alternative are environmentally comparable.

Land Use / Planning
Land use and planning issues are addressed in the Initial Study, Chapter 8.1. In most instances the BNSF and UPRR track alignments have been in place longer than land use and planning regulations have been in operations. The land use will not be altered within the Corridor, but the use will be intensified. Under the CHSTS feeder service alternative the land use change will not only be intensified, but it will happen over an eight-year rather than a 21-year period. Solely due to the rapidity of this change under the CHSTS feeder service alternative, the proposed project is considered the environmentally superior because it allows more time to adapt to the proposed increased intensity of use within the Corridor.

Mineral Resources
Mineral resource issues are addressed in the Initial Study, Chapter 8.1. The proposed project was determined not to cause any significant conflicts with mineral resources or resource values within the Corridor due to changes in infrastructure and future operations. This same conclusion applies to the CHSTS feeder service alternative, including installation of a new CHSTS/ICR station and/or interconnect and new or modified bus routes and associated improvements. Thus, for mineral resource issues the proposed project and CHSTS feeder service alternative are environmentally comparable.

Noise
Noise impacts are addressed in Appendix 8.1 of this document and Chapter 4.7 of this PEIR. The proposed project will add short-term construction noise and long-term operational noise to the Corridor. Due to the existing high background noise environment, the small project incremental addition of noise is not considered to be significant, but combined with the high background condition, the proposed project is considered to contribute to a cumulatively considerable noise environment. It is assumed that any new or modified bus routes required for the CHSTS feeder service alternative would be located along major roads that currently serve buses such that the addition of less than ~one bus per hour along most routes would not result in a significant change in the noise environment. However, in the vicinity of any major new interconnect or CHSTS/ICR stations required to support the CHSTS feeder service, there is a potential for significant operational noise impacts which should be included for analysis in any follow-on environmental document for the CHSTS feeder service alternative. The CHSTS feeder service alternative will increase construction activity within the Corridor over the first eight years of the program, although these short-term noise impacts can be mitigated or managed to a less than significant impact level (unless construction must be completed during evening and night hours). The CHSTS feeder service alternative poses greater noise impacts than the proposed project and is less environmentally superior.

Population / Housing Resources
The proposed project population and housing impacts were determined to be less than significant within the Initial Study, Chapter 8.1. The proposed project will expand as demand from future population within its service area grows. In contrast, the CHSRA Business Plan envisions that it will induce new riders to use the system. With Amtrak operations serving in a collection/feeder role to the CHSTS, this alternative should increase ridership on the San Joaquin Corridor Amtrak trains more quickly than the proposed project. From a business perspective this appears to be a positive impact, but from an environmental impact standpoint this alternative would not be environmentally superior to the passive expansion program envisioned by the proposed project.

Public Services
Public service impacts for the proposed project are discussed in the Initial Study, Chapter 8.1, and all public service impacts associated with the proposed project are considered to be less than significant with mitigation incorporated. However, the proposed project will generate some unquantifiable additional demand for fire and law enforcement services simply due to the increased number of passengers and trains in the future. By compressing the timeframe in which larger numbers of trains and passengers will be using the San Joaquin Corridor, the potential public service impacts will potentially experience greater demand over a shorter period, which allows less time for adjustment by public service agencies. In this instance the proposed project is the environmentally superior alternative, but mitigation by the CHSRA could balance this increase in demand.

Recreation Resources
Recreational resource issues are addressed in the Initial Study, Chapter 8.1. The proposed project was determined not to cause any significant conflicts with recreational resources or resource values within the Corridor due to changes in infrastructure and future operations. This same conclusion applies to the CHSTS feeder service alternative, including installation of a new CHSTS/ICR station and/or interconnect and new or modified bus routes and associated improvements. Thus, for recreational resource issues the proposed project and CHSTS feeder service alternative are environmentally comparable.

Transportation / Traffic
The Transportation/Traffic issues are addressed in the Initial Study, Appendix 8.1, and in Chapter 4.8 of this PEIR. The proposed project will generate more train traffic along the Corridor where at-grade crossings occur and more vehicle trips at station locations. The analysis indicates that mitigation will be available to reduce the proposed project's transportation and traffic impacts to a less than significant impact at these locations. Under the CHSTS feeder service alternative there will be less time to obtain funding and to implement mitigation. There is a question of whether the mitigation can be implemented in a timely manner under this alternative. It is assumed that any new or modified bus routes required for the CHSTS feeder service alternative would be located along major roads that currently serve buses such that the addition of less than ~one bus per hour along most routes would not result in a significant change in the transportation/traffic environment. However, in the vicinity of any major new interconnect or CHSTS/ICR stations required to support the CHSTS feeder service, there is a potential for significant construction and operational traffic and transportation impacts which should be included for analysis in any follow-on environmental document for the CHSTS feeder service alternative. Thus, for transportation and traffic issues the proposed project should be considered the environmentally superior alternative.

Utilities and Service Systems
With the exception of flood control systems, the utilities and service system issues are addressed in the Initial Study, Appendix 8.1. The proposed project's effects on flood control systems are addressed in Chapter 4.6 of the PEIR. The proposed project will affect utilities that parallel or cross the railroad tracks throughout the Corridor. Mitigation is identified to address all utilities and service system impacts from the proposed project to a less than significant level. Demand for utilities and service system, particularly storm water management systems and solid waste systems, will be greater over a shorter period for the CHSTS feeder service alternative. Thus, for utilities and service systems issues the proposed project should be considered the environmentally superior alternative.

5.3.2 Summary of CHSTS Feeder Service Alternative

The level of environment impact increases when all of the proposed infrastructure improvements are compressed into an eight year timeframe compared to an estimated 21 year schedule. Adequate funding can offset some of the potential adverse impacts, but issues such as acquisition of sufficient locomotives and passenger cars (train consists) may not be resolvable without immediate commitments of funding. Further, based on past experience, it takes a considerable amount of time to engineer, contract and construct new infrastructure facilities. This raises an important question that has yet to be fully addressed by CHSRA. Assuming it can complete its own infrastructure improvements from San Fernando Valley to the Madera area by 2022, will the level of envisioned high speed rail operations require 11 trains or more per day on the San Joaquin Corridor to provide adequate feeder and connector services, or can the CHSTS operate adequately with a lower level of feeder and connector service on the

San Joaquin Corridor? For the time being, the assumption that moving passengers from and to CHSTS stations to Bakersfield, Stockton, Oakland and Sacramento will require at least 11 trains per day and preparing the San Joaquin Corridor Amtrak operations to provide this service will cause slightly greater overall adverse impact than the proposed project. As this issue is more clearly defined in the future, additional second-tier environmental documentation may be required to provide the public with adequate information to resolve this issue.

5.4 PROPOSED PROJECT BNSF TRACK ALIGNMENT FROM PORT CHICAGO TO RICHMOND, CALIFORNIA

This alternative was originally intended to evaluate a second track on the BNSF rail alignment between Richmond (Richmond Connector) to Port Chicago. However, given the key stop in Martinez where all of the coastal northern California buses connect with the San Joaquin Corridor Amtrak trains, the cost and potential environmental impacts were concluded not to justify considering such a comprehensive second-track alternative. Instead, as generally discussed in the Initial Study (Chapter 8.1 of this PEIR), this alternative considers the assignment of one express Amtrak train (roundtrip) along the BNSF tracks from Richmond to Bakersfield. This train would originate in Oakland and include stops in Stockton, Fresno and Bakersfield. It would bypass minor stations and could run about 30-45 minutes faster end-to-end relative to a regular San Joaquin schedule. In addition, during an emergency on the UPRR tracks from Richmond to Port Chicago, the Amtrak trains might possibly be routed on the BNSF track to maintain passenger schedules. See Figure 3-6 for a depiction of this alternative alignment.

Note that this alternative would require Amtrak/Caltrans to negotiate a new contract with BNSF to allow this service to utilize the segment from Richmond to Port Chicago. It would also require Amtrak/Caltrans to adjust its schedules to accommodate an express passenger train from Oakland to Bakersfield and a once a day return. Future implementation of this alternative is dependent on whether there is sufficient capacity on the BNSF segment from Richmond to Port Chicago to integrate a single roundtrip express Amtrak passenger train. Under this alternative the single BNSF track from Richmond to Port Chicago would be retained and those improvements required to support passenger train operations on this segment would be constructed. However, according to discussions with BNSF staff, there does not appear to be sufficient capacity to accommodate the proposed passenger rail service along this alignment on the existing single track. Any improvements required to support passenger train operations along this route would most likely consist of double tracking at various locations yet to be determined.

A review of this alternative path of travel from Oakland to Port Chicago indicates that the BNSF track is approximately 21.9 miles long from the Richmond Connector to Port Chicago where the Amtrak trains presently enter the BNSF system. This can be compared to a 27.1 mile long alignment along the UPRR tracks between the Richmond Connector and Port Chicago. Therefore, a train following the BNSF alignment would reduce overall train air pollutant emissions relative to the existing route through Martinez. Regarding noise, the proposed project noise evaluation in Chapter 4.7 documents that the addition of more passenger trains within the existing high freight train noise environment along the BNSF tracks will not cause a substantial change in the existing noise environment. In addition, the construction activities within the alignment will also not exceed the existing background noise environment along the BNSF track.

Since any track improvements to facilitate passenger train service would be conducted on the existing track within the existing BNSF right-of-way, there would be no change in the visual setting of the track between Richmond and Port Chicago; no agricultural or forest land resources would be impacted; no new biological resource or cultural resource impacts would occur; GHG emissions would be reduced by a minor amount for an express train (due to fewer miles traveled and more constant speed and fewer stops); geology and soil impacts would not be altered from present conditions; no new hazards or changes in hydrology of the alignment between Richmond and Port Chicago would occur; no changes in land use would occur along this track alignment; no new mineral resource issues arise; and no population, housing, public service, or recreation impacts would occur from implementing this alternative.

Regarding transportation, Amtrak/Caltrans would have to adjust the bus arrival schedule at Martinez since there would be one less north- and southbound train passing through Martinez each day. Similarly, minor adjustments in utilities that cross the existing BNSF track alignment might be required to accommodate any track improvements along this segment. Overall, it appears that if Amtrak/Caltrans should choose to make arrangements with BNSF for use of the segment from Richmond to Port Chicago, this alternative should be feasible to implement without causing any significant adverse impacts to the environment along this route.

5.5 PROPOSED PROJECT WITH A SECONDARY SEGMENT FROM BAKERSFIELD TO LOS ANGELES (UPRR AND METROLINK)

This alternative includes all facilities and components described above in Section 3.3.2 (proposed project). In addition, this alternative would include the development of a passenger rail segment that would extend from Bakersfield to Los Angeles through Lancaster, a distance of approximately 120 miles. None of the existing rail alignments from the San Joaquin Valley that connect these two locations currently carry passengers. An alignment owned and operated by the UPRR is currently in operation between Bakersfield and Lancaster. This alignment passes through Tehachapi and Mojave to Lancaster. From Lancaster to Los Angeles, a San Joaquin passenger train would utilize the railroad tracks owned by the Southern California Regional Rail Authority (SCRRA). Refer to Figure 3-5.

The existing UPRR track segment from Bakersfield to Mojave is dedicated solely to freight service. This is one of the busiest single track freight lines in the western United States. The segment from Mojave to Lancaster is also dedicated solely to freight service. The UPRR and BNSF share the capacity over this route and do not allow regularly scheduled passenger train access over the Tehachapi Pass due to the combination of heavy freight tonnage, the frequency of trains, and track geometry that requires slow operating speeds. Historically, the UPRR has re-routed coastal Amtrak passenger trains over the pass, but only when maintenance or repairs are required on the Coast Route. Thus, it is feasible for passenger trains to operate over the Bakersfield to Lancaster track segment. Note that under current operating conditions, the San Joaquin Corridor Amtrak California rail operations terminate in Bakersfield and the final segment from Bakersfield to southern California is provided by Amtrak buses.

Caltrans received a request from the San Joaquin Valley Rail Committee to explore the feasibility of operating passenger train service over the Tehachapi Pass. This proposal would allow San Joaquin Corridor trains to be extended via Tehachapi Pass to connect with the Pacific Surfliner Corridor that operates between Los Angeles and San Diego. The evaluation of this proposal identified a number of constraints to the operation of a passenger train through Tehachapi Pass. Because of the high freight density on Tehachapi, the likelihood of interference with BNSF and UPRR freight trains on this single-track mountain railroad requires

any proposed passenger train schedule to plan for delays. To operate a passenger train from Bakersfield to Los Angeles, Amtrak/Caltrans would have to negotiate rights to travel on the UPRR track and obtain permission from UPRR. UPRR, and BNSF which has rights over Tehachapi Pass, have both stated firmly that they oppose scheduled passenger train service through this segment of track.

Regardless, to allow passenger service to operate between Bakersfield and Lancaster with minimal impact to freight service and maintain a high level of on-time performance, Caltrans planners determined that 3 hours of extra time (pad) should be added to the schedule. The provision of a schedule pad allows the use of existing San Joaquin Corridor schedules. Additionally, the southbound pad would provide an early morning arrival in Los Angeles for connection with the Pacific Surfliners. It is important that a southbound San Joaquin Amtrak California train operate on a regular schedule within Metrolink territory due to the need to integrate with Metrolink and Pacific Surfliner trains. This evaluation resulted in the development of a conceptual schedule that holds the southbound San Joaquin train in Palmdale until the train's scheduled morning departure to Los Angeles over Metrolink territory. After departing Palmdale, the train would proceed south to Los Angeles and then continue to San Diego as a Pacific Surfliner train.

The best feature of this scenario is that it requires no new equipment, with the exception of adding one sleeping car per train set and one sleeper to serve as a spare. This is because the proposed service operates at night when the equipment sets currently sit overnight in either Los Angeles or Bakersfield. The equipment rotation scenario (Amtrak passenger train numbers) would be as follows: #718→ #564 → #573 → #580 → #591 → #711. This allows for the train to continue to San Diego as a Pacific Surfliner through train. The ~~#564~~ #573 → #580 → #591 rotation will be the actual equipment rotation on the Pacific Surfliner Corridor. This rotation would take two equipment sets, with the sets maintained in Oakland every other day between 11:00 a.m. and 5:50 p.m. Three sleepers would be required to operate the service, which will operate as trains #573→ #580. Appendix 5 of Appendix 8.1 contains the detailed analysis of this operating scenario.

This alternative proposes to develop the infrastructure necessary to enable the existing UPRR alignment to carry passenger trains. It is assumed that infrastructure improvements to the existing single track alignment between Bakersfield and Lancaster would be required to satisfy UPRR rail capacity requirements. The ability to operate over this segment would enable passengers to ride the train continuously from northern California to Los Angeles Union Station, eliminating the need for bus service for this segment of the trip on one train. This alternative would also reduce the total reliance on the extensive bus connections currently operating between Bakersfield and southern California cities.

A review of this alternative path of travel from Bakersfield to Los Angeles indicates the total mileage by train would be approximately 120 miles, while the bus trip from Bakersfield to Los Angeles is approximately 100 miles. Emissions from diesel powered trains and buses are fairly comparable as shown on the following data summary.

Pollutant	Mode	
	Train (100 passenger)	Buses (2 x 50 passengers)
ROG	0.8	0.9
CO	31.8	2.8
NOx	39.2	44.6
PM-10	0.6	<0.1

Emission data are presented in pounds per day. Therefore, a train following the UPRR/SCRRA alignment would have comparable emissions to the buses transporting passengers from Bakersfield to Los Angeles over Interstate 5 and State Highway 99. Regarding noise, the proposed project noise evaluation in Chapter 4.7 documents that the addition of more passenger trains within the existing high freight train noise environment along the existing tracks will not cause a substantial change in the existing noise environment. In addition, the construction activities (for any improvements to the UPRR track between Bakersfield and Lancaster) within the alignment will also not exceed the existing background noise environment along the track.

Since any track improvements to facilitate passenger train service would be conducted on the existing track within the existing UPRR right-of-way, there would be no change in the visual setting of the track between Bakersfield and Lancaster and on the SCRRA track from Lancaster to Los Angeles; no agricultural or forest land resources would be impacted; no new biological resource or cultural resource impacts would occur; GHG emissions would be comparable between bus and train operations; geology and soil impacts would not be altered from present conditions; no new hazards or changes in hydrology of the alignment between Bakersfield and Lancaster and Lancaster to Los Angeles would occur; no changes in land use would occur along this track alignment; no new mineral resource issue arise; and no population, housing, public service, or recreation impacts would occur from implementing this alternative.

Regarding transportation, Amtrak/Caltrans would have to adjust the bus schedule at Bakersfield and Los Angeles Union Station since there would be one passenger transfer at both train stations. Similarly, minor adjustments in utilities that cross the existing UPRR track alignment might be required to accommodate any track improvements along this segment. Note the SCRRA serves passenger trains and discussions with them indicate that it is possible that a single Amtrak train could traverse the Antelope Valley track alignment. Overall, it appears that if Amtrak/Caltrans should choose to make arrangements with UPRR and BNSF for use of the segment from Bakersfield to Lancaster and with SCRRA for the segment from Lancaster to Los Angeles, this alternative should be feasible to implement without causing any significant adverse impacts to the environment along this route.

However, there remain two major constraints to initiating this alternative. First, is the strong opposition from UPRR and BNSF. Second, the proposed operating scenario would require ten hours to move passengers from Bakersfield to Los Angeles, with a layover in Lancaster. Although this alternative would establish an “all train” option for the San Joaquin Corridor intercity operations between northern California to southern California, the lengthy period of travel may make this alternative an impractical alternative for implementation.

5.6 STOCKTON STATION ALTERNATIVE SITES

A new rail station, or refurbishment of the existing station in Stockton, is proposed as part of the project. Amtrak California in Stockton is currently served by two passenger stations. The original Santa Fe Railroad station is located at 735 South San Joaquin Street and consists of a building with a waiting room. The station serves 8 Amtrak California trains on the Oakland to Bakersfield route. There is also a second Amtrak California stop that has one platform with a shelter (the ACE Station located at 949 East Channel Street) served by 4 Amtrak California trains on the Stockton to Sacramento route.

It is hoped that an alternative station can be built that could serve both Amtrak and ACE. This station would include standard rail station design features, such as platforms that extend the full length of the passenger boarding area. It would be equipped with shelter, lighting, signage, schedules, leaning bars, information kiosks, ticket vending machines, as well as have adequate space for dedicated bus passenger circulation, loading or unloading bays and shelters, van, shuttle, taxicab, and passenger vehicle drop-off. Once a new station site is selected and funds become available, the project will follow a general construction scenario, which includes site preparation (possibly including demolition), grading, foundation construction, building construction, and landscaping and paving the surround parking area and open space.

Plans for the new station include a police-staffed, state-of-the-art, Emergency Operations Center (EOC), in which all stations, staffed and unstaffed, would be monitored. The EOC will incorporate a security management system that consists of video surveillance, access control, motion detection, intercoms and emergency mass notifications to ensure maximum safety for all passengers within our facilities.

Five alternative locations were considered for the new Stockton station in the NOP. The NOP eliminated three of the possible locations under consideration; however, after reviewing comments on the NOP, Caltrans decided to maintain consideration of joint or adjacent Amtrak California/Ace station. Descriptions of the locations to be considered in the Draft PEIR are as follows (See Figure 3-11, USGS topographic map):

Stockton Station Alternative 1 (See Figure 3-12): Alternative 1 would include the development of a new Amtrak San Joaquin station to be located at the corner of East Scotts Avenue and South Wilson Way, compass north of the BNSF mainline in the City of Stockton. The site is currently developed with industrial and commercial uses. Implementation of this alternative would include the demolition of existing facilities in order to accommodate the new train station. Standard rail station design features, as described above, would be implemented. It is recommended that Alternative 1 should not be given further consideration for two reasons. First, because a station at this location would require a difficult backup maneuver for trains heading to the San Francisco Bay area (Oakland), which comprises the majority of the train movements through Stockton. Second, reverse train movements through the Stockton Diamond are considered unacceptable to both UPRR and BNSF. It could also cause delays in the passenger train schedule as the reverse movement into the Stockton Diamond could be delayed by other trains on either the UPRR or BNSF tracks to the south. Therefore, Alternative 1 will not be given further consideration in this environmental document.

Stockton Station Alternative 2 (See Figure 3-13): Alternative 2 would include the development of a new Amtrak California station as part of the existing Robert J. Cabral Altamont Commuter Express (ACE) train station located at 949 East Channel Street in the City of Stockton. The site is currently developed with a bus station and parking lots. The existing UPRR mainline runs

directly east of the site. Several residences along Channel Street would need to be demolished as part of the implementation of Alternative 2. Similarly, the Stockton Civic Center, located on the corner of East Miner Avenue and South Aurora Street, would be demolished as part of implementation of Stockton Station Alternative 2. Standard rail station design features, as described above, would be implemented. It is recommended that Alternative 2 should not be given further consideration for the same reasons outlined for Stockton Station Alternative 1, i.e., a station at this location would require a difficult backup maneuver for trains heading to the San Francisco Bay area (Oakland), which comprises the majority of the train movements through Stockton. Second, reverse train movements through the Stockton Diamond are considered unacceptable to both UPRR and BNSF. It could also cause delays in the passenger train schedule as the reverse movement into the Stockton Diamond could be delayed by other trains on either the UPRR or BNSF tracks to the south. However, comments submitted in response to the NOP discussed the City of Stockton's goal of locating the Amtrak California Station in the downtown core of the City. In response Caltrans has carried Stockton Alternative Station 2 forward to additional consideration.

Stockton Station Alternative 3 (See Figure 3-14): Alternative 3 would include the development of a new Amtrak California station located at the site of the old Western Pacific train depot, on the corner of Weber Avenue and North Union Street in the City of Stockton. Portions of the site are undeveloped, but the old depot remains. Standard rail station design features, as described above, would be implemented. It is recommended that Alternative 3 should not be given further consideration for the same reasons outlined for Stockton Station Alternative 1.

Stockton Station Alternative 4 (See Figure 3-15): Alternative 4 would include the development of a new Amtrak California station located at the corner of East Scotts Avenue and Pilgrim Street in the City of Stockton on the BNSF right-of-way. Currently, the site is developed with a manufacturing plant directly adjacent to the Stockton Diamond. The site also contains a rail interlock connecting the UPRR and BNSF railroads. Implementation of Alternative 4 would include the demolition of the manufacturing plant. Existing tracks are located west and south of this site. Standard rail station design features, as described above, would be implemented. This alternative location would serve passengers on both the Oakland to Bakersfield and Sacramento to Bakersfield routes. Alternative 4 is the preferred location for a new passenger rail station, because it could easily serve both the Oakland and Sacramento trains that use the San Joaquin Corridor.

Stockton Station Alternative 5 (See Figure 3-16): Alternative 5 would rehabilitate the existing Amtrak California station located on the BNSF right-of-way at 735 South San Joaquin Street in the City of Stockton. Existing train tracks are located directly south of this site. Rehabilitation of this station would include an expansion of existing facilities to accommodate additional passengers. This Alternative would also include the demolition of commercial uses currently located on the southern portion of the site to accommodate expansion. Standard rail station design features, as described above, would be implemented. Alternative 5 is considered a viable alternative.

Because any new or remodeled Amtrak Station structure/site would have to meet the City's design requirements and because each of the three alternative locations is located in highly disturbed and older portions of the City, the aesthetic impact at all three locations is considered comparable and a net aesthetic improvement at each location. Also, since each of the three locations is in a highly urbanized location, no negative agricultural or forest resource impacts would result from implementing the proposed project at any of the three locations.

From a construction standpoint the air emissions generated from demolition and constructing new station facilities at each location is considered comparable. However from an operational standpoint, Alternative 4 would minimize overall air emissions because it could serve San Joaquin Corridor Oakland and Sacramento trains and, due to proximity to the UPRR tracks, it could also serve ACE passenger trains without any additional movements through the Stockton Diamond. Alternative 2 would require the reverse movement of eight current Oakland trains and in the future up to 14 Oakland trains. From an air quality standpoint this alternative would result in a modest increase of air emissions. Continued reliance on the existing station site (Alternative 5) would result in continued use of buses to connect Sacramento-bound passengers to Sacramento. The continuation of bus use results in slightly higher air emissions associated with this station alternative. Greenhouse gas emissions will be less for Alternative 4 and greater for Alternatives 2 and 5, respectively.

Due to the urban, developed location of all three Stockton Station alternative sites, no potential exists for impact to native habitat or biological resources. The three sites are comparable regarding biological resource impacts. From a cultural resources standpoint, the Robert C. Cabral/ACE Station (Alternative 2) and the BNSF Amtrak Station (Alternative 5) both have historic qualities discussed in Chapter 4.4 and any changes in these facilities pose a greater impacts for cultural resources that Alternative 4.

For the following environmental issues, the relative impacts of developing a new station appear to be comparable: geology and soils; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; population and housing; public services; recreation; and utilities and service systems.

Regarding noise, the additional train movements and bus transport associated with Alternatives 2 and 5 will add a minor increment of noise to the local environment relative to the Alternative 4 site. From a transportation standpoint, the Alternative 4 site can best serve all three passenger train systems, Amtrak Oakland, Amtrak Sacramento and ACE. Renovation and expansion of Alternative Site 5 would continue to serve Amtrak Oakland trains and by continuing bus service to Sacramento or to the Robert C. Cabral/ACE Station, it could also serve Sacramento Amtrak and ACE in the future. The Robert C. Cabral/ACE Station can presently serve ACE train passengers and Amtrak Sacramento trains. To serve Amtrak Oakland trains it would require a reverse train movement into the Stockton Diamond. Both BNSF and UPRR have indicated that this movement cannot be accommodated, which results in a potentially significant transportation impact on the Amtrak system. Refer to Appendix 8.5 in this PEIR.

5.7 DISCUSSION OF ALTERNATIVES TO THE PROPOSED PROJECT

The only full scope alternative identified to the proposed project is the No Project Alternative. The other alternatives discussed are limited route option alternatives and alternative Stockton Station sites. Based on the analysis presented in this Chapter, the NPA is considered to be the overall environmentally superior alternative. The NPA impact that cannot be fully evaluated is the impact from eliminating passenger train capacity and shifting up to 1,000,000 additional annual automobile trips. Since this equates to an average of about 3,000 additional automobile trips per day, the impact on regional and local circulation systems may require new roadway infrastructure or it may not. Regardless, by eliminating all construction and future train operations, the NPA is environmentally superior to the proposed project.

Section 15126.6(e)(2) indicates that where the no project alternative is environmentally superior, "the DEIR shall also identify an environmentally superior alternative among the other alternatives." This guidance is provided because the NPA does not meet any of the project objectives, purpose or need, and is, therefore, not a feasible alternative. Under this guidance the proposed project is the environmentally superior alternative.

The CHSTS feeder service alternative was not considered a comprehensive alternative like the NPA because it will not provide a San Joaquin Corridor-wide transportation alternative. It is only when the CHSTS is considered in conjunction with San Joaquin Corridor Amtrak passenger train operations that this system can provide a Corridor-wide mass transit alternative, i.e., intercity passenger rail alternative for the whole San Joaquin Corridor. The CHSTS feeder service alternative was evaluated as causing greater adverse environmental impact than the proposed project alone, primarily because it would require construction of all the San Joaquin Corridor infrastructure improvements over a period of eight years instead of 21 years. Also, assuming that the CHSTS becomes operational in 2022, the San Joaquin Corridor Amtrak operations will shift from a corridor-wide mass transit operation to a feeder and collector system to support the CHSTS operations. This may result in a fundamental change in the purpose and need for San Joaquin Corridor Amtrak operations. Only as these two systems, CHSTS and San Joaquin Corridor Amtrak, evolve over the next eight years will the specific purpose and need for Amtrak operations be defined and any adjustments in the infrastructure and operational aspects of the Amtrak program become clear.

From the analysis presented above, the alternative route from Richmond to Port Chicago on the BNSF track can be implemented without causing significant adverse environmental impacts, compared to the existing UPRR route. Also, it appears that a passenger train operation could be implemented between Bakersfield and Los Angeles, if a contract could be agreed upon with the UPRR and BNSF. The recent approval of State funds as a contribution to improvements of the Tehachapi segment may make such an agreement more plausible in the future. This alternative route would complement, not replace the existing bus transport system from Bakersfield to Los Angeles and other points to the south and east. Regardless, implementing a daily passenger train operation between Bakersfield and Los Angeles may not be economically feasible due to the lengthy eight to ten hours added by such a route.

Chapter 6 Topical Issues

Each environmental document contains a certain amount of duplication to ensure that information is conveyed to the decision-makers and interested members of the public in an organized fashion. Chapter 4 contains a detailed discussion of environmental effects that may result from implementing the proposed project. This includes a discussion of project specific and cumulative environmental impacts, as well as discussion of unavoidable adverse impacts for each topic evaluated in the EIR. This section of the EIR combines three "topical issues" that are mandated in the State CEQA Guidelines Section 15126. This section states: "The subjects listed below shall be discussed.....preferably in separate sections or paragraphs of the EIR." These sections are: (c) Significant Irreversible Environmental Changes Which Would be Involved in the Proposed Project Should it be Implemented and (d) Growth-Inducing Impact of the Proposed Project. Section 15130 requires a discussion of Cumulative Impacts. Because of the importance of this topic, a summary of cumulative effects is included in this Chapter. The other major topics required in an EIR (Significant Environmental Effects; Unavoidable Significant Environmental Effects; and Mitigation Measures) are specifically addressed in Chapter 4 of this EIR. Alternatives to the proposed project are evaluated in Chapter 5.

6.1 GROWTH-INDUCING IMPACTS

CEQA requires a discussion of the ways in which a project could be growth-inducing. (Pub. Resources Code, §21100, subd.(b)(5); CEQA Guidelines, §§15126, subd.(d), 15126.2, subd.(d)) The CEQA Guidelines identify a project as growth-inducing if it would foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Under CEQA, growth inducement is not considered necessarily detrimental or beneficial. (CEQA Guidelines §15126.2, subd.(d))

A project may indirectly induce growth by reducing or removing barriers to growth, or by creating a condition that attracts additional population or new economic activity. Projects that induce growth directly would include commercial or industrial development that hire new employees and residential development that provide housing. These direct forms of growth have a secondary effect of expanding the size of local markets and inducing additional economic activity in an area. Growth inducement may also occur if a project provides infrastructure or service capacity that accommodates growth beyond the levels currently permitted by local or regional land use plans. However, a project's potential to induce growth does not automatically result in growth. Growth only happens when the private or public sector responds to a change in the underlying development potential of an area with capital investment.

Typically, significant growth is induced in one of three ways. In the first instance, a project developed in an isolated area may bring sufficient urban infrastructure to cause new or additional development pressure on the intervening and surrounding land. This type of induced growth leads to conversion of adjacent acreage to higher intensity uses, either unexpectedly or through accelerated development. This conversion occurs because the adjacent land becomes more suitable for development and, hence, more valuable because of the availability of the new infrastructure. This type of growth inducement is termed "leap frog" or "premature" development because it creates an island of higher intensity developed land within a larger area of lower intensity land use.

The second type of significant growth inducement is caused when development of a large scale project, relative to the surrounding community or area, produces a “multiplier effect” resulting in substantial indirect community growth, although not necessarily adjacent to the development site or of the same type of use as the project itself. This type of stimulus to community growth is typified by the development of major destination facilities, such as Disney World near Orlando, Florida, or around military facilities, such as the Marine Corps Air Ground Combat Center, near Twentynine Palms.

A third, and more subtle, type of significant growth inducement occurs when land use plans are established that create a potential for growth because the available land and the land uses permitted result in the attraction of new development. This type of growth inducement is also attributed to other plans developed to provide the infrastructure necessary to meet the land use objectives, or community vision, contained in the governing land use agency’s general plan. In this type of growth inducement, the ultimate vision of future growth and development within a project area is established in the City General Plan or other comprehensive land use plan. The net effect of a General Plan’s land use designations is to establish a set of expectations regarding future land use and growth that may or may not occur in the future, depending upon the actual demand and other circumstances when development is proposed. Thus, a plan may assign an area 100,000 square feet of commercial space, but if actual development does not ultimately generate demand for this much retail square footage, it will never be established.

The proposed project depends upon a Caltrans study that anticipates population growth over the next 20+ year period and anticipates the growth in demand for alternative modes of transportation over the same time period. The modeling conducted by AECOM under the direction of Caltrans generated the San Joaquin Corridor passenger rail demand forecast provided in Table 3-1 of the Project Description. Based on the modeling, demand for 8 passenger trains per day (total 16 trains) on the BNSF tracks between Merced and Bakersfield in 2020 is identified. This represents an increase in 2 round-trip trains, for a total of 16 trains using this segment compared to the current total of 12 Amtrak passenger trains. By 2035 the modeling indicates a need for 11 round trip passenger trains per day (total of 22 trains) from Bakersfield to Stockton on the BNSF tracks compared to the current total of 12 Amtrak passenger trains. The passenger trains would be expected to operate with 4 or more passenger cars to meet demand. The modeling effort is used for planning purposes over the planning period, but the actual future schedules would be developed in response to customer demand.

The proposed project would not extend railroad or other infrastructure where it does not currently exist, but would rather provide additional track, sidings, layover facilities along the designated route that would enable passenger rail to flow more efficiently. The improved rail facilities would be designed to accommodate growth, but would not attract substantial population to the area either by extending passenger rail service to currently unserved areas or by a substantial increase in rail-related employment. A small increase in rail-related employment would occur primarily at the location of the layover facility, and potentially at other locations where increased service would begin or end, but any increase would be negligible when compared with employment growth expected over the next 25 years in the region. Each of additional passenger trains added to the corridor would require approximately 10 new employees, resulting in an approximate total of 120 new employees after full expansion. Each new station proposed (Elk Grove and Hercules) would likewise provide a small increase in rail-related employment, but full employment at each station is expected to be fewer than 25 employees, which is negligible in the context of the large urban areas within which the stations would be located. The additional passenger rail service would be implemented as customer demand necessitates, and the additional service would not provide rail access where

it is not already available. As such, it is not anticipated to induce substantial numbers of people to relocate, for example, by providing passenger rail access to a new location that would allow people to live farther from existing employment centers that they would then commute to by rail. If the Bakersfield to Los Angeles passenger rail route is implemented, it would increase the availability of passenger rail to new communities, but in both cases efficient Amtrak bus to rail service is already available. The increased frequency of passenger rail service would not directly or indirectly induce substantial population growth.

The proposed new stations in Elk Grove and Hercules, and the relocated/renovated station in Stockton would provide improved passenger access to the existing passenger rail service. Passengers that might currently have to drive or take a bus to another passenger rail station could more conveniently and efficiently access a closer station. Improved access is expected to induce greater use of the San Joaquin Corridor Amtrak California Service, and the new/improved stations could be perceived as growth inducing in that they could encourage higher density development on adjacent properties. As discussed previously, the vast majority of project-related improvements would be located within the existing rail rights-of-way. The facilities that would or could require land acquisition or expansion of rail facilities onto land not currently dedicated to rail (Stockton Station, Elk Grove Station, Hercules Station, Fresno Layover Facility, and Merced Layover Facility) are all located within urbanized areas on sites that are vacant or developed for industrial or commercial uses. The proposed San Joaquin Corridor Amtrak California Service Program would not result in a change in the adjacent land use designations, and any future development that might be proposed for the land adjacent to proposed infrastructure would require subsequent environmental review, including review for consistency with the general plan. Similarly, any change in land use designations that might be proposed for land adjacent to the proposed infrastructure improvements would require subsequent environmental review.

Hercules Station is proposed as part of an intentionally dense Transit Oriented Development (TOD) Hercules Intermodal Facility. The proposed Hercules Station was evaluated as part of the Hercules Intermodal Transit Center (ITC) Final Environmental Impact Statement (FEIS), which was prepared in 2012 by the Federal Transit Administration (FTA) and the City of Hercules. The growth inducing aspects of a station at this location have already been considered and addressed as part of the Hercules ITC.

Elk Grove Station would be located in the northern part of Elk Grove where it meets with the City of Sacramento. Land to the north, south and west of the proposed station is largely built-out, but land to the east is vacant, undeveloped or land developed at a very low density. A station at this location has the potential to induce higher density development on nearby vacant and undeveloped land and on nearby land developed at a very low density. The Elk Grove Station is zoned Commercial/Office/Multifamily and Transit-Oriented Development Overlay. Land to the east of the proposed station site is zoned Heavy Industry, Commercial, Rural Residential and Public Open Space/Recreation. The proposed Elk Grove Station would provide rail service to the existing and planned population of Elk Grove. No growth beyond that which is provided for in the City Land Use Policy could occur without subsequent review, including a separate environmental analysis, of land use policy. To reiterate, as discussed above, any future development that might be proposed for the land adjacent to the proposed Elk Grove Station would require subsequent environmental review, including review for consistency with the general plan. Similarly, any change in land use designations that might be proposed for land adjacent to the proposed Elk Grove Station would require subsequent environmental review.

The Stockton Station alternatives are all located within the urban core of the City of Stockton. As a station already exists within Stockton, and the project would only upgrade and possibly relocate the station within the same general area of the City, no direct or indirect growth inducing impact is expected at this location.
The proposed San Joaquin Corridor Amtrak California Service Program would provide enhanced passenger rail to the service area and is a planned improvement consistent with the land use and circulation objectives contained in the governing land use agencies' planning documents. The needs of existing and projected population as anticipated by the governing agencies' planning documents will be partially met by this passenger rail service improvement project. As it serves existing and planned needs, the proposed passenger rail service improvements will not induce substantial growth within the service area that would exceed official regional or local population projections. As such, this project is considered growth-accommodating, not growth-inducing in that it will help provide adequate transportation infrastructure to existing, approved and allowed development.

In summary, implementation of the proposed San Joaquin Corridor Amtrak California Service Program would not result in the extension of rail infrastructure into an area not currently served by passenger rail, inducing premature development. Neither will it result in development of a new large project with the potential to create a "multiplier effect" that has not already been provided for in the local land use planning documents and that could induce growth beyond that anticipated in those planning documents. Finally, the project would not create or change a land use plan that might cause a potential for growth because the available land and the land uses permitted result in the attraction of new development.

6.2 CUMULATIVE IMPACTS

The intent of a cumulative impact evaluation is to provide the public and decision-makers with an understanding of a given project's contribution to area-wide or community environmental impacts when added to other development occurring in the region. Typically, cumulative impacts are discussed in relation to a list of past, present, and reasonably anticipated projects or in relation to broad growth projections contained in general or regional plans (refer to Section 15130(b) of the State CEQA Guidelines). Cumulative impacts are discussed in each issue subchapter of Chapter 4 in this document. The following is a summary of cumulative impacts that are forecast to occur if the proposed project is implemented as proposed and a restatement of the cumulative impacts from Chapter 4.

Air Quality: Air emission significance thresholds established for each air basin are based on cumulative emissions within each air basin. By controlling construction emissions to a level below the established significance thresholds, project-related construction emissions are not forecast to be cumulatively considerable. However, there could be circumstances in any given year when construction emissions would exceed thresholds, for example, if more than two miles of track are constructed simultaneously in the Bay Area or if construction of both a mile of track and a new passenger station occurred simultaneously in the City of Elk Grove. In addition, there are other large construction projects that could occur during the next 20 years, including the High Speed Rail track and possible new tunnels associated with a Delta bypass. Given these background conditions, the possibility exists for the proposed project to contribute to cumulatively considerable significant air emissions from project-related construction activities.

Regarding future expanded passenger rail operations, Amtrak is forecast to carry approximately 2 million additional passengers by 2035 within the San Joaquin Corridor (forecast total of 3.2 million passengers per year). As noted in the Project Description, the Amtrak San Joaquin

Corridor operations extend and connect residents throughout California and into portions of Nevada, providing residents with an alternative means of transportation throughout the State. As discussed in detail in Subchapter 4.2 Air Quality, passenger train emissions per passenger mile depend upon the number of passengers on the train as well on the efficiency rating of the train engine. The projected ridership increases will reduce the per person emissions of train travel. By 2035, the Amtrak passenger trains within the Corridor would be substantially more efficient (up to 1,620 BTU/passenger mile) than automobiles (~2,740 BTU/passenger mile). If half of the future San Joaquin Corridor passengers take the train instead of driving their automobiles an average of 100 miles (with two people in the car), then 100,000,000 automobile miles on California roads would be eliminated with a corresponding reduced energy consumption of about 40% per passenger mile. New train engines that will be phased in over the next several years will have much more efficient engines and will produce fewer emissions, increasing the air quality benefit from passenger train travel. Based on the projections, by reducing dependence on automobiles the project would reduce operational emissions associated with moving people along the Corridor.

Funding for rail infrastructure improvements is typically provided through State funding from the California Transportation Commission and occasionally provided from the FRA. To be conservative, the option of conducting more than one project within an air basin in order to take advantage of future funding opportunities is retained. Therefore, based on the construction activity emission forecasts provided in Subchapter 4.2 Air Quality of this PEIR, the potential short-term air quality impacts could result in an unavoidable significant adverse air quality impact. All efforts will be made to control construction activity emissions below the thresholds applicable for each air basin, but under plausible future funding scenarios, such emissions may exceed thresholds of significance after application of all construction mitigation measures.

Biological Resources: Cumulative biological resource impacts may occur when such resources are not avoided, protected or mitigated as previously outlined. The mitigation requirements outlined in Section 4.3.4 of this PEIR are identified to ensure that biological resources are avoided or otherwise protected or mitigated, such that no cumulatively considerable impacts to significant biological resources are forecast to occur if the proposed project is implemented as analyzed in this document. These impacts may include direct impacts such as the removal or modification of local hydrology, the redirection of flow, and the placement of fill material. Potential indirect impacts on jurisdictional waters include a number of water-quality-related impacts such as erosion and transport of fine sediments or fill downstream of construction, or unintentional release of contaminants into jurisdictional waters that are outside of the project footprint. Temporary impacts to jurisdictional waters include the placement of temporary fill during construction in both man-made and natural jurisdictional waters. Temporary fill could be placed during the construction of access roads and staging/equipment storage areas. The temporary fill would result in a temporary loss of jurisdictional waters and could potentially increase erosion and sediment transport into adjacent areas.

In the case of man-made features, these impacts would remove or disrupt the limited biological functions that these features provide. In natural areas, these activities would remove or disrupt the hydrology, vegetation, wildlife use, water quality conditions, and other biological functions provided by the resources. Therefore these impacts should be quantified and analyzed in a subsequent tier document.

Regardless, until these designs are brought forth and the ultimate impacts are quantified and analyzed, it is concluded that a cumulatively considerable adverse biological resources impact will occur from implementing the proposed project.

Cultural Resources: Cumulative cultural resource impacts would only occur if such resources were not avoided or were not recovered, evaluated and their data value placed in the broader context of such resources. Mitigation measures have been identified within Subchapter 4.3 Cultural Resources that will be implemented to control potential cultural and paleontological resource impacts for the proposed project. Based on the requirements designed to ensure that such resources are avoided or otherwise protected and evaluated, the proposed project is not forecast to cause or contribute to cumulatively considerable impacts to cultural and paleontological resources in the project area.

Greenhouse Gases: As described in Subchapter 4.5 Greenhouse Gases (GHG), GHG emissions are assumed to be cumulative. As a result of forecast increased ridership on the San Joaquin Corridor passenger trains, GHG emissions were forecast to be less than comparable automobile traffic that would result from not implementing the proposed project, i.e., the proposed project would result in a reduction in cumulative GHG emissions relative to business as usual. Regarding construction emissions, most jurisdictions do not consider such emissions to be permanent and significant. However, based on the more stringent threshold established by the BAAQMD of 1,100 metric tons of CO_2e per year and implementation of mitigation measure 4.5-1, the potential construction GHG emissions can be controlled to a less than significant impact level. With implementation of mitigation measure 4.5-1, project-related GHG emissions are not considered to be cumulatively considerable or a significantly adverse impact and will not result in a significant impact on global climate change.

Hydrology and Water Quality: Examining cumulative impacts from flood hazards or from downstream modifications to such hazards is complicated for the proposed project because of the indefinite period of construction and the lack of available development data for each specific 100-year flood hazard area. For example, each flood hazard zone creates a constraint on development and development affects either the amount of surface runoff within a watershed or the path in which the surface runoff flows. Within each County there exists a fairly sophisticated review process when any project has a potential to alter either the volume or floodplain of a 100-year flood hazard zone. Both the FEMA FIRM Panels and the County flood hazard maps are indicative of the resources that have been expended to define such areas. These document are planning tools to ensure that future development, be it the proposed project, a residential subdivision, or the proposed California High Speed Train System (CHSTS) Project, does not result in exposure to significant flood hazards or a cumulative contribution to areas designated as 100-year flood hazard zones. These institutional protections, along with the mitigation measures identified in this Subchapter 4.6, are deemed sufficient to prevent cumulatively considerable or significant impacts to the identified 100-year flood hazard areas along the proposed project alignment.

Noise: Based on the analysis presented in Subchapter 4.7 Noise, the addition of 10 additional passenger trains within the San Joaquin Corridor is not forecast to cause any project specific significant noise impacts during future construction or operations. However, the background noise level of 77-83 dBA CNEL along the corridor based on the current volume of train traffic (46 freight trains and 12 passenger trains) already exceeds acceptable noise levels for most uses except agriculture and industrial activities and thus is considered cumulatively considerable under existing conditions. A substantial portion of the cumulatively considerable noise impact within the Corridor is caused by night time freight train activities which incur substantial penalties in CNEL calculations for noise contributions between 7 pm and 7 am. The additional proposed ten passenger trains in the Corridor add approximately 0.5 dBA to the existing background noise levels in the Corridor. Regardless of the small increment of noise added to the Corridor by the proposed project, the existing high background noise level is

considered to be a significant impact to sensitive noise uses adjacent to the Corridor. Therefore, it was concluded that small increment added by the proposed project must be considered a cumulatively considerable adverse impact.

Since the contribution of the proposed project to the significant noise levels within the Corridor is minimal, no "feasible or reasonable" mitigation that the project can implement within the whole Corridor has been identified. However, it may be possible to address noise levels at site specific noise sensitive land uses, such as existing hospitals or other similar existing uses. Mitigation measure 4.7-10 will be implemented on a case-by-case basis in the future where new infrastructure will be constructed adjacent to existing sensitive uses. Such limited mitigation may be feasible and may reduce noise impacts at specific locations, but the Corridor-wide cumulatively considerable noise remains an unavoidable significant adverse impact within the Corridor.

Transportation/Traffic: The circulation system impact analysis in Chapter 4.8 Transportation and Traffic evaluates the potential environmental impacts of the proposed operational modifications and supporting infrastructure improvements required to support intercity passenger train operations within the San Joaquin Corridor through the 2035 planning period. The program is designed to meet the forecasted increase in intercity passenger demand through 2035, the expanded number of passenger train operations required to meet the demand, and the specific infrastructure improvements required to support future operations.

Development of the San Joaquin Corridor Amtrak California Service project as described in Chapter 3 of this Draft PEIR will result in the creation of short-term construction-related circulation system impacts and construction-related generation of additional short-term traffic which could adversely affect local circulation systems. After development, the San Joaquin Corridor Amtrak California Service project will result in localized traffic impacts where new or upgraded stations or facilities require access and parking for passengers and employees. The projected increase in ridership has the potential to impact parking and roadway access infrastructure at existing stations. Because ridership growth at existing stations is expected to occur slowly and incrementally, and because existing conditions and capacity vary from station to station, the majority of infrastructure improvements will be addressed in follow-on environmental documents tiered from this Program EIR.

The proposed project would serve to improve rail safety and operations and provide increased availability of public transportation, which would, in turn, help to reduce automobile trips and achieve the goals of State and local plans. Examining cumulative impacts to traffic and transportation is complicated for the proposed project because of the indefinite period of construction and the changing circulation system conditions and constraints. Within each City and County there exists a review process when any project has a potential to impact local circulation levels of service. These institutional protections, along with the mitigation measures identified in this Subchapter, are deemed sufficient to prevent cumulatively considerable or significant impacts to traffic and transportation systems along the proposed project alignment.

Conclusion: Based on the detailed cumulative impact analysis provided in Chapter 4 for each issue and as summarized above, the only cumulatively considerable environmental impacts forecast to result from implementing the San Joaquin Corridor Amtrak California Service project as described in Chapter 3 of this Draft PEIR would be with respect to construction-related air quality impacts, biological resources and operational-related noise impacts.

6.3 SIGNIFICANT IRREVERSIBLE AND/OR UNAVOIDABLE ENVIRONMENTAL IMPACTS

In considering the topic of "Significant Irreversible and/or Unavoidable Environmental Impacts," it is important to define the terminology that is used in making impact forecasts. For example, an "unavoidable significant adverse environmental impact" is an effect of a proposed project that cannot be avoided or reduced relative to the identified impact evaluation criteria by any available or feasible mitigation measure or alternative to that project. These impacts are discussed in the subchapter text for each environmental issue in Chapter 4 of this document.

An irreversible impact is an impact that once experienced, cannot be changed or modified, by any means. Irreversible impacts have more nuance than do unavoidable impacts. For example, if a project results in the death of the last individual of an endangered species, this impact cannot be reversed (at least with technology available at this time). At least for the present, we cannot make any more individuals of the species. On the other hand, if air emissions from a project exceed established impact evaluation criteria and are considered significant, future reductions in mobile source emissions, such as from electric vehicles, could feasibly reverse this impact, reduce (reverse) the air emissions and perhaps eliminate or reverse a significant impact. Thus, the potential for a reversal of an identified impact, be it less than significant or significant, depends on the time scale used for evaluation (forever or just next year) and the likelihood that sufficient resources (societal or individual) will be applied to reverse an impact.

Another example that illustrates this topic is the potential exposure of people to an accidental spill of an acutely hazardous or toxic substance. If the threat is significant enough, society will demand that such exposure be eliminated immediately. Thus, such a spill and the related exposure to the hazard is typically immediately reversed. Where it is not reversed the potential significant effects will remain until sufficient individual or societal resources are expended to eliminate the hazard.

With this in mind, the following analysis of irreversible environmental effects is presented for the reviewer's consideration. After completing the analysis of all of the topics required in an EIR, this document has identified significant adverse environmental impacts associated with air quality, biological resources and noise. The issues that were eliminated from further consideration in the Initial Study are not given further consideration here either as the Program was already determined not to result in significant adverse impacts with respect to those issues. If the San Joaquin Corridor Amtrak California Service Program is approved and implemented, the following irreversible environmental changes are forecast to occur.

Air Quality: The proposed project has the potential to result in significant construction-related air emissions even with mitigation identified to reduce potential impacts to the lowest level achievable. Circumstances in which construction emissions could exceed thresholds include if more than two miles of track are constructed simultaneously in the Bay Area or if construction of both a mile of track and a new passenger station occurred simultaneously in the City of Elk Grove. Funding for rail infrastructure improvements is typically provided through State funding from the California Transportation Commission and occasionally provided from the FRA. To be conservative, the option of conducting more than one project within an air basin at a time will be retained in order to take advantage of future funding opportunities. Therefore, based on the construction activity emission forecasts provided in Subchapter 4.2 Air Quality of this PEIR, the potential short-term air quality impacts could result in an unavoidable significant adverse air quality impact. All efforts will be made to control construction activity emissions below the

thresholds applicable for each air basin, but under plausible future funding scenarios, such emissions may exceed thresholds of significance after application of all construction mitigation measures. Construction-related air quality impacts would be reversible, because after completion of the construction activities construction emissions would cease and would no longer contribute to air quality conditions.

The proposed project operations are not projected to result in significant adverse unavoidable or irreversible air quality impacts. As discussed in detail in Subchapter 4.2 Air Quality, passenger train emissions per passenger mile depend upon the number of passengers on the train as well on the efficiency rating of the train engine. The projected increase in ridership on passenger trains would reduce the per person emissions of train travel. Based on projections in Subchapter 4.2, Amtrak passenger trains within the Corridor would be substantially more efficient (up to 1,620 BTU/passenger mile) than automobiles (~2,740 BTU/passenger mile) by 2035. If half of the future San Joaquin Corridor passengers take the train instead of driving their automobiles an average of 100 miles (with two people in the car), then 100,000,000 automobile miles on California roads would be eliminated with a corresponding reduced energy consumption of about 40% per passenger mile. New train engines that will be phased in over the next several years will have much more efficient engines and will produce fewer emissions, increasing the air quality benefit from passenger train travel.

Biological Resources: There are certain areas within the overall project area of potential impact where the resource impacts from constructing new infrastructure may cause unavoidable significant adverse impacts on biological resources. These areas are: within the UPRR segment between Oakland and Martinez where extensive fill into San Pablo Bay may be required to install a third main track; within the UPRR Fresno Subdivision segment between Stockton and Sacramento where the construction of a second track could cause direct or indirect loss of the Consumnes River Preserve area; within the BNSF track segment between Port Chicago to Oakley where the Dow Chemical Mitigation area occurs and at the Nichols curve location where substantial loss of wetlands may occur (dependent upon the final design) that cannot be reasonably or feasibly offset; and within other critical habitat areas for specific species identified in the PNES.

The ultimate design of these referenced improvements must be based on sound track engineering, but it may be possible to avoid certain impacts by designs that avoid such impacts. For example, in UPRR's segment between Oakland and Martinez it may be possible to avoid fill into San Pablo Bay by placing the third track inland against the existing bluff. Alternatively, additional modeling can be conducted to determine if it may be possible to expand other segments of the track in less sensitive locations and avoid impacts to highly sensitive areas by leaving particular track segments in the current configuration (single or double track). Final determination of impacts can only occur after new track engineering and design are completed and avoidance measures are incorporated. Where avoidance cannot be achieved, the residual impact may be unavoidable. Regardless, until these designs are brought forth the significance of biological resources at the above referenced segments is quantified and analyzed, it is found that an unavoidable significant adverse biological resource impact will occur from implementing the proposed project.

Cultural Resources: Based on the requirements designed to ensure that significant cultural resources are avoided or otherwise protected and evaluated, construction of the proposed project is not forecast to cause or contribute to significant adverse unavoidable or irreversible impacts to cultural and paleontological resources in the project area. Mitigation measures have been identified within Subchapter 4.3 Cultural Resources that will be implemented to control

potential cultural and paleontological resource impacts for the proposed project. Based on the requirements designed to ensure that such resources are avoided or otherwise protected and evaluated, the proposed project is not forecast to cause or contribute to significant adverse unavoidable or irreversible impacts to cultural and paleontological resources in the project area.

Greenhouse Gases: As described in Subchapter 4.5 Greenhouse Gases (GHG), GHG emissions are assumed to be cumulative. As a result of forecast increased ridership on the San Joaquin Corridor passenger trains, GHG emissions were forecast to be less than comparable automobile traffic that would result from not implementing the proposed project, i.e., the proposed project would result in a reduction in cumulative GHG emissions relative to business as usual. Regarding construction emissions, most jurisdictions do not consider such emissions to be permanent and significant. However, based on the more stringent threshold established by the BAAQMD of 1,100 metric tons of CO_2e per year and implementation of mitigation measure 4.5-1, the potential construction GHG emissions can be controlled to a less than significant impact level. With implementation of mitigation measure 4.5-1, project-related GHG emissions for construction and/or operations are not considered to be significantly adverse impact and will not result in a significant impact on global climate change.

Hydrology and Water Quality: Examining impacts from flood hazards or from downstream modifications to such hazards is complicated for the proposed project because of the indefinite period of construction and the lack of available development data for each specific 100-year flood hazard area. The proposed project will result in unavoidable short-term and long-term changes in the hydrology and water quality, but identified mitigation measures will reduce these impacts to a less than significant level. Some drainages that cross the alignment will be altered, but these changes will not cause significant irreversible impacts to drainage flows or to the downstream drainage facilities or flood hazards with implementation of the identified mitigation measures designed to reduce impacts to a less than significant level. Within each County there exists a fairly sophisticated review process when any project has a potential to alter either the volume or floodplain of a 100-year flood hazard zone. These planning tools help to ensure that future development does not result in exposure to significant flood hazards or a significant contribution to areas designated as 100-year flood hazard zones. These institutional protections, along with the mitigation measures identified in Subchapter 4.6, are deemed sufficient to prevent significant adverse unavoidable or irreversible impacts to the identified 100-year flood hazard areas along the proposed project alignment.

Noise: Based on the analysis presented in Subchapter 4.7 Noise, the addition of 10 additional passenger trains within the San Joaquin Corridor is not forecast to cause any project specific significant noise impacts during future construction or operations. However, the background noise level of 77-83 dBA CNEL along the corridor based on the current volume of train traffic (46 freight trains and 12 passenger trains) already exceeds acceptable noise levels for most uses except agriculture and industrial activities. A substantial portion of the existing noise impact within the Corridor is caused by night time freight train activities which incur substantial penalties in CNEL calculations for noise contributions between 7 pm and 7 am. The addition of 10 passenger trains to the Corridor would add approximately 0.5 dBA to the existing background noise levels in the Corridor. The actual contribution of the proposed 10 additional passenger trains would be small, but in the context of the existing noise levels that exceed thresholds for most uses, the addition of more noise by the Project is considered to be a significant impact on sensitive noise uses adjacent to the Corridor. Therefore, it was concluded that the small increment added by the proposed project must be considered a significant unavoidable adverse impact. The impact is reversible, because future technology may allow for

quieter trains or less intrusive noise reduction, and because noise would stop if the proposed additional trains were stopped.

Since the contribution of the proposed project to the significant noise levels within the Corridor is minimal, no "feasible or reasonable" mitigation has been identified that the project can implement within the whole Corridor. However, it may be possible to address noise levels at site specific noise sensitive land uses, such as existing hospitals or other sensitive receptors. Mitigation measure 4.7-10 will be implemented on a case-by-case basis in the future where new infrastructure will be constructed adjacent to existing sensitive uses. Such limited mitigation may be feasible and may reduce noise impacts at specific locations, but the Corridor-wide noise remains an unavoidable significant adverse impact within the Corridor.

Transportation/Traffic: The circulation system impact analysis in Chapter 4.8 Transportation and Traffic evaluates the potential environmental impacts of the proposed operational modifications and supporting infrastructure improvements required to support intercity passenger train operations within the San Joaquin Corridor through the 2035 planning period. The program is designed to meet the forecasted increase in intercity passenger demand through 2035, the expanded number of passenger train operations required to meet the demand, and the specific infrastructure improvements required to support future operations.

Development of the San Joaquin Corridor Amtrak California Service project as described in Chapter 3 of this Draft PEIR will result in the creation of short-term construction-related circulation system impacts and construction-related generation of additional short-term traffic which could adversely affect local circulation systems. After development, the San Joaquin Corridor Amtrak California Service project would result in localized traffic impacts where new or upgraded stations or facilities require access and parking for passengers and employees. The projected increase in ridership has the potential to impact parking and roadway access infrastructure at existing stations. Because ridership growth at existing stations is expected to occur slowly and incrementally, and because existing conditions and capacity vary from station to station, the majority of infrastructure improvements will be addressed in follow-on environmental documents tiered from this Program EIR.

The proposed project would serve to improve rail safety and operations and provide increased availability of public transportation, which would, in turn, help to reduce automobile trips and achieve the goals of State and local plans. Examining impacts to traffic and transportation is complicated for the proposed project because of the indefinite period of construction and the changing circulation system conditions and constraints. Within each City and County there exists a review process when any project has a potential to impact local circulation levels of service. These institutional protections, along with the mitigation measures identified in this Subchapter, are deemed sufficient to prevent significant adverse unavoidable or irreversible impacts to traffic and transportation systems along the proposed project alignment.

Conclusion: Except for air quality, biological resources and noise, unavoidable or irreversible adverse environmental impacts are not forecast to be significant for any issue areas if the proposed project is implemented. Based on assumptions in this analysis, there is a potential for unavoidable significant adverse impacts to air quality and noise and either irreversible or unavoidable significant adverse impacts to biological resources. All other potential adverse impacts from implementing the proposed project are considered less than significant. Implementation of the suite of mitigation measures listed in this document will insure that all irreversible environmental impacts, as identified above and described within Chapter 4 of this Draft PEIR, can be reduced to the extent reasonably feasible.

This page left intentionally blank for pagination purposes.

Chapter 7 Preparation Resources

7.1 PREPARERS

This document was prepared by the following:

Dodson, Tom. *President / Environmental Specialist*, Tom Dodson & Associates
M.S., *Geography*, University of California, Berkeley; more than 30 years of experience in land use planning and environmental and resource management, with special expertise in CEQA, NEPA, regulatory compliance, expert witness testimony and communication/facilitation for resolution of environmental issues. Contribution: Overall report writer and editor of document.

Camacho, Christine. Tom Dodson & Associates
B.S., *Operations Management*, California State Polytechnic University, Pomona; more than 28 years of experience in office management and document production. Contribution: Document production and editing of environmental documents.

Cañas, Marc. *Vice President,* J.L. Patterson & Associates, Inc.
B.S. Information Systems, Chapman University, MBA University of Southern California, (GISP) Geographic Information Systems Professional, Cal Poly Pomona. 24 years of experience in planning, design & construction management of rail projects including Class 1, Short Line, Commuter, Intercity, Heavy Rail, Light Rail and Port Facilities throughout the United States. Contribution: Engineering Evaluation and Exhibits.

Giroux, Hans. Giroux & Associates
M.S., *Meteorology*, University of California, Los Angeles; more than 35 years of experience in atmospheric sciences, including meteorology, air pollution, noise/acoustics, airborne toxic substances and nuisance dust and odors. Contribution: Air Quality/GHG Analysis and Noise Analysis.

Hogan, Michael. CRM TECH
Ph.D., *Anthropology*, University of California, Riverside; 27 years of experience in Archaeology/Ethnography/Cultural Resources Management. Contribution: Archaeological Survey Report.

Jacquemain, Terri. CRM TECH
B.A., *Anthropology*/M.A., *Public History*, University of California, Riverside; 9 years of experience in Public History/Archaeology/Cultural Resources Management. Contribution: Historic Property Survey Report / Archaeological Survey Report.

McAndrews, Jo. McAndrews & Boyd.
B.S., *Psychology and Criminal Justice*, University of California, Sacramento. Over 25 years' experience in public relations and community outreach working with water agencies, military, and the EPA. Contribution: presentations, meetings, transcribing and publications.

Patterson, Lisa. *Sr. Environmental Manager / Regulatory Specialist / Ecologist*, J.L. Patterson & Associates, Inc.
B.S., *Biology*, California Polytechnic State University, Pomona; over 18 years of experience in evaluations of absence/presence of endangered species, habitat assessments, biological assessments, impact analyses, mitigation plans, implementation plans, construction monitoring, general biological surveys, and preparation of reports for focused studies and endangered species. She also conducts wetland delineations and is involved in several habitat restoration projects. Contribution: Natural Environmental Study (*Minimal Impacts*).

Tang, Bai "Tom". CRM TECH

M.A., American History, Yale University, New Haven, Connecticut; 20 years of experience in Public History/Architectural History/Cultural Resources Management. Contribution: Historic Property Survey Report / Archaeological Survey Report.

Wright, Pamela. *Environmental Specialist*, Tom Dodson & Associates

B.A., *Environmental Studies, Core: Anthropology*, Macalester College, St. Paul, Minnesota; more than 10 years of experience in preparation of CEQA/NEPA environmental and biological resources documents. Contribution: Overall report writer of document.

CALTRANS DOCUMENT REVIEWERS

Barajas, Agustin. *Associate Environmental Planner*, Division of Environmental Planning, California Department of Transportation

B.S., Natural Resources Planning & Interpretation, California State University Humboldt; 7 years of experience preparing and reviewing NEPA/CEQA environmental documents. Contribution: Overall document review.

Gotcher, Royce. *Chief, Track and Signal Construction Branch;* Division of Rail, California Department of Transportation.

B.A., Government and Sociology, California State University Sacramento, over 25 years experience managing intercity rail capital improvement projects with Class I Railroads. Royce has worked as a liaison for the Department and with both the Union Pacific Railroad and the BNSF Railroad and their predecessor railroads and is called on to represent the Department for issues ranging from Positive Train Control to the implementation of Trade Corridor projects. Contribution: Overall document review.

Harbert, Claudia. *Associate Environmental Planner -- Principal Architectural Historian,* Division of Environmental Planning, California Department of Transportation

B.A., Art History, Temple University, Philadelphia, Pennsylvania. Attended graduate program in Historic Preservation, University of Pennsylvania, Philadelphia, Pennsylvania; 14 years experience in completing and reviewing cultural resources studies. Contribution: Review of cultural resources studies.

Hoyt, Leo. *Chief,* Office of Rail Project Development, Operations & Marketing; Division of Rail, California Department of Transportation.

B.A., Psychology, California State University Sacramento, Certified Senior Project Manager; University of California Irvine, with more than 35 years of operational, procurement, and managerial experience. Leo has developed expertise in all facets of intercity passenger rail. Contribution: Overall document review.

Kirkish, Alex. *Associate Environmental Planner (Archaeologist),* Division of Environmental Planning, California Department of Transportation

B.A., Anthropology, University of California, Santa Barbara; M.A., Anthropology, University of California, Riverside; Ph.D., University of Leicester, Leicester, England; over 25 years of experience in cultural resources management. Contribution: Cultural review.

Kosinski, Ron. *Deputy Director*, Division of Environmental Planning, California Department of Transportation

M.S., Urban and Regional Planning, California Polytechnic State University, Pomona. Providing environmental review, document preparation and approval since 1975. Contribution: Supervisory review of the environmental document.

Kukla, Dawn. *Senior Environmental Planner*, Division of Environmental Planning, California Department of Transportation

B.A., Environmental Studies, B.A., Geography, University of California, Santa Barbara; 14 years of experience in transportation planning and environmental project management. Contribution: Senior review of environmental document and technical studies.

Miller, Betty L. *Rail Transportation Manager*, Division of Rail, California Department of Transportation

B.A., Business Administration, San Jose State College; 29 years experience in contract/project administration. Sequential emphasis on Federal contract administration; technical writing; tribal administration; intergovernmental environmental review (CEQA/NEPA); and public/private contracting administration. Contribution: Overall report editor.

Parmer, Arnold J. *Transportation Engineer,* Noise & Vibration -- Division of Design, California Department of Transportation

B.S., Civil Engineering, California State University Northridge; 14 years experience in preparing and reviewing technical noise studies. Contribution: Review of Noise and Vibration Impact Analysis.

Yoo, Andrew. *Senior Transportation Engineer,* Division of Design, California Department of Transportation

B.S., Civil and Environmental Engineering, University of California, Los Angeles; 16 years experience in environmental and transportation engineering related to design, traffic, hazardous waste, and air quality. Contribution: Review of Air Quality technical study.

This page left intentionally blank for pagination purposes.

7.2 REFERENCES

The American River Parkway Plan, 2008. County of Sacramento Municipal Services Agency Planning and Community Development Department

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program Draft Fire Hazard Safety Zones in Local Responsibility Area Map dated September 17, 2007.

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program Fire Hazard Severity Zone in State Responsibility Areas adopted on November 7, 2007

California Department of Transportation Service Development Plan San Joaquin Corridor Final Submittal dated May 2013

California Geological Survey, through December 2010. *Official Maps of Earthquake Fault Zones* delineated under the Alquist-Priolo Earthquake Fault Zoning Act available at http://www.quake.ca.gov/gmaps/ap/ap_maps.htm accessed on February 17, 2011

California Scenic Highway Mapping System accessed at http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm on February 3 2012

State of California Solid Waste Information System (SWIS) Database, http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx accessed May 20, 2012

Metropolitan Bakersfield General Plan adopted December 11, 2007

Contra Costa County Airport Land Use Compatibility Plan adopted December 13, 2000 adopted by Contra Costa County Land Use Commission

Contra Costa County General Plan 2005-2020 adopted January 2005

Contra Costa Transportation Authority 2009 Countywide Comprehensive Transportation Plan Final Adopted June 17, 2009

East (Contra Costa) County Action Plan for Routes of Regional Significance dated August 13, 2009, prepared for TransPlan by DKS Associates Transportation Solutions

CRM TECH, Historic Property Survey Report for the San Joaquin Corridor Amtrak California Service Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno in San Joaquin, Merced, and Fresno Counties, California dated May 1, 2013

CRM TECH, Preliminary Historical/Archaeological Resources Study for the San Joaquin Corridor Amtrak California Service Programmatic Environmental Impact Report dated September 13, 2013

CRM TECH, Letter Report Re: Identification of Historic Properties for the Proposed Railway Station in the City of Hercules in Contra Costa County, California dated September 23, 2013

CRM TECH, Historic Property Survey Report for the Proposed Railway Station in the City of Elk Grove Sacramento County, California dated November 6, 2013 (revised 1-9-14)

CRM TECH, Paleontological Sensitivity Assessment, San Joaquin Corridor Amtrak California Service Programmatic EIR, Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California dated February 23, 2014

The City of Elk Grove, Elk Grove Intermodal Rail Station Master Plan Draft Recirculated Initial Study / Mitigated Negative Declaration dated January 2010 available at http://www.egplanning.org/environmental/intermodal-rail-station/index-2010.asp accessed between September 2013 and February 2014

www.fresnocog.org/airport-land-use-commission-fresno-county accessed March 9, 2012

Fresno County Airport Land Use Policy Plan dated January 1983

The City of Fresno 2025 Fresno General Plan dated February 1, 2002

County of Fresno General Plan Background Report dated October 3, 2000

The City of Fresno General Plan and Development Code Update Working Paper 4: Transportation and Connectivity dated November 14, 2011

City of Fresno Sierra Sky Park Land Use Policy Plan adopted August 1985 as amended September 16, 1998

Franklin Field Comprehensive Land Use Plan adopted December 1988 and amended December 1992 by the Sacramento Area Council of Governments

Giroux & Associates, Air Quality and GHG Impact Analyses, San Joaquin Corridor Project, Central Valley and Bay Area, California, dated December 2013

Giroux & Associates, Noise and Vibration Impact Analyses, San Joaquin Corridor Project, Central Valley and Bay Area, California, dated January 2014

The City of Hanford General Plan adopted on June 18, 2002

The City of Hercules Intermodal Transit Center Draft Environmental Impact Report/ Environmental Impact Statement State Clearinghouse Number 2009112087 prepared by the City of Hercules and Federal Transit Administration Region IX date September 2010 and accessed at http://www.ci.hercules.ca.us/index.aspx?page=604 between September 2013 and February 2014

The City of Hercules Intermodal Transit Center Final Environmental Impact Report State Clearinghouse Number 2009112087 prepared by the City of Hercules date June 2011and accessed at http://www.ci.hercules.ca.us/index.aspx?page=604 between September 2013 and February 2014

The City of Hercules Intermodal Transit Center Final Environmental Impact Statement prepared by the City of Hercules and Federal Transit Administration Region IX date April 2012 and accessed at http://www.ci.hercules.ca.us/index.aspx?page=604 between September 2013 and February 2014

Kern County Airport Land Use Compatibility Plan dated March 29, 2011

Kern County General Plan dated September 22, 2009

Kings County Airport Land Use Compatibility Plan dated July 1994

Kings County 2035 General Plan

Kings County 2035 General Plan EIR dated June 2009

The Los Angeles County Airport Land Use Plan adopted December 19, 1991 and revised December 1, 2004 by the Los Angeles County Airport Land Use Commission

General William J. Fox Airfield Land Use Compatibility Plan adopted December 1, 2004 by the Los Angeles County Airport Land Use Commission

City of Madera General Plan Update Final Environmental Impact Report August 2009

County of Merced 2030 General Plan

County of Merced General Plan Background Report dated June 21, 2007

City of Merced Final Program EIR for the *Merced Vision 2030 General Plan* dated July 2011

City of Modesto Final Urban Area General Plan dated October 14, 2008

City of Modesto Final Master Environmental Impact Report for the Urban Area General Plan Update October (SCH #2007072023) dated October 2008 and prepared by ICF Jones & Stokes

City of Modesto Traffic Flow Map 2007 Counts prepared by City of Modesto Public Works Traffic Engineering updated January 2007

National Wild and Scenic Rivers System Map dated September 2009 accessed at http://www.rivers.gov/maps/zoom/conus/conus.html on January 31, 2012

City of Palmdale General Plan adopted January 25, 1993

Lisa M. Patterson of J.L. Patterson & Associates, Program Natural Environmental Study "San Joaquin Corridor Amtrak California Service Oakland and Sacramento to Bakersfield and then Los Angeles Union Station Program Natural Environment Study Discussions of Biological Assessments" dated December 2013

County of Sacramento General Plan as amended November 9, 2011

Sacramento County General Plan Update EIR approved November 9, 2011

City of Sacramento Master EIR for the 2030 General Plan certified March 3, 2009

County of Sacramento General Plan Amended November 9, 2011

Sacramento Executive Airport Comprehensive Land Use Plan adopted May 1998 and amended May 1999 by the Airport Land Use Commission for Sacramento, Sutter, Yolo and Yuba Counties

San Joaquin County General Plan Background Report, Public Review Draft, dated July 2, 2009

2009 Final San Joaquin County Airport Land Use Compatibility Plan

Stanislaus County General Plan available at http://www.stancounty.com/planning/pl/general-plan.shtm accessed in April 2012. No title page or other information providing the date of adoption of the General Plan is provided on the website, but the Traffic Analysis for the General Plan, which is referenced in the General Plan, is dated November 2005

Traffic Analysis of Stanislaus County's Circulation Element prepared by Dowling Associates, Inc. dated November 26, 2005

Stockton General Plan 2035 Background Report dated December 2007

The Greater Tehachapi Area Specific Plan Traffic Analysis prepared by Urban Crossroads for the County of Kern dated May 28, 2010

Tulare County Revised Draft 2030 General Plan Update dated February 2010

Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report February 2010

Tulare County General Plan 2030 General Plan Background Report dated February 2010

http://www.amtrak.com/california-train-routes accessed January and February 2014

http://www.amtrak.com/california-train-bus-stations accessed January and February 2014

http://www.amtrak.com/san-francisco-bay-area-northern-california-train-routes accessed January and February 2014

http://www.greatamericanstations.com/ accessed January and February 2014

Chapter 8 Appendices

8.1 INITIAL STUDY

8.2 NOTICE OF PREPARTION / NOP COMMENTS AND RESPONSES

8.3 CONTROL OF EMISSIONS FROM LOCOMOTIVES

8.4 PASSENGER DEMAND FORECAST

8.5 EMAILS FROM BNSF & UPRR REGARDING PASSENGER RAIL SERVICE

8.6 COMPARATIVE EVALUATION OF FIVE ALTERNATIVES FROM SDP

8.7 NOP DISTRIBUTION LIST, STAKEHOLDERS MEETINGS & PUBLIC NOTICES

APPENDIX 8.1

SAN JOAQUIN CORRIDOR PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT 2035 VISION

Oakland and Sacramento to Bakersfield and then Los Angeles Union Station

INITIAL STUDY

California Department of Transportation

November 2012

Caltrans

Table of Contents

Detailed Project Description ..... **Attachment 1**

Section 1 – Project Information **1**

Section 2 – Environmental Factors Potentially Affected **3**

Section 3 – Determination **4**

Section 4 – Impacts Checklist **5**

I. Aesthetics 5
II. Agriculture and Forestry Resources 14
III. Air Quality 17
IV. Biological Resources 18
V. Cultural Resources 19
VI. Geology and Soils 20
VII. Greenhouse Gas Emissions 26
VIII. Hazards and Hazardous Materials 27
IX. Hydrology and Water Quality 40
X. Land Use and Planning 45
XI. Mineral Resources 51
XII. Noise 53
XIII. Population and Housing 54
XIV. Public Services 56
XV. Recreation 60
XVI. Transportation / Traffic 62
XVII. Utilities and Service Systems 65
XVIII. Mandatory Findings of Significance 70
XIX. Summary of Mitigation Measures 72

Section 5 – List of Preparers **76**

Section 6 – Figures / Exhibits **78**

Section 7 – References **79**

Section 1 Project Information

INTRODUCTION

1. Project Title: San Joaquin Corridor Programmatic Environmental Impact Report 2035 Vision

2. Lead Agency Name: California Department of Transportation
   Address: Caltrans District 7

3. Contact Person: Dawn Kukla
   Phone Number: 213-897-3643
   E-mail: dawn.kukla@dot.ca.gov

4. Project Location: San Joaquin Rail Corridor – Oakland and Sacramento to Bakersfield and then Los Angeles Union Station

5. Project Sponsor's Name and Address: Caltrans District 7, Division of Environmental Planning, MS 16-A
   100 South Main Street, Suite 100
   Los Angeles, CA 90012

6. General Plan Designation: various

7. Zoning: various

8. Project Description: The Detailed Project Description is provided as Attachment 1.

9. Surrounding land uses and setting: (Briefly describe the project's surroundings)

The proposed San Joaquin Rail Corridor (Corridor) Project infrastructure upgrades would generally be installed within the existing track rights-of-way, with limited rights-of-way acquisition if any, and would not change the existing land use of the rail corridor or the surrounding parcels. The land use setting for the project area includes a variety of rural and urban uses and the existing BNSF Railway Company (BNSF), Union Pacific Railroad (UPRR), and under certain circumstances, Metrolink rail transportation corridors.

The proposed **Sacramento Maintenance Facility** would be located between the American River Parkway corridor to the north and the existing UPRR to the south. Land to the east and west is either vacant or contains industrial development. The proposed site is currently occupied by disturbed fields, a parking lot and retention basin. Existing residential development south of the UPRR tracks would continue to have access to the American River Parkway at an existing point of entry west of the proposed facility.

At both locations under consideration for the new **Stockton Amtrak Station**, the sites are designated "industrial" in the Stockton General Plan as is land along both sides of the rail corridor in both locations. There is land designated commercial, residential and a park in the near vicinity of both locations.

The **Fresno Layover Facility** Alternative would include the development of a layover facility located in the City of Fresno that would extend along existing train tracks northeast of State

Route (SR) 41 to Tulare Street in the north, adjacent to the existing Fresno Amtrak station, and along abandoned railroad tracks south of SR 41 to Walker Avenue in the south. Implementation of a facility at this site might require acquisition of property. Existing land use for much of the area including and adjacent to the expansion area southeast of SR 41 is described as heavy industrial; however, site review found that a homeless encampment of perhaps up to 100 individuals is located along the abandoned tracks within the proposed layover facility site. The existing adjacent land use on both sides of the tracks northwest of SR 41 is parking lots.

The **Merced Layover Facility** Alternative would include the development of a layover facility located in the City of Merced that would extend along the existing train tracks from K Street in the north to 6th Avenue in the south. Land uses surrounding the proposed Merced Layover Facility are almost exclusively residential with a small area of general commercial and neighborhood commercial designated land located at G Street. Other nearby land uses include several schools, including John Muir Elementary School and Preschool, that are located about 250 feet north of the existing rail yard. Hoover Middle School is located north of and across E Santa Fe Avenue from the existing rail road tracks. The proposed expansion would locate the westernmost portion of the facility south of the rail and one block west of the middle school. The expanded facilities on the north side of the tracks would be located about 1,100 feet west of the middle school. Most of the proposed layover facility would be within an existing rail yard to the north of the tracks that is separated from existing low density residential development by a surface street or would be located within the existing Amtrak Station. The proposed layover facility may be located along the southern edge of the tracks immediately east of the Amtrak station and west of G Street where a storage rental facility is currently located. If the layover facility were to occupy this area, it would require property acquisition. The proposed layover facility is zoned High Density Residential, High Medium Density Residential, Low Density Residential and General Commercial.

10. Other agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

Although local communities do not have jurisdiction or direct approval over the implementation of the proposed project, certain components of the project may be subject to review and approval by other agencies. This includes encroachment permits from local jurisdictions where construction activities may occur outside of the BNSF, UPRR, and under certain conditions Metrolink rights-of-way; filing of a Notice of Intent with the State for a Construction Activity General Permit; and regulatory permits from the U.S. Army Corps of Engineers (Corps), California Regional Water Board and the California Department of Fish and Game. These permits are discussed in their pertinent Subchapters, including Water Resources and Biological Resources. For example, where drainage channels must be modified, the permits must be obtained from the referenced regulatory agencies before construction activities can proceed in such areas.

Section 2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- ❑ Aesthetics
- ✔ Biological Resources
- ✔ Greenhouse Gas Emissions
- ✔ Land Use / Planning
- ❑ Population / Housing
- ✔ Transportation / Traffic
- ❑ Agriculture and Forestry Resources
- ✔ Cultural Resources
- ❑ Hazards & Hazardous Materials
- ❑ Mineral Resources
- ❑ Public Services
- ✔ Utilities / Service Systems
- ✔ Air Quality
- ❑ Geology / Soils
- ✔ Hydrology & Water Quality
- ✔ Noise
- ❑ Recreation
- ❑ Mandatory Findings of Significance

Section 3 Determination

On the basis of this initial evaluation, the following finding is made:

	The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
	Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
■	The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Ron Kosinski

Ron Kosinski
Deputy District Director
Division of Environmental Planning
California Department of Transportation
District 7

Nov. 9, 2012
Date

Section 4 Impact Checklist

The impacts checklist in this section identifies physical, biological, social, and economic factors that might be affected by the proposed project. Direct and indirect impacts are addressed in checklist items I through XVII. Mandatory Findings of Significance are discussed in item XVIII. The California Environmental Quality Act (CEQA) impact levels include "potentially significant impact," "less than significant with mitigation incorporated," "less than significant impact," and "no impact."

A brief explanation of each CEQA checklist determination follows each checklist item.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista?	❑	✔	❑	❑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	❑	✔	❑	❑
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	❑	✔	❑	❑
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	❑	✔	❑	❑

SUBSTANTIATION:

a. *Less Than Significant With Mitigation Incorporated* – Aesthetics issues are typically addressed in local (city or county) planning documents. These documents identify particular locations that are sensitive to physical changes in visual setting, or locations where the desire is to upgrade from the existing visual setting/conditions. Policies are specified in general plans, as well as in ordinances to be found in development codes or zoning ordinances. Thus, in order to determine adverse effects under this issue, the local characteristics must be examined in relation to the proposed project to see if a project site or project alignment is within an aesthetically sensitive location. Also, the project's consistency with policies or ordinances must be demonstrated, otherwise an inconsistency may be considered an adverse impact.

   Conceptually, it is easiest to discuss the San Joaquin Rail Corridor Project in terms of improvements to the existing track system that are expected to occur within the existing rail rights-of-way (installation of double or triple track, sidings, modification of drainage facilities, etc.), improvements associated with the ancillary facilities that would install and operate rail infrastructure support facilities at a new location; or improvements that would expand facilities and convert land use to support rail infrastructure (e.g., Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility and Merced Layover Facility.) General construction impacts for all project components are addressed first in the discussion. Potential impacts associated with the proposed Sacramento Maintenance facility, Stockton Station alternatives and layover facilities are addressed separately after the discussion of the track improvements throughout the San Joaquin Corridor outlined in Figures 1-3a through 1-3h.

Construction Impacts

All of the project components have some potential to conflict with local agency design guidelines through construction disturbance of the landscape. Such disturbance can be reduced to an acceptable level by landscaping or revegetating disturbed areas or returning hardscapes (paved roadways, parking areas, etc.) to their prior condition after disturbance. Restoration of disturbed areas requires vegetating either with landscaping that is consistent with local design guidelines or with native vegetation that is consistent with that which occurs naturally in the area.

With implementation of mitigation outlined below, development under the San Joaquin Rail Corridor Project will be consistent with current general plan requirements for protecting scenic vistas.

I-1 All surface areas disturbed by the San Joaquin Rail Corridor Project construction activities, except those areas occupied by structures, hardscapes, or rail maintained areas, shall be revegetated, either with native vegetation in natural landscapes or in accordance with a landscape plan in man-made landscape areas. In non-native landscape areas, landscaping shall prioritize the use of native species or drought tolerant non-invasive species. Once construction is completed, site revegetation or restoration shall begin immediately. Where a formal landscape plan is to be implemented, it shall be coordinated with the local agency and the local design guidelines for consistency. Where a native landscape is to be restored, it shall be implemented in cooperation with regulatory agencies with oversight from a qualified biologist.

The construction activities associated with implementation of the proposed project would be temporary and localized. Construction-related aesthetic impacts associated with the San Joaquin Rail Corridor Project are not forecast to be substantially degraded by any of the proposed facilities in conjunction with implementation of the above mitigation.

Track Improvements throughout the San Joaquin Corridor

The visual setting for the project area includes a variety of rural and urban uses and the existing BNSF and UPRR rail transportation corridors. The track and siding upgrades outlined in Figures 1-3a through 1-3h would generally occur within the rail corridor rights-of-way, with limited rights-of-way acquisition, if any, and would not change the existing land use, nor substantially affect the existing scenic vistas or visual aspects of the project area. Designs for the new track segments would follow standard BNSF and UPRR track design requirements, and the visual setting after project completion would be comparable to the visual setting of the existing track. The long-term visual changes associated with the project would be the addition of new track at some locations, which would generally be at the same elevation as the existing surrounding track (Figures 1-1 and 1-2). There is potential for subsequent traffic/transportation analysis of individual segments of the project to conclude that grade separation of railroad and local streets is necessary at some locations. For views across the tracks (perpendicular to the track), the existing visual settings/vistas are forecast to remain the same as they are now, i.e., no change in the existing visual setting except in the event that grade separation is necessary to reduce traffic/transportation impacts. In general, the only long-term change in view where track would be added at the same grade as current track would be a wider area of tracks with a visual setting comparable to that under existing conditions.

The Traffic/Transportation analysis in Section XVI Of this document identifies locations where track improvement may have the potential to reduce the level of service on impacted roadways. Subsequent site specific analysis conducted as part of future environmental documents at the identified locations may determine that grade separation is necessary at some sites. The following mitigation will be required to minimize potential aesthetic impacts associated with any grade separations.

I-2 At any location where grade separation is recommended by the traffic/transportation or subsequent analysis, the follow on CEQA document will evaluate the

potential aesthetic impacts of the proposed grade separation and make a determination regarding the significance of the aesthetic impacts.

As specific facilities are proposed in the future, the associated environmental impacts will be evaluated in a subsequent project-specific CEQA evaluation to allow a final determination on future project's specific aesthetic impacts. Such review is appropriate and consistent with utilization of a program environmental document in accordance with Sections 15162 and 15168 of the State CEQA Guidelines.

Proposed Sacramento Maintenance Facility

The proposed installation of a rail operations and maintenance facility in the City of Sacramento would include a maintenance yard and shop designed to handle routine and periodic inspections and repairs (fueling, sanding, inspections and light repairs), as well as heavy maintenance for both coach cars and locomotives. In addition to tracks and repair bays, the maintenance facility would contain mechanic support areas; an operations control center; transportation support areas for train engineers (day room, lockers, train control and dispatch, etc.); materials handling areas; administrative offices; and possibly other supporting services such as training and security. The maintenance facility is currently proposed to be located generally between 20th Street and 28th Street, adjacent to the UPRR track. The proposed site would have to be acquired for the project to proceed at this location. Figure 1-11 shows the proposed location of the maintenance facility and Figure 1-12 is an aerial photo of the proposed maintenance facility site. Current uses include disturbed fields, a parking lot, and retention basin.

The proposed Sacramento Maintenance Facility site is adjacent to the American River on the south side of the river within the area designated as both a State and National Wild and Scenic River, classified as a "Recreation" river. Most of the American River Parkway amenities in the vicinity of the proposed project site (trails, restrooms, picnic areas, etc) are located on the north side of the river; however, there is a bicycle trail located just west of the proposed site boundary and the proposed Two Rivers Bicycle/Pedestrian Trail along the south side of the river within the Parkway boundary, which extends to include a small portion of the south side of the riverbank. According to the 2008 American River Parkway Plan Wood Lake Area Plan Map depicting the project area, pedestrian and bicycled access to the proposed Two Rivers Bicycle Trail is proposed both within the proposed Maintenance Facility site and along the eastern edge of the site.

Detailed Maintenance Facility site development plans are not available for review at this time. However, Figure 1-12 shows that the boundary of the proposed facility is located very close to the River, and there is the potential both for the proposed facility to be visible from the River corridor/Parkway and for trees along the River to be adversely impacted by facility development, depending upon the development plans.

The 2008 American River Parkway Plan developed by the County of Sacramento includes Goals and Policies applicable to the proposed maintenance facility, particularly the following items under *Visual Impacts from Uses and Facilities Adjacent to the Parkway.*

7.23 Levees, landscaping, or other man-made or natural buffers should be used to separate, buffer or screen the Parkway visually from adjoining land uses, unless the adjacent land uses are indistinguishable from the Parkway.

7.24 In order to minimize adverse visual impacts on the aesthetic resources of the Parkway, local jurisdictions shall regulate adjacent development visible from the Parkway. These local regulations shall take into account the extent to which the development is visible from the Parkway. Regulations may include tools to address design, color, texture and scale, such as:

- *Setbacks or buffers between the Parkway and the development.*
- *Structures to be stepped away from the Parkway or limits on building scale.*

- *Screening of structures visible from the Parkway with landscaping, preferably native vegetation or other naturally occurring features.*
- *Use of colors and materials including non-reflective surfaces, amount of glass, and requiring medium to dark earth tone colors that blend with the colors of surrounding vegetation, particularly in sensitive bluff or river's edge locations.*
- *Guidelines to discourage intrusive lighting and commercial advertising.*

7.25 Between the confluence of the Sacramento and American rivers and the Capital City Freeway (Business-80) the Parkway context is the Sacramento downtown urban core for the Sacramento metropolitan region. ***(Note: the proposed Maintenance Facility would be located within this area.)*** *Protection of the Parkway's aesthetic values in this reach should be accomplished within the context of creating a vital urban area. Development immediately adjacent to the Parkway shall respect the intent of the Parkway goals by reducing visual impacts through context sensitive site planning and building design.*

7.26 Development of the bluffs within and adjacent to the Parkway shall be designed so as not to degrade the stability of the bluffs, while minimizing the visual impacts into the Parkway.

Mitigation is incorporated to minimize adverse impacts to the visual setting of the river from implementation of the proposed Maintenance Facility.

I-3 The site development plan for the proposed Sacramento Maintenance Facility shall be required to show consistency with goals 7-23 through 7-26 from the 2008 American River Parkway Plan. Additionally, the proposed facility development plan must demonstrate that the facility would not prevent the development of the proposed extension of the Two Rivers Bicycle/Pedestrian Trail along the south bank of the River within the Parkway Boundary or create hazards for the proposed pedestrian/bicycle access along 28th Street or the existing pedestrian/bicycle access immediately west of the site.

Stockton Amtrak Station Alternatives

The proposed Stockton Amtrak Station would include standard rail station design features, such as platforms that extend the full length of the passenger boarding area to permit boarding to all accessible train cars. It would be equipped with shelter, lighting, signage, schedules, leaning bars, information kiosks, ticket vending machines, as well as have adequate space for dedicated bus passenger circulation, loading or unloading bays and shelters, van, shuttle, taxicab, and passenger vehicle drop-off. Once a station site is selected and funds become available, the project will follow a general construction scenario.

Plans for the new station include a police-staffed, state-of-the-art, Emergency Operations Center (EOC), in which all stations, staffed and unstaffed, would be monitored. The EOC would incorporate a security management system that consists of video surveillance, access control, motion detection, intercoms and emergency mass notifications to ensure maximum safety for all passengers within Amtrak facilities.

- Stockton Amtrak Station Alternative 4 (See Figure 1-17): Alternative 4 would include the development of a new Amtrak station located at the corner of East Scotts Avenue and Pilgrim Street in the City of Stockton on the BNSF rights-of-way. Currently, the site is developed with a manufacturing plant. The proposed site would have to be acquired for the project to proceed at this location. The site also contains a rail interlock connecting the UPRR and BNSF railroads. Implementation of Alternative 4 would include the demolition of the manufacturing plant. Existing tracks are located west and south of this site. Standard rail station design features would be implemented. This alternative location would serve passengers on both the Oakland to Bakersfield and Sacramento to Bakersfield routes. Alternative 4 is the preferred location for a new passenger rail station, because it could easily serve both the Oakland and Sacramento trains that use the San Joaquin Corridor.

- Stockton Amtrak Station Alternative 5 (See Figure 1-18): Alternative 5 would rehabilitate the existing Amtrak station located on the BNSF rights-of-way at 735 South San Joaquin Street in the City of Stockton. Existing train tracks are located directly south of this site. Rehabilitation of this station would include an expansion of existing facilities to accommodate additional passengers. Standard rail station design features would be implemented. Alternative 5 is considered a viable, but not the preferred, alternative.

Construction and operation of the new Stockton Station at either location will require compliance with local agency design guidelines in order to ensure that new facilities do not cause significant negative aesthetic effects.

I-4 Fencing, landscaping and/or architectural design will be incorporated in project design to reduce the visual impact of facilities in a manner consistent with the surrounding development and with the local agency design guidelines to the extent that such measures do not conflict with the engineering and budget constraints established for the facility.

<u>Layover facilities</u>
Within the 25-year planning period, Caltrans proposes initiating two train operations from the middle of the San Joaquin Corridor, either from Merced or Fresno. The objective would be to start a train early in the morning that would head north to Sacramento and south to Bakersfield. The train would return to the layover facility at the end of the day. The new layover facility would include a storage yard; running maintenance and repair area; support shops; parts storage; mechanical and electrical rooms; and administrative offices. Descriptions of the potential layover locations are as follows:

- Fresno Layover Facility Alternative (See Figures 1-19 and 1-20): This Alternative would include the development of a layover facility located in the City of Fresno that would extend along the existing train tracks from Tulare Street in the north to Walker Avenue in the south. The layover facility would be located adjacent to the existing Fresno Amtrak station. This site is constrained by its small size and ability to meet the layover objective. Implementation of a facility at this site might require acquisition of property.

- Merced Layover Facility Alternative (See Figures 1-21 and 1-22): This Alternative would include the development of a layover facility located in the City of Merced that would extend along the existing train tracks from K Street in the north to 6th Avenue in the south.

Construction and operation of the layover facility at either location would require compliance with local agency design guidelines in order to ensure that new facilities do not cause significant negative aesthetic effects. Implementation of mitigation measure I-4 is sufficient to reduce potential adverse aesthetic impacts at either site to a less than significant level.

With implementation of the proposed mitigation addressing concerns in specific locations, the proposed project is not projected to have a substantial adverse impact on a scenic vista.

b. *Less Than Significant With Mitigation Incorporation* – A review of the California Scenic Highway Mapping System identified both state and county eligible and designated scenic highways. The only designated State or County scenic highways that occur within the viewshed of the proposed railroad infrastructure are located in Contra Costa County. Details are provided on each County within which project infrastructure improvements are proposed below.

- In Los Angeles County Interstate (I)-110 east of I-5 is designated an Historic Parkway and State Route (SR) 126 south along I-5 and east along I-210 are identified as State Eligible, but have not been designated at this time. The only possible project-related impacts in the area would occur if the alternative to provide passenger rail service from Bakersfield to Los Angeles were selected, as shown on Figure 1-5. The existing rail alignment in the vicinity of I-110 is located west of the I-5/I-110 Interchange. Extensive rail facilities, as they currently exist at this location, are part of the existing and historic viewshed, and include passenger rail (local

commuter rail) under existing conditions. No significant adverse change to the viewshed of a designated Historic Parkway is projected to occur with implementation of the project. The Eligible Highways referenced above similarly have existing rail infrastructure and carry passenger rail under existing conditions. No significant adverse change to the viewshed of an Eligible State Scenic Highway is projected to occur with implementation of the project.

- In Kern County SR 58 east of SR 14, and SR 14 north of SR 58 are both identified as State Eligible, but neither has been designated at this time. The only possible project-related impacts in the area of either highway would occur if the alternative to provide passenger rail service from Bakersfield to Los Angeles were selected, as shown on Figure 1-5. The Eligible Highways referenced above have existing rail infrastructure and carry passenger rail under existing conditions. No significant adverse change to the viewshed of an Eligible State Scenic Highway is projected to occur with implementation of the project.

- In Kings County SR 41 west of SR 33 is identified as State Eligible but has not been designated at this time. No proposed project impacts would occur in the vicinity of this highway segment.

- In Tulare County SR 190 east of SR 65 and SR 198 east of SR 99 are identified as State Eligible but have not been designated at this time. No proposed project impacts would occur in the vicinity of either highway segment.

- In Madera County SR 41 north of SR 49 and SR 49 northwest of SR 41 are identified as State Eligible but have not been designated at this time. No proposed project impacts would occur in the vicinity of either highway segment.

- In Merced County I-5 north of SR 33/SR 152 and SR 152 west of I-5 are designated as State Scenic. No proposed project impacts would occur in the vicinity of either highway segment.

- In Stanislaus County I-5 is designated as State Scenic. No proposed project impacts would occur in the vicinity of this highway segment.

- In San Joaquin County I-580 west of I-5 is designated as State Scenic. No proposed project impacts would occur in the vicinity of this highway segment.

- In Sacramento County SR 160 southwest of I-5 is designated as State Scenic, and a County Road that isn't identified by number located south of SR 160 and west of I-5 is designated as County Scenic. No proposed project impacts would occur in the vicinity of either highway segment.

- In Contra Costa County I-680 southeast of SR 24 and SR 24 west of I-680 are designated State Scenic and SR 4 east of SR 160 and SR 160 north of SR 4 are identified as State Eligible. The proposed UPRR double tracking would occur over a mile west of the identified segment of SR 24 at the closest point, and thus would have no potential to impact views along this route. The identified segment of I-680 is not in the vicinity of any proposed improvements. The identified segments of I-160 and SR 4 are in the vicinity of BNSF in the eastern portion of the City of Antioch in the vicinity of Oakley station. SR 160 crosses over the railroad via an overpass in an industrialized area. The eligible section of SR 4 runs parallel and adjacent to the railroad for about a mile and in vicinity with areas where the railroad is briefly adjacent to SR 4 or within the viewshed for approximately two additional miles. The general area is a mixture of agricultural fields and residential development with increasing industrial activity in the western portion of the SR 4 alignment identified as eligible. As shown in Figures 1-3a through 1-3e, none of the proposed project alternatives would include additional track along the eligible segment of SR 4. Any infrastructure improvements within the identified area would occur within the existing rights-of-way and would not substantially change or alter the existing visual character of an active railway. Based on this information, the proposed project's potential impact to scenic highway resources in this area is concluded to be a less than significant impact.

Wild and Scenic Rivers

A review of the National Wild and Scenic River System found that the only designated river in the vicinity of any portion of the proposed project is the American River as it flows through the City of Sacramento. A 23-mile segment of the American River is designated a Wild and Scenic River from the Nimbus Dam, just east of Gold River, downstream to the juncture with the Sacramento River, just west of I-5. The proposed Sacramento Maintenance Facility site is adjacent to the American River on the south side of the river within the area designated as Wild and Scenic, as has already been addressed under the Maintenance Facility discussion under item (a) of this Section. Site development plans are not available for review at this time. However, there are trees along the river that have the potential to be adversely impacted by facility development, depending upon the development plans. Mitigation has been incorporated under item (a) of this Section to minimize adverse impacts to the visual setting of the river from implementation of the proposed Maintenance Facility.

Both segments of the UPRR under consideration for track upgrades in the Sacramento Area terminate south of the American River in the near vicinity of the segment designated as a National Wild and Scenic River. However, in both cases the railroad is outside of the viewshed of the river. The Sacramento Subdivision (western alignment alternative) terminates almost half a mile before reaching the river, leaving a substantial margin of industrial development and vacant lands between the alignment and the river. The Fresno Subdivision (eastern alignment alternative) parallels the American River through a designated portion of the river for approximately 4-miles. The Fresno Subdivision runs 800 feet south of the river at the closest point but is separated from the river by residential housing in this area. At other locations the distance between the railroad alignment and the river is greater, and the intervening land uses include I-80, the State University, fields, industrial development, and the proposed Sacramento Maintenance Facility Site.

There are no other designated rivers within the San Joaquin Valley in the vicinity of the proposed rail infrastructure improvements according to the September 2009 National Wild and Scenic Rivers System Map.

Other Scenic Resources

A cultural resources evaluation to be conducted as part of the EIR for this project will evaluate the potential for the project to adversely impact historic buildings. Because the vast majority of the project would occur within existing railway rights-of-way, those improvements have no potential to impact historic buildings. The only proposed improvements that might impact historic buildings would be the Stockton Station Alternate 5, which would require renovation of the existing Station building, or possibly some of the proposed demolitions, such as removal of a manufacturing plant for Stockton Station Alternate 4. The age of the structures to be demolished has not been evaluated at this time, but will be addressed in the cultural resources evaluation included in the EIR.

Because the vast majority of the proposed facilities would be located within the existing rights-of-way of active railways, no adverse impact to scenic resources such as trees would be impacted. Railroad safety regulations require that rights-of-way be maintained free of trees and tree limbs.

Visual inspection of the whole scenic corridor determined that along the vast majority of the alignment no scenic resources such as trees or rock outcroppings occur within the project area of potential effect (APE). Exceptions occur at three locations along the alignment as detailed below.

- Areas of rock outcroppings occur along the proposed passenger rail alignment between Bakersfield and Los Angeles. However, as operation of a small number of passenger trains along this alignment would not require track modification, no adverse impacts to scenic resources along this segment of the alignment would occur.

- Along the UPRR track between Richmond and Martinez there is a segment where the development of the existing double track required cutting into the hillside. While the site does not have a high aesthetic value, it may be further disturbed by installation of a third main track.

The proposed third track at this location could be installed either by cutting into hillside or by filling on bay shore, either of which could have adverse aesthetic impacts.

- The final location with some aesthetic sensitivity is along the alternate BNSF route between Richmond and Port Chicago. The following mitigation shall be implemented prior to commencement of construction activities on either the segment of the UPRR between Richmond and Martinez or the segment of the BNSF between Richmond and Port Chicago.

I-5 Prior to commencement of construction activities on either the segment of the UPRR between Richmond and Martinez or the segment of the BNSF between Richmond and Port Chicago, a visual simulation analysis shall be performed of the facility's impact on the view. If the analysis identifies a significant impact on a scenic vista, the facility shall be relocated or redesigned to reduce the impact to a non-significant level, or a subsequent environmental evaluation shall be prepared.

Because no scenic resources that would be adversely impacted occur along the remaining segments of the proposed project and because the physical changes to the corridor from implementing the proposed project are not forecast to be substantial, the proposed project's potential impact to scenic resources is concluded to be a less than significant impact.

c. *Less Than Significant With Mitigation Incorporation* – The existing visual setting of the railroad corridor includes tracks, culverts, signals, and other appurtenant railroad support infrastructure. At certain locations along the corridor storage tracks contain stored rail cars; at other locations side tracks extend to industrial customers; and about 50 times per day, trains (freight and passenger) pass through the corridor. The proposed project would cause short-term construction activities within the rail corridor that would result in construction equipment and activities that are necessary to install all of the proposed project components. Within the context of an active rail corridor, short-term construction activity is not forecast to cause substantial degradation to the existing visual qualities. This is because ongoing track maintenance within the corridor results in short-term construction activities that are already part of the corridor visual setting.

The proposed project is designed to meet the expected long-term increase in passenger rail operations. Future commercial demand for rail transport is also expected to increase freight rail operations, and the project design features would provide for more efficient handling of greater rail volume. Increased rail traffic will require increased frequency of rail maintenance activities. An increase in the frequency of train traffic or of rail maintenance activities along the existing rail corridor is not considered an adverse impact on the visual qualities of the corridor. No significant long-term degradation of the rail corridors visual qualities is forecast to occur if the proposed project is implemented.

Improvements associated with the ancillary facilities (Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility and Merced Layover Facility) would install and operate rail infrastructure support facilities at new locations, or would expand facilities and convert land use to support rail infrastructure. Installation of these facilities has a potential to modify the existing view or visual setting at the specific project sites where they would occur. Mitigation measure I-3 outlined previously in this section can ensure that construction disturbance is mitigated by replacing vegetation and controlling potential negative aesthetic effects due to landscape scarring. Compliance with local agency design guidelines, as identified in mitigation measure I-4, will ensure that new facilities do not cause significant negative aesthetic effects.

Based on the above, it is concluded this project would not have a substantial adverse effect on or substantially degrade the visual character or quality of the project corridor/area. Potential impacts to the visual characteristics of the existing visual setting are considered less than adverse based on the proposed modifications to the existing visual environment described above.

d. *Less Than Significant With Mitigation Incorporation* – The development of most of the proposed San Joaquin Rail Corridor Project facilities would be within the existing rail corridor and would not require the installation of lighting that is substantially different from what is installed under existing conditions. Any new signals adjacent to the new track will not be a source of substantial amounts of new light. Existing rail crossing lighting, such as that associated with crossing stop signs or signals, may be upgraded, but based on the type of light standards used for safety purposes any changes would not alter the existing light environment.

The proposed Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility and Merced Layover Facility would install and operate rail infrastructure support facilities at new locations, or would expand facilities and convert land use to support rail infrastructure. These proposed facilities would result in new lighting sources. Lighting requirements associated with active railroad facilities must prioritize safety and must comply with standard railroad lighting protocols. Lighting associated with facilities necessary to support rail infrastructure, such as parking lots or station lighting (not related to rail safety) can be designed to minimize conflicts with adjacent uses.

Many of the jurisdictions within which the project would occur have passed ordinances or adopted development codes designed to minimize the impact of light and glare on sensitive uses. The San Joaquin Rail Corridor facilities would conform with the guidelines of each jurisdiction wherever feasible, but at a minimum they shall comply with the following mitigation measure.

I-6 Installation of lighting not associated with rail safety shall be implemented consistent with the following measures.

- ***Use low pressure sodium lights to minimize impacts of glare, where security needs require such lighting***
- ***Install lighting fixtures at the lowest level consistent with the purpose of the lighting to reduce unwanted illumination***
- ***Direct and shield light to minimize off-site illumination***
- ***Prevent light from intruding into sensitive light receptor areas off of a specific project site***

With implementation of the proposed mitigation measures, no significant adverse light or glare effects are forecast to occur from implementing the proposed project.

Conclusion

No unavoidable, adverse aesthetic effects have been identified in association with the implementation of the proposed project. The following issues **will not** require any further analysis in the EIR:

- Affect a scenic highway
- Create light or glare
- Affect a scenic vista
- Have a demonstrable negative aesthetic effect.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
II. AGRICULTURE AND FORESTRY RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	❑	❑	❑	✔
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	❑	❑	❑	✔
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	❑	❑	❑	✔
d) Result in the loss of forest land or conversion of forest land to non-forest use?	❑	❑	❑	✔
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	❑	❑	❑	✔

SUBSTANTIATION:

a-e. *No Impact* – The rail corridors of the San Joaquin Rail Corridor Project are owned and maintained by BNSF and UPRR solely for the support of rail operations. These corridors range between 100 feet and 200 feet in width. Federal rules prevent the introduction of vegetation that could pose a fire or other safety hazard to rail operations within this corridor. Therefore, no agricultural operations or timberlands are permitted within this corridor. No portion of the proposed rail road alignment improvements is located outside of the existing BNSF and UPRR rights-of-way. A separate project within the corridor of the proposed project would relocate approximately 1,000 feet of track within the City of Sacramento in the vicinity of the Old Sacramento Rail Yard. The tracks have already been relocated and passengers are required to walk or be ferried out to the new track alignment to meet trains. Bus operations continue to be operated adjacent to the existing Sacramento Amtrak Station. The proposed rail operations and maintenance facility to be located in the City of Sacramento and a proposed new station in Stockton could both require procurement of property that is not currently within railroad rights-of-way. If the Fresno Alternative is selected for the proposed Layover Facility, property acquisition might be required.

There are four major classifications of farmland adopted by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). These classifications are based on the fertility of soils and such factors as water availability. “Prime Farmland” has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops, when managed according to modern farming methods. “Farmland of Statewide Importance” is land other than prime farmland with a good combination of physical and chemical characteristics for producing food, feed, forage, and fiber. “Unique Farmland” is land other than prime farmland and land of statewide importance that has a special combination of soil quality, growing season, and moisture supply needed to produce sustained high yields of a specific crop. “Farmland of Local Importance” is defined as important to the local agricultural economy.

The State is required to prepare current maps of the important farmland in agricultural counties of California and monitor permanent farmland conversion. The California Department of Conservation, Division of Land Resource Protection’s Farmland Mapping and Monitoring Program also uses this system for the classification of farmland. In addition to the farmland classifications above, the California Department of Conservation describes three other categories, as follows: “Grazing Land” is land on which the existing vegetation is suited to the grazing of livestock. “Urban and Built-Up Land” is land that does not fall within an agricultural category and is occupied by structures with a density of at least one structure to one and one-half acres “Other Land” is all other land that does not meet the criteria of any other category.

According to the 2008 California Department of Conservation Important Farmlands Maps for each of the affected counties, extensive areas of land designated as Prime Farmland, Farmland of Statewide Importance and Unique Farmland occur along the railroad alignments in Fresno, Kings, Madera, Merced, Stanislaus and San Joaquin Counties. In Kern County Prime Farmland and Farmland of Statewide Importance is abundant along the railroad alignment, and in Tulare County Farmland of Statewide Importance is abundant along the railroad alignment. No designated farmlands occur in Contra Costa County along the railroad alignments west of the City of Antioch, but to the east all three aforementioned classifications occur. In Sacramento County Farmland of Statewide Importance occurs along both the UPRR Fresno and Sacramento Subdivisions, and Prime Farmlands also occur along the Fresno Subdivision. Along the Bakersfield to Los Angeles rail alignment, areas of land designated as Prime Farmland and Unique Farmland occur east of Bakersfield before the alignment traverses the Tehachapi Pass. In the Tehachapi Mountains, much of the land along the railroad alignment is designated as grazing land. In Los Angeles County, there is a small sliver of Unique Farmland that abuts the rail alignment in Sylmar, but no other land is designated as having agricultural importance. Please refer to Appendix A for a copy of the Important Farmlands maps referenced. Although Prime Farmland, Farmland of Statewide Importance and Unique Farmland occur along many portions of the project alignment, all of the proposed improvements to the rail alignment would be constructed and operated within the existing railway rights-of-way, which has been dedicated to non-agricultural uses for over a century.

The ancillary facilities that may or would require property acquisition, including the proposed rail operations and maintenance facility to be located in the City of Sacramento, the proposed new station in Stockton, and the proposed Fresno Layover Facility are all proposed to be located on land identified as urban and built-up land by the Important Farmlands Maps.

The California Land Conservation Act (Williamson Act) was established in 1965 to protect agricultural lands from conversion to non-agricultural use. Owners of land placed under Williamson Act contract receive lower property tax rates, but must keep the land in agricultural production or related use for the ten-year contracts that are automatically renewed each subsequent year (after the initial ten year period) unless a notice of non-renewal is filed. According to the California Department of Conservation Williamson Act Lands County Maps for the most recent years available, there are extensive areas of land under Williamson Act Contracts along the railroad alignment(s) in Fresno, Kern, Kings, Madera, Merced, San Joaquin, and Stanislaus Counties. In Contra Costa County, there are very limited lands under Williamson Act Contracts along the railroad alignments. In Sacramento County there are no lands under Williamson Act Contracts closer to the developed portions of the City and only limited lands under contract along the UPRR Fresno Subdivision, but there are more extensive areas of lands under contract along the UPRR Sacramento Subdivision alignment. Along the Bakersfield to Los Angeles rail alignment, Williamson Act land along the rail alignment in Kern County are primarily on non-prime agricultural lands, including an area east of Tehachapi identified as in non-renewal. The only map of Williamson Act land available from the Department of Conservation File Transfer Protocol (FTP) website represented Catalina Island, so presumably there are no Williamson Act lands along the alignment in Los Angeles County. The 2008 Statewide Map of Williamson Act Contract Land shows no designated lands in Los Angeles County. Please refer to Appendix A for a copy of the Williamson Act maps referenced.

Although lands under Williamson Act contracts occur along many portions of the project alignment, all components of the proposed rail alignment improvements would be constructed and operated within the existing railway rights-of-way. The ancillary facilities that may or would require property acquisition, including the proposed rail operations and maintenance facility to be located in the City of Sacramento, the proposed new station in Stockton and the proposed Fresno Layover Facility are all proposed to be located on land identified as urban and built-up land by the Williamson Act Maps. Because all components of the proposed rail project would be constructed and operated within the existing railway rights-of-way which are maintained for railroad safety and operations and none of which is under Williamson Act contracts, or on land identified as urban/built-up, no Williamson Act contract lands are present within the project area of impact.

The proposed project would accommodate increased train traffic along the existing rail alignment, which has the potential to increase delays for vehicles, including farm equipment or other agriculture-related vehicles, waiting at railroad crossings. The project would not remove any existing crossings, and all grade-separated crossings (crossings where trains are separated from non-train traffic by a bridge or underpass) would continue to be grade-separated during construction and after completion of the project. This issue is addressed in greater detail under Section XVI Traffic/Transportation. The proposed project is not expected to result in substantial increased delays for agricultural vehicles that would result in significant adverse impacts to agricultural lands.

No significant adverse impact to any prime or unique farmlands, farmlands of statewide importance, or farmland under Williamson Act contracts would occur as a result of implementing the proposed project.

The proposed project would not traverse any areas or forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production, except for within the Tehachapi Pass area of the proposed Los Angeles to Bakersfield alignment. It is expected that initiating passenger rail along this alignment could be implemented within the existing rights-of-way or with minimal expansion.

No portion of the project has the potential to cause the rezoning of any land zoned for forest or timber uses.

Conclusion

Based on the analysis above, the proposed project would have no significant impact on forest lands, timberland, prime or unique farmlands, farmlands of statewide importance or farmland under Williamson Act contracts. No mitigation is required to minimize project impacts on these resources. The issues of agricultural, timberland and forest resources **will not** be carried forward to the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	✔	❑	❑	❑
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	✔	❑	❑	❑
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	✔	❑	❑	❑
d) Expose sensitive receptors to substantial pollutant concentrations?	✔	❑	❑	❑
e) Create objectionable odors affecting a substantial number of people?	✔	❑	❑	❑

SUBSTANTIATION:

The proposed project has the potential to result in significant impacts with respect to this issue; therefore, this issue **will be** included in the EIR to be prepared for the proposed project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	✔	❑	❑	❑
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	✔	❑	❑	❑
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	✔	❑	❑	❑
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	✔	❑	❑	❑
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	✔	❑	❑	❑
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	✔	❑	❑	❑

SUBSTANTIATION:

The proposed project has the potential to result in significant impacts with respect to this issue; therefore, this issue **will be** included in the EIR to be prepared for the proposed project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	✔	❑	❑	❑
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	✔	❑	❑	❑
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	✔	❑	❑	❑
d) Disturb any human remains, including those interred outside of formal cemeteries?	✔	❑	❑	❑

SUBSTANTIATION:

The proposed project has the potential to result in significant impacts with respect to this issue; therefore, this issue **will be** included in the EIR to be prepared for the proposed project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
$ Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	❑	✔	❑	❑
$ Strong seismic ground shaking?	❑	✔	❑	❑
$ Seismic-related ground failure, including liquefaction?	❑	✔	❑	❑
$ Landslides?	❑	✔	❑	❑
b) Result in substantial soil erosion or the loss of topsoil?	❑	✔	❑	❑
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	❑	✔	❑	❑
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	❑	✔	❑	❑
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	❑	❑	❑	✔

SUBSTANTIATION:

a. *Less Than Significant With Mitigation Incorporation* – Conceptually, it is easiest to discuss the San Joaquin Rail Corridor Project in terms of improvements to the existing track system that are expected to occur within the existing rail rights-of-way (installation of double or triple track, sidings, drainage facilities, etc.) and improvements associated with the ancillary facilities that would install and operate rail infrastructure support facilities at a new location, or would expand facilities and convert land use to support rail infrastructure (e.g., Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility, and Merced Layover Facility.)

A review of *Official Maps of Earthquake Fault Zones* delineated by the California Geological Survey through December 2010 under the Alquist-Priolo Earthquake Fault Zoning Act found that none of the proposed ancillary facilities would be located within or in the vicinity of Alquist-Priolo Special Studies Zone Boundaries. However, segments of the proposed rail alignment improvements would be located within Alquist-Priolo Special Studies Zone Boundaries, as are detailed below.

Bakersfield to Sacramento alignment as shown on Figures 1-2a, 1-2b and 1-2d: There are Alquist-Priolo Special Studies Zones in the Bakersfield region, extending north approximately to the community of Delano. There are no Alquist-Priolo Special Studies Zones north of Delano along the alignment north through Fresno, Merced, Stockton, and Sacramento counties. The **Pond Quadrangle** in Kern County shows the northernmost Alquist-Priolo Special Studies Zones in the rail vicinity along this route as located between one and one and a half miles east of the alignment, running roughly parallel to the railroad. The **Oildale Quadrangle** in Kern County shows Alquist-Priolo Special Studies Zones located in the mountainous terrain in the northwest section of the quadrangle, while the rail alignment is located in the far southeast of the quadrangle more than four miles from the Zones. Similarly, the **Oil Center Quadrangle** in Kern County shows Alquist-Priolo Special Studies Zones located in the western section of the quadrangle, while the rail alignment is located in the far southeast of the quadrangle more than 2.5 miles from the Zones.

Stockton to Oakland alignment as shown on Figure 1-2c: There are no Alquist-Priolo Special Studies Zones along this portion of the route east of Contra Costa County. The **Vine Hill Quadrangle** in the vicinity of Port Chicago shows that an Alquist-Priolo Special Studies Zone crosses perpendicular to the rail alignment along Pacheco Creek east of I-680. Continuing westward, the Mare Island Quadrangle in the vicinity of Pinole shows an Alquist-Priolo Special Studies Zone crosses the rail alignment in Richmond. The Richmond Quadrangle shows that an Alquist-Priolo Special Studies Zone crosses diagonal to the rail alignment in the San Pablo area continues to run roughly parallel to the railroad approximately two miles to the east as far south as Oakland.

BNSF Port Chicago to Richmond alignment as shown on Figure 1-6: The **Vine Hill Quadrangle** in the vicinity of Port Chicago shows that an Alquist-Priolo Special Studies Zone crosses perpendicular to the BNSF rail alignment along Pacheco Creek east of I-680. BNSF crosses the same Alquist-Priolo Special Studies Zone that the UPRR crosses; the UPRR crosses the zone north of the BNSF crossing.

Visalia to Hanford Route alignment as shown on Figure 1-4: There are no Alquist-Priolo Special Studies Zones along this portion of the alignment.

Los Angeles to Bakersfield Route as shown on Figure 1-5: The **Edison Quadrangle** east of Bakersfield shows that an Alquist-Priolo Special Studies Zone is located just north of the rail way in the community of Edison. Additional Alquist-Priolo Special Studies Zones are located one-half mile or farther to the north as the rail continues to the east. The **SW ¼ Breckenridge Mountain Quadrangle** shows that the rail way crosses an Alquist-Priolo Special Studies Zone as the track winds through the Tehachapi Pass near Bealville. The **SE ¼ Breckenridge Mountain Quadrangle** shows that the rail way crosses through an approximately mile-wide Alquist-Priolo Special Studies Zone as the track winds through the Tehachapi Pass south of Caliente Creek. The **Tehachapi South Quadrangle** shows that the rail way runs in the extreme northeast of the quadrangle while an Alquist-Priolo Special Studies Zone is located more than five miles to the south. The **Monolith Quadrangle** shows that the rail way runs within an Alquist-Priolo Special Studies Zone for approximately two miles in the vicinity of Cameron. The **Mojave Quadrangle** shows that the rail way runs parallel about half of a mile south of an Alquist-Priolo Special Studies Zone for approximately two miles in the northwest corner of the quadrangle. The **Palmdale Quadrangle** shows that the rail way crosses perpendicular to the San Andreas Fault and associated Alquist-Priolo Special Studies Zone just south of Palmdale. The **Newhall Quadrangle** shows that the rail way crosses an Alquist-Priolo Special Studies Zone just before the rail way turns south to Santa Clarita. The **Oat Mountain Quadrangle** shows that the rail way crosses several Alquist-Priolo Special Studies Zones north of the San Fernando Valley. The **San Fernando Quadrangle** shows that the rail way crosses several Alquist-Priolo Special Studies Zones in San Fernando. The Alquist-Priolo Special Studies Zones in the **Burbank Quadrangle** are in the far northeast of the quadrangle whereas the rail way is several miles to the west in the central portion of the quadrangle. The Alquist-Priolo Special Studies Zones in the **Hollywood Quadrangle** are in the far southwest of the quadrangle whereas the rail way is in the far northeast of the quadrangle.

The **Los Angeles Quadrangle** shows that the rail way runs more than two miles west of an Alquist-Priolo Special Studies Zones in the Pasadena area.

All components of the proposed rail alignment improvements would be constructed and operated within the existing railway rights-of-way; therefore, the rail system currently operates with the above referenced proximity to Alquist-Priolo Special Studies Zones. The proposed project would construct all infrastructure in accordance with the established standards of each railroad, including design standards that account for seismic activity and its effect on rail corridor design and operation. BNSF and UPRR maintain crews that monitor and repair any damage from natural hazards that may affect their main line tracks. The potential for fault rupture along the proposed alignment is highest within the Alquist-Priolo Special Studies Zones. Potential impacts can be mitigated to reduce impacts by implementing the following mitigation measures.

Under existing avoidance and minimization measures, in the event of significant seismic activity the track owners stop all trains in areas of concern and send out crews to ride the rail in search of any issues. In the event that issues are found with the rail, structural engineers evaluate issues and determine remediation measures, if required. This standard operating procedure would occur on any new segment of track constructed as part of the project, particularly at locations where surface rupture is most likely to occur, such as where tracks cross Alquist-Priolo Special Studies Zones. No mitigation is required because the existing standard operating procedure would avoid and minimize any adverse impacts associated with seismic activity.

Ground-shaking can cause damage by itself or through potential secondary effects such as fire and dam failure. Ground settlement may also occur in unconsolidated sediments saturated with water, which occur along portions of the alignment. These sediments represent the poorest kind of soil condition for resisting seismic shock waves. The changes that occur, such as liquefaction and loss of strength in fine-grained materials, can result in ground cracking, unequal settlement, subsidence, and other surface changes.

A great deal of soil compaction and settlement can also result from seismic ground shaking. If the sediments which compact during an earthquake are saturated with water, soil can liquefy and lose its capacity to support structures. The extent of damage ranges from minor displacement to total collapse of a structure. Engineering treatment of either the ground or structures, or both, can sometimes stabilize hazards, such as liquefaction. According to the General Plans for the cities and counties within which the proposed project improvements would occur, portions of the alignment are located within areas of liquefaction and subsidence hazard potential. Potential impacts can be mitigated to reduce impacts by implementing the following mitigation measures.

VI-1 ***The structural design and construction of new structures will, at a minimum, be in accordance with the requirements of the most recent Uniform Building Code (UBC) and California Building Code (CBC) including the latest supplements for the Groundshaking Zone within which they will occur, as described in the latest California Building Code and all other applicable City, County, State, and Federal laws, regulations and guidelines.***

VI-2 ***The proposed project rail infrastructure shall be designed to comply with the performance standard for Risk Class I & II, e.g., public facilities, as identified below:***

Risk Class I & II, Structures Critically Needed after Disaster: Structures which are critically needed after a disaster include important utility centers, fire stations, police stations, emergency communication facilities, hospitals, and critical transportation elements such as bridges and overpasses and smaller dams.

<u>Acceptable Damage</u>: Minor non-structural; facility should remain operational and safe, or be suitable for quick restoration of service.

Ancillary facilities including the Sacramento Maintenance Facility, new/refurbished Stockton Station, Fresno Layover Facility, and Merced Layover Facility shall be designed to comply with the performance standard for Risk Class III, as identified below:

Risk Class III: High occupancy structures; uses are required after disasters, i.e., places of assembly such as schools and churches.

<u>Acceptable Damage</u>: Some impairment of function acceptable; structure needs to remain operational.

The mitigation measures are designed to ensure that the proposed facilities are not subjected to significant risk associated with severe ground shaking, including liquefaction or subsidence, in the event of future seismic activity.

The vast majority of the proposed project area occurs within the generally flat San Joaquin Valley where landslide risk is minimal. The only locations where risk of landslide increases is the Bakersfield to Los Angeles alignment, which crosses over the Tehachapi Mountains, through Soledad Canyon and various locations between Lancaster and the San Fernando Valley; along the UPRR track from Richmond to Martinez; along the alternate BNSF track from Richmond to Port Chicago; and where infrastructure would cross or be located adjacent to streams or rivers. In addition to the many stream crossings along the railroad alignment, the Sacramento Maintenance Facility is located on land adjacent to the American River, where bluffs occur.

Under existing avoidance and minimization measures, in the event of significant rainfall or seismic activity that has the potential to trigger landslides, the track owners stop all trains in areas of concern and send out crews to ride the rail in search of any issues. In the event that issues are found with the rail, structural engineers evaluate issues and determine remediation measures, if required. This standard operating procedure would occur on any new segment of track constructed as part of the project, particularly at locations where landslides are most likely to occur, such as the aforementioned locations. No additional mitigation is required because the existing standard operating procedure in combination with mitigation measures VI-1 and VI-2 are sufficient to minimize the risk of significant adverse impacts of landslides resulting from the implementation of the proposed project.

b. *Less Than Significant With Mitigation Incorporation* – The State Water Resources Control Board (SWRCB) adopted the General Construction Activity Storm Water National Pollution Discharge Elimination System (General Permit) in 1992 thereby regulating construction activity that would result in the disturbance of five (5) acres or more. Water Quality Order 99-08-DWQ lowered threshold of regulated activity to one (1) acre in 2002. The proposed project will impact more than one acre of land; therefore, a Notice of Intent (NOI) with the SWRCB prior to initiation of construction activity must be filed. The General Permit requires that the project developer submit a NOI with SWRCB and authorizes discharge of stormwater associated with construction given implementation of a Storm Water Pollution Prevention Plan (SWPPP) that eliminates or reduces non-stormwater discharges to storm sewer systems and other “Waters” as defined by the Clean Water Act (CWA). The General Permit prohibits the discharge of material other than stormwater and all discharges that contain hazardous substances in excess of reportable quantities established at 40 Code of Federal Regulations 117.3 or CFR 302.4, unless a separate National Pollution Discharge Elimination System (NPDES) permit has been issued to regulate those discharges. Regardless of the need for a construction NPDES permit, the Project must implement Best Management Practices (BMPs) to reduce the potential for soil erosion or pollutants leaving the site and adversely affecting surface water.

New construction must conform to the appropriate Basin Plan water quality standards and applicable Stormwater NPDES Permit, which requires implementation of a Standard Urban Storm Water Mitigation Plan (SUSMP)/ Water Quality Management Plan (WQMP) with numerical design standards for BMPs. The BMPs to infiltrate and/or treat stormwater pollution are required to be incorporated into the design phase of new development and redevelopment in order to minimize the discharge of pollutants of concern. Numerical design standards ensure that stormwater runoff is managed for water quality and quantity concerns. Therefore, the following measure shall be implemented to reduce the effects of potential impacts to water quality from non-point source discharges to a less than significant level.

In the short term, construction activities associated with the San Joaquin Rail Corridor Project have some potential to increase soil erosion.

Mitigation measures are required to minimize erosion problems associated with wind and water, especially during the construction phase when trenches and cut slopes are exposed. During construction, the length of time vegetation and other cover is absent should be minimized. When cut slopes are exposed, the following measures shall be implemented in order to limit potentially significant adverse erosion impacts.

VI-3 ***Add protective covering of mulch, straw or synthetic material (erosion control blankets, tacking will be required). Mulch or straw must be certified to be free of invasive plant seed.***

VI-4 ***Limit the amount of area disturbed and the length of time slopes and barren ground are left exposed. After sub-surface infrastructure installation, soil shall be compacted to an elevation and density similar to pre-construction conditions.***

VI-5 ***Construct diversion dikes and interceptor ditches to divert stormwater away from construction areas.***

VI-6 ***Apply provisions of erosion and sediment control that reduce volume and velocity of flows and content of sediment to levels that do not cause significant rill or gully erosion in susceptible areas. For example, the project may install slope drains (conduits) and/or water-velocity-control devices to reduce concentrated high-velocity streams from developing. In addition, provide for restoration of areas that do become eroded.***

The above measures shall be implemented as part of a SWPPP and WQMP in order to reduce pollutants, such as sediment, from disturbed areas to the maximum extent practicable as defined by the Regional Water Quality Control Board (Regional Board) stormwater runoff adopted NPDES permits. The SWPPP prior to initiating each future second tier project shall be provided to the Regional Board for review and comment prior to construction. The WQMP shall be developed for implementation prior to completion of construction. Measures identified above shall be employed within the proposed project area as necessary.

After construction, soils underlying facilities and pavements will not be subject to erosion. The following mitigation will be required to ensure that exposed soils are not subject to significant erosion after completion of construction.

VI-7 ***After the construction phase, long-term erosion control shall be accomplished by keeping soils under vegetative cover, hardscape (pavement, gravel, or other hard cover) or by planting wind breaks. The type of vegetation used as wind breaks, if installed, shall include natural plants and must comply with the applicable Air quality Management District's standards.***

Implementation of the above measures as well as mitigation measures IX-1 and IX-2 (Hydrology and Water Quality) is considered sufficient to reduce potential impacts to a less than significant level. Please refer to Section IX, Hydrology and Water Quality for a full discussion of the hydrology and water quality issue. By meeting these requirements, potential erosion impacts related to installing the facilities would not cause any significant adverse erosion or sedimentation impacts.

c. *Less Than Significant With Mitigation Incorporation* – According to the General Plans for the cities and counties within which the proposed project improvements would occur, portions of the alignment are located within areas of liquefaction and subsidence hazard potential. The potential for project area soils to become unstable as a result of seismic activity or heavy rain is addressed under item (a) of this section, with mitigation included that, when implemented in conjunction with existing standard operating procedures designed to avoid and minimize hazards, would ensure that no significant adverse impact would occur. Other potential causes/contributors to soil instability include changes in the quantity of water stored underground. The proposed project would have no impacts on water consumption, other than minor amounts of water used to control construction dust or the incremental increase in water required to service increased rail service (domestic water uses at rail facilities and rail maintenance activities), and has no potential to raise or lower groundwater levels that could potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse. Please refer to Section IX Hydrology and Water Quality for more information regarding storm water management and equalization via culverts.

d. *Less Than Significant with Mitigation Incorporation* – Expansive soils, which are primarily clay soils, occur along the whole track alignment and can occur at the sites of the proposed support facilities. All proposed new tracks will be aligned adjacent to existing tracks. Historically, where tracks were installed in areas with expansive soil or other underlying materials that could not support the track high fill, these materials were overexcavated and replaced with structurally sound fill material, or structural foundations have been installed. Thus, where expansive soil, or other structurally unsound soil occurs along the existing track corridors the railroads have implemented engineering measures to protect the track from failure. The success of these measures is reflected in the long-term operation of the railroad along the San Joaquin Corridor without track failure.

When new tracks are engineered, one of the studies that is conducted includes borings along the alignment to determine whether the underlying soil or sediment is structurally sound, which includes tests for expansive soil. Based on the soil data collected along the proposed track alignment, specific engineering and construction methods are defined to compensate or eliminate any identified soil constraints. Although this type of pre-construction study is routine for all track construction activities, the following mitigation measure ensures that such studies will be completed prior to installing new track or new support facilities.

VI-8 Prior to completing engineering for future track(s) or support facilities, the Division of Rail shall ensure that essential soil and sediment studies have been completed to identify any soil constraints along the track alignment. The information from these studies shall be used to design the track or support facilities with the objective of ensuring adequate foundation support for the specific facility being designed.

With implementation of the above measure the potential for expansive soil or other related soil constraints to adversely impact future rail facilities will be avoided or mitigated to an acceptable level of foundation protection.

e. *No Impact* – The proposed project does not include the use of septic tanks or alternative wastewater disposal systems. Sewers are available for the disposal of wastewater within each of the urban areas where ancillary rail facilities are proposed that would include new or expanded needs for wastewater treatment. The project does not propose the use of septic tanks or alternative wastewater disposal systems where soils area incapable of adequately supporting such systems.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	✔	❑	❑	❑
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	✔	❑	❑	❑

SUBSTANTIATION:

The proposed project has the potential to result in significant impacts with respect to this issue; therefore, this issue **will be** included in the EIR to be prepared for the proposed project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	❑	✔	❑	❑
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	❑	❑	✔	❑
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	❑	❑	✔	❑
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	❑	✔	❑	❑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	❑	✔	❑	❑
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	❑	✔	❑	❑
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❑	❑	✔	❑
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	❑	❑	✔	❑

SUBSTANTIATION:

a. *Less Than Significant With Mitigation Incorporation* – The principal agency for managing contamination from illegal or accidental releases of hazardous materials and wastes in the State of California is the Department of Toxic Substances Control (DTSC). In addition to enforcing state regulations (California Code of Regulations (CCR) Titles 17, 19, and 22), the DTSC was granted authorization from the federal EPA in 1992 to be the agency responsible for regulating the generation, transport, and disposal of hazardous waste under the authority of the Resource Conservation and Recovery Act (RCRA) in California. Other agencies that may periodically coordinate with DTSC or with the enforcement of regulations that address site activities include the California Department of Transportation, California Highway Patrol, State Water Resources Control

Board, Regional Water Quality Control Board (RWQCB) jurisdictions within which the project occurs, Air Quality Management District jurisdictions within which the project occurs, and the city and county fire departments and offices of emergency services jurisdictions in which the project occurs.

In addition to the above regulatory agencies, BNSF and UPRR maintain their own internal teams to manage hazardous materials and wastes and to respond to train accidents that result in the spill of hazardous or toxic materials into the environment along their rail corridors. Management of hazardous and toxic materials being shipped by rail includes maintaining records of such materials being shipped on each train, standard response procedures, and trained personnel to deal with accidental spills when they occur.

Hazardous materials will routinely be utilized during short-term construction activities. Petroleum products, such as diesel fuel, gasoline, lubricants, etc. are required to support construction equipment in the field, and such materials can be accidentally released to the environment. Ongoing rail operations also involve the use and/or transport of hazardous substances. Federal, State and local regulatory agencies oversee hazardous substances handling, transport, and management in accordance with the statutes and regulations that these agencies administer. Railroads are not restricted on transportation routes; rather there are controls on the types of materials that can be transported and on the location of the materials in relation to possible sources of ignition (e.g., the locomotive).

Inherent to the use of hazardous materials is the risk of an accidental release. Because of this risk, Federal, State, and local agencies have established regulations to minimize the likelihood of such occurrences. There are two approaches to managing hazards: (1) minimize the potential release of hazardous or toxic substances into the environment; and (2) if released, have the resources and techniques on hand to respond to an accidental release, including controlling a release; managing any adverse exposure from a release; cleaning up (remediating) a release; and properly disposing of the material contaminated by the release.

Mitigation measures designed to reduce, control, or remediate potential accidental releases must be implemented to prevent the creation of new contaminated areas that may require remediation in the future and to minimize exposure of humans to public health risks from accidental releases. These measures are provided to reduce the potential for such accidents to occur (use of spill prevention countermeasure practices to minimize potential for accidental releases as part of construction activities); to immediately collect and store or remove the primary source of contamination, including soils; and to remediate any residual contamination to levels that do not exceed regulatory thresholds for allowable use in the future. By implementing these measures, potentially substantial adverse environmental impacts from accidental releases associated with construction of the proposed project can be reduced to a less than significant level.

VIII-1 All contaminated material removed from the project area of impact, as a result of an accidental release or otherwise, shall be delivered to a licensed treatment, disposal or recycling facility that has the appropriate systems to manage the contaminated material without significant impact on the environment.

VIII-2 Before determining that an area contaminated as a result of an accidental release is fully remediated, specific thresholds of acceptable clean-up shall be established (in reference to the appropriate regulatory statue) and sufficient samples shall be taken within the contaminated area to verify that these clean-up thresholds have been met.

With implementation of these measures the known contamination along the alignment can be properly managed to prevent any substantial adverse impacts to humans or the environment.

b. *Less Than Significant With Mitigation Incorporation* – As discussed under item (a) above, there is a potential for accidental release of hazardous materials both during construction and operation.

Accidental releases of hazardous materials during construction or operations are readily controlled to a less than significant level of hazard through control or remediation of the material accidentally released. Implementation of mitigation measures VII-1 and VII-2 can prevent any significant exposures to hazardous or toxic materials by the public or employees at the location of an accidental spill. These measures are sufficient to control or limit the adverse impact of accidental releases to a less than significant impact level.

c. *Less Than Significant Impact* – Conceptually, it is easiest to discuss the San Joaquin Rail Corridor Project in terms of improvements to the existing track system that are expected to occur within the existing rail rights-of-way (installation of double or triple track, sidings, drainage facilities, etc.) and improvements associated with the ancillary facilities that would install and operate rail infrastructure support facilities at a new location, or would expand facilities and convert land use to support rail infrastructure (Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility and Merced Layover Facility.) Potential impacts associated with the proposed Sacramento Maintenance facility, Stockton Station alternatives, and layover facilities are addressed separately after the discussion of the track improvements throughout the San Joaquin Corridor outlined in Figures 1-3a through 1-3h.

Hazardous materials would routinely be utilized during short-term construction activities. Petroleum products, such as diesel fuel, gasoline, lubricants, etc. are required to support construction equipment in the field, and such materials can be accidentally released to the environment. Ongoing rail operations also involve the use and transport of hazardous substances. Federal, State, and local regulatory agencies oversee hazardous substances handling, transport, and management, as well as the statutes and regulations that these agencies administer. Railroads are not restricted on transportation routes; rather there are controls on the types of materials that can be transported and on the location of the materials in relation to possible sources of ignition (e.g., the locomotive).

The proposed project would not convey trains along any alignment or to any destination where they do not already travel. The proposed facilities that would convert land use to rail uses, as detailed above, are all in locations where existing rail operations are adjacent to the proposed land conversion. While there would be an increased presence and increased types of operations at these sites, they do not represent an introduction of rail activities to a location where previously there were none in the vicinity. The proposed project would provide for more efficient flow of rail traffic, thereby reducing the potential for rail accidents, including those that might result in the release of hazardous materials in the vicinity of an existing or proposed school.

There are numerous schools along rail alignment, but only those located within a ¼ mile of a proposed rail expansion site are detailed below, because along the rest of the alignment the proposed project would not result in increased proximity to rail operations and it would not adversely impact the risk/hazard associated with rail operations.

<u>Sacramento Maintenance Facility</u>
Courtyard Private School is located across the existing railroad tracks to the south of the proposed Sacramento Maintenance Facility. No other known existing or proposed schools are located within one-quarter mile of the site. The proposed Sacramento Maintenance Facility would not increase the volume of passenger train traffic to the location, nor would it change the types of freight materials conveyed along rail from the existing conditions, but it would introduce rail maintenance activities to the area. The proposed rail maintenance activities are not projected to create a significant hazard to nearby uses or the general public.

<u>Stockton Amtrak Station</u>
Spanos Elementary School and Lafayette School are both located one-quarter mile northeast of the existing Stockton Amtrak Station, which is Alternative 5 for the proposed Stockton Station. Luther Burbank School is located one-quarter mile south of Alternative 4, the preferred alternative for the Stockton Amtrak Station relocation. Relocating or expanding the station would not change the

existing location of rail in the vicinity of either site, nor would expansion or operation of a passenger station introduce hazardous materials to either site.

Fresno Layover Facility Site

Saint Johns School is located about 600 feet northeast of the northern extent of the proposed Fresno Layover Facility Site. Jefferson Elementary, Sunshine School, UCSF Fresno Center for Medical Education and Research and Childtime are all located between 2,000 and 2,500 feet north of the of the northern extent of the proposed Fresno Layover Facility Site. The selection of the Fresno site for the layover facility would not change the existing proximity of rail to these school sites because the proposed facility would expand rail operations to the west and south.

Emerson School is located about 1,300 feet west of the southern extent of the proposed Fresno Layover Facility Site. The proposed Fresno Layover Facility would locate rail operations about 500 feet closer to Emerson School than under existing conditions.

Fresno Adult School is located about 2,000 feet north of the northwestern extent of the proposed Fresno Layover Facility. Fresno Special Education is located about 2,000 feet northwest of the northwestern extent of the proposed Fresno Layover Facility. The proposed expansion would locate rail activities about 170 feet closer to both schools than under existing conditions. The proposed layover facilities are not projected to create a significant hazard to nearby uses or the general public, and expanding the rail facilities such that they would be located closer to existing schools is not projected to cause a significant adverse impact.

Merced Layover Facility Site

John Muir Elementary School and Preschool are located about 250 feet north of existing rail yard that would be part of the expansion. Le Conte Kindergarten is located about 450 feet west of the western extent of the proposed Merced Layover Facility Site. Friends International Christian University is located about 2,000 feet west of the western extent of the proposed Merced Layover Facility Site. Merced Montessori School is located about 1,100 feet southwest of the western extent of the proposed Merced Layover Facility Site. Yosemite High School, Merced Adult School, and East Campus Educational Center Independence High School are all located about 1,400 feet south of the western extent of the proposed Merced Layover Facility Site. The expansion would locate rail activities about 100 feet closer to the schools than under existing conditions.

Hoover Middle School is located north of and across E. Santa Fe Avenue from the existing rail road tracks. The proposed expansion would locate the westernmost portion of the facility south of the rail and one block west of the middle school. The expanded facilities on the north side of the tracks would be located about 1,100 feet west of the middle school.

While at some of the specific sites listed above the proposed project would result in increased proximity to rail operations, the project would not adversely impact the risk/hazard associated with rail operations. No mitigation is required.

d. *Less Than Significant With Mitigation Incorporation* – Portions of the alignment would be located in the near vicinity of areas with known historic hazardous contamination, a list of which is provided in Appendix B. The list is derived from DTSC's EnviroStor Database, which includes Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, Hazardous Waste Permit Sites, Geotracker Leaking Underground Fuel Tank (LUFT) and Spills, Leaks, Investigation, and Cleanups (SLIC) sites. In summary, there are numerous hazardous cleanup sites, including superfund sites, along the project alignment. The list provided in Appendix B includes the site location, type of hazardous site, and information regarding regulatory oversight. Some sites have been certified while others are under continuing review. Sites on the LUFT and SLIC are included if the cases are open and adjacent to the project alignment, if they are on property currently or historically owned by the railroads, or the case is on or adjacent to a site identified in the project description for proposed project facilities. For those locations where known hazardous contamination occurs within the railroad property or in another location deemed most likely to be encountered by the proposed project, the information is included below. LUST or SLIC sites that

have been closed, even if on railroad property, are included in the appendix but not in the short list brought forward below.

UPRR from Sacramento to Stockton - western alignment
Union Pacific Railroad, Curtis Park (34400003)
3675 Western Pacific Avenue
Sacramento, CA 95818
Sacramento County
Site Type: State Response or NPL
Status: Active

Groundwater (other than drinking water) and soil have been impacted by historic railroad car maintenance activities. The Site is divided into active (24 acres) and inactive (about 70 acres) portions of the Rail Yard. The active portion is currently operating as a switching yard by UPRR. Land use restrictions apply. DTSC - Site Cleanup Program - Lead

Bakersfield to Oakland alignment
Santa Fe Railway Property - Wasco
7th and H Streets
Wasco, CA 93280
State Response Site - Land Use Restrictions
Certified / Operation & Maintenance as of 6/30/1997

DTSC issued a certification on June 30, 1997 of completion of removal actions in accordance to the approved Removal Action Workplan.

Former Burlington Northern Santa Fe Ice House
3090 E Church Ave
Fresno, CA 93721
State Response Site
Active
DTSC - Site Cleanup Program - Lead

Burlington Northern Santa Fe Railway Company
Adjoining USS Posco Steel Facility
Pittsburg, CA 94565
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead

The Site is currently owned and operated as a railroad right-of-way by BNSF. The Site consists of only a portion of the BNSF rights-of-way in Pittsburg, California. The Site encompasses a rectangular area of approximately 150-feet by 550-feet and contains 11 rail lines trending in an east-west direction. The rail lines are currently used to stage rail cars that are awaiting classification and transport. No prior ownership information was available; however, the Site has reportedly been used as a rail car staging area since at least the early 1940's. The Site is paralleled to the north by a UPRR right-of-way. Immediately north of the BNSF and UPRR rights-of-way is the USS-POSCO Industries (UPI) facility. The Site is bordered to the south by a residential development and to the east and west by adjacent portions of the BNSF rights-of-way.

Liquid Gold Oil Corp
Hoffman Blvd and S 47th St
Richmond, CA 94804
Federal Superfund Site
Land Use Restrictions
DTSC - Site Cleanup Program - Lead
US EPA

The site was owned by the Southern Pacific Transportation Company and is now owned by UPRR. From 1974 to 1982, the site was leased by Liquid Gold Oil Corporation to store, re-refine, and recycle oil and other substances. The hazardous substances stored in over 20 storage tanks and drums included waste motor oil, organic solvents, bunker oil, diesel fuel, oil-water emulsions and mixtures, and tank bottom waste. As a result of site operations, hazardous substances leaked or spilled onto the ground and were discharged into ponds, sumps, and ditches and drained into wetland areas. Subsequently, site remedial investigations were performed, remedial actions completed, and the site was de-listed by the U.S. Environmental Protection Agency from the National Priorities List in 1995.

Southern Pacific Right-of-Way Emeryville
West of 4525 Hollis Street
Emeryville, CA 94608
State Response Site
DTSC - Site Cleanup Program - Lead

The Site is located immediately adjacent to Pacific Gas and Electric Company's (PG&E) Materials Distribution Center. The Materials Distribution Center has served as a warehouse, repair shop, and storage yard since the early 1920's for equipment used by PG&E's substations and electrical distribution network. In the past, fluids in transformers and capacitors contained polychlorinated biphenyls (PCBs). The Site is currently owned by Chiron Corporation and Wareham Development. Chiron operates a research and development facility and the area where residual PCB-contaminated soil may be present is paved. Wareham Development has a parking lot on its property that it leases to Chiron. DTSC is currently evaluating whether land use restrictions on the area where residual contamination may be present are required.

UPRR Parcel D
North of Sherwin Avenue and Halleck Street
Emeryville, CA 94608
Voluntary Cleanup Site
DTSC - Site Cleanup Program

Site is a vacant parcel located to the north of the intersection of Sherwin Avenue and Halleck Street in Emeryville, California. The Site is bounded by the Sherwin-Williams Site on the east and north, UPRR tracks on the west, and the southern edge of Sherwin Avenue on the South. It incorporates the Technichem facility's Solid Waste Management Unit #6 on the southwest corner of the Site adjacent to the building that formerly housed Technichem. The City of Emeryville is preparing the Site for redevelopment. Under the MOA between the City of Emeryville, DTSC, and the Water Board, the City provided oversight for the Redevelopment Agency's site characterization activities and development of a Final Cleanup Plan for the Site.

AT and SF Railroad Property
Along Wood and 32nd Street
Oakland, CA 94607
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead

This property is part of Cypress Reconstruction Project in Oakland. The property is located west of Wood Street between 26th and 34th streets. The property was owned and operated by AT&SF Railroad since the late 1800's. The land use has been a railroad yard used to store rail cars in route to or returning from the Port of Oakland from the AT&SF Richmond rail yard. The property may have been contaminated from spills and leaks from railcars and general maintenance activities.

BNSF Wood Street Yard
Wood Street and West Grand Avenue
Oakland, CA 94607
State Response Site

Land Use Restrictions
Certified / Operation & Maintenance as of 6/28/2006
DTSC - Site Cleanup Program - Lead

Southern Pacific Oakland
1707 Wood Street
Oakland, CA 94607
State Response Site
RWQCB 2 - San Francisco Bay - Lead

Historical land uses have included a foundry, vehicle repair activities, rail terminal, door manufacturing operation, and training maintenance area. Known or suspected contaminates include: lead, petroleum hydrocarbons, PAH's, and volatile organic hydrocarbons.

Visalia to Hanford Route
UPRR - Goshen Junction
Effie
Goshen, CA 93227
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Port Chicago to Richmond on BNSF
Former BNSF Property, Rumrill Blvd. (70000080)
Rumrill Blvd at Chelsey Avenue
San Pablo, CA 94806
Site Type: Voluntary Cleanup

Potential Contaminants of Concern include Chromium VI and Halogenated Organic Compounds and Trichloroethylene (TCE). In 2002 DTSC issued an Imminent and Substantial Endangerment and Remedial Action Order to the Burlington Northern and Santa Fe Railroad Company.

Bakersfield to Los Angeles
Whittaker Bermite/Rail Station - Site A (19281203)
22116 West Soledad Canyon Road
Santa Clarita, CA 91350
Site Type: State Response
Status: Active

This site is identified as a 1/3 acre Santa Clarita Commuter Rail Station Site. It is comprised of a very small portion of the Whittaker Bermite RCRA facility. The PEA was conducted to facilitate the construction of the Metrolink Station. Additional investigation and cleanup is required for impacted soil and groundwater. The cleanup will be part of the former Whittaker-Bermite site wide remedial plans.

Southern Pacific - Taylor Yard/active (19470006)
2800 Kerr Street
Los Angeles, CA 90039
Site Type: State Response
Status: Active

This site is the active or operational portion of a 243-acre rail yard. Routine maintenance and major diesel locomotive service and repair have been conducted at this site for nearly 100 years. Areas of concern include large holding ponds, several former aboveground and underground tank locations, and a rubbish pile.

Taylor Yard - Parcel C (60001553)
Northwest of Granada St and San Fernando Road

Los Angeles, CA 90039
Site Type: Voluntary Cleanup
Status: Active

The Taylor Yard Parcel C had previously undergone excavation and in-situ remediation in the 1990s as part of the larger Taylor Yard Sale Parcel.

Union Pacific Railroad - Cornfield Yard
1245 North Spring St
Los Angeles, CA 90012
Cleanup Program Site
Cleanup Status: Open - Verification Monitoring

The site is a former Union Pacific Railroad facility that has been converted to use for the Metro Rail Gold Line and as a park. Groundwater is impacted primarily by benzene.

Union Pacific/Railroad Company
1322 Broadway N
Los Angeles, CA 90012
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

LA to Pasadena Metro Blue Line Construction Author
Los Angeles, CA
Cleanup Program Site
Cleanup Status: Open - Site Assessment as of 1/5/2001 – no further information provided

Metro Rail
Union Station
Los Angeles, CA 90023
Cleanup Program Site
Cleanup Status: Open as of 1/1/1965 – no further information provided

As detailed above and in Appendix B, there are multiple sites along the project of impact where there is a potential for the proposed project construction activities to encounter known or unknown contamination. If contamination is encountered in the course of project implementation, mitigation measures are incorporated to remediate or avoid any contamination to prevent any significant adverse effects due to hazardous materials. The accidental discovery of contamination would be reported to the appropriate regulatory agencies and any remediation actions would be coordinated with these agencies.

VIII-3 The construction contractor shall halt activities in the vicinity if the site appearance (discolored soil, etc) suggests that contamination has occurred on the site until findings can be reviewed by a qualified industrial hygienist.

VIII-4 In the event that contamination within the area of impact is discovered after construction is initiated, the project proponent shall retain a qualified industrial hygienist to characterize the type and extent of the contamination, contain the contamination and oversee the proper removal and disposal of contamination in accordance with an approved work plan, and all applicable laws, regulations and standards.

Implementation of these measures can ensure that the proposed San Joaquin Rail Corridor Project improvements would not be developed in a manner that could cause significant hazards to the public or environment from historic or existing contamination.

e&f. *Less Than Significant with Implementation of Mitigation* – The Airport Land Use Commissions of the counties within which the proposed project would be located have either adopted comprehensive airport land use plans that cover multiple public use airports within their jurisdiction, or they have adopted individual airport land use plans for public use airports within their jurisdiction. The documents vary in the level of detail provided, but all include basic maps showing the extent of noise contours that exceed certain thresholds (typically 65 db CNEL) and all show safety zones surrounding the airport. Some also provide maps depicting transitional or conical "imaginary surfaces" where, for example, height restrictions may apply to very tall structures.

The **Los Angeles County** Airport Land Use Plan adopted December 19, 1991 and revised December 1, 2004 includes public use airports of Los Angeles County with the exception of Fox Airfield, which is covered in the General William J. Fox Airfield Land Use Compatibility Plan adopted December 1, 2004. According to the Plan, the following portions of the proposed project are located within restricted areas of the following Los Angeles County airports.

- A portion of the Bakersfield to Los Angeles rail alignment is within airport influence area, the Runway Protection Zone and the 65 CNEL contour of the Burbank/Glendale /Pasadena Airport.

- A portion of the Bakersfield to Los Angeles rail alignment is within airport influence area and the 65 CNEL contour of the Palmdale Airport/USAF Plant 42.

- A portion of the Bakersfield to Los Angeles rail alignment is within the airport influence area, the Runway Protection Zone and the 65 CNEL contour of the Whiteman Airport.

- A portion of the Bakersfield to Los Angeles rail alignment is within airport influence area and Zone D of the General William J. Fox Airfield. The Plan states that there is no concern with regard to any object up to 100 feet tall unless it is located on high ground within *Compatibility Zone D*. Objects taller than 100 feet require Federal Aviation Regulations (FAR) Part 77 review.

The **Kern County** Airport Land Use Compatibility Plan dated March 29, 2011 includes public, private (public use), and military airports. According to the Plan, the following portions of the proposed project are located within restricted areas of the following Kern County airports.

- A portion of the Bakersfield to Los Angeles alignment is within airport influence area, the 65 dBA CNEL contour and the single event 90 dB CNEL (as of 2001) for Mojave Airport.

- A portion of the Bakersfield to Los Angeles alignment is within airport influence area and the terrain penetration area for the Tehachapi Municipal Airport.

- A portion of the Bakersfield to Fresno alignment is within the Airspace Plan for the Wasco-Kern County Airport in the portion marked as conical surface 20:1. The rail alignment is not located within any of the other influence areas of this airport.

The **Kings County** Airport Land Use Compatibility Plan dated July 1994 includes public and private (public use) airports. According to the Plan, the following portions of the proposed project are located within restricted areas of the following Kings County airports.

- A portion of the Bakersfield to Fresno alignment is within the Airspace Plan for the Corcoran Airport in the portion marked as conical surface 20:1. The rail alignment is not located within any of the other influence areas.

- A portion of the Bakersfield to Fresno alignment is within the Airspace Plan for the Hanford Airport in the portion marked as horizontal surface. The rail alignment is not located within any of the other influence areas.

The Tulare County Comprehensive Airport Land Use Plan adopted June 24, 1992 and amended November 30, 1995 includes public and private (public use) airports.

- A portion of the proposed Visalia to Hanford Route railroad alignment runs approximately 7,500 feet to the north of the Visalia Municipal Airport property boundary located at 9501 Airport Drive in Visalia, CA. No portions of the rail alignment are located within the 60 dB contour as depicted in the document. The copy of the Plan provided by Tulare County did not include a map depicting FAR Part 77 Surfaces. Proximity of the airport to the rail alignment and the orientation of the runway suggest that there is potential for the alignment to fall within 20:1 Conical Surface height restriction areas.

No other Tulare County airport documented in the Plan is located within the vicinity of proposed San Joaquin Rail Corridor improvements.

Airport Land Use Commission of **Fresno County** website provides links to the most recently adopted Airports Land Use Plans and Maps within the County. Review of the Coalinga Airport Land Use Plan, Fresno Yosemite International Airport Land Use Plan, Fresno-Chandler Downtown Airport Land Use Policy Plan, Harris Ranch Land Use Plan, Reedley Airport Land Use Plan, and Selma-Reedley-Firebaugh-Mendota Airports Land Use Plans indicates that the proposed project rail alignment improvements, including the Fresno Layover Facility, are not within influence area of any of the above referenced airports.

- A portion of the Fresno to Stockton alignment is within the Primary Review Area boundary and within the Horizontal Surface boundary for the Sierra Sky Park as identified in the Sierra Sky Park Land Use Policy Plan adopted August 1985 as amended September 16, 1998. The rail alignment is not located within the 60 CNEL noise boundary.

Madera County Airport Land Use Compatibility Plan adopted December 16, 1993 covers two municipal airports within the County: Chowchilla Municipal Airport and Madera Municipal Airport. The Airspace Plan for both airports is only partially included in the document available from the website, but it is clear in the document that no part of the alignment is located within noise contours or safety zones of either airport. The project is not located in the vicinity of Chowchilla Municipal Airport. The County did not respond to a request for the Madera Municipal Airspace Plan that would indicate if the proposed project traverses imaginary surfaces, such as the transitional zones.

The September 2011 Draft - **Merced County** Airport Land Use Compatibility Plan includes each of the five public use airports within the County. While the ALUC has not been adopted at the time of this writing, it provides information regarding the proximity and airport zones with respect to the proposed project improvements. According to the Plan, the following portions of the proposed project are located within restricted areas of the following Merced County airports.

- A portion of the Fresno to Stockton rail alignment is located within the airport influence area in zones B2, C, and D of the Castle Airport. In zones B2 and C object height is generally not restricted to less than 100 feet except lateral to the runway. In B2 noise impact may exceed CNEL 55 dB, in C and D noise impact is typically less than CNEL 55 dB with frequent noise intrusion. In Zone D the object height concern is with respect to single objects, such as antennas, that exceed 150 feet in height.

- A portion of the Fresno to Stockton rail alignment is located within the airport influence area in Zone D of the Merced Regional Airport. The potential Merced Layover Facility site is located within the conical surface slope.

- A portion of the Fresno to Stockton rail alignment is located within the airport influence area in Zone D of the Turlock Municipal Airport. The rail alignment is also located within the conical surface slope of a proposed runway at this airport.

The **Stanislaus County** Airport Land Use Compatibility Plan adopted August 3, 1978 as amended May 20, 2004 includes public use airports within the County. According to the Plan, the following portions of the proposed project are located within restricted areas of the following Stanislaus County airports.

- A portion of the Fresno to Stockton rail alignment is located within the airport influence Modesto City-County Airport.

The 2009 Final **San Joaquin County** Airport Land Use Compatibility Plan includes public use airports within the County. According to the Plan, the following portions of the proposed project are located within restricted areas of the following San Joaquin County airports.

- Portions of the western alignment of the UPRR Stockton to Sacramento alignment are within the Part 77 Horizontal Surface of Kingdon Airpark.

- Portions of the eastern alignment of the UPRR Stockton to Sacramento alignment are within the Part 77 Horizontal Surface area, the 95 dB Single Event Contour and the 2008 and 2028 marginal effect noise exposure contour of Lodi Airport.

- Portions of the western alignment of the UPRR Stockton to Sacramento alignment are within the Part 77 Horizontal Surface area of Lodi Airpark.

Individual Comprehensive Land Use Plans (CLUPs) have been adopted for airports in **Sacramento County.** Review of each CLUP as linked from the Sacramento Council of Governments website http://www.sacog.org/airport/clups.cfm accessed March 13, 2012 found that the following portions of the proposed project are located within restricted areas of the following Sacramento County airports.

- Portions of the western alignment of the UPRR Stockton to Sacramento alignment are within the airport influence area, the 65 CNEL noise contour, the Safety Zone 2 (approach and departure zone) and the Overflight Zone of Franklin Field.

- Portions of the western alignment of the UPRR Stockton to Sacramento alignment are within the Approach and Departure Zone 2 and the Overflight Zone of Sacramento Executive Airport.

Review of the **Contra Costa County** Airport Land Use Compatibility Plan adopted December 13, 2000 found that the following portions of the proposed project are located within restricted areas of the following Contra Costa County airport.

- Portions of the UPRR alignment from Antioch to Oakland are within the airport influence area, approach surface, transitional surface, and critical TERPS airspace of the Buchanan Field Executive Airport.

- Portions of the BNSF alignment from Port Chicago to Richmond are within the airport influence area, the 55-60db CNEL contour, approach surface, horizontal surface, transitional surface, and critical TERPS airspace of the Buchanan Field Executive Airport.

As indicated by the information provided above, the proposed San Joaquin Rail Corridor Project would include improvements located within the vicinity, and within specific safety zones, of numerous public-use airports. No known private airstrips are located along the corridor. The project has the potential to result in a safety hazard if improvements are not coordinated in accordance with FAA safety regulations. The following mitigation measure is required.

VIII-5 At locations where proposed improvements would be located within airport safety zones that restrict the height of structures, all improvements will be demonstrated to be below the restricted height or measures will be taken to minimize adverse impacts. For example, where a new track will be installed

within a height restriction zone that the train engine on the railbed could violate, the new track would be installed on the far side of the existing track further away from the runway so as to minimize intrusion into the airspace.

g. *Less Than Significant Impact* – Since the proposed project provides for more efficient flow of rail traffic, the potential for rail operations to interfere with an adopted emergency response plan or emergency evacuation plan over the long-term would be reduced. BNSF and UPRR emergency response capabilities will remain the same and the ability to respond to accidents will remain the same after completion of the project as before. The incremental increase in rail traffic along the alignments has the potential to increase delay times at at-grade cross streets, but this increase in delay would occur with or without the project as rail traffic increases. The proposed project itself would accommodate the increased rail traffic in a manner that reduces train delays; and, therefore delays at cross streets, by providing the infrastructure to allow trains to pass each other with fewer stoppages and less slowing than would otherwise occur. The net effect of the proposed project is to provide a comparable or improved level of response capability in the event of an emergency response or evacuation after project completion during future operations relative to the existing conditions.

The construction activities associated with implementation of the proposed project would be temporary and localized. Short-term access disruptions would occur when the proposed infrastructure is installed. It typically requires about a year to install two miles of new track from initial grading to final inspection, with some variation in construction time depending upon whether there are at-grade crossings and/or bridges included in the segment. Impacts to at-grade cross streets would be managed to minimize the amount of time that cross traffic would be impacted, but short term impacts would occur. Please refer to Section XVI Traffic/Transportation item (e) and Section XIV Public Services for a full discussion of emergency access issues. No mitigation is required under this item.

h. *Less Than Significant Impact* – The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) Draft Fire Hazard Safety Zones in Local Responsibility Area Map dated September 17, 2007 and the FRAP Fire Hazard Severity Zone in State Responsibility Areas adopted on November 7, 2007 shows that most of the project alignment is located within unzoned areas of fire hazard. The FRAP draft County maps indicate that the areas shown as unzoned in the statewide map consist of non-wildland fuels (rock, agriculture and water), and thus the unzoned areas are considered areas of low wildland fire risk in this analysis. Most of the proposed project occurs within Local Responsibility Areas. There are scattered areas of moderate fire hazard both in the Local Responsibility Areas and in State Responsibility Areas. The State Responsibility Areas are generally located in Contra Costa County, where the alignment crosses through areas of high fire hazard, as well as along the Bakersfield to Los Angeles alignment in Kern and Los Angeles County, where the alignment also crosses areas of high and very high fire hazard. Local Responsibility Areas along the Bakersfield to Los Angeles alignment also include areas of high and very high fire hazard. The FRAP Draft Fire Hazard Severity Zoning Map for Sacramento County shows that the Sacramento Maintenance Facility is located in an area along the American River identified as a moderate fire hazard. All of the other ancillary facilities (Stockton Station, Fresno Layover Facility, and Merced Layover Facility) are identified in the FRAP draft county maps for each location as being located in urbanized areas that are not in a fire hazard area.

The rail corridors of the San Joaquin Rail Corridor Project are owned and maintained by BNSF and UPRR solely for the support of rail operations. These corridors range between 100 feet and 200 feet in width. Federal rules prevent the introduction of vegetation that could pose a fire or other safety hazard to rail operations within these corridors. Existing maintenance operations along the corridors minimize fire hazard. Over the long-term, the installation and operation of the proposed rail improvements would facilitate more efficient movement of trains along the corridors, which would reduce the amount of time that a train spends at any one point, such as at an existing road that crosses the tracks at grade. Thus, the long-term impact of the proposed project would result in

better emergency response capabilities, including better wildland fire response capacities for vehicles traveling by land.

Based on the analysis above, the proposed project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Conclusion

Based on the analysis presented above, hazards and hazardous material issues are not forecast to experience significant adverse impacts from project implementation as long as the identified mitigation measures are implemented during the project development. No further analysis of hazards and hazardous material issues is required. The issues of hazards and hazardous materials **will not** be carried forward to the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	❑	✔	❑	❑
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	❑	❑	❑	✔
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite?	✔	❑	❑	❑
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?	✔	❑	❑	❑
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	❑	✔	❑	❑
f) Otherwise substantially degrade water quality?	❑	✔	❑	❑
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	❑	❑	❑	✔
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	✔	❑	❑	❑
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	❑	❑	✔	❑
j) Inundation by seiche, tsunami, or mudflow?	❑	❑	✔	❑

SUBSTANTIATION:

a. *Less Than Significant With Mitigation Incorporation* – The proposed project would result in increases in stormwater volumes both along the Corridor alignment and at individual site developments due to the increase in impervious areas after project implementation. Site improvements associated with the San Joaquin Rail Corridor Project would include storm water drainage modifications and additions. The post-construction storm drainage system would be sized to accommodate a 100-year storm event. Small amounts of urban pollutants, including petroleum products (motor oil, antifreeze, etc.) associated with rail facility operations and maintenance, could be introduced to stormwater

The State Water Resources Control Board (SWRCB) adopted the General Construction Activity Storm Water National Pollution Discharge Elimination System (General Permit) in 1992 thereby regulating construction activity that would result in the disturbance of five (5) acres or more. Water Quality Order 99-08-DWQ lowered threshold of regulated activity to one (1) acre in 2002. The proposed project will impact more than one acre of land; therefore, a Notice of Intent (NOI) with the SWRCB prior to initiation of construction activity must be filed. The General Permit requires that the project developer submit a NOI with SWRCB and authorizes discharge of stormwater associated with construction given implementation of a Storm Water Pollution Prevention Plan (SWPPP) that eliminates or reduces non-stormwater discharges to storm sewer systems and other "Waters" as defined by the Clean Water Act (CWA). The General Permit prohibits the discharge of material other than stormwater and all discharges that contain hazardous substances in excess of reportable quantities established at 40 Code of Federal Regulations 117.3 or CFR 302.4, unless a separate National Pollution Discharge Elimination System (NPDES) permit has been issued to regulate those discharges. Regardless of the need for a construction NPDES permit, the Project must implement Best Management Practices (BMPs) to reduce the potential for soil erosion or pollutants leaving the site and adversely affecting surface water.

New construction must conform to the appropriate Basin Plan water quality standards and applicable Stormwater NPDES Permit, which requires implementation of a Standard Urban Storm Water Mitigation Plan (SUSMP)/ Water Quality Management Plan (WQMP) with numerical design standards for BMPs. The BMPs to infiltrate and/or treat stormwater pollution are required to be incorporated into the design phase of new development and redevelopment in order to minimize the discharge of pollutants of concern. Numerical design standards ensure that stormwater runoff is managed for water quality and quantity concerns. Therefore, the following measure shall be implemented to reduce the effects of potential impacts to water quality from non-point source discharges to a less than significant level.

IX-1 ***The construction contractor shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) that specifies Best Management Practices that will be implemented to prevent construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving offsite. The SWPPP shall be developed with the goal of achieving a reduction in pollutants both during and following construction to control urban runoff to the maximum extent practicable based on available, feasible best management practices. The SWPPP and the monitoring program for the construction projects shall be consistent with the requirements of the latest version of the State's General Construction Activity Storm Water Permit (General Permit) and the applicable NPDES Permit, which will depend upon the county within which construction is occurring.***

The following items should be included in the SWPPP:

- ***The length of trenches that can be left open at any given time should be limited to that needed to reasonably perform construction activities. This will serve to reduce the amount of backfill stored onsite at any given time.***

- ***Backfill material should not be stored in areas which are subject to the erosive flows of water.***

- ***Measures such as the use of straw bales, sandbags, silt fencing, or detention basins shall be used to capture and hold eroded material for future cleanup.***

- ***Rainfall will be prevented from entering material and waste storage areas and pollution-laden surfaces.***

- ***Construction-related contaminants will be prevented from leaving the site and polluting waterways.***

- ***Replanting and hydroseeding of native vegetation will be implemented to reduce slope erosion and filter runoff.***

- ***A spill prevention control and remediation plan to control release of hazardous substances shall be included.***

IX-2 The Project Proponent shall prepare and implement a Water Quality Management Plan (WQMP) that specifies Best Management Practices that will be implemented to prevent long-term surface runoff from discharge of pollutants from sites on which construction has been completed. The WQMP shall be developed with the goal of achieving a reduction in pollutants following construction in order to control urban runoff pollution to the maximum extent practicable based on available, feasible best management practices.

In addition, Section VI Geology and Soils mitigation measures VI-3 through VI-6 are required to minimize erosion problems associated with wind and water, especially during the construction phase when trenches and cut slopes are exposed. These measures require the minimization of exposed soils, the use of mulch or other material to reduce erosion and construction of diversion dikes, slope drains or similar methods to reduce erosive flows and limit potentially significant adverse erosion impacts during construction. After construction, soils underlying facilities and pavements will not be subject to erosion. Mitigation measure VI-7 requires that exposed soils are not subject to significant erosion after completion of construction. Due to the proposed landscaped or hard-surfaced nature of the majority of the San Joaquin Rail Corridor Project areas of impact after construction, the potential for substantial long-term soil erosion to occur is considered less than significant with implementation of Mitigation Measures VI-3 through VI-7 and IX-1 and IX-2. In combination with implementation of BNSF and UPRR, adopted BMPs designed to control discharges of pollution that could cause a significant adverse impact to surface water quality to the maximum extent practicable as defined by the appropriate Regional Water Quality Control Board (Regional Board), potential impacts are reduced to a less than significant level.

b. *Less Than Significant Impact* – The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. The project does not propose any groundwater extraction or major new demands on the water supply. In the short-term, the project construction would require water to minimize dust. The water required for construction activities (dust control, etc.) is forecast to be about 30,000 gallons per day of construction for the track and associated activities. This volume of water will place a short-term demand on local water supplies, which are considered adequate to meet this construction water demand. Water used in construction activities is often from non-potable sources. The short-term demand by the proposed project is not forecast to cause significant water supply impacts.

The project would require an incremental increase in water over the long-term to service an increased number of passenger trains, both for potable and sanitary needs on trains and at

stations. Each Amtrak passenger train carries about 1,000 gallons of fresh water. The tanks are filled in either Oakland at the north end of the passenger train system or in Bakersfield at the south end of the system. As the trains are serviced the water tanks are "topped off" for the next day's runs. Approximately 250 gallons of fresh water is used per train trip. With train operations increasing from 12 trains per day to 22 trains per day, this represents an increase in potable water consumption of approximately 2,500 gallons per day. This equates to approximately 912,500 gallons per year, or about 2.8 acre-feet per year. However the increased water demand is expected to be negligible in terms of the overall use of water by agriculture and urban areas in the San Joaquin Rail Corridor, which use several million acre feet per year.

The project would not interfere substantially with groundwater recharge. The proposed project would have no impact on existing recharge basins or spreading grounds. Along the existing tracks at most locations, storm water runoff from the partially previous track high fill drains to a swale adjacent to the high fill but within the rail rights-of-way. From here the runoff either percolates into the ground or flows to an existing man-made or natural drainage system. This drainage system will be maintained along the future tracks and flows will not be substantially increased as a result of adding another track as summarized in the project description. The net result is that the installation of additional track along much of the Corridor alignment will not substantially reduce groundwater percolation when compared to the existing condition along the tracks. Improvements associated with the ancillary facilities that would install and operate rail infrastructure support facilities at a new location, or would expand facilities and convert land use to support rail infrastructure (Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility and Merced Layover Facility) require short-term retention of incremental surface runoff on the sites of these facilities.

Based on the above analysis, adverse impact to groundwater resources would not result from implementing the proposed project, and no mitigation is required.

c. *Potentially Significant Impact* – This issue will be evaluated in the EIR.

d. *Potentially Significant Impact* – This issue will be evaluated in the EIR.

e. *Less Than Significant With Mitigation Incorporation* – Please refer to the discussion under item (a) of this Section. No additional mitigation is required under this item.

f. *Less Than Significant With Mitigation Incorporation* – Please refer to the discussion under item (a) of this Section. No additional mitigation is required under this item.

g. *No Impact* – The proposed project does not directly or indirectly involve housing or housing resources. Therefore, it has no potential to expose housing to 100-flood hazards.

h. *Potentially Significant Impact* – This issue will be evaluated in the EIR.

i. *Less Than Significant Impact* – There are numerous dams and levees protecting land that includes the rail alignment throughout the San Joaquin Rail Corridor. Dam safety is regulated by the State Department of Water Resources, Division of Safety of Dams. Government Code Section 8589.5 requires dam owners to submit copies of inundation maps to the Governor's Office of Emergency Services. As discussed under item (h) of this Section, rail infrastructure is placed on highfill that at times is the only land in the vicinity not included within the FEMA 100-year floodplain. The design standards of BNSF and UPRR add an additional level of protection from flood hazards along the alignment beyond the protection provided by dams and levees. However, even given the extra level of protection from flood hazards afforded by standard design practices, there is a potential for dam or levee failure to result in damage to rail facilities. The proposed project would not install rail infrastructure in locations where it does not already occur in the immediate vicinity, so potential adverse impacts to rail infrastructure from levee or dam failure already occurs in locations where the San Joaquin Rail Corridor Project would be exposed to such impacts.

Under existing avoidance and minimization measures, in the event of significant seismic activity or rainfall that could result in dam or levee failure, the track owners stop all trains in areas of concern and send out crews to ride the rail in search of any issues. In the event that issues are found with the rail, structural engineers evaluate issues and determine remediation measures, if required. This standard operating procedure would occur on any new segment of track constructed as part of the project, particularly at locations where flooding is most likely to occur, such as where tracks cross rivers or streams or areas protected by levees. No mitigation is required because the existing standard operating procedure would avoid and minimize any adverse impacts associated with dam or levee failure.

j. *Less Than Significant Impact* – The only portion of the proposed project within sufficient proximity to the ocean to be potentially susceptible to tsunami risks would occur in Contra Costa County. According to the Contra Costa County General Plan, the maximum wave height recorded at the Golden Gate Tide Gage between 1868 and 1968 was 7.4 feet. Wave height diminishes by about half by the time waves reach Richmond from the Golden Gate and dissipate completely before reaching Carquinez Strait where the City of Martinez is located. The General Plan assumes that future tsunami generated waves would be of similar maximum height. If the maximum tsunami generated wave height in the Richmond area would be less than 4-feet in height, and the typical height of highfill on which rail is installed is 5 feet above surrounding surfaces, tsunami waves are not of concern for the proposed alignment infrastructure in Richmond. The only portion of the alignment infrastructure close enough to the coast that tsunami waves might be of concern would be around the point towards Martinez on UPRR track. Under existing avoidance and minimization measures, in the event of a tsunami in the vicinity of this rail alignment, the track owners stop all trains in areas of concern and send out crews to ride the rail in search of any issues. In the event that issues are found with the rail, structural engineers evaluate issues and determine remediation measures, if required. This standard operating procedure would occur on any new segment of track constructed as part of the project, particularly at locations where tsunami waves would be most likely to occur. No mitigation is required because the existing standard operating procedure would avoid and minimize any adverse impacts associated with a tsunami.

Seiche can occur on closed bodies of water after an earthquake. There are no recorded occurrences of seiche in the Bay Area according to the Contra Costa County General Plan, which is where the largest bodies of water along the project area of impact occur. Potential for adverse impacts to the proposed project from seiche is considered less than significant, because the impacts are generally less substantial than from tsunami, which the above analysis has already determined to be less than significant, and because along most of the alignment there are no large bodies of water capable of causing substantial flooding impacts. Further, as noted previously, existing avoidance and minimization measures in place by the track owners include stopping trains in areas of concern and sending out crews to ride the rail in search of any issues in the event of significant seismic activity, such as would be capable of generating dangerous seiche activity. In the event that issues are found with the rail, structural engineers evaluate issues and determine remediation measures, if required. This standard operating procedure would occur on any new segment of track constructed as part of the project, particularly at locations where seiche is most likely to occur, such as where tracks cross or are located in the vicinity of large bodies of water. No mitigation is required because the existing standard operating procedure would avoid and minimize any adverse impacts associated with seiche.

Finally, the potential for mudflow to impact rail infrastructure occurs along portions of the alignment, particularly where infrastructure is located in hilly terrain or near the base of diverse topography. The same avoidance and minimization measures noted above for seiche apply during and immediately after periods of substantial rainfall when mudflow is likely to occur. Again, no mitigation is required because the existing standard operating procedure would avoid and minimize any adverse impacts associated with mudflow.

<u>Conclusion</u>

Based on the analysis presented above, most hydrology and water quality issues are not forecast to experience significant adverse impacts from project implementation as long as the identified mitigation measures are implemented during the project development. The proposed project has the potential to result in significant impacts with respect to drainage impacts and placing structures within a 100-year floodplain; therefore, these issues **will be** included in the EIR to be prepared for the proposed project. The issues of water quality, ground water impacts, impacts from dam or levee failure, seiche, tsunami or mudflow and placing housing within a 100-year floodplain **will not** be carried forward to the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	❑	❑	✔	❑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	❑	❑	✔	❑
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	✔	❑	❑	❑

SUBSTANTIATION:

a&b. *Less Than Significant Impact* – As discussed previously, it is easiest to review the San Joaquin Rail Corridor Project in terms of improvements to the existing track system that are expected to occur within the existing rail rights-of-way (installation of double or triple track, sidings, drainage facilities, etc.) and improvements associated with the ancillary facilities that would install and operate rail infrastructure support facilities at a new location, or would expand facilities and convert land use to support rail infrastructure (e.g., Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility, and Merced Layover Facility.) Potential impacts associated with the proposed Sacramento Maintenance facility, Stockton Station alternatives, and layover facilities are addressed separately after the discussion of the track improvements throughout the San Joaquin Corridor outlined in Figures 1-3a through 1-3h.

The proposed San Joaquin Rail Corridor Project infrastructure would generally be installed within the existing track rights-of-way. The land use setting for the project area includes a variety of rural and urban uses and the existing BNSF and UPRR rail transportation corridors. The track and siding upgrades outlined in Figures 1-3a through 1-3h would generally occur within the rail corridor rights-of-way, with limited rights-of-way acquisition if any, and would not change the existing land use of the rail corridor or the surrounding parcels.

The proposed project is designed to meet the expected long-term increase in passenger rail operations. In addition, future commercial demand for rail transport is expected to increase freight rail operations, and the project design features would provide for more efficient handling of greater rail volume, both passenger and freight. Increased rail traffic will require increased frequency of rail maintenance activities. An increase in the frequency of train traffic or of rail maintenance activities along the existing rail corridor has the potential to increase wait times of cross traffic at locations where rail and cross traffic are at the same elevation (locations without over or underpasses or “at-grade”), which could contribute to increased disruption of communities separated by the existing rail corridor. However, the proposed project would add additional track/sidings precisely with the

intention of decreasing the amount of time that passenger trains are stopped on rails while allowing other trains to pass. The incremental increase in rail traffic along the alignments has the potential to increase delay times at at-grade cross streets, but this increase in delay would occur with or without the project as rail traffic increases. The proposed project itself would accommodate the increased rail traffic in a manner that reduces train delays, and therefore delays at cross streets, by providing the infrastructure to allow trains to pass each other with fewer stoppages and less delay than would otherwise occur.

Designs for the new track segments would follow standard BNSF and UPRR track design requirements and would be comparable to the existing track. The additional track and/or new or extended sidings associated with the project would generally be at the same elevation as the existing surrounding track. There is potential for subsequent traffic/transportation analysis to conclude that grade separation of railroad and local streets is necessary at some locations. In the event that the project warrants a grade separation to enhance traffic flow, any physical separation of an existing community that currently occurs due to train traffic would be decreased by the project.

In general, the only long-term change along the existing track corridor would be a wider set area of tracks along the existing corridor and increased train frequency. At this time it appears that the additional tracks can be added within the existing railroad rights-of-way. If property must be acquired in the future, a subsequent environmental evaluation will be performed. The increase in train operations will cause greater noise and vibration impacts on sensitive uses located adjacent to the track rights-of-way. A detailed assessment of noise impacts associated with the proposed project will be conducted as part of the EIR. The construction activities associated with implementation of the proposed project would be temporary and localized. Short-term disruptions would occur within communities when the proposed infrastructure is installed. It typically requires about a year to install two miles of new track from initial grading to final inspection, with some variation in construction time depending upon whether there are at-grade crossings and/or bridges included in the segment. Impacts to at-grade cross streets would be managed to minimize the amount of time that cross traffic would be impacted, but short-term impacts, on the order of days, would occur. Please refer to Section XVI Traffic/Transportation item (e) and Section XIV Public Services for a full discussion of emergency access issues. No permanent community disruption would result from implementing this project. Sidings and/or additional track is expected to be accommodated within the existing railroad rights-of-way, and thus would not require land acquisition or changes to land use designation or zoning.

The project alignments between Los Angeles and Bakersfield, Bakersfield and Port Chicago, and Stockton and Sacramento are not located within a designated coastal zone. The portion of the UPRR project alignment between western Martinez and Hercules Point is located along the shoreline and any impacts outside of the existing rail bed is expected to require regulatory coordination with and permits from the San Francisco Bay Conservation and Development Commission. The project will secure permits from the San Francisco Bay Conservation and Development Commission (or other appropriate coastal regulatory entity) as applicable specific projects are brought forth. No significant conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect is expected to occur as a result of implementing the new track/sidings proposed by the project.

The proposed ancillary facilities that would install and operate rail infrastructure support facilities at a new location or would expand facilities and convert land use to support rail infrastructure are addressed individually with respect to their potential to divide an established community. All of the proposed ancillary facilities would be located in urbanized areas.

<u>Sacramento Maintenance Facility</u>
The proposed installation of a rail operations and maintenance facility in the City of Sacramento would include a maintenance yard and shop designed to handle routine and periodic inspections and repairs (fueling, sanding, inspections, and light repairs), as well as heavy maintenance for both

coach cars and locomotives. In addition to tracks and repair bays, the maintenance facility would contain mechanic support areas; an operations control center; transportation support areas for train engineers (day room, lockers, train control and dispatch, etc.); materials handling areas; administrative offices; and possibly other supporting services such as training and security. The proposed Sacramento Maintenance Facility would be located between the American River Parkway corridor to the north and the existing UPRR tracks to the south. Land to the east and west is either vacant or contains industrial development. The proposed site is currently occupied by disturbed fields, a parking lot, and retention basin. Existing residential development south of the UPRR tracks would continue to have access to the American River Parkway at an existing point of entry west of the proposed facility. Figure 1-11 shows the proposed location of the maintenance facility and Figure 1-12 is an aerial photo of the proposed maintenance facility site.

Section LU-1 of the City of Sacramento 2030 General Plan identifies the proposed site as an area *"expected to develop for commercial and employment uses (without housing) and/or mixed-use projects that integrate housing with retail, office, community facilities and other uses."* Figure LU-1, Land Use and Urban Form Diagram, shows the site as low rise employment center. Allowed uses include *"Industrial or manufacturing that occurs entirely within an enclosed building or an enclosed outdoor area with appropriately landscaped setbacks"* and *"Compatible public, quasi-public, and special uses."* The proposed facility can be designed to be in compliance with the designated land use. The preliminary project description for the facility states that transit access, bicycle, and employee parking would be incorporated into the design and that the preliminary design would achieve LEED (Leadership in Energy and Environmental Design) Gold standard.

The proposed Sacramento Maintenance Facility would not increase the volume of passenger train traffic to the location, nor would it change the types of freight materials conveyed along rail from the existing conditions. The maintenance facility would divert individual trains into the facility for routine rail maintenance activities, introducing a new rail use to the proposed site. Potential areas of conflict between the proposed facility and adjacent uses include noise, light, and aesthetic impacts. Aesthetic impacts, including lighting conflicts, are addressed in Section I Aesthetics of this document and were found to be less than significant with implementation of mitigation measures. A detailed assessment of noise impacts associated with the proposed project will be conducted as part of the EIR. The proposed Sacramento Maintenance Facility has no potential to divide an established community given that existing UPRR railroad track and the American River already separate the community south of the property from properties farther north, and that adjacent development to the east and west is industrial in nature. Specific information regarding proposed landscaped setbacks of the facility, height of structures, and density of site development are not available at this time, but it is expected that the facility can be designed to be consistent with the specifications for the City's designated land use for the site, low rise employment center.

Stockton Amtrak Station

At both locations under consideration for the new Stockton Amtrak Station, the sites are designated "industrial" in the Stockton General Plan, as is land along both sides of the rail corridor in both locations. There is land designated commercial, residential, and a park in the near vicinity of both locations. Relocating or expanding the station would not change the existing location of track in the vicinity of either site. The preferred alternative, Stockton Amtrak Station Alternative 4 (See Figure 1-17) is located just to the east of the crossroads of the north-south running UPRR tracks with the east-west running BNSF tracks, whereas the existing station under consideration for expansion is located just west of this crossroads. In both locations, the crossroads of existing rail forms some level of physical barrier in the community when trains are passing through intersections, but this condition would not change with either site selection for the new station.

The preferred alternative (Alternative 4) would include the development of a new Amtrak station located at the corner of East Scotts Avenue and Pilgrim Street in the City of Stockton on the BNSF rights-of-way. Currently, the site is developed with a manufacturing plant that is proposed to be acquired and demolished as part of implementation of Alternative 4. The site contains a rail interlock connecting the UPRR and BNSF railroads. Alternative 4 is the preferred location for a

new passenger rail station, because it could easily serve both the Oakland and Sacramento trains that use the San Joaquin Corridor.

Stockton Amtrak Station Alternative 5 (See Figure 1-18) would rehabilitate the existing Amtrak station located on the BNSF rights-of-way at 735 South San Joaquin Street in the City of Stockton. Rehabilitation of this station would include an expansion of existing facilities to accommodate additional passengers.

An expansion of the existing Stockton Station would probably not increase noise impacts in the vicinity of the existing station, but the relocation probably would increase noise impacts in the vicinity of the proposed station. Relocation of the Amtrak station would also have the potential for traffic impacts related to the arrival and departure of passenger vehicles and buses from the relocated station. Noise impacts associated with each site will be addressed in the EIR. A traffic impacts analysis will be conducted as part of a follow on environmental review when the Stockton Station plans are brought forward for implementation. It is expected that the Stockton Amtrak Station can be designed to be consistent with the specifications for the City's "industrial" designation for either site.

Fresno Layover Facility Site

The Fresno Layover Facility Alternative (See Figures 1-19 and 1-20) would include the development of a layover facility located in the City of Fresno that would extend along existing train tracks northeast of SR 41 to Tulare Street in the north and along abandoned railroad tracks south of SR 41 to Walker Avenue in the south. The new layover facility would include a storage yard; running maintenance and repair area; support shops; parts storage; mechanical and electrical rooms; and administrative offices. The layover facility would be located adjacent to the existing Fresno Amtrak station. This site is constrained by its small size and ability to meet the layover objective. Implementation of a facility at this site might require acquisition of property. According to the City of Fresno Interactive Mapping website http://gis4u.fresno.gov/viewer/ accessed March 19, 2012, the planned land use for the proposed expansion area and adjacent areas southeast of SR 41 are heavy and light industrial and are zoned general industrial, and the planned land uses for the proposed expansion area and adjacent areas northwest of SR 41 are commercial/mixed use level 2 (Central Area) and are zoned commercial and light manufacturing. Existing land use for much of the area including land adjacent to the expansion area southeast of SR 41 is described as heavy industrial. However, site review found that a homeless encampment of perhaps up to 100 individuals is located along the abandoned tracks within the proposed layover facility site. Existing land use for much of the area including land adjacent to the expansion area northwest of SR 41 is described as light industrial with most of the parcels immediately adjacent to the railroad described as "parking." Review of Google earth images for the parcels adjacent to the railroad northwest of SR 41 confirms that the existing adjacent land use on both sides of the tracks is parking lots.

The City of Fresno General Plan is supportive of expansion of Amtrak service to the Fresno area, but it is not supportive of BNSF mainline operations expansion or continued use of the BNSF mainline tracks that traverse the center city, as is detailed below in the Objective and Policies extracted from the General Plan.

> *City of Fresno General Plan Objective E-5: Promote continued growth of rail passenger and freight travel through a safe, efficient, and convenient rail system that is integrated with, rather than in conflict with, other modes of travel.*
>
> *E-5-a. Policy: Support and advocate the relocation of the Burlington Northern/Santa Fe Railroad mainline operations over to the Union Pacific railroad tracks or other rail corridor that relocates rail operations from the center sector of the city.*
>
> *E-5-b. Policy: Support development of a method of funding the consolidation of the Burlington Northern/Santa Fe Railroad mainline tracks over to the Union Pacific railroad tracks or other rail corridor that relocates rail operations from the center sector of the city.*

E-5-f. Policy: Support the following improvements of the AMTRAK rail service to the Fresno Metropolitan Area and San Joaquin Region:

- *Provision of the maximum level of train service economically feasible for the San Joaquin route.*
- *Improvement of the AMTRAK station facilities.*
- *Provision of direct train service to the San Francisco/Oakland Bay Area, Sacramento and the Los Angeles area.*

To the extent that the proposed layover facility would serve Amtrak, it appears that the proposal would be consistent with the policies outlined in the General Plan. If the layover facility would also serve BNSF "mainline operations," consistency with General Plan policies is doubtful. However, the policies advocated in the General Plan cannot be realistically implemented at this time because of the extent of existing operations. There is no way that UPRR tracks could accommodate all mainline BNSF and Amtrak traffic without causing significant slow-downs and stoppages due to inadequate capacity. Relocation of the BNSF mainline, on which the passenger rail is currently carried, would require significant land acquisition and would cause significant adverse environmental impacts that are not under consideration as part of the proposed project. The proposed project cannot fulfill the policy objectives outlined in General Plan Policies E-5-a and E-5-b. The proposed project is consistent with the policy objectives outlined in General Plan Policy E-5-f.

If the layover facility resulted in the reduction of parking lots that currently occupy the area, this may be consistent with General Plan Policy E-9-x which advocates reducing the required number of parking spaces in areas, like the City Center, where local public transit is available.

Expanding the Amtrak facilities to include a layover facility at the proposed Fresno location would not be expected to result in land use conflicts (noise, lighting, etc) in the heavy industrial area southeast of SR 41. In the area northwest of SR 41 where adjacent land uses are predominantly parking lots, commercial, and light manufacturing, the layover facility would not locate rail closer to residential development to the east. Regardless, noise impacts associated with the proposed layover facility would be evaluated as part of the EIR prepared for the project. Consistency with the General Plan and impacts to adjacent uses would likely depend upon the ultimate configuration of the layover facility. If administrative offices were located in the area north of SR 41, which is designated for commercial and mixed use and the maintenance and repair activities were located in the area south of SR 41, which is designated heavy industrial, it appears the proposed facility would be consistent with the General Plan and zoning designations.

The proposed layover facility would not create a new division of an established community given that existing railroad tracks and operations already exist at the proposed location. Increased train frequency could contribute to community division, if it already exists, by increasing the amount of time that trains are occupying the rails. No community division is expected to occur to legal conforming uses in the heavy industrial area south of SR 41, but it may already occur to some degree between the commercial district of the City Center and the residential development to the east. The proposed project would facilitate more efficient train movement that would reduce the period of time that trains block at-grade intersections; it would therefore be beneficial in reducing any community division that may currently occur intermittently due to trains blocking crossing streets.

The homeless encampment located along the abandoned rail line proposed as part of the layover facility is a trespass use that would be eliminated if this alternative is selected. Community division of the homeless encampment would occur, as it is unlikely that the inhabitants would be resettled en masse. The City and County of Fresno adopted a 10 Year Plan to End Chronic Homelessness in 2008. The report indicates that the Plan emphasizes the chronically homeless because of the heavy demand they tend to place on social and emergency services and the cost effectiveness of programs designed to prevent ongoing homelessness versus the expense of the same population on emergency services. The Fresno First Steps Home website cites a recent study that housing a

chronically homeless person saves the community of Fresno $11,872 in public funds each year. Cost savings are attributed to a reduction in incarceration, hospitalization, court costs, emergency response calls, and emergency shelter. The 2009 Year One Report on the progress of the 10 Year Report indicates progress with respect to re-housing local homeless, such as establishing 103 people in 72 scattered market rate apartment sites from a local encampment. Housing the homeless in units scattered throughout the community rather than en masse has better outcomes for reintegrating individuals into society. Based upon the existing Plan to address homelessness and information presented above regarding effective re-housing strategies, community division of the homeless encampment is not considered a significant or adverse impact of the proposed project.

Merced Layover Facility Site

The Merced Layover Facility Alternative (See Figures 1-21 and 1-22) would include the development of a layover facility located in the City of Merced that would extend along the existing train tracks from K Street in the north to 6th Avenue in the south. The new layover facility would include a storage yard; running maintenance and repair area; support shops; parts storage; mechanical and electrical rooms; and administrative offices. Land uses surrounding the proposed Merced Layover Facility are almost exclusively residential with a small area of general commercial and neighborhood commercial designated land located at G Street. Other nearby land uses include several schools, including John Muir Elementary School and Preschool, that are located about 250 feet north of the existing rail yard. Hoover Middle School is located north of and across E. Santa Fe Avenue from the existing rail road tracks. The proposed expansion would locate the westernmost portion of the facility south of the rail and one block west of the middle school. The expanded facilities on the north side of the tracks would be located about 1,100 feet west of the middle school. Most of the proposed layover facility would be within an existing rail yard to the north of the tracks that is separated from existing low density residential development by a surface street or would be located within the existing Amtrak Station area that is separated from low to medium density residential development by W. 24th Street. The proposed layover facility is zoned High Density Residential, High Medium Density Residential, Low Density Residential, and General Commercial. While the development of a layover facility at this location that is currently in use as a rail yard, Amtrak station, and tracks would not achieve consistency with the zoning for the site, it would maintain the land use as rail. Therefore the existing circumstances would not change. Because there is no change in the underlying land use at this location, the proposed project is not forecast to result in significant land use impacts.

Potential areas of conflict between the proposed Merced Layover Facility and adjacent uses, particularly adjacent sensitive uses, include noise, light, and aesthetic impacts. Aesthetic impacts, including lighting conflicts, are addressed in Section I Aesthetics of this document and were found to be less than significant with implementation of mitigation measures. A detailed assessment of noise impacts associated with the proposed project will be conducted as part of the EIR. The proposed Merced Layover Facility would not create a new division of an established community given that existing railroad tracks and Amtrak station operations already exist at the proposed location. Increased train frequency could contribute to community division by increasing the amount of time that trains are occupying the rails. According to the City of Merced Vision 2030 General Plan adopted in January 2012, construction of a G Street undercrossing of the BNSF tracks is expected to be completed in 2012. G Street is the primary street crossing through the proposed layover facility. The completion of the surface street undercrossing would therefore reduce adverse impacts of layover facility on circulation, including community division.

c. *Potentially Significant Impact* – The potential for the proposed project to conflict with any applicable habitat conservation plan or natural community conservation plan will be evaluated in association with the Biological Resources analysis, which **will be** addressed in the EIR.

Conclusion

Based on the analysis above, the proposed project would have no significant adverse impact on land use or planning issues, with the exception of a potential to conflict with a habitat conservation plan or natural

community conservation plan, which have not been evaluated at this time. The issue of consistency with habitat conservation plans or natural community conservation plans will be addressed in conjunction with the Biological Resources analysis as part of the EIR. No land use mitigation is required to minimize project impacts on the remaining issues of land use and planning. The issues of land use and planning **will not** be carried forward to the EIR, with the exception of the potential to conflict with a habitat conservation plan or natural community conservation plan.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	❑	❑	✔	❑
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	❑	❑	✔	❑

SUBSTANTIATION:

a&b. *Less Than Significant Impact* – Conceptually, it is easiest to discuss the San Joaquin Rail Corridor Project in terms of improvements to the existing track system that are expected to occur within the existing rail rights-of-way (installation of double or triple track, sidings, drainage facilities, etc.), improvements associated with the ancillary facilities that would install and operate rail infrastructure support facilities at a new location, or would expand facilities and convert land use to support rail infrastructure (Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility, and Merced Layover Facility.) Potential impacts associated with the proposed Sacramento Maintenance facility, Stockton Station alternatives, and layover facilities are addressed separately after the discussion of the track improvements throughout the San Joaquin Corridor outlined in Figures 1-3a through 1-3h. Proposed alternative passenger rail alignments outlined in Figure 1-4, 1-5 and 1-6 are also considered.

The rail corridor improvements are expected to be implemented with minimal, if any, expansion of right-or-way. As such, in any location along the alignment where mineral resources occur within the rights-of-way, existing rail development already precludes the likely recovery of these minerals. However, if the rail is adjacent to mineral resources or to active mineral recovery operations, the proposed project would not create a new constraint on those resources or operations. The ancillary facilities are all located within urbanized areas on sites that are vacant or developed for industrial or commercial uses. None of these proposed facilities (Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility, and Merced Layover Facility) are located where it would be consistent with adjacent uses to site new mineral recovery activities.

According to the City of Sacramento General Plan 2030 Master EIR, there are no active, permitted mining operations within the City. There has been a construction sand mining operation along the American River within the City limits operating without a State permit that the City and State have sought to stop. Figure 6.5-3 Mineral Resource Zones of the Master EIR shows that the proposed Sacramento Maintenance Facility is located in an area designated MRZ-3: *Areas containing mineral deposits, the significance of which cannot be evaluated from available data*. The Master EIR indicates that the City does not consider this area to contain significant mineral resources.

The City of Stockton *Final Background Report for the 2035 General Plan* indicates that most of the City's Study Area is designated as MRZ-1*: Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their*

presence. The Report indicates that the exception to this designation is not in the vicinity of either proposed Stockton Station location.

The Final Program EIR for the City of Merced *Merced Vision 2030 General Plan* dated July 2011 states that no Mineral Resource Zones or mineral resource recovery sites exist within the City of Merced. Therefore, there are no mineral resource recovery zones or sites that would be impacted by the Merced Layover Facility Site.

The City of Fresno *2025 Fresno General Plan* indicates that there are two regions of significant mineral resources in the general vicinity of the City: along the upper Kings River and along the San Joaquin River. Exhibits 10 and 11 in the General Plan show that neither area of mineral resources includes the proposed Fresno Layover Facility Site. The rail alignment crosses an area of regionally significant resources along the San Joaquin River, but as discussed previously, any additional siding or track is expected to be located within the existing rail rights-of-way, which is already inaccessible for mineral recovery.

Given that most of the proposed project improvements would occur within the existing rights-of-way, and those that would not occur in locations without mineral resources, the proposed project would not result in the loss of a known mineral resource of significance. No impact is expected, and no mitigation is required.

Conclusion

Based on the analysis above, the proposed project would have no significant impact on mineral resources. No mitigation is required to minimize project impacts on these resources. The issues of mineral resources **will not** be carried forward to the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	✔	❑	❑	❑
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	✔	❑	❑	❑
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	✔	❑	❑	❑
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	✔	❑	❑	❑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	✔	❑	❑	❑
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	✔	❑	❑	❑

SUBSTANTIATION:

The proposed project has the potential to result in significant impacts with respect to this issue; therefore, this issue **will be** included in the EIR to be prepared for the proposed project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❑	❑	✔	❑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	❑	❑	✔	❑
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❑	❑	✔	❑

SUBSTANTIATION:

The proposed project depends upon a Caltrans study that anticipates population growth over the next 20-year period as well as growth in demand for alternative modes of transportation. The modeling conducted by AECOM under the direction of Caltrans generated the San Joaquin Corridor passenger rail demand forecast provided in Table 1-1 of the Project Description. Based on the modeling, Caltrans identifies a demand for 8 passenger trains per day (total 16 trains) on the BNSF tracks between Merced and Bakersfield in 2020. This represents an increase in 2 round-trip trains, for a total of 16 trains using this segment compared to the current total of 12 Amtrak passenger trains. By 2035 the modeling indicates a need for 11 round trip passenger trains per day (total of 22 trains) from Bakersfield to Stockton on the BNSF tracks compared to the current total of 12 Amtrak passenger trains. The passenger trains would be expected to operate with 4 or more passenger cars to meet demand. The modeling effort is used for planning purposes over the 25-year planning period, but the actual future schedules would be developed in response to customer demand.

a. *Less Than Significant Impact* – The proposed project would not extend railroad or other infrastructure where it does not currently exist, but would rather provide additional track, sidings, layover maintenance facilities, and an improved station along the designated route that would enable passenger rail to flow more efficiently. The improved rail facilities would be designed to accommodate growth, but would not attract substantial population to the area either by offering expanded passenger rail service or by a substantial increase in rail-related employment. A small increase in rail-related employment would occur primarily at the locations of the maintenance facility and the layover facility, and potentially at other locations where increased service would begin or end, but any increase (approx. 50 new employees) would be negligible when compared with employment growth expected over the next 25 years in the region. The additional passenger rail service would be implemented as customer demand necessitates, and the additional service would not provide rail access where it is not already available. As such, it is not anticipated to induce substantial numbers of people to relocate, for example, by providing passenger rail access to a new location that would allow people to live farther from existing employment centers that they would then commute to by rail. If the Hanford to Visalia or the Bakersfield to Los Angeles passenger rail route is implemented, it would increase the availability of passenger rail to new communities, but in both cases efficient Amtrak bus to rail service is already available. The project would not directly or indirectly induce substantial population growth. No mitigation is required.

b.&c. *Less Than Significant Impact* – As discussed previously, the vast majority of proposed improvements would be located within the existing rail rights-of-way. The facilities that would require land acquisition or expansion of rail facilities onto land not currently dedicated to rail

(Sacramento Maintenance Facility, Stockton Station, Fresno Layover Facility, and Merced Layover Facility) are all located within urbanized areas on sites that are vacant or developed for industrial or commercial uses. None of these proposed facilities are located where formal housing currently exists.

However, the portion of the proposed Fresno Layover Facility Alternative (See Figures 1-19 and 1-20) located along abandoned railroad tracks from SR 41 south to Walker Avenue is occupied by a homeless encampment of perhaps up to 100 individuals. Existing land use for much of this portion of the proposed Layover Facility is described as heavy industrial. According to the City of Fresno Interactive Mapping website http://gis4u.fresno.gov/viewer/ accessed March 19, 2012, the planned land use for the proposed expansion area and adjacent areas southeast of SR 41 are heavy and light industrial and are zoned general industrial. The homeless encampment on the Fresno Layover Facility site is not a legal use of the property, nor is it consistent with the General Plan designation for the site. The Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs (42 USC Chapter 61) states clearly in Section (B)(i) that “the term "displaced person" does not include a person who has been determined, according to criteria established by the head of the lead agency, to be in unlawful occupancy of the displacement dwelling…” and as such the provisions of the Program would not apply to the occupants of the homeless encampment.

Selection of the Fresno site for the layover facility would require at a minimum the possible eviction of the individuals occupying the homeless encampment and possibly their relocation to alternate locations or facilities. Given that the encampment is not a legal, conforming use of the site, the project would not be responsible for relocation of the inhabitants, but local social services and law enforcement resources would be required to evict and relocate the inhabitants. The City and County of Fresno adopted a 10 Year Plan to End Chronic Homelessness in 2008. The report indicates that the Plan emphasizes the chronically homeless because of the heavy demand they tend to place on social and emergency services and the cost effectiveness of programs designed to prevent ongoing homelessness versus the expense of the same population on emergency services. The Fresno First Steps Home website cites a recent study that housing a chronically homeless person saves the community of Fresno $11,872 in public funds each year. Cost savings are attributed to a reduction in incarceration, hospitalization, court costs, emergency response calls and emergency shelter. The 2009 Year One Report on the progress of the 10 Year Report indicates progress with respect to re-housing local homeless, such as establishing 103 people in 72 scattered, market-rate apartments from a local encampment. The selection of the Fresno site for the Layover Facility would have a significant impact on this homeless population and on the social services needed to serve this population; however, whether the impact is adverse or beneficial would depend upon the outcome of the relocation/re-housing effort.

Housing the homeless in units scattered throughout the community rather than en masse has better outcomes for reintegrating individuals into society. Therefore, in general, replacement housing would be best procured through the consortium of non-profit and governmental organizations (Fresno First Steps Home) working to address the complex issues causing homelessness rather than by creating a new homeless community. Fresno First Steps Home is limited by the availability of funding. Based upon the existing Plan to address homelessness and information presented above regarding effective re-housing strategies, elimination of the homeless encampment would not require construction of replacement housing, because it would be more effective to re-house the homeless in scattered, existing housing if funding is available.

With the exception of the trespass homeless encampment located on a portion of the Fresno Layover Facility site, no existing housing would be directly displaced by the proposed project. The project would accommodate an increase in rail traffic that could have significant adverse impacts on adjacent sensitive uses, particularly due to increase noise levels from additional train traffic. Also, the proposed ancillary facilities could locate some rail related activities closer to sensitive receptors, particularly residential development, than it is under current conditions.

Potential areas of conflict between the proposed facilities and adjacent sensitive uses include noise, light, and aesthetic impacts. Aesthetic impacts, including lighting conflicts, are addressed in Section I Aesthetics of this document and were found to be less than significant with implementation of mitigation measures. A detailed assessment of noise impacts associated with the proposed project will be conducted as part of the EIR. If the noise analysis determines that existing housing would be significantly adversely impacted by the proposed project, mitigation is available to reduce noise levels at adjacent sensitive receptors such that noise levels should not result in displacement of housing.

Conclusion

Based on the analysis above, the proposed project would have no significant impact on population and housing issues. No mitigation is required to minimize project impacts on these issues. The issues of population and housing **will not** be carried forward to the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XIV. PUBLIC SERVICES: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	❑	✔	❑	❑
b) Police protection?	❑	✔	❑	❑
c) Schools?	❑	❑	✔	❑
d) Recreation/Parks?	❑	❑	✔	❑
e) Other public facilities?	❑	❑	❑	✔

SUBSTANTIATION:

a&b. *Less Than Significant Impact With Mitigation Incorporated* – The existing rail operations place a minimal demand on fire and police protection. The proposed project may cause short-term adverse impacts on emergency services provided by fire, ambulance, and law enforcement services along the rail corridor. Closure of existing road crossings would require development of alternative emergency response routes as outlined in Section XVI, Traffic and Transportation. Similarly, construction staging areas may experience an increase in trespass and theft activities over the short-term, which can place additional demand on local law enforcement services.

Along the whole construction route, a potential exists to adversely impact emergency response as individual second tier projects are implemented in the future. To address this potential impact, the following mitigation measure is identified for implementation.

XIV-1 Prior to initiating construction of the proposed project, the project proponent shall submit and have approved a fire or medical emergency response access plan that meets each affected jurisdiction's response time frame. Success for

this measure will be determined by the local fire agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives.

Implementation of the measure will ensure that potential adverse impacts to emergency fire response capability are mitigated to a level such that the current level of service (as of the start of construction) is maintained.

Police emergency responses will experience the same short-term impacts during construction of future facilities as fire emergency response. Similar mitigation shall be implemented to ensure that police response times are maintained within each jurisdiction's response time guidelines. Implementation of the following mitigation measure will ensure that potential significant adverse impacts to emergency police response capability are mitigated to a level such that the current level of service (as of the start of construction) is maintained.

XIV-2 Prior to initiating construction of the proposed project, the project proponent or contractor shall submit and have approved a police emergency response access plan that meets each affected jurisdiction's response time frame. Success for this measure will be determined by the local law enforcement agency approving and verifying that the specific access response plan and measures will allow them to continue meeting their emergency response time frame objectives.

Staging and equipment storage areas shall be provided with adequate protection to minimize potential for trespass and theft. The following mitigation shall be implemented during construction to minimize demand for law enforcement response during construction.

XIV-3 Prior to initiating construction of the proposed project, the project proponent shall submit and have approved an access control plan to its staging and equipment storage areas that meets each affected jurisdiction's crime minimization standards. Success for this measure will be determined by the local law enforcement agency approving and verifying that the access control plan and measures will minimize trespass and theft activities in accordance with local requirements.

Implementation of the above measures can ensure that potential significant adverse demand impacts for law enforcement resources during construction are mitigated below a level of significance.

After construction, the proposed track facility improvements would accommodate increased passenger rail. The increase in passenger rail traffic could occur without the project, but speed and reliability of the trains would diminish with increased congestion and conflicts with cross-streets would increase as delays lengthened. Over the long-term, the installation of the San Joaquin Rail Corridor Project would facilitate better emergency response capabilities. The proposed additional track and sidings would facilitate better movement of trains along the corridor, thus reducing the amount of time that a train spends at any one point, such as at an existing road that crosses the tracks at grade. No mitigation is required for the long-term emergency access and police and fire protection capability of the affected police, fire, and other emergency departments. Future access will be equal to or better than the existing condition.

<u>Sacramento Maintenance Facility</u>

A Maintenance facility located on predominantly vacant industrial land along an active railroad segment within the urbanized area of the city is not expected to create a significant increase in emergency response, from police, fire, or other emergency services. The increase in legitimate activity (continuous preserve on the property) would be more likely to deter illegal activities at this location rather than to attract them. No significant adverse impacts to police, fire, or other emergency services are expected from implementing the Sacramento Maintenance Facility.

Stockton Station

Plans for the new station include a police-staffed, state-of-the-art, Emergency Operations Center (EOC), in which all stations, staffed and unstaffed, would be monitored. The EOC would incorporate a security management system that consists of video surveillance, access control, motion detection, intercoms, and emergency mass notifications to ensure maximum safety for all passengers within the San Joaquin Passenger Corridor Rail facilities.

When compared with the existing Stockton Station and current police and emergency oversight, the proposed station would provide for improved facilities and systems that facilitate police and emergency service at passenger rail stations throughout the San Joaquin Corridor.

Fresno Layover Facility

The proposed Fresno Layover Facility Alternative would locate the layover facility along existing, but partially abandoned, track co-located with the Fresno Amtrak Station. Layover facilities located along an active railroad segment are not expected to create a significant increase in emergency response, from police, fire, or other emergency services. The increased rail activity would be more likely to deter illegal activities at this location rather than to attract them. The portion of the proposed Fresno Layover Facility Alternative (See Figures 1-19 and 1-20) located along abandoned railroad tracks from SR 41 south to Walker Avenue is occupied by a homeless encampment of perhaps up to 100 individuals. Selection of the Fresno site for the layover facility would require at a minimum the eviction of the individuals occupying the homeless encampment and possibly their relocation to alternate locations or facilities. Given that the encampment is not a legal, conforming use of the site, the project would not be responsible for relocation of the inhabitants, but local social services and law enforcement resources would be required to evict and relocate the inhabitants.

The City and County of Fresno adopted a 10 Year Plan to End Chronic Homelessness in 2008. The report indicates that the Plan emphasizes the chronically homeless because of the heavy demand they tend to place on social and emergency services and the cost effectiveness of programs designed to prevent ongoing homelessness versus the expense of the same population on emergency services. The Fresno First Steps Home website cites a recent study that housing a chronically homeless person saves the community of Fresno $11,872 in public funds each year. Cost savings are attributed to a reduction in incarceration, hospitalization, court costs, emergency response calls, and emergency shelter. In other words, the existing condition of the homeless encampment likely demands considerable resources from local emergency services. While elimination of the homeless encampment at this location would reduce demand on emergency services from this encampment, the overall demand of this population on emergency services would only be reduced if individuals were successfully re-housed and re-integrated into society. As the homeless population exists in the community with or without implementation of the proposed project, the overall effect of eliminating this homeless encampment would be neutral on emergency services. No significant adverse impacts to police, fire, or other emergency services are expected from implementing the Fresno Layover Facility Alternative.

Merced Layover Facility

The Merced Layover Facility Alternative (See Figures 1-21 and 1-22) would include the development of a layover facility located in the City of Merced that would extend along the existing train tracks from K Street in the north to 6th Avenue in the south. Most of the proposed layover facility would be located within an existing rail yard to the north of the tracks or within the existing Amtrak Station area.

Layover facilities located along an active railroad segment co-located with an existing Amtrak Station and rail yard are not expected to create a significant increase in emergency response from police, fire, or other emergency services. The increase in rail activity would be more likely to deter illegal activities at this location rather than to attract them. No significant adverse impacts to police, fire, or other emergency services are expected from implementing the Merced Layover Facility Alternative.

Based on the analysis presented above emergency services will not experience significant adverse impacts with implementation of the recommended mitigation measures.

c. *Less Than Significant Impact* – The proposed project depends upon a Caltrans study that anticipates population growth over the next 20-year period as well as demand for alternative modes of transportation. The proposed project would not extend railroad or other infrastructure where it does not currently exist, but would rather provide additional track, sidings, layover, and maintenance facilities and an improved station along the designated route that would enable passenger rail to flow more efficiently. The improved rail facilities would be designed to accommodate growth, but would not attract substantial population to the area either by offering expanded passenger rail service or by a substantial increase in rail-related employment. A small increase in rail-related employment (estimated to be 50 employees) would occur primarily to operate new trains and at the locations of the maintenance facility and the layover facility, and potentially at other locations where increased service would begin or end, but any increase would be negligible when compared with employment growth expected over the next 25 years in the region. The additional passenger rail service would be implemented as customer demand necessitates, and under the proposed project the additional service would not provide rail access where it is not already available. As such, it is not anticipated to induce substantial numbers of people to relocate, for example, by providing passenger rail access to a new location that would allow people to live farther from existing employment centers that they would then commute to by rail. The project would not directly or indirectly induce substantial population growth. As such, the project would not place demands on the local schools by increasing the student population.

There are a number of school facilities within the near vicinity of the proposed rail improvements. Potential impacts on nearby school facilities are addressed in the appropriate sections of this document (Aesthetics, Air Quality, Hazards, Noise and Traffic/Transportation), if applicable. No mitigation is required under this item.

d. *No Impact* – There are a number of park facilities within the near vicinity of the proposed rail improvements. Potential impacts on nearby park facilities are addressed in the appropriate sections of this document (Aesthetics, Air Quality, Hazards, Noise and Traffic/Transportation) if applicable. No mitigation is required under this item.

e. *No Impact* – No adverse impacts to other public facilities not discussed above are anticipated from implementation of the proposed project. No additional mitigation is required under this item.

Conclusion

Based on the analysis above, the proposed project would have no significant impact on public service issues with implementation of the proposed mitigation measures. The issues of public services **will not** be carried forward to the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	❑	❑	✔	❑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	❑	✔	❑	❑

SUBSTANTIATION:

a. *Less Than Significant Impact* – The proposed project depends upon a Caltrans study that anticipates population growth over the next 20-year period as well as demand for alternative modes of transportation. The proposed project would not extend railroad or other infrastructure where it does not currently exist, but would rather provide additional track, sidings, layover, and maintenance facilities and an improved station along the designated route that would enable passenger rail to flow more efficiently. The improved rail facilities would be designed to accommodate growth, but would not attract substantial population to the area either by offering expanded passenger rail service or by a substantial increase in rail-related employment. If the Hanford to Visalia or the Bakersfield to Los Angeles passenger rail route is implemented, it would increase the availability of passenger rail, but in both cases efficient bus to rail service is already available. A small increase in rail-related employment would occur primarily at the locations of the maintenance facility and the layover facility, and potentially at other locations where increased service would begin or end, but any increase would be negligible when compared with employment growth expected over the next 25 years in the region.

The additional passenger rail service would be implemented as customer demand necessitates, and the additional service would not provide passenger rail access where it is not already available, although as mentioned above, service to Visalia and Los Angeles is currently available as a hybrid bus-train service. As such, the proposed additional service is not anticipated to induce substantial numbers of people to relocate, for example, by providing passenger rail access to a new location that would allow people to live farther from existing employment centers that they would then commute to by rail. The project would not directly or indirectly induce substantial population growth and would not place demands on the local recreational facilities by inducing population growth.

The project would not contribute to an increase in the population of the area beyond that already allowed or planned for within the project area. Therefore, there would be no increase above current plans for demand for parks and other recreational facilities associated with this project.

b. *Less Than Significant Impact* W*ith Mitigation Incorporated* - No recreation activities are presently allowed or conducted within the existing railroad rights-of-way or lands to be acquired to implement the proposed Sacramento Maintenance Facility, Stockton Station, or Layover Facility Alternatives; therefore, proposed construction or operation activities would not have a direct impact on parks. There are a number of park facilities within the near vicinity of the proposed rail improvements. Potential impacts on nearby park facilities are addressed in the appropriate sections of this document (Aesthetics, Air Quality, Hazards, Noise and Traffic/Transportation), if applicable.

The proposed Sacramento Maintenance Facility site is adjacent to the American River on the south side of the River within the area designated as both a State and National Wild and Scenic River,

classified as a “Recreation” river. Mitigation measure I-3 is sufficient to ensure that no significant adverse impacts on the recreational features of the Parkway occur as a result of implementing and operating the proposed Maintenance Facility. The installation of the proposed improvements would not create any new access limitations to recreation.

The project does not propose any new development or expansion of recreational facilities. No substantial adverse effects to parks and recreation will be caused by implementing the proposed project. The proposed project would not make a cumulatively considerable contribution to parks or recreational resources within or adjacent to the rail corridor. No mitigation is required under this item.

Section 4(f) Issues

The United States Department of Transportation (DOT) Act of 1966 Section 4(f) stipulates that the Federal Highway Administration and other DOT agencies “cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply:

- There is no feasible and prudent alternative to the use of land.
- The action includes all possible planning to minimize harm to the property resulting from use.” http://environment.fhwa.dot.gov/4f/index.asp

No publicly owned parks or recreational areas are presently allowed or operated within the existing railroad rights-of-way or lands to be acquired to implement the proposed Sacramento Maintenance Facility, Stockton Station, or Layover Facility Alternatives; therefore, proposed construction or operation activities would not have a direct impact on publicly owned parks or recreational areas. The potential for impacts to Wildlife and waterfowl refuges will be addressed in the Biological Resources Section of the EIR, and the potential for impacts to public and private historical sites will be addressed in the Cultural Resources Section of the EIR.

Conclusion

Based on the analysis above, the proposed project would have no significant impact on recreation issues with implementation of the proposed mitigation measures. The issues of recreation **will not** be carried forward to the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVI. TRANSPORTATION / TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	✔	❑	❑	❑
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	✔	❑	❑	❑
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	❑	✔	❑	❑
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❑	❑	❑	✔
e) Result in inadequate emergency access?	❑	✔	❑	❑
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	❑	❑	✔	❑

SUBSTANTIATION:

a&b. *Potentially Significant Impact* – There are hundreds of active at-grade crossings along the San Joaquin Rail Corridor. County and city planning documents (general plans, general plan EIRs, background technical reports, etc) were reviewed for the counties and cities in which the project is located in order to identify intersections and roadway segments that currently, or are projected to operate at a deficient level of service (LOS). Deficient roadways and intersections will be evaluated for their proximity to the San Joaquin Rail Corridor in general and to at-grade crossings along the Corridor in particular. These two issues, conflicts between operations of the local circulation system and rail operations along the San Joaquin Corridor, **will be** evaluated in the EIR.

c. *Less Than Significant Impact With Mitigation Incorporated* – The proposed San Joaquin Rail Corridor Project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. More efficient and reliable passenger rail service has the potential to reduce reliance on air travel for short-distance travel. Project improvements that would be located within airport safety zones must comply with

mitigation measure VIII-5 from the Hazards and Hazardous Materials Section of this document. No additional mitigation is required under this item.

d. *No Impact* – The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). No new at-grade crossings are proposed as part of the project. Any expansion of rail infrastructure would occur within the existing rail rights-of-way or at discrete facilities designed for maintenance activities, layover facilities, or as passenger stations. No mitigation is required.

e. *Less Than Significant Impact With Mitigation Incorporated* – Since the proposed project provides for more efficient flow of rail traffic, the potential for rail operations to interfere with an adopted emergency response plan or emergency evacuation plan over the long-term would be reduced. BNSF and UPRR emergency response capabilities will remain the same, and the ability to respond to accidents will remain the same after completion of the project. The incremental increase in rail traffic along the alignments has the potential to increase delay times at at-grade cross streets, but this increase in delay would occur with or without the project as rail traffic increases. The proposed project itself would accommodate the increased rail traffic in a manner that reduces train delays, and therefore delays at cross streets, by providing the infrastructure to allow trains to pass each other with fewer delays and less slowing than would otherwise occur. Therefore, the net effect of the proposed project is to provide a comparable or improved level of response capability in the event of an emergency response or evacuation after project completion during future operations relative to the existing conditions.

The construction activities associated with implementation of the proposed project would be temporary and localized. Short-term access disruptions would occur when the proposed infrastructure is installed. It typically requires about a year to install two miles of new track from initial grading to final inspection, with some variation in construction time depending upon whether there are at-grade crossings and/or bridges included in the segment. Impacts to at-grade cross streets would be managed to minimize the amount of time that cross traffic would be impacted, but short term impacts would occur. The following mitigation is required.

XVI-1 At all times during construction, the contractor will ensure that emergency fire, police or medical vehicles are able to access all adjacent areas. Additionally, construction equipment or activities must not obstruct or hinder traffic that might be generated during an evacuation.

Implementation of the above mitigation measure, as well as measures XIV-1 and 2 from the Public Services section of this document, are sufficient to reduce potential adverse impacts to a less than significant level.

f. *Less Than Significant Impact* – No new at-grade crossings are proposed as part of the project. Any expansion of rail infrastructure would occur within the existing rail rights-of-way or at discrete facilities designed for maintenance activities, layover facilities, or as passenger stations. As such, conflicts with other forms of transit, bicycle, or pedestrian facilities would not increase as a result of the proposed project.

According to the Kings County General Plan EIR, the County has identified the San Joaquin Valley Railroad rights-of-way as a viable option for pedestrian and bicycle use. The EIR states that the "shared use and development of the Union Pacific railroad, between the Fresno and Tulare County lines, would provide a signed, recreational route that is intended for pedestrians, bicyclists and equestrian uses." Unless the proposed shared-use would occur in addition to preserving the functionality of the railroad, this proposal would apparently convert the UP freight track alignment that is under consideration to provide passenger rail between Fresno-Hanford-Visalia to a trail. The City of Hanford General Plan adopted on June 18, 2002 suggests development of a multi-use trail along the BNSF rail alignment rights-of-way, but doesn't suggest a similar trail along the San Joaquin Valley Railroad rights-of-way. However, the identification of a possible trail route does not constitute an adopted policy, plan or program, and it does not seem that mention of the possibility

of such a trail in the King County General Plan EIR is sufficient to conflict with the proposed passenger rail extension Fresno-Hanford-Visalia alternative. Also, the intention may be to consider development of a trail along the right-of-way as a buffer between rail and adjacent development, as is suggested along the BNSF route in the Hanford General Plan. Many of the jurisdictions through which the project would be located call for the preservation of abandoned railroad rights-of-way from development in order to provide for future transit, trail, or other infrastructure.

There are specific locations in urban areas where lack of grade separation may result in inconvenience to other forms of transit, bicyclists or pedestrians; as previously noted, the Rail Corridor track improvements will allow trains to more easily pass through at grade crossings without delays. This change can also reduce inconvenience for alternative forms of transportation where at-grade crossings occur, and combined with the benefits of improved passenger rail service along the corridor, reduce potential inconvenience to a less than significant impact level.

Conclusion

Based on the analysis above, the proposed project would have no significant adverse impact on alternative forms of transportation, air traffic, or emergency access and would not substantially increase hazards due to a design feature or incompatible uses with implementation of the proposed mitigation measures. These issues **will not** be carried forward to the EIR.

There is the potential for the proposed project to impact roadways and intersections that are currently deficient or are expected to operate at deficient levels in the future. Conflicts between operations of the local circulation system and rail operations along the San Joaquin Corridor **will be** evaluated in the EIR. Roadways and intersections will be evaluated for their proximity to the San Joaquin Rail Corridor in general and to at-grade crossings along the Corridor in particular in the EIR.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❑	❑	✔	❑
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❑	❑	❑	✔
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	✔	❑	❑	❑
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	❑	❑	✔	❑
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❑	❑	✔	❑
f) Be served by a landfill(s) with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	❑	❑	✔	❑
g) Comply with federal, state, and local statutes and regulations related to solid waste?	❑	❑	✔	❑

SUBSTANTIATION:

a. *Less Than Significant Impact* – The proposed project generates a minor amount of wastewater from the toilets on the Amtrak trains and buses. Based on discussions with Amtrak personnel in Oakland, a contract service removes the wastewater from the passenger cars primarily in Oakland when the trains are serviced, but removal can also occur by a contractor in Bakersfield. This wastewater is then delivered to a wastewater treatment plant (WWTP) or water reclamation plant (WRP) licensed to receive septic waste from wastewater holding tanks. When the tanks are pumped from a train with four or five passenger cars, approximately 1,000 gallons of wastewater is collected for delivery to a WWTP or WRP. The trains are serviced as needed and with six trains on the system, this equates to approximately 6,000 gallons being generated every few days. At full implementation of the proposed project assumed to occur in 2035, the volume of wastewater from trains will increase from 6,000 to 11,000 gallons per service of the fleet.

Although the contractor must be licensed to collect the holding tank wastewater, the actual permits from the Regional Water Quality Control Board are assigned to the WWTP/WRF. The authorization to receive and treat holding tank wastewater is given to the WWTP or WRF by the Regional Board, and the contractor that collects wastewater from the Amtrak trains pays a commercial fee to the WWTP/WRF for the capacity utilized at each facility. Based on the process already established for

handling wastewater from passenger trains and the capacity demand at the WWTP/WRF, the continued treatment of wastewater generated from the trains is not forecast to cause any WWTP/WRF to exceed treatment requirements of any Regional Board. No mitigation is required.

The only support rail infrastructure facility that may generate wastewater will be the proposed rail maintenance facility in Sacramento. Aside from municipal wastewater generated at the facility from employees, this facility may generate industrial wastewater. As an industrial facility it will be necessary to obtain pretreatment requirements for the industrial wastewater to ensure that the receiving WWTP/WRF water quality standards are met. This is a routine procedure coordinated directly between the WWTP/WRF agency and the Caltrans Division of Rail. Since these standards are mandatory and must be negotiated prior to generation of industrial wastewater, the potential for adverse impact is less than significant without mitigation.

b. *No Impact* – The increase of approximately 5,000 gallons of water supply and 5,000 gallons of wastewater generated by the additional trains every one or two days is a very small quantity of wastewater that has no potential to require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. Therefore, no new construction of such facilities will be required that could cause significant environmental effects.

c. *Potentially Significant Impact* – Stormwater drainage issues **will be** evaluated in the EIR in conjunction with the hydrology/flood hazard issues in Section IX of this Initial Study.

d. *Less Than Significant Impact* – When fully implemented, the San Joaquin Corridor Amtrak operations will require approximately 11,000 gallons of potable water every two days. This equates to approximately six acre feet of potable water per year. This is a *de minimis* volume of potable water within the State of California and represents a net increase of approximately 3 acre feet through 2035. This is a less than significant impact on water resources of the State.

e. *Less Than Significant Impact* – Based on the volume of wastewater and the capacity of the wastewater treatment systems in Oakland (East Bay Municipal Utilities District, [EBMUD]) and Bakersfield (City of Bakersfield). EBMUD currently has 168 million gallons of secondary treatment capacity, and the current average annual flow is 75 million gallons per day (mgd). In Bakersfield the City operates two wastewater treatment plants, Plants #2 and #3. The design capacity of Plant #2 is 25 mgd and it currently treats about 13.6 mgd. The design capacity of Plant #3 is 32 mgd and it currently treats about 17.7 mgd. The 5,000 gallon increase in demand over a two day period (2,500 gpd) for wastewater treatment capacity is a *de minimis* demand on these two systems. The forecast future demand for wastewater treatment capacity is a less than significant impact on the wastewater treatment capacity of both the EBMWD and Bakersfield systems.

f&g. *Less Than Significant Impact* – The proposed project would generate solid waste during construction. The soil/sediment excavated will either be utilized within the rights-of-way as fill or it will be made available to local jurisdictions and/or commercial haulers as fill. The asphalt and other waste will be transported and disposed of at appropriate recycling or solid waste landfills. The solid waste disposal of construction debris that will be generated by the proposed project, and disposal of contaminated soil or sediment that may be encountered during construction, would be carried out in full compliance with pertinent statutes and regulations. Impacts in this area would not be substantial.

The proposed project would generate an incremental increase in operational solid waste typically consistent with commercial use from administrative and passenger uses, as well as solid waste associated with train maintenance and repair. Disposal of any hazardous waste generated in the process of train maintenance or other activities would be carried out in full compliance with pertinent statutes and regulations. Impacts in this area would not be substantial.

The California Integrated Waste Management Act of 1989 mandates a 50 percent diversion goal. The Board announced compliance with the goal in 2006 based on averaging statewide diversion rates. The proposed project impacts would occur within Contra Costa, Sacramento, San Joaquin,

Merced, Madera, Tulare, Fresno, Kings, Kern, and Los Angeles Counties. Contra Costa, Sacramento, San Joaquin, Fresno, Kings and Los Angeles County have identified sufficient disposal capacity to meet the short- and long-term needs of County residents in their respective General Plans, Background Reports for General Plans, General Plan EIR, or Countywide Integrated Waste Management Plan. The Kern County General Plan states that the County shall ensure adequate solid waste disposal facilities for residents and industries within the County.

Specific, current disposal capacity was not provided in planning documents available for the Counties of Merced, Tulare, San Joaquin, and Madera; therefore the State of California Solid Waste Information System (SWIS) database was reviewed to document availability of solid waste capacity in each County.

Merced County

According to the SWIS database and Solid Waste Facility Permit, the Merced County SR 59 Disposal Site had remaining capacity of 28,025,334 Cubic Yards as of September 01, 2005 with an estimated closure date of 2030. According to the SWIS database, the Merced County Department of Public Works Billy Wright Disposal Site had remaining capacity of 11,370,000 cubic yards as of September 30, 2010 with an estimated closure date of December 31, 2054.

Madera County

According to the SWIS database and Solid Waste Facility Permit, the Madera Disposal Systems Fairmead Solid Waste Disposal Site had remaining capacity of 5,552,894 cubic yards as of January 01, 2004 with an estimated closure date of 12/31/2028.

Tulare County

According to the SWIS database and Solid Waste Facility Permit, the County of Tulare Resource Management Agency's Teapot Dome Disposal Site has a remaining capacity of 1,142,278 cubic yards as of December 31, 2004 with an estimated closure date of 05/31/2012. According to the SWIS database and Solid Waste Facility Permit, the County of Tulare Resource Management Agency's Woodville Disposal Site had a remaining capacity of 6,970,183 cubic yards as of February 28, 2006 and an estimated closure date of 12/31/2026. According to the SWIS database and Solid Waste Facility Permit, County of Tulare Resource Management Agency's Visalia Disposal Site had a remaining capacity of 16,145,591 cubic yards as of March 31, 2006 with an estimated closure date of 01/01/2024. In addition, there are a number of green waste/composting facilities in the County.

San Joaquin County

According to the SWIS database and Solid Waste Facility Permit, the San Joaquin County Public Works Department Foothill Sanitary Landfill had a remaining capacity of 125,000,000 cubic yards as of Jun 10, 2010 and an estimated closure date of 2055. Forward Landfill, Inc. had a remaining capacity of 23,700,000 cubic yards as of May 19, 2008 and an estimated closure date of 2021. The County of San Joaquin Public Works Department's North County Landfill had a remaining capacity of 35,400,000 cubic yards as of December 31, 2009 and an estimated closure date of 2048. In addition, there are a number of green waste/composting facilities in the County.

Based on the availability of adequate disposal and recycling capacity, disposal of solid waste generated in association with implementing the proposed project is not forecast to result in significant impacts to the environment. The California Integrated Waste Management Act of 1989 (AB 939) mandated diversion of 50% of waste by 2000 in order to address increasing solid waste disposal and decreasing landfill capacity. Because the existing regulatory system mandates that local jurisdictions meet this established threshold, no mitigation is required to comply with solid waste regulations.

The proposed track facility improvements may require relocation or avoidance of existing utilities where utilities cross and may conflict with installation and operations of the new sections of track. Avoidance may be necessary where a flood control channel crosses the alignment, and can be achieved by widening of a bridge or extension of a culvert, depending upon individual

circumstances and how existing rail has been accommodated at the location. Utility relocation or avoidance is a routine component of rail construction activities.

The following mitigation measure will be implemented to ensure that all utility lines within the project alignment that must be relocated will be relocated in a manner consistent with maintaining the continued operation of the utility with a minimum of disruption and that ensures the utility capacity and service is not diminished or significantly affected by the relocation.

XVII-1 ***Prior to initiating relocation of any utility system located within the railroad rights-of-way, the project proponent will notify the pertinent utility of the rail construction plan. The project proponent will work with the utility under the terms of the utilities agreement to occupy the BNSF or UPRR rights-of-way to limit short-term system relocation effects and minimize outages to the degree feasible. The project proponent shall submit sufficient engineering data to verify that remaining utility systems will function as effectively after relocation as it does before relocation.***

Implementation of this measure will ensure that potential substantial adverse effects associated with utility system relocation are fully mitigated to a non-substantial level during both the short and long-term.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact or Does Not Apply
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE:				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	✔	❑	❑	❑
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	✔	❑	❑	❑
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	✔	❑	❑	❑

SUBSTANTIATION:

a. *Potentially Significant Impact* – The proposed project has the potential to have substantial impacts on biological and cultural resources. The biological and cultural resources impacts have the potential to contribute to cumulative adverse effects. Both of these resource issues will be evaluated in the EIR.

b. *Potentially Significant Impact* – The project will construct rail facilities to meet passenger rail demand in the San Joaquin Corridor. The proposed facilities are consistent with the General Plans of the cities and counties within which they would occur, and projects that are consistent with current land use planning documents are not considered to have the potential to have impacts that are individually limited but are cumulatively considerable. This project does not rely on other development. No other rail improvements are associated with or reliant upon this project.

The issues of Agriculture, Mineral Resources, and Population and Housing were found to have no significant impacts without implementation of mitigation. No further analysis of these issues was required, and these issues **will not be** addressed in the EIR.

All resource issues under Air Quality, Biological Resources, Cultural Resources, Noise, and Greenhouse Gases were found to be potentially significant. These issues **will be** addressed in the EIR.

The issues of Public Services were found to have no significant impacts without implementation of mitigation except for the issues of impacts on police and fire services, which were found to be less than significant with the implementation of mitigation measures. The issue of Recreation was found to have no significant impacts without implementation of mitigation except for in association with the proposed Sacramento Maintenance Facility, which was found to be less than significant with the implementation of mitigation to address potential impacts to the American River Parkway Plan

located adjacent to the proposed facility. All of the Aesthetics issues were found to be less than significant with implementation of mitigation measures. All of the Geology and Soils issues were found to be less than significant with implementation of mitigation measures, except for the issue regarding the capability of soils to support septic tanks or alternative wastewater treatment, which was found to be less than significant without mitigation because all wastewater treatment will occur through existing wastewater treatment or reclamation facilities. All of the Hazards and Hazardous Materials issues were found to be less than significant without the implementation of mitigation except for issues regarding impacts in the vicinity of private and public airports with the potential to result in a safety hazards, the potential for the project to be located on sites with current or historic hazardous material contamination and the potential for hazards created by the routine transport, use or disposal of hazardous materials, all of which required mitigation to reduce potential impacts to below a level of significance. These issues **will not be** addressed in the EIR.

The issues of Utilities and Service Systems were found to have no significant impacts without implementation of mitigation except for the potential for the project to require construction of new or expand existing storm water drainage facilities, which **will be** addressed in conjunction with the Hydrology and Water Quality Issues in the EIR. The issues of Land Use and Planning were found to have no significant impacts without implementation of mitigation except for the issue of habitat conservation plans and natural community conservation plan, which **will be** evaluated in conjunction with the Biological Resources impacts in the EIR.

The Hydrology and Water Quality issue of the placement of housing within a 100-year flood hazard area requires no mitigation to address, because the project would not result in the construction of any housing. Similarly, the issue of groundwater depletion requires no mitigation because the project would not directly extract groundwater nor would it interfere substantially with groundwater recharge. For the Hydrology and Water Quality issues of exposing people or structures to significant risk of inundation as a result of dam or levee failure, seiche, tsunami or mudflow, standard operating procedures of the railroads were found to be sufficient to minimize the risks to below a level of significance. Mitigation is provided to ensure that no violation of water quality standards or waste discharge requirements occur with implementation of the project, as well as to ensure that the project would not create or contribute runoff water that would exceed the capacity of storm water drainage systems. These Hydrology and Water Quality **will not be** addressed in the EIR.

The proposed project has the potential to substantially alter the existing drainage pattern of the site or area in a manner which could result in substantial erosion, siltation or flooding onsite or offsite. It also has the potential to place structures that might impede or redirect flood flows within a 100-year flood hazard. These Hydrology and Water Quality issues **will be** addressed in the EIR.

The Transportation and Traffic issues of hazards attributed to design features or incompatible uses and conflicts with adopted public transit, bicycle or pedestrian facilities or plans were found to be less than significant without mitigation. The Transportation and Traffic issues of impacts to air traffic patterns and inadequate emergency access required mitigation to reduce potential impacts to below a level of significance. These Transportation and Traffic issues **will not be** addressed in the EIR.

The Transportation and Traffic issues regarding the potential for the proposed project to significantly adversely impact the performance of the circulation system or conflict with an applicable congestion management program were found to be potentially significant. These Transportation and Traffic issues **will be** addressed in the EIR.

Based on the analysis in this Initial Study, the installation of and operation of the proposed new facilities would not cause impacts that are individually or cumulatively considerable for those issues that will not be addressed in the EIR. For those issues that will be addressed in the EIR, cumulative impacts will be further evaluated as part of the EIR.

c. *Less than Significant* With Mitigation Incorporated – The provision of an adequate passenger rail system is considered a benefit to public health and safety and has no potential to cause substantial adverse effects on human beings. However, potential impacts to Air Quality, Biological Resources, Cultural Resources, Greenhouse Gases, Hydrology and Water Quality, Land Use and Planning, Noise, Transportation and Traffic, and Utilities and Service Systems have been determined as potentially significant impacts and the specific issues identified under item (b) above will be evaluated in the EIR to be prepared for this project.

The potential for the project to adversely impact human beings exists for the issues of Aesthetics, Geology and Soils, Hazards and Hazardous Materials, Public Services, and Recreation, but mitigation is incorporated to ensure that the effects of proposed project are controlled to a less than significant impact level based on mitigation implementation. Traffic and Transportation issues have the potential to adversely impact human beings, but for specific issues identified under item (b) above mitigation was available to reduce the potential impacts to a less than significant level.

The analysis determined that for the issues of Agriculture, Mineral Resources, and Population and Housing the potential to cause substantial adverse effects on human beings was less than significant.

Conclusion

This document evaluated all CEQA issues contained in the latest Initial Study Checklist form. The evaluation determined that either no impact or less than significant impacts would be associated with the issues of Agriculture, Mineral Resources, and Population and Housing. Some or all of the issues of Aesthetics, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Public Services, Recreation, and Transportation and Traffic required mitigation to reduce the potential for impacts to a less than significant level.

All resource issues under Air Quality, Biological Resources, Cultural Resources, Noise, and Greenhouse Gases were found to be potentially significant. These issues **will be** addressed in the EIR.

The issues of Utilities and Service Systems were found to have no significant impacts without implementation of mitigation except for the potential for the project to require construction of new or expand existing storm water drainage facilities, which **will be** addressed in conjunction with the Hydrology and Water Quality Issues in the EIR. The issues of Land Use and Planning were found to have no significant impacts without implementation of mitigation except for the issue of habitat conservation plans and natural community conservation plan, which **will be** evaluated in conjunction with the Biological Resources impacts in the EIR. The proposed project has the potential to substantially alter the existing drainage pattern of the site or area in a manner which could result in substantial erosion, siltation or flooding onsite or offsite. It also has the potential to place structures that might impede or redirect flood flows within a 100-year flood hazard. These Hydrology and Water Quality issues **will be** addressed in the EIR. The Transportation and Traffic issues regarding the potential for the proposed project to significantly adversely impact the performance of the circulation system or conflict with an applicable congestion management program were found to be potentially significant. These Transportation and Traffic issues **will be** addressed in the EIR.

XIX. SUMMARY OF MITIGATION MEASURES

Aesthetics

I-1 All surface areas disturbed by the San Joaquin Rail Corridor Project construction activities, except those areas occupied by structures, hardscapes, or rail maintained areas, shall be revegetated, either with native vegetation in natural landscapes or in accordance with a landscape plan in man-made landscape areas. In non-native landscape areas, landscaping shall prioritize the use of native species or drought tolerant non-invasive species. Once construction is completed, site revegetation or restoration shall begin immediately. Where a formal landscape plan is to be implemented, it shall be coordinated with the local agency and local design guidelines for consistency. When a native landscape is to be restored, it shall be implemented in cooperation with regulatory agencies with oversight from a qualified biologist.

I-2 At any location where grade separation is recommended by the traffic/transportation or subsequent analysis, the follow on CEQA document will evaluate the potential aesthetic impacts of the proposed grade separation and make a determination regarding the significance of the aesthetic impacts.

I-3 The site development plan for the proposed Sacramento Maintenance Facility shall be required to show consistency with goals 7-23 through 7-26 from the 2008 American River Parkway Plan. Additionally, the proposed facility development plan must demonstrate that the facility would not prevent the development of the proposed extension of the Two Rivers Bicycle/Pedestrian Trail along the south bank of the American River within the Parkway Boundary; nor would it create hazards for the proposed pedestrian/bicycle access along 28th Street or the existing pedestrian/bicycle access immediately west of the site.

I-4 Fencing, landscaping, and architectural design, as applicable, will be incorporated in project design to reduce the visual impact of facilities in a manner consistent with the surrounding development and local agency design guidelines to the extent that such measures do not conflict with the engineering and budget constraints established for the facility.

I-5 Prior to commencement of construction activities on either the segment of the UPRR between Richmond and Martinez or the segment of the BNSF between Richmond and Port Chicago, a visual simulation analysis shall be performed of the facility's impact on the view. If the analysis identifies a significant impact on a scenic vista, the facility shall be relocated or redesigned to reduce the impact to a non-significant level, or a subsequent environmental evaluation shall be prepared.

I-6 Installation of lighting not associated with rail safety shall be implemented consistent with the following measures.

- Use low pressure sodium lights to minimize impacts of glare, where security needs require such lighting.
- Install lighting fixtures at the lowest level consistent with the purpose of the lighting to reduce unwanted illumination.
- Direct and shield light to minimize off-site illumination.
- Prevent light from intruding into sensitive light receptor areas off of a specific project site.

Geology and Soils

VI-1 The structural design and construction of new structures will, at a minimum, be in accordance with the requirements of the most recent Uniform Building Code (UBC) and California Building Code (CBC), including the latest supplements for the Groundshaking Zone within which they will

occur, as described in the latest CBC and all other applicable city, county, State, and Federal laws, regulations, and guidelines.

VI-2 The proposed project rail infrastructure shall be designed to comply with the performance standard for Risk Class I & II; for example, public facilities, as identified below:

Risk Class I & II, Structures Critically Needed after Disaster: Structures that are critically needed after a disaster include important utility centers, fire stations, police stations, emergency communication facilities, hospitals, and critical transportation elements, such as bridges, overpasses, and smaller dams.

Acceptable Damage: Minor non-structural; facility should remain operational and safe or be suitable for quick restoration of service.

Ancillary facilities including the Sacramento Maintenance Facility, new/refurbished Stockton Station, Fresno Layover Facility, and Merced Layover Facility shall be designed to comply with the performance standard for Risk Class III, as identified below:

Risk Class III: High occupancy structures; uses are required after disasters, for example, places of assembly, such as schools and churches.

Acceptable Damage: Some impairment of function acceptable; structure needs to remain operational.

VI-3 Add protective covering of mulch, straw, or synthetic material (erosion control blankets, tacking will be required). Mulch or straw must be certified to be free of invasive plant seed.

VI-4 Limit the amount of area disturbed and the length of time slopes and barren ground are left exposed. After sub-surface infrastructure installation, soil shall be compacted to an elevation and density similar to pre-construction conditions.

VI-5 Construct diversion dikes and interceptor ditches to divert stormwater away from construction areas.

VI-6 Apply provisions of erosion and sediment control that reduce volume and velocity of flows and content of sediment to levels that do not cause significant rill or gully erosion in susceptible areas. For example, the project may install slope drains (conduits) and/or water-velocity-control devices to reduce concentrated high-velocity streams from developing. In addition, provide for restoration of areas that do become eroded.

VI-7 After the construction phase, long-term erosion control shall be accomplished by keeping soils under vegetative cover, hardscape (pavement, gravel, or other hard cover) or by planting wind breaks. The type of vegetation used as wind breaks, if installed, shall include natural plants and must comply with the applicable Air Quality Management District's standards.

VI-8 Prior to completing engineering for future track(s) or support facilities, the Division of Rail shall ensure that essential soil and sediment studies have been completed to identify any soil constraints along the track alignment. The information from these studies shall be used to design the track or support facilities with the objective of ensuring adequate foundation support for the specific facility being designed.

Hazards and Hazardous Materials

VIII-1 All contaminated material removed from the project area of impact, as a result of an accidental release or otherwise, shall be delivered to a licensed treatment, disposal, or recycling facility that has the appropriate systems to manage the contaminated material without significant impact on the environment.

VIII-2 Before determining that an area contaminated as a result of an accidental release is fully remediated, specific thresholds of acceptable clean-up shall be established (in reference to the appropriate regulatory statue) and sufficient samples shall be taken within the contaminated area to verify that these clean-up thresholds have been met.

VIII-3 The construction contractor shall halt activities in the vicinity if the site appearance (discolored soil, etc) suggests that contamination has occurred on the site until findings can be reviewed by a qualified industrial hygienist.

VIII-4 In the event that contamination within the area of impact is discovered after construction is initiated, the project proponent shall retain a qualified industrial hygienist to characterize the type and extent of the contamination, contain the contamination, and oversee the proper removal and disposal of contamination in accordance with an approved work plan and all applicable laws, regulations, and standards.

VIII-5 At locations where proposed improvements would be located within airport safety zones that restrict the height of structures, all improvements will be demonstrated to be below the restricted height or measures will be taken to minimize adverse impacts. For example, where a new track will be installed within a height restriction zone that the train engine on the railbed could violate, the new track would be installed on the far side of the existing track further away from the runway so as to minimize intrusion into the airspace.

Hydrology and Water Quality

IX-1 The construction contractor shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) that specifies Best Management Practices to be implemented in order to prevent construction pollutants from contacting stormwater. The SWPPP shall be developed with the goal of achieving a reduction in pollutants both during and following construction in order to control urban runoff to the maximum extent practicable, based upon available and feasible best management practices. The SWPPP and the monitoring program for the construction projects shall be consistent with the requirements of the latest version of the State's General Construction Activity Storm Water Permit and the applicable NPDES Permit, which will depend upon the county within which construction is occurring.

The following items should be included in the SWPPP:

- The length of trenches that can be left open at any given time should be limited to that needed to reasonably perform construction activities. This will serve to reduce the amount of backfill stored onsite at any given time.
- Backfill material should not be stored in areas that are subject to the erosive flows of water.
- Measures such as the use of straw bales, sandbags, silt fencing, or detention basins shall be used to capture and hold eroded material for future cleanup.
- Rainfall will be prevented from entering material and waste storage areas and pollution-laden surfaces.
- Construction-related contaminants will be prevented from leaving the site and polluting waterways.
- Replanting and hydroseeding of native vegetation will be implemented to reduce slope erosion and filter runoff.
- A spill prevention control and remediation plan to control release of hazardous substances shall be developed.

IX-2 The Project Proponent shall prepare and implement a Water Quality Management Plan (WQMP) that specifies Best Management Practices to be implemented in order to prevent long-term surface runoff from discharge of pollutants from sites on which construction has been completed. The WQMP shall be developed with the goal of achieving a reduction in pollutants following construction in order to control urban runoff pollution to the maximum extent practicable, based upon available and feasible best management practices.

Public Services

XIV-1 Prior to initiating construction of the proposed project, the project proponent shall submit and have approved a fire or medical emergency response access plan that meets each affected jurisdiction's response time frame. Success for this measure will be determined by the local fire agency approving and verifying that the specific access response plan and measures will allow the local agency to continue meeting their emergency response time frame objectives.

XIV-2 Prior to initiating construction of the proposed project, the project proponent or contractor shall submit and have approved a police emergency response access plan that meets each affected jurisdiction's response time frame. Success for this measure will be determined by the local law enforcement agency approving and verifying that the specific access response plan and measures will allow the local agency to continue meeting their emergency response time frame objectives.

XIV-3 Prior to initiating construction of the proposed project, the project proponent shall submit and have approved an access control plan to its staging and equipment storage areas that meets each affected jurisdiction's crime minimization standards. Success for this measure will be determined by the local law enforcement agency approving and verifying that the access control plan and measures will minimize trespass and theft activities in accordance with local requirements.

Transportation / Traffic

XVI-1 At all times during construction, the contractor will ensure that emergency fire, police, or medical vehicles are able to access all adjacent areas. Additionally, construction equipment or activities must not obstruct or hinder traffic that might be generated during an evacuation.

Utilities and Service Systems

XVII-1 Prior to initiating relocation of any utility system located within the railroad rights-of-way, the project proponent will notify the pertinent utility of the rail construction plan. The project proponent will work with the utility under the terms of the utilities agreement to occupy the BNSF, or UPRR rights-of-way to limit short-term system relocation effects and minimize outages to the degree feasible. The project proponent shall submit sufficient engineering data to verify that remaining utility systems will function as effectively after relocation as they did before relocation.

Section 5 List of Preparers

This document was prepared by the following:

Tom Dodson. *President / Environmental Specialist*, Tom Dodson & Associates
M.S., *Geography*, University of California, Berkeley; more than 30 years of experience in land use planning and environmental and resource management, with special expertise in CEQA, NEPA, regulatory compliance, expert witness testimony and communication/facilitation for resolution of environmental issues. Contribution: Overall report writer and editor of document.

Marc Cañas. *Vice President,* J.L. Patterson & Associates, Inc.
B.S. Information Systems, Chapman University, MBA University of Southern California, (GISP) Geographic Information Systems Professional, Cal Poly Pomona. 24 years of experience in planning, design & construction management of rail projects including Class 1, Short Line, Commuter, Intercity, Heavy Rail, Light Rail and Port Facilities throughout the United States. Contribution: Engineering Evaluation and Exhibits.

Lisa Patterson. *Sr. Environmental Manager and Regulatory Specialist / Ecologist / QSP,* J.L. Patterson & Associates, Inc.
B.S., Biology, California Polytechnic State University, Pomona; over 24 years of experience in evaluations of absence/presence of endangered species, habitat assessments, biological assessments, impact analyses, mitigation plans, implementation plans, construction monitoring, general biological surveys, and preparation of reports for focused studies and endangered species. She is also conducts wetland delineation and is involved in several habitat restoration projects. Contribution: Biological Assessment and Natural Environmental Study.

Pam Wright. *Environmental Specialist*, Tom Dodson & Associates
B.A., *Environmental Studies, Core: Anthropology*, Macalester College, St. Paul, Minnesota; more than 10 years of experience in preparation of CEQA/NEPA environmental and biological resources documents. Contribution: Overall report writer of document.

CALTRANS DOCUMENT REVIEWERS

Agustin Barajas, *Associate Environmental Planner*, Division of Environmental Planning, California Department of Transportation
B.S., Natural Resources Planning & Interpretation, California State University Humboldt; 7 years of experience preparing and reviewing NEPA/CEQA environmental documents. Contribution: Overall document review.

Royce Gotcher, *Chief, Track and Signal Construction Branch;* Division of Rail, California Department of Transportation.
B.A., Government and Sociology, California State University Sacramento, over 25 years experience managing intercity rail capital improvement projects with Class I Railroads. Royce has worked as a liaison for the Department and with both the Union Pacific Railroad and the BNSF Railroad and their predecessor railroads and is called on to represent the Department for issues ranging from Positive Train Control to the implementation of Trade Corridor projects. Contribution: Overall document review.

Leo Hoyt , *Chief,* Office of Rail Project Development, Operations & Marketing; Division of Rail, California Department of Transportation.
B.A., Psychology, California State University Sacramento, Certified Senior Project Manager; University of California Irvine, with more than 35 years of operational, procurement, and managerial experience. Leo has developed expertise in all facets of intercity passenger rail. Contribution: Overall document review.

Ron Kosinski, *Deputy Director*, Division of Environmental Planning, California Department of Transportation

M.S., Urban and Regional Planning, California Polytechnic State University, Pomona. Providing environmental review, document preparation and approval since 1975. Contribution: Supervisory review of the environmental document.

Dawn Kukla, *Senior Environmental Planner*, Division of Environmental Planning, California Department of Transportation

B.A., Environmental Studies, B.A., Geography, University of California, Santa Barbara; 14 years of experience in transportation planning and environmental project management. Contribution: Senior review of environmental document and technical studies.

Betty L Miller, *Rail Transportation Manager*, Division of Rail, California Department of Transportation

B.A., Business Administration, San Jose State College; 29 years experience in contract/project administration. Sequential emphasis on Federal contract administration; technical writing; tribal administration; intergovernmental environmental review (CEQA/NEPA); and public/private contracting administration. Contribution: Overall report editor.

Section 6 Figures / Exhibits

All figures are within the Detailed Project Description in Attachment 1.

Figure 1-1 San Joaquin Corridor Intercity Route
Figure 1-2a Proposed Track Upgrades – BNSF Bakersfield to Fresno
Figure 1-2b Proposed Track Upgrades – BNSF Fresno to Stockton
Figure 1-2c Proposed Track Upgrades – UPRR Antioch to Oakland
Figure 1-2d Proposed Track Upgrades – UPRR Stockton to Sacramento
Figure 1-3a Current BNSF Track Structure
Figure 1-3b Proposed BNSF 5/10-Year (79 mph) Plan
Figure 1-3c Proposed BNSF 25-Year (79 mph) Plan
Figure 1-3d Proposed BNSF 5/10-Year (90 mph) Plan
Figure 1-3e Proposed BNSF 25-Year (90 mph) Plan
Figure 1-3f Proposed UPRR 25-Year (90 mph) Plan Niles – Tracy Subdivision
Figure 1-3g Proposed UPRR 25-Year (90 mph) Plan Sacramento Subdivision
Figure 1-3h Proposed UPRR 25-Year (90 mph) Plan Fresno Subdivision
Figure 1-4 Proposed Visalia to Hanford Route
Figure 1-5 Alternative Project – Los Angeles Route;
Los Angeles to Bakersfield (includes Tehachapi)
Figure 1-6 Alternative Project – Port Chicago to Richmond on BNSF
Figure 1-7 California Intercity Passenger Service System Map
Figure 1-8 Railroad Standard Bridge Structure
Figure 1-9 Typical At-Grade Railroad Crossing Design
Figure 1-10 Typical Railroad Equalizer Culvert
Figure 1-11 Proposed Sacramento Maintenance Facility Site
USGS 7.5 Minute Quadrangle Map “Sacramento East”
Figure 1-12 Proposed Sacramento Maintenance Facility Site
Figure 1-13 Proposed Stockton Station Alternative Site
USGS 7.5 Minute Quadrangle Map “Stockton West”
Figure 1-14 Alternative #1 – Stockton Amtrak Station Relocation Site
Figure 1-15 Alternative #2 – Stockton Amtrak Station Relocation Site (ACE Station)
Figure 1-16 Alternative #3 – Stockton Amtrak Station Relocation Site
Figure 1-17 Alternative #4 – Stockton Amtrak Station Relocation Site “The Interlock”
Figure 1-18 Alternative #5 – Existing Stockton Amtrak Station Site
Figure 1-19 USGS – Potential Fresno Layover Facility Site
USGS 7.5 Minute Quadrangle Map “Fresno South”
Figure 1-20 Potential Fresno Layover Facility Site
Figure 1-21 Potential Merced Layover Facility Site
USGS 7.5 Minute Quadrangle Map “Merced”
Figure 1-22 Potential Merced Layover Facility Site
Figure 1-23 Sacramento Amtrak Station – Future Track Relocation

Section 7 References

The American River Parkway Plan, 2008. County of Sacramento Municipal Services Agency Planning and Community Development Department.

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program Draft Fire Hazard Safety Zones in Local Responsibility Area Map dated September 17, 2007.

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program Fire Hazard Severity Zone in State Responsibility Areas adopted on November 7, 2007.

California Geological Survey, through December 2010. *Official Maps of Earthquake Fault Zones* delineated under the Alquist-Priolo Earthquake Fault Zoning Act available at http://www.quake.ca.gov/gmaps/ap/ap_maps.htm accessed on February 17, 2011.

California Scenic Highway Mapping System accessed at http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm on February 3, 2012.

State of California Solid Waste Information System (SWIS) Database, http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx accessed May 20, 2012

Metropolitan Bakersfield General Plan adopted December 11, 2007.

Contra Costa County Airport Land Use Compatibility Plan adopted December 13, 2000 adopted by Contra Costa County Land Use Commission.

Contra Costa County General Plan 2005-2020 adopted January 2005

www.fresnocog.org/airport-land-use-commission-fresno-county accessed March 9, 2012

Fresno County Airport Land Use Policy Plan dated January 1983

The City of Fresno 2025 Fresno General Plan dated February 1, 2002.

County of Fresno General Plan Background Report dated October 3, 2000

The City of Fresno General Plan and Development Code Update Working Paper 4: Transportation and Connectivity dated November 14, 2011.

City of Fresno Sierra Sky Park Land Use Policy Plan adopted August 1985 as amended September 16, 1998

Franklin Field Comprehensive Land Use Plan adopted December 1988 and amended December 1992 by the Sacramento Area Council of Governments.

The City of Hanford General Plan adopted on June 18, 2002

Kern County Airport Land Use Compatibility Plan dated March 29, 2011

Kern County General Plan dated September 22, 2009.

Kings County Airport Land Use Compatibility Plan dated July 1994

Kings County 2035 General Plan

Kings County 2035 General Plan EIR dated June 2009.

The Los Angeles County Airport Land Use Plan adopted December 19, 1991 and revised December 1, 2004 by the Los Angeles County Airport Land Use Commission.

General William J. Fox Airfield Land Use Compatibility Plan adopted December 1, 2004 by the Los Angeles County Airport Land Use Commission.

City of Madera General Plan Update Final Environmental Impact Report August 2009

County of Merced 2030 General Plan

County of Merced General Plan Background Report dated June 21, 2007.

City of Merced Final Program EIR for the *Merced Vision 2030 General Plan* dated July 2011.

City of Modesto Final Urban Area General Plan dated October 14, 2008

City of Modesto Final Master Environmental Impact Report for the Urban Area General Plan Update October (SCH #2007072023) dated October 2008 and prepared by ICF Jones & Stokes.

National Wild and Scenic Rivers System Map dated September 2009 accessed at http://www.rivers.gov/maps/zoom/conus/conus.html on January 31, 2012.

City of Palmdale General Plan adopted January 25, 1993.

County of Sacramento General Plan as amended November 9, 2011.

Sacramento County General Plan Update EIR approved November 9, 2011.

City of Sacramento Master EIR for the 2030 General Plan certified March 3, 2009.

County of Sacramento General Plan Amended November 9, 2011.

Sacramento Executive Airport Comprehensive Land Use Plan adopted May 1998 and amended May 199 by the Airport Land Use Commission for Sacramento, Sutter, Yolo and Yuba Counties.

San Joaquin County General Plan Background Report, Public Review Draft, dated July 2, 2009.

2009 Final San Joaquin County Airport Land Use Compatibility Plan

Stanislaus County General Plan available at http://www.stancounty.com/planning/pl/general-plan.shtm accessed in April 2012. No title page or other information providing the date of adoption of the General Plan is provided on the website, but the Traffic Analysis for the General Plan, which is referenced in the General Plan, is dated November 2005.

Traffic Analysis of Stanislaus County's Circulation Element prepared by Dowling Associates, Inc. dated November 26, 2005.

Stockton General Plan 2035 Background Report dated December 2007.

The Greater Tehachapi Area Specific Plan Traffic Analysis prepared by Urban Crossroads for the County of Kern dated May 28, 2010

Tulare County Revised Draft 2030 General Plan Update dated February 2010

Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report February 2010

Tulare County General Plan 2030 General Plan Background Report dated February 2010.

ATTACHMENT 1

DETAILED PROJECT DESCRIPTION

ATTACHMENT 1

SAN JOAQUIN CORRIDOR PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT 2035 VISION

Oakland and Sacramento to Bakersfield and then Los Angeles Union Station

PROJECT DESCRIPTION

California Department of Transportation

November 2012

Table of Contents

1.0 Introduction 1

1.1 Project Objectives 2
1.1.1 Specific Objectives 2

1.2 Project Characteristics 2
1.2.1 Program / Project Approach 3
1.2.2 Construction Scenario 10
1.2.3 Expanded Program Elements 12
1.2.4 Facility Construction Activities 15

1.3 Alternatives 18
1.3.1 No Project Alternatives 18
1.3.2 Proposed Project 19
1.3.3 Proposed Project with a Secondary Segment from Fresno to Visalia (San Joaquin Valley Rail – SJVR) 20
1.3.4 Proposed Project with a Secondary Segment from Bakersfield to Los Angeles (UP and SCRRA) 22
1.3.5 Proposed Project BNSF Track Alignment from Port Chicago to Richmond, California 25
1.3.6 Proposed Project Combined with High Speed Rail (HSR) 26
1.3.7 Service to Wheeler Ridge 27

1.4 Permits and Approvals Needed 27

TABLES

Table 1-1 Forecast Results for San Joaquin Corridor Service 5
Table 1-2 Future Equipment Forecast 17
Table 1-3 Permits and Approvals 27

FIGURES

Figure 1-1 San Joaquin Corridor Intercity Route
Figure 1-2a Proposed Track Upgrades – BNSF Bakersfield to Fresno
Figure 1-2b Proposed Track Upgrades – BNSF Fresno to Stockton
Figure 1-2c Proposed Track Upgrades – UPRR Antioch to Oakland
Figure 1-2d Proposed Track Upgrades – UPRR Stockton to Sacramento
Figure 1-3a Current BNSF Track Structure
Figure 1-3b Proposed BNSF 5/10-Year (79 mph) Plan
Figure 1-3c Proposed BNSF 25-Year (79 mph) Plan
Figure 1-3d Proposed BNSF 5/10-Year (90 mph) Plan
Figure 1-3e Proposed BNSF 25-Year (90 mph) Plan
Figure 1-3f Proposed UPRR 25-Year (90 mph) Plan Niles – Tracy Subdivision
Figure 1-3g Proposed UPRR 25-Year (90 mph) Plan Sacramento Subdivision
Figure 1-3h Proposed UPRR 25-Year (90 mph) Plan Fresno Subdivision
Figure 1-4 Proposed Visalia to Hanford Route
Figure 1-5 Alternative Project – Los Angeles Route; Los Angeles to Bakersfield (includes Tehachapi)
Figure 1-6 Alternative Project – Port Chicago to Richmond on BNSF
Figure 1-7 California Intercity Passenger Service System Map

Table of Contents

FIGURES (continued)

Figure 1-8 Railroad Standard Bridge Structure
Figure 1-9 Typical At-Grade Railroad Crossing Design
Figure 1-10 Typical Railroad Equalizer Culvert
Figure 1-11 Proposed Sacramento Maintenance Facility Site
USGS 7.5 Minute Quadrangle Map "Sacramento East"
Figure 1-12 Proposed Sacramento Maintenance Facility Site
Figure 1-13 Proposed Stockton Station Alternative Site
USGS 7.5 Minute Quadrangle Map "Stockton West"
Figure 1-14 Alternative #1 – Stockton Amtrak Station Relocation Site
Figure 1-15 Alternative #2 – Stockton Amtrak Station Relocation Site (ACE Station)
Figure 1-16 Alternative #3 – Stockton Amtrak Station Relocation Site
Figure 1-17 Alternative #4 – Stockton Amtrak Station Relocation Site "The Interlock"
Figure 1-18 Alternative #5 – Existing Stockton Amtrak Station Site
Figure 1-19 USGS – Potential Fresno Layover Facility Site
USGS 7.5 Minute Quadrangle Map "Fresno South"
Figure 1-20 Potential Fresno Layover Facility Site
Figure 1-21 Potential Merced Layover Facility Site USGS 7.5 Minute Quadrangle Map "Merced"
Figure 1-22 Potential Merced Layover Facility Site
Figure 1-23 Sacramento Amtrak Station – Future Track Relocation

APPENDICES

Appendix 1: San Joaquin Corridor Train and Bus Schedules
Appendix 2: Passenger Demand Forecast Modeling
Appendix 3: BNSF Report, *San Joaquin Valley Analysis, Summary of RTC Simulations*
Appendix 4: UP Letter, *San Joaquin Service Bakersfield – Oakland*

1.0 INTRODUCTION

The State of California has directly supported intercity passenger rail services since 1976. Functioning through the California Department of Transportation, Division of Rail (Caltrans), the State manages two routes operated by the National Railroad Passenger Corporation (Amtrak)--the Pacific Surfliner Corridor and the San Joaquin Corridor. The State financially supports a third Amtrak intercity passenger rail service, the Capitol Corridor. In addition to providing operating funds to Amtrak, Caltrans funds capital infrastructure improvements and equipment purchases (locomotives and passenger cars).

As State manager of the San Joaquin Corridor, Caltrans initiated the San Joaquin Corridor Program Environmental Impact Report (PEIR) process to comply with the California Environmental Quality Act (CEQA) (Cal. P.R.C. § 21000 et seq.). At this time there is no federal action so compliance with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. § 321 et seq.) is not required. However, to ensure data in this PEIR can be used in conjunction with future federal projects, all technical reports have been prepared to comply with Federal Railroad Administration (FRA) standards. The FRA's "Procedures for Considering Environmental Impacts" contain the procedures relating to environmental assessment and documentation and establish procedures for compliance by the FRA with NEPA, in particular NEPA Section 102 (2)(C) (42 U.S.C. 4332(2)(C)); Section 4(f) of the Department of Transportation Act (49 U.S.C. 303(c)); Section 106 of the National Historic Preservation Act (16 U.S.C. 470(f)); Section 309(a) of the Clean Air Act (42 U.S.C. 7609(a)); Section 307(c)(2) of the Coastal Zone Management Act (16 U.S.C. 1456(c)(2)); Section 2(a) of the Fish and Wildlife Coordination Act (16 U.S.C. 662(a)); Section 7 of the Endangered Species Act (16 U.S.C. 1536); the Noise Control Act of 1972 (42 U.S.C. 4901 et seq.); and certain Executive Orders, regulations, and guidelines. These procedures supplement the Council on Environmental Quality (CEQ) Regulations (40 CFR parts 1500 et seq.) and Department of Transportation (DOT) Order 5610.1C.

Caltrans is the lead State agency, for the environmental review. Caltrans is evaluating the San Joaquin Corridor Project as a "state program" to be implemented over the next 25 years. The objective in preparing the PEIR is to review potential impacts of proposed rail improvement projects to the San Joaquin Intercity Passenger Rail Corridor (San Joaquin Corridor) through 2035.

This PEIR provides a detailed description of the proposed project and alternatives, with a focus on those characteristics and activities that can cause physical changes in the human, physical, and biological environment. A statement of purpose and need for the proposed project is included. A statement of purpose and need for each alternative is also included, as the project encompasses a large area and each alternative would serve a different population. A project's "need" is an identified transportation deficiency or limitation, and it's "purpose" is the set of objectives that will be met by addressing the transportation deficiency. A reasonable solution or range of solutions is developed and evaluated based on the objectives. A project's purpose and need statement is designed to meet the requirements of Federal and State statutes and regulations by providing a basis for the selection of reasonable and practicable alternatives, a comparison of those alternatives, and the selection of a preferred alternative.

The purpose of the proposed rail improvements to the San Joaquin Corridor is to accommodate existing and future California intercity passenger rail demand and projected increases in ridership through 2035. The proposed project would also serve to improve rail safety and operation and provide increased availability of public transportation, which would, in turn, help to reduce emissions from vehicular travel and achieve the goals of State and local plans.

The need for increased rail capacity and the proposed improvements to the San Joaquin Corridor is demonstrated by ridership increases that have resulted in both sold out trains and an increased number of standees on board the corridor trains. Travel demand is projected to grow threefold over the course of this planning period, well exceeding current capacity.

1.1 Project Objective

Caltrans, in cooperation with multiple local agencies located within 11 California counties, propose to fund expansion of the existing rail system within the BNSF Railway Company (BNSF) and Union Pacific Railroad (UP) rights-of-way along three segments of passenger rail corridor in the San Joaquin Valley and portions of the San Francisco Bay area. If federal funding becomes available in the future, a separate document for compliance with the National Environmental Policy Act (NEPA) will be prepared at that time. The map in Figure 1-1 shows Amtrak's existing San Joaquin Corridor intercity rail passenger route. Some of the proposed Project alternatives would utilize rights-of-way along the San Joaquin Valley Railroad (SJVR) and the Southern California Regional Rail Authority (SCRRA), also known as Metrolink. The expansion of this system would serve to accommodate existing and future passenger rail demand and projected increases in ridership through 2035.

1.1.1 Specific Objectives

- Install a second or third main track along:
  - 188.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  - 22.11 miles of the Port Chicago to Oakland segment of UP track;
  - 40.62 miles of the Stockton to Sacramento segment (Fresno Subdivision) or 35.2 miles (Sacramento Subdivision) of UP track.

  (Figures 1-2a through 1-2d depict where the installation of second or third track is proposed. Figure 1-3a reflects the current BNSF track structure. Figures 1-3b through 1-3h depict the proposed track structure for BNSF and UP in order to improve the efficiency of train movements and ensure that passenger train service can operate on a reliable schedule.)
- Install new sidings, or passing track, in order to facilitate train flow on both tracks.
- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations.
- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures.
- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems.
- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas.
- Increase the maximum operating speed of passenger trains in all existing segments of the existing San Joaquin Corridor from 79 miles per hour (mph) to 90 mph.
- Obtain additional operating equipment (rolling stock) to meet the forecasted customer demand for passenger trains.
- Install new passenger train infrastructure, such as additional layover or maintenance facilities, to support expansion of future train operations.

1.2 Project Characteristics

The proposed Project traverses approximately 357 miles of existing track that is located mainly throughout California's Central Valley, reaching into portions of the San Francisco Bay area, and includes three main rail line segments:

- Bakersfield to Port Chicago (BNSF) – Milepost 887.7 to Milepost 1164.0 (276.6 track miles);
- Port Chicago to Oakland (UP) – Milepost 41.3 to Milepost 3.2 (38.1 track miles); and
- Stockton to Sacramento (UP) –Two separate line segment alternatives are proposed that would extend from Stockton to Sacramento. The first proposed alternative (UP's Fresno Subdivision track) for this segment would extend generally to the east of Highway 99 from Stockton to Sacramento from MP 82.96 to MP 39.35 (43.61 miles). The second proposed alternative (UP's Sacramento Subdivision track) would generally extend just east of Interstate 5 from Stockton to Sacramento from MP 95.1 to MP 136.85 (41.75 miles). Only one alternative alignment for this segment would be selected as part of the final preferred Project.

Some of the Project alternatives include secondary passenger train segments that extend beyond the existing areas presently served by the three main San Joaquin Corridor track segments. These secondary passenger train segments include:

- Fresno to Porterville (SJVR)
- Bakersfield to Lancaster (UP tracks) and Lancaster to Los Angeles (SCRRA/Metrolink – Antelope Valley Line)
- Port Chicago to Richmond on the existing BNSF main line

As indicated earlier, Figures 1-2a through 1-2d show the proposed locations of second and third track installation and alignments that encompass the three main San Joaquin Corridor segments (Bakersfield to Stockton, Stockton to Sacramento and Stockton to Oakland). Figures 1-4 through 1-6 show secondary segments, as described in the alternatives section below.

1.2.1 Program / Project Approach

A program-level, first tier, environmental document is considered appropriate for a corridor-wide project as envisioned by Caltrans. This Draft PEIR evaluates the potential environmental impacts of the proposed operational modifications and supporting infrastructure improvements required to support intercity passenger train operations within the San Joaquin Corridor over the 25-year planning period. The program is designed to meet the forecasted increase in intercity passenger demand over the 25-year period, the expanded number of passenger train operations required to meet the demand, and the specific infrastructure improvements required to support future operations. Conceptual and site specific impact evaluations are presented, depending upon projected operations and the rail infrastructure improvements required to support those operations. Under this approach, proposed near-term capital improvements are evaluated with more detailed, site specific information, while long-term capital improvements are evaluated at a programmatic level.

1.2.1.1 Key Program Elements

In order to create a vision for the San Joaquin Corridor at the end of the 25-year planning period, Caltrans focused on the following aspects of the passenger rail system: defined the passenger demand growth over the 25-year planning period; determined how many passenger trains will be required to meet this demand; established an objective of increasing passenger train speeds to 90 miles per hour (mph) where possible; and identified the track and facility infrastructure improvements required to support the proposed future passenger train operations. Caltrans developed the program outlined in the following sections, based on continued growth in intercity rail passenger use of the San Joaquin Corridor. The number of passengers using the San Joaquin Corridor increased about 21.5 percent over the four-year period between 2006 and 2010 (see below). Although the future growth in demand for intercity rail capacity will be affected by a large number of variables, such as future High Speed Rail operations, increased costs for fuel, and availability of future funding to support infrastructure and operations, ridership modeling shows that demand will continue to grow over the 25-year planning period. Based on this assumption, Caltrans has developed a vision of the San Joaquin Corridor operations and infrastructure improvements required to meet the 2035 demand forecast.

1.2.1.2 Existing San Joaquin Corridor Intercity Passenger Train Operations

Current San Joaquin Corridor intercity passenger train operations consist of the following: 6 daily round trip trains on the Bakersfield-Stockton segment (total of 12 trains); 4 daily round trips on the Stockton-Oakland segment (total of 8 trains); and 2 daily round trip trains on the Stockton-Sacramento segment (total of 4 trains). Passenger ridership on the San Joaquin Corridor has increased by about 170,000 riders since 2006, as shown in the following ridership summary:

Year	Number of Passengers
2006-2007	804,785
2007-2008	949,611
2008-2009	929,172
2009-2010	977,835

Based upon the forecasted growth, Caltrans concluded that additional intercity passenger trains will be needed to serve the San Joaquin Corridor. The additional passenger trains forecasted to be needed over the next 25 years, along with the required track system and other infrastructure to support the trains, are the focus of this environmental review.

Another component of current passenger train service along the San Joaquin Corridor is the extensive connecting thruway bus system that supports the train operations. The effectiveness of the San Joaquin Corridor transportation system is partially based on connecting bus routes throughout the Central Valley and into the Los Angeles Basin and beyond. It is through the combined use of Amtrak buses and trains that the San Joaquin Corridor transportation system reaches the majority of Californians and adjacent populations in Nevada. The statewide Amtrak California System Map, included as Figure 1-7, presents the San Joaquin Corridor passenger train route and the connecting bus routes. The bus system extends north to Redding, east to Reno and Las Vegas, Nevada; south to Indio; and all along the California coast from Arcata to San Diego. Throughout the system, interconnections are available between buses and other Amtrak intercity routes (such as the Pacific Surfliner), with Amtrak National Train Routes (such as the Coast Starlight or the Sunset Limited); and with the various commuter rail systems. Bus motor coaches are leased from local companies. All bus motor coaches are required to meet Amtrak motor coach design and safety requirements.

Appendix 1 contains the current San Joaquin Corridor train and bus schedules (May 9, 2011, from *Amtrak California's Operating Timetable No. 43*).

1.2.1.3 Future Intercity Passenger Demand for the San Joaquin Corridor Passenger Trains

In order to forecast demand for passenger train operations in 2035, Caltrans modeling included, among other factors, anticipated population growth over the next 20-year period and demand for alternative modes of transportation as fuel prices increase. The modeling was conducted by AECOM under the direction of Caltrans and generated the following demand forecast for a mid-point (2020) and end date for the planning period (2035).

Table 1-1: Forecast Results for San Joaquin Corridor Service

	Baseline		10-year Plan 79 mph service	10-year Plan 90 mph service	25-year Plan 90 mph service
	2011	2012	2020	2020	2035
Annual Forecasts					
Ridership	1,016,300*	1,069,500**	1,665,600	1,721,200	3,044,500
Ticket Revenue	$31,341,000*	$34,748,000**	$67,896,000	$70,732,000	$144,527,000
Passenger-Miles	139,410,000*	149,140,000**	248,330,000	258,920,000	461,890,000
Service Characteristics					
Train Frequency	Daily	Daily	Daily	Daily	Daily
Oakland-Stockton	4	4	6	6	10
Sacramento-Stockton	2	2	3	3	6
Stockton-Merced	6	6	7	7	10
Merced-Bakersfield	6	6	8	8	11
Average Travel Time (minutes)					
Oakland-Bakersfield	368	368	346 (-6%)	327 (-11%)	324 (-12%)
Sacramento-Stockton	318	318	312 (-2%)	302 (-5%)	300 (-6%)

Notes:

Forecasts are based solely upon information available to AECOM as of 6/21/11.

Forecasts are provided for the sole use of Amtrak and Caltrans.

Forecasts are not intended for disclosure in a financial offering statement.

* FY11 Estimate (prepared May 2011)

** FY 12 Budget (prepared May 2011)

Market Growth

Based on California Department of Finance growth and population projections

Auto Congestion

Auto travel times increase by 2% every five years due to increased congestion

Service Changes

Changes in frequency and travel time as shown above (timetables provided by Caltrans 5/21/11 & 5/31/11)

On Time Performance (OTP) at 90% in all years

Pricing Actions

+2% per year applied to all prices (assume no ridership loss since increase matches inflation rate)

See Appendix 2, *Passenger Demand Forecast Modeling*, for the detailed information in support of Table 1-1. Based upon the modeling, Caltrans identified a demand for 8 passenger trains per day (total 16 trains) on the BNSF tracks between Merced and Bakersfield in 2020. This represents an increase in 2 round trip trains, or a total of 16 trains using this segment compared to the current total of 12 Amtrak passenger trains. The total of 16 trains represents an increase in train operations by about 33 percent in 2020. By 2035 the modeling indicated a need for 11 round trip passenger trains per day (total of 22 trains) from Bakersfield to Stockton on the BNSF tracks. Relative to the current total of 12 Amtrak passenger trains, the 2035 operations represents an increase in operations by 10 trains, or an 83% increase in passenger train operations. These passenger trains would operate with 4 or more passenger cars to meet demand.

The above information is adequate for planning purposes over the 25-year planning period, but actual schedules will be developed in response to customer demand over the planning period. The information provides a baseline from which the program environmental effects can be forecast.

1.2.1.4 Future Line Capacity Demand: BNSF Railway and Union Pacific

Caltrans met with both BNSF and UPRR and requested they model the passenger schedules for the service proposed in this document in order for the railroads to assess the ability of their respective infrastructure and to support the future demand for track capacity, including freight. BNSF used their own RTC (Rail Traffic Controller) model to determine specific projects that would be needed. On the other hand, instead of modeling the proposed service increases, the UPRR requested specific modifications to their railroad infrastructure they claimed would be needed to support the proposed increases in passenger train operations.

1.2.1.4.1 BNSF

Using the passenger demand data, BNSF proceeded with line capacity modeling to identify the track modifications between Port Chicago and Bakersfield that the railroad considered necessary to support the proposed 2020 operating scenario (16 trains) and the 2035 operating scenario (22 trains). Port Chicago is the location (see Figure 1-2c) where intercity passenger trains operating between Oakland and Bakersfield transition between the BNSF and UP tracks.

BNSF evaluated four different schedule proposals, as follows:

- 8 daily round trip trains on the full Bakersfield - Port Chicago segment (total of 16 trains) with the passenger trains operating at a maximum speed of 79 miles per hour (mph). This scenario is termed the 5/10 year 79 mph plan.
- 11 daily round trip trains on the full Bakersfield – Port Chicago segment (total of 22 trains) with the passenger trains operating at a maximum speed of 79 mph. This scenario is termed the 25 year 79 mph plan.
- 8 daily round trip trains on the full Bakersfield – Port Chicago segment (total of 16 trains) with the passenger trains operating at a maximum speed of 90 mph. This scenario is termed the 5/10 year 90 mph plan.
- 11 daily round trip trains on the full Bakersfield – Port Chicago segment (total of 22 trains) with the passenger trains operating at a maximum speed of 90 mph. This scenario is termed the 25 year 90 mph plan.

BNSF also incorporated the following assumptions in its modeling:

- Each of the 5/10 year cases reflects a scenario where one round trip operates as an “express” schedule, with intermediate stops at Stockton, Modesto, Merced, Fresno, and Hanford only on the BNSF. The other 5/10 year cases reflect all trains stopping at all stations.
- In the 5/10 cases the freight counts were increased by 14 trains per week (2 intermodal Z1-7, 10 intermodal Q/S and 2 unit). The freight counts were then kept at those levels for the 25-year cases (in order to identify just the scope of projects needed for the modified passenger services beyond the 5/10 plan). This alternative also includes the express trains.

Based on the above assumptions, BNSF identified the line capacity improvements that would be required to meet the four different schedule proposals. Figure 1-3a shows the existing track structure from Port Chicago to Bakersfield. Only limited double track occurs along this segment, but this configuration supports the current 12 trains per day from Stockton to Bakersfield (8 to/from Oakland and 4 to/from Sacramento). Figure 1-3b shows the track improvements required to support the 5/10-year 79 mph plan. Additional double track is required for 5 new segments, totaling about 31 miles. Figure 1-3c shows the track improvements required to support the 25-year 79 mph plan. Additional double track (relative to the current circumstance) is required for 11 new segments totaling about 75.2 miles. Figure 1-3d shows the track improvements required to support the 5/10-year 90 mph plan. Less additional double track (relative to the current circumstance) is required to support this operational scenario as only 8 new segments totaling about 54 miles is required. Finally, Figure 1-3e shows the track improvements required to support the 25-year 90 mph plan. Additional double track (relative to the current circumstance) is required for 16 new segments totaling about 188.5 miles. With the described improvements to BNSF’s

tracks between Port Chicago and Bakersfield, the modeled future passenger train operational scenarios are feasible.

Appendix 3, *San Joaquin Valley Capacity Analysis, Summary of RTC Simulations*, provides details of the BNSF report.

1.2.1.4.2 Union Pacific

In a letter to Caltrans, UPRR indicated that in order to accommodate any additional intercity passenger trains along its track segments from Oakland to Port Chicago and Stockton to Sacramento, one additional track would be required on each of the specified segments. See Appendix 4, *UP Letter, San Joaquin Service Bakersfield—Oakland*. Thus, a third track would need to be installed from Richmond to Martinez and a second track would need to be installed from Martinez to Port Chicago and from Stockton to Sacramento. This proposal is discussed in more detail below.

In order to evaluate an actual improvement scenario for the UP track segments from Oakland to Port Chicago and Stockton to Sacramento, Caltrans contracted with an engineering firm with expertise in railroad engineering to examine these alignments and identify the scope of improvements that could reasonably be installed within three specific segments of the San Joaquin Corridor. Three corridors were examined, because there are currently two UP track corridors from Stockton to Sacramento, as shown on Figure 1-2d. Ultimately, only one corridor will be selected for improvement, either the Fresno Subdivision on the east or the Sacramento Subdivision on the west. Although UP did not model the route, Caltrans accepts that there is a need for an additional track to be installed on each segment, resulting in three tracks from Oakland to Martinez and two tracks from Martinez to Port Chicago, as well as two tracks on the route selected for the Stockton to Sacramento corridor.

Based upon field surveys and a review of existing track charts, it has been determined that it is possible to add the required track improvements to each of the UP corridors. The UP Niles and Tracy Subdivisions would be improved with a third main track beginning at Shellmound on the west (MP 5.20) and ending at Martinez on the east (MP 32.00). A double track would be added on the Tracy Subdivision from Martinez at MP 36 to Port Chicago at MP 41.3. Figure 1-3f shows the track improvements along these UP Subdivisions. The areas to be improved include segments of existing siding, which would be upgraded to mainline standards, and a new second/third track beginning at MP 6.35. Installation of an additional track was considered infeasible as a result of the engineering review on two segments east of Shellmound, in Richmond and between Crockett and Costa. Of the approximate 38.10 miles of the Tracy Subdivision considered for improvement, approximately 33 miles of second or third track would be installed.

Figures 1-3g and 1-3h show the UPRR's Sacramento Subdivision and Fresno Subdivision tracks, respectively. With the exception of a small segment near Lodi, where it was judged infeasible to construct a second track, the entire Fresno Subdivision would receive a second track, either through upgrade of an existing siding to main status or through installation of a new second track. Approximately 43 miles of new track would be constructed. If the Sacramento Subdivision is selected for improvement, a second track would be installed along the entire alignment, either through upgrading existing sidings or installation of a second track, resulting in approximately 41.75 miles of new track.

1.2.1.4.3 Summary – 25-Year 90 mph

In summary, the following additional track improvements would be required to meet the 25-year 90 mph intercity passenger train operating forecast on the San Joaquin Corridor: This identifies the maximum rail infrastructure improvements proposed by the host railroads.

BNSF from Bakersfield to Port Chicago:	Existing - 276.6 total track miles; 188.5 miles are proposed for new double track (68.1%)
UP from Port Chicago to Oakland:	Existing - 38.10 track miles; 33 proposed new double or triple track miles (86.6% of segment).
UP from Stockton to Sacramento:	
Fresno Subdivision:	Existing - 43.6 track miles; 43 miles estimated new double track (approximately 98.6%)
Sacramento Subdivision:	Existing - 41.75 track miles; the entire alignment is proposed for double track (100%)

An estimated total of 306.25 miles of new track, identified as siding extensions or additional main line, is proposed to meet the 2035 90 mph operational scenario with 22 trains. All new track improvements would include new or revised signal systems, culvert extensions, positive train control systems, and all other infrastructure required to operate the San Joaquin Corridor intercity passenger train system in 2035. These additional infrastructure support facilities are addressed below.

1.2.1.5 General Design Features: Track Improvements throughout the San Joaquin Corridor

The alignments of the proposed additional main line tracks would closely follow the existing track and be designed for the maximum allowable speed, currently 79 mph for passenger trains and 70 mph for freight trains. In locations where operating speed is restricted (track geometry or other constraints), the additional main line tracks would be designed with the same standard as the existing main line track through all segments of the rail corridor.

Connections to sidings and spur tracks from the new track would be made using turnouts that meet host railroad standards, currently No. 11 turnouts. Where existing track would be upgraded to mainline standard, connections to sidings and spur tracks would also use No. 11 turnouts or the current standard. All mainline connections are assumed to be No. 24 turnouts and crossovers. Roadbed sections would be constructed to conform to current railroad construction standards for mainline and major spur tracks. The proposed second mainline track alignments, as well as the upgraded mainline track, would use standard mono-block concrete ties with a resilient fastening system. Running rail would be 136 or 141 continuously welded (CWR) (136/141 lbs per meter of rail) rail on tangents and curves flatter than one degree. Sharper curves would be laid with 141# CWR rail. Cross ties through grade crossings, as well as transition ties, would be 10-foot-long wood ties.

The limits of the area of potential effect (APE) would be fixed at 5 feet from the edge of the new drainage ditch paralleling new mainline track alignments.

1.2.1.6 Track Design

- Structural Bridge Design
  Bridge design would follow common railroad and AREMA standards. The existing timber trestle ballasted deck bridges would be replaced with pre-cast concrete slab or box girder bridges or steel girder ballasted deck bridges as appropriate. All new bridges would use one of the following four designs: (1) pre-cast concrete slab; (2) pre-cast concrete box girder; (3) plate girder; or (4) rolled steel beam. Figure 1-8 provides an example of a typical railroad bridge structure.

  It is estimated that approximately 12 existing bridges along the BNSF right-of-way will be impacted by Project implementation and would need to be widened to accommodate the additional facilities. In addition, approximately 57 new bridges would need to be constructed to accommodate the additional proposed track facilities if the Sacramento Subdivision from Stockton to Sacramento is implemented. If the Fresno Subdivision alternative is implemented, an

estimated 28 bridges would be constructed. Exact bridge locations would be determined during project design.

- Grade Crossing Design
  Grade crossings would follow current railroad standards using pre-cast steel clad, shunt resistant concrete panels on 10-foot-long timber ties spaced on 19.5-inch centers. The timber ties would use tie plates adapted for the same elastic rail clips as the concrete cross ties. End ramps would be provided per railroad standards. Figure 1-9 shows a typical at grade crossing. Generally, new 8-foot concrete crossing panels would be installed for second mainline track alignments. Panels in existing grade crossings would not be upgraded.

  It is estimated that implementation of this Project would require approximately 212 grade crossings to be upgraded if the Sacramento Subdivision from Stockton to Sacramento is implemented and that 218 grade crossings would be impacted if the Fresno Subdivision is implemented. There are currently no grade separations anticipated. Exact grade crossing locations would be determined during the Project development phase.

1.2.1.7 Culverts

It is estimated that the extension of approximately 244 culverts would be required on the Sacramento Subdivision. Approximately 247 culverts would be impacted if the Fresno Subdivision is implemented. Exact culvert locations would be determined during the project development phase. Figure 1-10 contains a photo of a typical culvert.

1.2.1.8 Road Improvements

Several at-grade road crossing improvements may be required as part of the proposed Project. Exact road improvements would be determined during the project development phase.

1.2.1.9 Other Project Aspects

- Land Acquisition
  The width of railroad right-of-way varies throughout the San Joaquin Corridor. Along most of the alignment, the existing right-of-way is sufficient for completion of the proposed track improvements, with a distance of 15 to 20 feet between track centers.

- Utility Crossings
  It is anticipated that there would be utility crossings affected by the Project. These may include natural gas and oil pipelines; water and sewer lines; electric, cable, and telephone lines; storm drains; and industrial product and waste lines (caustic soda, nitrogen, and oxygen gas lines). Construction would avoid the utility crossings, if possible. If not, the lines would be relocated within the railroad right-of-way. A utility line within the railroad right-of-way that is no longer necessary would be removed or closed. Any utility relocations or closures would be implemented only after close coordination with the utility owner(s).

- Staging Areas
  A number of staging areas would be necessary in order to accommodate storage of equipment, materials, and employee parking. The staging areas would be located along the railroad right-of-way at a distance of at least 25 feet from the closest track. Necessary staging areas outside the railroad's right-of-way would be the contractor's responsibility and cannot be identified at this time. If permits (entitlements or regulatory permits) are required for staging areas, they would be obtained by the contractor and any subsequent environmental documentation would be prepared and processed on a case-by-case basis by the contractor.

- Grade Separations
  The proposed 22 train, 90 mph operational scenario in 2035 would not require the construction of any new grade separations.

- Permits
  Various permits would be required for the proposed project. They include, but are not limited to, Section 404 permit from the U.S. Army Corps of Engineers (Corps); California Regional Water Quality Control Board (RWQCB) 401 Water Quality Certification; California Department of Fish and Game (CDFG) Streambed Alteration Agreement (1601 or 1603 Agreement); and construction stormwater discharge permit National Pollution Discharge Elimination System (NPDES) through filing a Notice of Intent and compiling a Storm Water Pollution Prevention Plan (SWPPP) with the RWQCB. It may also be necessary to obtain incidental take permits for listed protected species from the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG). County Drainage Permits would be required from each county that the proposed Project alignment would traverse for activities affecting watercourses and drainage facilities in unincorporated areas. A Flood Control Encroachment Permit may be required for any temporary or permanent encroachment on County Flood Control and Water Conservation District properties or rights-of-way.

1.2.2 Construction Scenario

1.2.2.1 General

The proposed Project track installation would be completed by implementing a series of construction activities. Contracts for construction of new track are typically awarded on an incremental basis. For example, a logical construction segment would be from Merced to LeGrand. It would require an estimated 9 to 12 months to install a 5 to 10-mile segment of new track, excluding the need for grading, permitting, or grade separations. It is estimated that about 31 years of construction activity would be required to install the approximately 312 miles of new track envisioned for this project. Thus, for analysis of potential Project-related construction impacts, it is assumed that two track segments may be under construction at any given time over the 25-year period through 2035.

For a complex project component, such as constructing a new bridge over the San Joaquin River (near Fresno) or the Nichols Curve Bridge near Port Chicago and related track improvements, the track construction period could extend to between 24 to 36 months.

Installation of new second track and support facilities would involve a series of construction activities that would culminate in BNSF or UP track-laying teams installing welded rail on new fill that would be placed along a segment selected for an additional track. The proposed welded rail type (136/141 #CWR) is among the heaviest rail currently being used by BNSF and UP, and provides the best ride and safety for high speed trains, such as the existing passenger trains.

1.2.2.2 Construction Process

The first step in the construction process would be to remove and compact existing soil material within the project alignment and install fill to elevate the new track surface an average of about 5 feet above existing ground level in order to match the existing track elevation. This also maintains a drainage ditch adjacent to the track to manage stormwater runoff. This is accomplished in the following manner:

- A grading contractor would be engaged to first create a compacted base for installation of the sub-ballast. For planning purposes, it is assumed that approximately 50,000 cubic yards (cy) of this material would be excavated within a 10-mile alignment adjacent to existing track(s). About 30,000 cy would be utilized to make the new high fill. The remaining 20,000 cy of material would be exported from the site and made available to contractors as fill material. Assuming 20 cy per truck, a total of 1,000 truck trips would be required to remove the excavated material. It is assumed that the roundtrip distance would be a maximum of 20 miles. The excavation activities

are proposed to occur over an estimated 4 to 6 months, which is equal to about 17 truck trips per day.

- After the sub-ballast fill is placed, the dirt contractor would place 12 inches of sub-ballast on the subgrade. Overall, an estimated 40,000 cy of material would be used for sub-ballast. The sub-ballast material would be purchased from commercial sources in the project area and delivered by truck. Assuming 20 cy per truck delivery, a total of 2,000 truck trips would be required to import sufficient material to create the new fill and sub-ballast. Assuming 60 days of sub-ballast installation, about 34 truck trips per day would occur to deliver the sub-ballast to the entire project alignment.

- An estimated 30 people are forecast to be employed during the grading operations and typical grading equipment (dozers, graders, rollers, etc.) would be used to excavate the existing material and properly compact and install the fill and sub-ballast. Completion of the fill is expected to require approximately 4 to 6 months from the date construction begins. Due to an expected need to dispose of a portion of the excavated material, it is assumed that a maximum of 60 truck trips would occur per day during this phase of construction.

During the same period that the fill is being installed, a separate work crew will be installing bridges, drainage pipes/culverts, and other support facilities for the track. Several small culverts and several road crossings will have to be improved to ensure safety for vehicles using these roads. In addition, pipelines (such as water, natural gas, etc.) located under the railroad right-of-way will have to be protected, either by encasement, relocation or other similar measures. An estimated 50 employees may be utilized on this phase of construction. Most of the material for constructing these support facilities will be delivered by truck and are part of the estimated 60 truck deliveries to the project each day. It is anticipated that these facilities will be completed in six to nine months for each construction contract within a segment of this corridor.

The final phase of construction involves laying the new track and upgrading existing track. Track laying will be carried out by BNSF and UP personnel using a Track Laying Machine (TLM), with the majority of track work materials delivered and installed by rail. Rail, concrete ties, and ballast rock will be installed in sequence as follows:

- Approximately 5 percent of the railroad ballast (1,600 cy or 100 trucks in a 10-day period) will be delivered, laid by bottom dump truck, and leveled by graders to provide an initial working surface.
- The new rail will be delivered by a special train in 1,140-foot segments and laid alongside the existing track.
- The TLM will arrive with all needed ties on flatcars, and position the ties and rail on the newly laid ballast - approximately on alignment, but below final grade.
- Railroad cars with the remainder of the ballast will travel on top of the partially built skeleton track, and unload the ballast on top of the ties and rail.
- Specialized rail-mounted equipment will surface the track structure to final alignment and grade, smoothing the ballast placement and installing safety walkways beside the track as required.
- New signals required for operation and safety will be installed and hooked up to BNSF and UP electrical and communication systems which parallel the existing track. In addition, the access road will be improved for the track corridor to provide for ongoing operations and maintenance.

The final phase of construction would take approximately two months for completion. The new rail will be delivered by a special train in 1,140-foot segments. The new track can be installed at a rate of approximately one mile per day. Track laying requires approximately 50 people to carry out the required tasks. At the same time new signals required for operation and safety will be installed and connected to the railroad electrical and communication systems. When the track and signals have been installed and tested, the new track will be available to support train operations.

Both rail and vehicular traffic will be maintained within the corridor through the period of construction. Disturbance at an individual road crossing occurs only for a few days, except where bridges are being

installed. Where road crossings are improved, vehicular traffic will be detoured for short periods of time. This activity will be coordinated with the appropriate local agency with roadway responsibility. It is anticipated that the majority of the construction activities will take place in the daytime with the exception of major cutovers. This work will need to be coordinated with railroad operations and be scheduled during construction windows in existing track operations.

1.2.3 Expanded Program Elements

A variety of program elements (infrastructure support systems) are presented here for inclusion in all of the alternatives analyzed in this document. These include both fixed stock (rail infra-structure such as tracks, signals, stations, other building, electric wires, etc.) and rolling stock (all the vehicles that move on a railway).

1.2.3.1 Maintenance Facility

The proposed Project includes the installation of a rail operations and maintenance facility to be located in the City of Sacramento for the purpose of servicing rolling stock equipment that will be procured to address a growing demand for intercity passenger rail services. A maintenance yard and shop has been designed to handle routine and periodic inspections and repairs (fueling, sanding, inspections and light repairs), as well as heavy maintenance for both coach cars and locomotives. In addition to tracks and repair bays, the maintenance facility would contain mechanic support areas; an operations control center; transportation support areas for train engineers (day room, lockers, train control and dispatch, etc.); materials handling areas; administrative offices; and possibly other supporting services such as training and security. The maintenance facility is currently proposed to be located generally between 20th Street and 28th Street, adjacent to the UP track. Figure 1-11 shows the proposed location of the maintenance facility and Figure 1-12 is an aerial photo of the proposed maintenance facility site. Current uses include brownfields, disturbed fields, a parking lot, and retention basin.

1.2.3.2 New Stations

A new rail station, or refurbishment of the existing station in Stockton, is proposed as part of the Project. Amtrak currently has one rail station in Stockton, consisting of a building with a waiting room (the San Joaquin Street Station located at 735 South San Joaquin Street), which consists of most transit amenities The station services the 8 Amtrak trains on the Oakland to Bakersfield route. There is also a second Amtrak stop that has one platform with shelter (the ACE Station located at 949 East Channel Street) served by 4 Amtrak trains.

A new station would replace the existing station. It would include standard rail station design features, such as platforms that extend the full length of the passenger boarding area to permit boarding to all accessible train cars. It would be equipped with shelter, lighting, signage, schedules, leaning bars, information kiosks, ticket vending machines, as well as have adequate space for dedicated bus passenger circulation, loading or unloading bays and shelters, van, shuttle, taxicab, and passenger vehicle drop-off. Once a new station site is selected and funds become available, the project will follow a general construction scenario.

Plans for the new station include a police-staffed, state-of-the-art, Emergency Operations Center (EOC), in which all stations, staffed and unstaffed, would be monitored. The EOC will incorporate a security management system that consists of video surveillance, access control, motion detection, intercoms and emergency mass notifications to ensure maximum safety for all passengers within our facilities.

Five alternative locations were considered for the new Stockton station. (See figure 1-13, USGS topographic map.) Descriptions of these locations are as follows:

- Stockton Station Alternative 1 (See Figure 1-14): Alternative 1 would include the development of a new Amtrak station to be located at the corner of East Scotts Avenue and South Wilson Way, compass north of the BNSF mainline in the City of Stockton. The site is currently developed with

industrial and commercial uses. Implementation of this alternative would include the demolition of existing facilities in order to accommodate the new train station. Standard rail station design features, as described above, would be implemented. Caltrans concluded that Alternative 1 should not be given further consideration because a station at this location would require a difficult backup maneuver for trains heading to the San Francisco Bay area (Oakland), which comprises the majority of the train movements through Stockton. It would also cause delays in the schedule. Therefore, Alternative 1 will not be given further consideration in this environmental document.

- Stockton Station Alternative 2 (See Figure 1-15): Alternative 2 would include the development of a new Amtrak station as part of the existing Robert J. Cabral Altamont Commuter Express (ACE) train station located at 949 East Channel Street in the City of Stockton. The site is currently developed with a bus station and parking lots. The existing Union Pacific mainline runs directly east of the site. Several residences along Channel Street would need to be demolished as part of the implementation of Alternative 2. Similarly, the Stockton Civic Center, located on the corner of East Miner Avenue and South Aurora Street, would be demolished as part of implementation of Alternative 2. Standard rail station design features, as described above, would be implemented. Caltrans concluded that Alternative 2 should not be given further consideration because a station at this location would require a difficult backup maneuver for trains heading to the San Francisco Bay area (Oakland), which comprises the majority of the train movements through Stockton. Therefore, Alternative 2 will not be given further consideration in this environmental document.

- Stockton Station Alternative 3 (See Figure 1-16): Alternative 3 would include the development of a new Amtrak station located at the site of the old Western Pacific train depot, on the corner of Weber Avenue and North Union Street in the City of Stockton. Portions of the site are undeveloped, but the old depot remains. Standard rail station design features, as described above, would be implemented. Caltrans concluded that Alternative 3 should not be given further consideration because a station at this location would require a difficult backup maneuver for trains heading to the San Francisco Bay area (Oakland), which comprises the majority of the train movements through Stockton. Therefore, Alternative 3 will not be given further consideration in this environmental document.

- Stockton Station Alternative 4 (See Figure 1-17): Alternative 4 would include the development of a new Amtrak station located at the corner of East Scotts Avenue and Pilgrim Street in the City of Stockton on the BNSF right-of-way. Currently, the site is developed with a manufacturing plant. The site also contains a rail interlock connecting the UP and BNSF railroads. Implementation of Alternative 4 would include the demolition of the manufacturing plant. Existing tracks are located west and south of this site. Standard rail station design features, as described above, would be implemented. This alternative location would serve passengers on both the Oakland to Bakersfield and Sacramento to Bakersfield routes. Alternative 4 is the preferred location for a new passenger rail station, because it could easily serve both the Oakland and Sacramento trains that use the San Joaquin Corridor.

- Stockton Station Alternative 5 (See Figure 1-18): Alternative 5 would rehabilitate the existing Amtrak station located on the BNSF right-of-way at 735 South San Joaquin Street in the City of Stockton. Existing train tracks are located directly south of this site. Rehabilitation of this station would include an expansion of existing facilities to accommodate additional passengers. This Alternative would also include the demolition of commercial uses currently located on the southern portion of the site to accommodate expansion. Standard rail station design features, as described above, would be implemented. Alternative 5 is considered a viable, if not the preferred, alternative.

1.2.3.3 Layover Facilities

Within the 25-year planning period, Caltrans proposes initiating two train operations from the middle of the San Joaquin Corridor, either from Merced or Fresno. The objective would be to start a train early in

the morning that would head north to Sacramento and south to Bakersfield. This would allow mid-route passengers to reach the Bay Area, or Bakersfield, at the start of the work day. The train would return to the layover facility at the end of the day.[1]

The new layover facility would include a storage yard; light running maintenance and repair area; support shops; parts storage; mechanical and electrical rooms; and administrative offices. Such a facility would reduce the need to run "deadhead" trains (i.e., trains without passengers), which will reduce the cost of operation and improve the utilization of train crews. The facility will be designed and built to accommodate planned and future service requirements.

Descriptions of the potential layover locations are as follows:

- Fresno Layover Facility Alternative (See Figures 1-19 and 1-20): This Alternative would include the development of a layover facility located in the City of Fresno that would extend along the existing train tracks from Tulare Street in the north to Walker Avenue in the south. The layover facility would be located adjacent to the existing Fresno Amtrak station. This site is constrained by its small size and ability to meet the layover objective.

- Merced Layover Facility Alternative (See Figures 1-21 and 1-22): This Alternative would include the development of a layover facility located in the City of Merced that would extend along the existing train tracks from K Street in the north to 6th Avenue in the south. The layover facility would be located adjacent to the existing Merced Amtrak station.

1.2.3.4 Track Relocation

A track relocation project underway in the City of Sacramento has realigned the existing UP tracks approximately 1,000 feet to the north, closer to the Sacramento River. The tracks have been relocated to the northeast end of the Old Sacramento Rail Yard, which will affect approximately 0.55 miles of track from the UP bridge over the Sacramento River to north 7th Street. This alignment is shown on Figure 1-23. As presently envisioned, the existing historic downtown Amtrak station will continue to serve arriving and departing passengers, but a 1,080-foot underground tunnel would connect to a platform adjacent to the new track alignment. Realignment will allow access for community development to a larger parcel between the existing station and the new track from 7th Street.

1.2.3.5 Equipment Needs

Over the next 25 years new rolling stock will be required to replace equipment that has reached the end of its useful life and to provide new train sets needed to increase the number of train operations along the San Joaquin Corridor from the current 12 trains to the 22 trains envisioned for future operations in 2035. The anticipated useful life of a locomotive, including various rebuild cycles is 30 years, while the current anticipated life of a passenger car is 40 years. The expansion of rail services on the San Joaquin Corridor will require procurement of additional conventional train equipment, including new passenger rail cars and diesel locomotives. Caltrans developed the following estimates of new rolling stock acquisition over the 25-year period. Table 1-2 summarizes a programmatic equipment acquisition schedule over the planning period.

- The current San Joaquin Corridor service requires seven trainsets daily for operation of six roundtrips – four between Bakersfield and Oakland, and two between Bakersfield and Sacramento. These seven trainsets utilize a total of 42 cars and 9 locomotives, including maintenance spares. The current revenue equipment requirements are detailed under the "current" field in of Table 1-2.

[1] Schedules were modeled for Merced where the crew base is currently located. Early morning Fresno service would still be served both ways if Merced were the selected location. The train from the Bay Area goes through to Bakersfield where it is served by the overnight bus connection to and from Los Angeles. The ridership model showed this option would result in a significant increase in through ridership. The southbound morning train from Merced and northbound evening train would both layover in Merced.

- The revenue equipment requirements for the 2020 operating schedule (for both 79 mph and 90 mph scenarios) requires a total of nine trainsets, which includes an additional 12 cars and 2 locomotives, for a total of 54 cars and 11 locomotives (including maintenance spares). A detailed equipment rotation and consist size summary is located under the "2020 79 mph" and "2020 90 mph" fields in Table 1-2. Additionally, between now and 2020, four Superliner cars will be returned to Amtrak and two "Dash 8" locomotives currently used in San Joaquin service are scheduled to be retired. This increases the total new equipment requirement for the implementation of the 2020 operating scenarios to 16 cars and 4 locomotives.

- Implementation of the 2035 90 mph operating scenario will require a total of 17 trainsets, with a total of 110 cars and 20 locomotives (including maintenance spares). A detailed equipment rotation and consist size summary is located under the "2035 90 mph" field in Table 1-2. This represents an increase of 56 cars and nine locomotives over the 2020 operating scenarios (and is an increase of 68 cars and 11 locomotives over current). Additionally, the 38 California Cars and Surfliners and seven F59PHI used to provide the current services will be at the end of their projected useful life by 2035, and will require replacement. This increases the amount of new rolling stock that will need to be acquired in order to implement the 2035 operating scenario to 94 cars and 16 locomotives (56 new cars and 38 replacement cars, and 9 new and 7 replacement locomotives).

1.2.3.6 Bus System Modifications

Modifications to the existing bus system within the San Joaquin Corridor would be necessary as part of the proposed Project, including possible modifications to existing bus routes and development of additional bus routes. Modifications to the bus system may also occur as part of facilities expansion. Expanding the capacity of the current bus system would increase capacity and thus increase the amount of ridership for the overall Amtrak system. Expanding the capacity of the current bus system does not involve direct acquisition of new buses, because the feeder bus service is contracted; the State does not own or operate the buses. Thus, expansion of the Amtrak bus feeder system simply requires modifications of contracts with the bus service providers in response to future demand throughout the extended San Joaquin Corridor service area.

Potential facility improvements to the bus system within the San Joaquin Corridor may include the following elements:

- Bus drop off/loading areas;
- Bus layover facilities;
- Additional bus transfer centers; and
- Bus pullout areas.

Potential route improvements to the bus system within the San Joaquin Corridor may include the following:

- Minor reroutes of existing lines;
- Additional routes to service increased passengers of proposed secondary (bus feeder) segments;
- Additional bus stops; and
- Decreased connection times.

1.2.4 Facility Construction Activities

The proposed Project would be implemented by initiating construction for the support facilities as funding becomes available over the 25-year period. Contracts for construction of new track are typically awarded on an incremental basis. Such contracts are dependent upon funding available from the State or Federal agencies, which also have competing projects in different areas of the state or nation, respectively. The description of second track or other track construction is provided in the previous text. Construction of most Project components will extend over a period of 24-36 months. Larger and more complex projects

are designed to be built, and funded, in phases, allowing time for funding to become available while projects move ahead incrementally.

The following general construction scenario is evaluated in this document for individual facilities. If a facility (new station, maintenance facility, etc.) will be located on a site with existing structures or development, the existing facilities will be demolished and removed, with as much construction material recycled as is possible; the new facility site will be graded and compacted in a manner consistent with the type of facility (examples are provided below); any structural foundation will be constructed; the utilities will be extended to the site concurrent with foundation installation; the new structure or facility and all supporting facilities will be constructed; and the final step will be equipping the new facility as appropriate.

For example, constructing the new maintenance facility in Sacramento would first require clearing the existing property. The site would then be graded to meet the 40-acre facility footprint, including the lead tracks entering the maintenance facility. Once grading is completed, the foundations for the facility would be constructed, including underground and above ground storage tank components required to fuel and maintain the rolling stock. Utilities would then be extended to the maintenance facility site from the nearest connection point, undergrounded wherever possible. The above ground structures would then be constructed based upon an architectural design. The final step would be to bring in all of the necessary equipment to operate the maintenance facility.

Table 1-2: Future Equipment Forecast

	Cab/ Baggage	Coach	Café-Lounge	Locomotive	Total # of Cars	Total # of Trainsets
Current revenue requirements*	9	24	9	9	42	7
2020 79/90mph total revenue operating requirement*	11	32	11	11	54	9
new revenue equipment required (increase over current)	2	8	2	2	12	2
equipment due for replacement by 2020	0	4	0	2	4	--
total new & replacement equipment for 2020 79/90mph	**2**	**12**	**2**	**4**	**16**	**2**
2035 90mph total revenue operating requirement*	20	70	20	20	110	17
new revenue equipment required (increase over 2020)	9	38	9	9	56	--
new revenue equipment required (increase over current)	*11*	*46*	*11*	*11*	*68*	*10*
equipment due for replacement by 2035	9	20	9	7	38	--
total new revenue & replacement equipment for 2035 90mph	**18**	**58**	**18**	**16**	**94**	**--**
total new revenue equipment (2020 and 2035)	11	46	11	11	68	--
total replacement equipment (2020 and 2035)	9	24	9	9	42	--

* Revenue requirements include maintenance spares.

Assumptions:

a) There are no shared trainsets between the San Joaquin and Capitol Corridor trains. All equipment shown operates exclusively on the San Joaquin corridor.

b) Consist size is calculated to accommodate peak ridership levels, and is based on the maximum peak ridership for all schedules within a given trainset's rotational pattern.

c) No additional layover facilities will be required at Bakersfield, Oakland or Sacramento to accommodate these operating scenarios.

d) Any additional station platform capacity required to implement these scenarios will be addressed elsewhere in the document.

e) The Merced layover facility is addressed elsewhere in the environmental document.

f) All trains will have a cab/baggage and café-lounge car, including both sections of trains that split or combine at Stockton (thus, combined trains operating south of Stockton will have two café-lounge cars, two cab/baggage cars coupled face-to-face, and a locomotive on each end). This is required to meet the requirements of set interchangeability, passenger service and equipment maintenance.

g) All equipment will rotate through a primary maintenance facility (Oakland or Sacramento) for servicing at least once during its rotational cycle.

h) No analysis was performed to validate the operability of the schedules, or to confirm that the equipment will be operationally capable of meeting the schedule times and speeds.

1.3 Alternatives

CEQA and its guidelines require an evaluation of alternatives to the proposed Project. Section 15126 of the CEQA Guidelines indicates that the "discussion of alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of not significant…" One of the alternatives that must be evaluated is a "no project/no change alternative" regardless of whether it is a feasible alternative to the proposed Project, i.e., would meet the Project objectives or requirements. Under the No Project alternative, the environmental impacts that would occur if the proposed Project is not approved and implemented are identified.

NEPA and its guidelines have similar requirements regarding alternatives analysis. Part 1502 of the Council on Environmental Quality (CEQ) Regulations requires that agencies "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated" and "devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits" (Sec. 1502.14).

The alternatives described below are designed to satisfy the initial State requirements and in the future the Federal alternatives analysis regulations.

1.3.1 No Project Alternative

The No Project alternative is the baseline for comparison of the alternatives, as described below. Under the No Project alternative, the existing rail system would not be expanded along any of the segments included in the proposed Project.[2] The No Project alternative would not meet the Project purpose and need because it would lack the facilities described as necessary elements of the proposed Project that would accommodate existing and future passenger rail demand and projected increases in ridership through 2035. In addition, the No Project alternative has the potential to cause increased vehicular travel and congestion on roadways due to lack of adequate passenger rail capacity along the San Joaquin Corridor, and would not help achieve the goals of state and local transportation plans.

1.3.1.1 Freight Rail

The purpose of the proposed Project is to serve passenger rail demand over the next 25 years. However, Project implementation would also benefit freight rail operations because the additional infrastructure improvements would increase capacity and reduce congestion along the San Joaquin Corridor for all trains. Thus, the No Project Alternative would not provide additional operational benefits to freight rail operations, which would affect the efficiency of future goods movement. As goods movement is anticipated to increase, either longer or more frequent trains would be required for this purpose. Insufficient capacity to transport goods by rail could also lead to increased goods movement by trucks. Thus, the No Project Alternative would have transportation impacts due to additional truck traffic on the roadways, with resultant negative air quality impacts in the long term.

1.3.1.2 San Joaquin Corridor Strategic Plan

The San Joaquin Corridor Strategic Plan includes details on projects that are programmed or currently underway. The BNSF, UP, and SJVR all currently have projects that are either underway or approved and are waiting for construction, or funding, to begin. Projects are defined as underway if State funds have been allocated by the California Transportation Commission (CTC) or if other funding sources (such as FRA, Amtrak, local, or others) are provided and under contract. Larger projects are often funded and completed in phases. Programmed projects are defined as projects that have been approved, but

[2] Implementation of the No Project alternative would not preclude previously approved projects from being developed. Rail projects within the San Joaquin Corridor that have been approved prior to the certification and approval of the proposed Project could be developed under the No Project alternative.

funding will not be available until sometime in the future. Current programmed projects include track and signal upgrades, route capacity improvements, and a number of station area improvements. Proposed immediate projects are defined as projects that would be developed in one to two years.

1.3.2 Proposed Project

The proposed Project would include three main rail line segments that traverse over 360 miles:

- Bakersfield to Port Chicago (BNSF) – Milepost 887.7 to Milepost 1164.0 (276.6 track miles);
- Port Chicago to Oakland (UP) – Milepost 41.3 to Milepost 3.2 (34.5 track miles); and
- Stockton to Sacramento (UP) – Milepost 1121.4 to Milepost 88.8 (49 track miles). Two separate line segment alternatives are proposed that would extend from Stockton to Sacramento. The first proposed alternative would generally extend just east of Interstate 5 from Stockton to Sacramento. The second proposed alternative for this segment would extend generally to the east of State Route 99 from Stockton to Sacramento. Only one alternative alignment for this segment would be implemented as part of the proposed Project.

These tracks would be installed adjacent to existing BNSF and UP rail lines, as part of a double or, in some cases, a triple track system. The segments would require bridges, culverts, grade crossings, utility crossings, staging areas and road improvements as part of the general design. The proposed Project would also require permit acquisition, and when necessary, land acquisition. In addition to the proposed infrastructure improvements (segments), the proposed Project would include the following elements:

- Additional maintenance facility for trains;
- New or rehabilitated passenger station within Stockton City limits;
- New layover facility (possibly in Merced or Fresno);
- Equipment Needs (including railcars, locomotives, wayside objects, etc.); and
- Bus system modifications.

1.3.2.1 Purpose and Need

The purpose of the proposed rail improvements to the San Joaquin Corridor is to accommodate existing and future passenger rail demand and projected increases in ridership through 2035. The proposed Project would increase the number of daily round trips from 16 to 22 trains operating per day. The proposed Project also includes increasing the maximum passenger train speed to 90 mph along the corridor. Further, the proposed Project would serve to improve rail safety and operation and provide increased availability of public transportation; which would in turn help reduce vehicular emissions and achieve the air quality goals of state and local plans.

The need for the proposed rail improvements to the San Joaquin Corridor is demonstrated by ridership increases and the increased number of standees on board the corridor trains, demonstrating the need to increase the capacity of the current system to meet existing travel demand. The proposed project is also needed to reduce negative impacts to the natural environment and air quality that would result as additional roadways are constructed and vehicular use increases.

1.3.2.2 Travel Demand

The San Joaquin Corridor (Bakersfield to Oakland, Los Angeles and Sacramento) is a major transportation resource between Southern and Northern California. It boasts the fifth highest ridership of any Amtrak service in the country and serves a vital function in providing intercity passenger rail service within and between cities in California's Central Valley.[3] As California's population continues to increase, the travel demand will also increase, with passenger rail ridership growth anticipated to outpace the number of trains available to serve the population.

[3] San Joaquin Corridor Strategic Plan, California Department of Transportation, January 2008. p.1-2.

The California State Rail Plan (2007-08 to 2017-18) (Plan) proposes implementation of 10-year intercity passenger rail service expansion to address projected increases in passenger rail ridership. There are currently 6 train round trips occurring on this route. Caltrans anticipates that within the next 10 years, there will be sufficient demand to support 8 train round trips on the San Joaquin Corridor, with 2 additional round trips operating between Oakland and Stockton.[4] One of the Plan's principal route objectives for the San Joaquin Corridor (defined by the Plan as Bay Area/Sacramento – Fresno – Bakersfield – Los Angeles) includes a 66 percent increase in annual ridership from 853,000 to 1,417,000, with a corresponding 105 percent increase in annual revenues from $27.8 million to $56.9 million.[5]

1.3.2.3 Safety

Passenger rail is known to be one of the safest modes of transportation in the nation, with significantly less accident risk than vehicle travel. The projected increase in passenger rail ridership does, however, bring with it an inherent increase of risk for accidents. In particular, the potential of rail/automobile collisions at grade crossings is elevated with the corresponding increase in the number of vehicles on the road and more frequent, faster trains. The San Joaquin Corridor Strategic Plan notes that the "San Joaquins" have over 400 public and private at-grade crossings throughout the corridor on both the UP and BNSF rail lines. On the BNSF route alone, there are 362 at-grade crossings with 255 public and 107 private crossings. In California, the San Joaquin Corridor has 3 out of the top 10, and 8 out of the top 20 at-grade road crossings with the most accidents between 1995 and 2004.[6] The consideration of safety will weigh heavily upon proposed rail improvement design features for the San Joaquin Corridor.

1.3.2.4 Natural Environment and Air Quality

Caltrans considers the preservation and improvement of the natural environment and air quality one of its key goals in its vision for intercity passenger rail. Both rail passenger and rail freight service contribute to improved air quality by reducing vehicle miles traveled and vehicle emissions. It reduces fuel consumption, thereby helping to limit dependence on scarce petroleum resources. It also helps to reduce the need for highway construction, which can contribute to inefficient land use patterns and their loss of economically, environmentally, and historically valuable land.[7] Expansion of the intercity passenger rail system on the San Joaquin Corridor will provide the opportunity to move more passengers by rail versus automobile.

1.3.3 Proposed Project with a Secondary Segment from Fresno to Visalia (San Joaquin Valley Rail – SJVR)

This alternative includes all facilities and components described above in Section 1.3.2 (proposed Project). In addition, this alternative would include the development of a secondary rail segment that would extend from Fresno to Visalia. One to two additional trains are proposed for the Fresno to Visalia segment. The San Joaquin Corridor Strategic Plan originally envisioned service to Porterville, but no trains are currently being operated to Porterville; nor are the tracks being maintained for service. Therefore, the extension of passenger train service to Porterville is not considered to be a viable alternative, and it will not be given further consideration in this document.

Enhanced track would occur along the existing SJVR alignments, either Fresno to Visalia or Fresno to Hanford to Visalia. The former segment is operated by SJVR, but they are leasing the tracks that are owned by the UP. The latter segment would travel the BNSF tracks from Fresno to Hanford and then the SJVR tracks from Hanford to Visalia. Refer to Figure 1-4 which shows the proposed two alignments for a Fresno to Visalia passenger train service. Two trains per day would operate along this segment, including one train to Fresno and from Fresno. The additional trains proposed for this segment would travel at

---

[4] California State Rail Plan (2007-08 to 2017-18), California Department of Transportation, March 2008. p. 114.

[5] Ibid.

[6] San Joaquin Corridor Strategic Plan, California Department of Transportation, January 2008. p. 1-6.

[7] California State Rail Plan (2007-08 to 2017-18), California Department of Transportation, March 2008. p. 10.

speeds between 79 to 90 miles per hour, based on the track geometry and signal system. This segment would require upgraded tracks, signals, bridges, warning devices, and grade crossings.

The SJVR operates over a total of 417 miles of track in the San Joaquin Valley, interchanging with the UP at Fresno, Goshen Junction, and Bakersfield. The SJVR interchanges with BNSF at Fresno and Hanford.

Implementation of a second segment from Fresno to Visalia would enable SJVR to increase its capacity to serve both existing and future demand. Service expansion to Visalia is projected to generate an additional 25,400 passengers per year in the next 10 years and 89,900 passengers per year in the next 25 years over the projected baseline ridership, with an estimated travel time between Fresno and Visalia of 1 hour and 12 minutes.

1.3.3.1 General Design Features

The alignment of the proposed secondary segment would utilize the existing track and would be designed for a maximum allowable speed of 90 miles per hour for intercity passenger trains. All design features would be constructed to conform to current UP construction standards.

1.3.3.2 Structural Bridge Design

All bridge design would follow UP and American Railway Engineering and Maintenance-of-Way Association (AREMA) standards. The existing bridges would be replaced with pre-cast concrete slabs, as appropriate, in order to expand the width of the bridges. All bridges would be constructed by preparing the subgrade, driving piles, then constructing piers, and installing the bridge span.

1.3.3.3 Grade Crossing Design

Grade crossings would follow current UP standards, using pre-cast steel clad, shunt resistant concrete panels on 10-foot long timber ties spaced on 19.5 inch centers. The timber ties would use tie plates. End ramps would be provided per UP standards. Generally, new 8-foot concrete crossing panels would be installed for the secondary track.

1.3.3.4 Culverts

Existing culverts would be extended, and drainage ditches adjacent to the tracks would be reconstructed as required to maintain historic flow paths.

1.3.3.5 Road Improvements

It is anticipated that road improvements would be necessary as part of implementation of the secondary segment. New signals required for operation and safety would be installed and hooked up to SJVR's electrical and communication systems which parallel the existing track.

1.3.3.6 Land Acquisition

Implementation of the secondary segment would generally occur within the existing right-of-way, with the potential for limited right-of-way acquisition, if necessary. A final land acquisition determination would be made during final engineering design.

1.3.3.7 Utility Crossings

It is anticipated that utility lines would be affected by implementation of a secondary segment from Fresno to Visalia. The lines may include natural gas and oil pipelines; water and sewer lines; storm drains; electric, cable, and telephone lines; and industrial products and waste lines. The lines would be left in place and avoided during construction; or, working in conjunction with the owners of the utility lines, the

lines would be relocated within the right-of-way. All utility relocations would only be implemented after close coordination with the owner(s) of the utility line.

1.3.3.8 Staging Areas

It is anticipated that staging areas would be necessary during the construction of the secondary segment from Fresno to Visalia. Exact locations of the staging areas would be determined during construction planning. When permits (entitlements or regulatory permits) are required for staging areas, such permits would be obtained by the contractor. Any subsequent environmental documentation required would be prepared and processed on a case-by-case basis by the contractor.

1.3.3.9 Permits

Implementation of a secondary segment from Fresno to Visalia may require obtaining permits, including, but not limited to a: Section 404 permit from the U.S. Army Corps of Engineers (Corps); California Regional Water Quality Control Board (RWQCB) 401 Water Quality Certification; California Department of Fish and Game (CDFG) Streambed Alteration Agreement (1601 or 1603 Agreement); and a construction stormwater discharge permit–National Pollution Discharge Elimination System (NPDES) through filing a Notice of Intent and compiling a Storm Water Pollution Prevention Plan (SWPPP) with the RWQCB. It may also be necessary to obtain incidental take permits for listed protected species from the USFWS and CDFG. County Drainage Permits may be required from each county through which the proposed secondary segment would traverse for activities affecting watercourses and drainage facilities in unincorporated areas. A Flood Control Encroachment Permit may be required for any temporary or permanent encroachment on County Flood Control and Water Conservation District properties or rights-of-way.

1.3.3.10 Purpose and Need

The purpose and need for this alternative is similar to that of the proposed Project for the portion of rail located in this segment, and would fulfill the same objective. The alignment for this alternative would be shared with the existing SJVR rail line from Fresno to Visalia, and would serve the populations located in the cities along this segment.

1.3.4 Proposed Project with a Secondary Segment from Bakersfield to Los Angeles (UP and SCRRA)

This alternative includes all facilities and components described above in Section 1.3.2 (proposed Project). In addition, this alternative would include the development of a passenger rail segment that would extend from Bakersfield to Los Angeles through Lancaster, a distance of approximately 120 miles. None of the existing rail alignments from the San Joaquin Valley that connect these two locations currently carry passengers. An alignment owned and operated by the UP is currently in operation between Bakersfield and Lancaster. This alignment passes through Tehachapi and Mojave to Lancaster. From Lancaster to Los Angeles, a San Joaquin passenger train would utilize the railroad tracks owned by the Southern California Regional Rail Authority (SCRRA). Refer to Figure 1-5.

The existing UP track segment from Bakersfield to Mojave is dedicated solely to freight service, and is not designed for passenger rail. This is one of the busiest single track freight lines in the western United States. The segment from Mojave to Lancaster is also dedicated solely to freight service. The UP and BNSF share the capacity over this route and do not allow passenger train access over the Tehachapi Pass due to the combination of heavy freight tonnage, the frequency of trains, and track geometry that requires slow operating speeds. Occasionally, the UP will re-route passenger trains over the pass, but this is a rare occurrence and only implemented when maintenance or repairs are required on the normal route. Thus, it is possible for passenger trains to utilize the Bakersfield to Lancaster track segment. Note that under current operating conditions, the San Joaquin Corridor Amtrak operations terminate in Bakersfield and the final segment of travel, Bakersfield to southern California, is provided by Amtrak buses.

Division of Rail (Caltrans) received a request from the San Joaquin Valley Rail Committee to explore the feasibility of operating passenger train service over the Tehachapi Pass. This proposal would allow San Joaquin Corridor trains to be extended via Tehachapi Pass to connect with the Pacific Surfliner Corridor that operates between Los Angeles and San Diego. The evaluation of this proposal identified a number of constraints to the operation of a passenger train through Tehachapi Pass. Because of the high freight density on Tehachapi, the likelihood of interference with BNSF and UP freight trains on this single-track mountain railroad requires any proposed passenger train schedule to plan for delays. To allow passenger service to operate between Bakersfield and Lancaster with minimal impact to freight service and maintain a high level of on-time performance, it was determined that 3 hours of extra time (pad) should be added to the schedule. The provision of a schedule pad allows the use of existing San Joaquin corridor schedules. Additionally, the southbound pad would provide an early morning arrival in Los Angeles for connection with the Pacific Surfliners. It is important that a southbound San Joaquin Amtrak train operate on a regular schedule within Metrolink territory due to the need to interact with Metrolink and Pacific Surfliner trains. This evaluation resulted in the development of a conceptual schedule that holds the southbound San Joaquin train in Palmdale until the train's scheduled morning departure to Los Angeles over Metrolink territory. After departing Palmdale, the train would proceed south to Los Angeles and then continue on to San Diego as a Pacific Surfliner train.

The standout feature of this scenario is that it requires no new equipment with the exception of one sleeping car per train set and one sleeper to serve as a spare. This is because the proposed service operates at night when the equipment sets currently sit overnight in either Los Angeles or Bakersfield. The equipment rotation scenario would be as follows: #718 → #564 → #573 → #580 → #591 → #711. This allows for the train to continue to San Diego as a Pacific Surfliner through train. The #564 → #573 → #580 → #591 rotation will be the actual equipment rotation on the Pacific Surfliner corridor. This rotation would take two equipment sets, with the sets maintained in Oakland every other day between 11:00 a.m. and 5:50 p.m. Three sleepers would be required to operate the service, which will operate as trains #573 → #580. Appendix 5 contains the detailed analysis of this operating scenario.

This alternative proposes to develop the infrastructure necessary to enable the existing UP alignment to carry passenger trains. Infrastructure improvements would be required to satisfy UP rail capacity requirements. The ability to operate over this segment would enable passengers to ride the train continuously from northern California to Los Angeles Union Station, eliminating the need for bus service for this segment of the trip on one train. This alternative would also reduce the total reliance on the extensive bus connections currently operating between Bakersfield and the southern California cities.

1.3.4.1 General Design Features

The alignment of the proposed secondary segment would utilize the existing track and would be designed for a maximum allowable speed of 90 miles per hour for passenger trains, except through Tehachapi Pass. Since the existing alignment is designed for freight rail only, the UP track system would be upgraded as necessary using regulation standards for passenger rail. All design features would be constructed to conform to current UP construction standards. There is currently a separate effort in progress to enhance goods movement through the Tehachapi Pass that would install double track along an additional 8.21 miles of the approximate 25.23 mile route through the Tehachapi Pass from Bena to Marcel. This improvement would provide additional areas through Tehachapi Pass for train meets. The objective of the additional double track is to increase the maximum capacity of this segment from 50 to 65 freight trains, including the ability to add longer trains. Thus, the potential to add one or two passenger trains may be feasible. In order to serve a passenger train in Lancaster, a new connection and platform would need to be constructed between the existing Metrolink station in Lancaster to the UP line. Although the schedule over Tehachapi Pass to Los Angeles Union Station requires about twice the time as the bus trip from Bakersfield to Los Angeles, this alternative will be given consideration as a complete passenger train trip from the Bay Area/Sacramento to Los Angeles.

1.3.4.2 Structural Bridge Design

All bridge design would follow UP and American Railway Engineering and Maintenance-of-Way Association (AREMA) standards. The existing bridges would be replaced with pre-cast concrete slabs as appropriate. All bridges would be constructed by driving piles.

1.3.4.3 Grade Crossing Design

Grade crossings would follow current UP standards, using pre-cast steel clad, shunt resistant concrete panels on 10-foot long timber ties spaced on 19.5 inch centers. The timber ties would use tie plates. End ramps would be provided per UP standards. It is anticipated that road improvements would be necessary as part of implementation of passenger train operations through the Pass.

1.3.4.4 Land Acquisition

Implementation of any track improvements would occur within the existing right-of-way, with the potential for limited right-of-way acquisition, if necessary. A final land acquisition determination would be made during final engineering design.

1.3.4.5 Utility Crossings

It is anticipated that utility lines would be affected by implementation of any track improvements to support passenger train operations from Bakersfield to Lancaster. The lines may include natural gas and oil pipelines; water and sewer lines; storm drains; electric, cable, and telephone lines; and industrial products and waste lines. The lines would be left in place and avoided during construction; or, working in conjunction with the owners of the utility lines, the lines would be relocated within the right-of-way. All utility relocations would only be implemented after close coordination with the owner(s) of the utility line.

1.3.4.6 Staging Areas

It is anticipated that staging areas would be necessary during any construction of track improvements for passenger rail operations from Bakersfield to Lancaster. Exact locations of the staging areas would be determined during construction planning. When permits (entitlements or regulatory permits) are required for staging areas, such permits would be obtained by the contractor. Any subsequent environmental documentation required would be prepared and processed on a case-by-case basis by the contractor.

1.3.4.7 Permits

Implementation of track improvements from Bakersfield to Lancaster may require obtaining permits, including, but not limited to a: Section 404 permit from the U.S. Army Corps of Engineers (Corps); California Regional Water Quality Control Board (RWQCB) 401 Water Quality Certification; California Department of Fish and Game (CDFG) Streambed Alteration Agreement (1601 or 1603 Agreement); and a construction stormwater discharge permit–National Pollution Discharge Elimination System (NPDES) through filing a Notice of Intent and compiling a Storm Water Pollution Prevention Plan (SWPPP) with the RWQCB. It may also be necessary to obtain incidental take permits for listed protected species from the USFWS and CDFG. County Drainage Permits may be required from each county through which the proposed secondary segment would traverse for activities affecting watercourses and drainage facilities in unincorporated areas. A Flood Control Encroachment Permit may be required for any temporary or permanent encroachment on County Flood Control and Water Conservation District properties or rights-of-way.

1.3.4.8 Purpose and Need

The purpose and need for this alternative is similar to that of the proposed Project for the portion of rail located in this segment, and would fulfill the same objectives. The alignment for this alternative would be shared with the existing UP infrastructure from Bakersfield to Lancaster and the existing Metrolink rights-

of-way from Lancaster to Los Angeles Union Station. The new passenger segment would serve the populations located in the cities along its length, as noted in the alternative description above.

1.3.5 Proposed Project BNSF Track Alignment from Port Chicago to Richmond, California

This alternative includes all facilities and components described above in Section 1.3.2 (proposed Project). In addition, this alternative would include the development of a passenger rail segment that would extend along the BNSF tracks between Port Chicago and Richmond. The existing BNSF track between Richmond and Port Chicago is dedicated solely to freight trains and is not designed for passenger rail operations. The current Amtrak passenger trains follow the UP alignment from Port Chicago along the San Francisco Bay from Martinez to Oakland. Under this alternative, the Amtrak passenger trains could also operate on the BNSF owned rights-of-way as an alternative or in an emergency. (See Figure 1-6.)

This alternative proposes to develop infrastructure necessary to enable the existing BNSF alignment to carry passenger trains. Infrastructure improvements would be required to satisfy BNSF rail capacity requirements. This alternative would reduce the total reliance on the UP track for the final segment from Port Chicago into Oakland.

1.3.5.1 General Design Features

The alignment of the proposed secondary segment would utilize the existing track and would be designed for a maximum allowable speed of 90 miles per hour for passenger trains, except through any restricted speed segments. Since the existing alignment is currently designed for freight rail only, the BNSF infrastructure would be upgraded, as necessary, using regulation standards for passenger rail. All design features would be constructed to conform to current BNSF construction standards. A potential to add one or more passenger trains may be feasible, such as a limited passenger train that would stop only at major urban areas along the route, for example, Stockton, Fresno, and Bakersfield.

1.3.5.2 Structural Bridge Design

All bridge design would follow BNSF and American Railway Engineering and Maintenance-of-Way Association (AREMA) standards. The existing bridges would be replaced with pre-cast concrete slabs, as appropriate. All bridges would be constructed by driving piles.

1.3.5.3 Grade Crossing Design

Grade crossings would follow current BNSF standards, using pre-cast steel clad, shunt resistant concrete panels on 10-foot long timber ties spaced on 19.5 inch centers. The timber ties would use tie plates. End ramps would be provided per BNSF standards. It is anticipated that road improvements would be necessary as part of implementation of passenger train operations through this segment of track.

1.3.5.4 Land Acquisition

Implementation of any track improvements would occur within the existing right-of-way, with the potential for limited right-of-way acquisition, if necessary. A final land acquisition determination would be made during final engineering design.

1.3.5.5 Utility Crossings

It is anticipated that utility lines would be affected by implementation of any track improvements to support passenger train operations from Port Chicago to Richmond. The lines may include natural gas and oil pipelines; water and sewer lines; storm drains; electric, cable, and telephone lines; and industrial products and waste lines. The lines would be left in place and avoided during construction; or working in conjunction with the owners of the utility lines, the lines would be relocated within the right-of-way. All utility relocations would only be implemented after close coordination with the owner(s) of the utility line.

1.3.5.6 Staging Areas

It is anticipated that staging areas would be necessary during any construction of track improvements for passenger rail operations from Port Chicago to Richmond. Exact locations of the staging areas would be determined during construction planning. When permits (entitlements or regulatory permits) are required for staging areas, such permits would be obtained by the contractor. Any subsequent environmental documentation required would be prepared and processed on a case-by-case basis by the contractor.

1.3.5.7 Permits

Implementation of track improvements from Port Chicago to Richmond may require obtaining permits, including, but not limited to a: Section 404 permit from the U.S. Army Corps of Engineers (Corps); California Regional Water Quality Control Board (RWQCB) 401 Water Quality Certification; California Department of Fish and Game (CDFG) Streambed Alteration Agreement (1601 or 1603 Agreement); and a construction stormwater discharge permit–National Pollution Discharge Elimination System (NPDES) through filing a Notice of Intent and compiling a Storm Water Pollution Prevention Plan (SWPPP) with the RWQCB. It may also be necessary to obtain incidental take permits for listed protected species from the USFWS and CDFG. County Drainage Permits may be required from each county through which the proposed secondary segment would traverse for activities affecting watercourses and drainage facilities in unincorporated areas. A Flood Control Encroachment Permit may be required for any temporary or permanent encroachment on County Flood Control and Water Conservation District properties or rights-of-way.

1.3.5.8 Purpose and Need

The purpose and need for this alternative alignment is as a backup to the existing UP track alignment for passenger rail operations or for use with a limited type train operation with minimal stops along the route from Oakland to Bakersfield.

1.3.6 Proposed Project Combined with High Speed Rail (HSR)

This alternative analyzes the relationship between the proposed Project in conjunction with the possible future development of high speed rail (HSR) within the San Joaquin Corridor. Amtrak's San Joaquin Corridor is an intercity passenger rail operation that serves as a key alternative transportation mode for the residents of the San Joaquin Valley and throughout the state. Through a combination of train stations in most large communities and an extensive bus feeder system, most of the San Joaquin Valley and Sacramento Valley residents have an alternative mode of transportation to move about the state safely and efficiently, with ultimate connections to both northern and southern California.

A separate high speed rail alignment, originally envisioned to move passengers between San Diego and San Francisco within a few hours, is proposed to be constructed between Bakersfield and either Madera or Merced as a demonstration project. One objective identified under this alternative is to create a "blended" or "integrated" rail system where SJVC trains travel at 90 miles per hour on the existing SJVC tracks to the location of the northern HSR station. Trains at that point would shift to the new HSR track where trains would be allowed to travel at speeds up to 125 mph to an HSR station north of Bakersfield, currently envisioned to be near Jastro, just north and west of downtown Bakersfield. Although this high speed rail system would initially parallel a portion of the San Joaquin Corridor, it would not provide stops throughout the Valley; therefore, it could not serve the entire population of the service area in the same manner as the existing system. A new alignment would be developed as part of this alternative due to a grade separation requirement for any trains traveling speeds in excess of 110 miles per hour. The high speed train is projected to travel at an initial top speed of 125 miles per hour and therefore must consist of a totally separate, isolated track system.

Established in 1996, the California High-Speed Rail Authority (CHSRA) is charged with the planning, design, construction, and operation of a statewide high-speed rail system. The purpose of the CHSRA is to successfully develop approximately 800 miles of a high-speed rail infrastructure that would span from

San Francisco to San Diego, serving up to 24 stations along the route. The need exists for high-speed rail to achieve the goals outlined by the California Legislature. The proposed system would serve some of the same cities currently served by the existing intercity and commuter passenger rail, including Fresno, Merced, Stockton, Bakersfield, San Francisco, and Los Angeles.

Since the CHSRA is responsible for implementing a High Speed Rail system, it is not a traditional alternative to the proposed action. It is being developed as a separate passenger rail system to serve a different clientele and service area. However, Caltrans has concluded that it is essential to define the role that the existing Amtrak passenger system will maintain relative to the proposed High Speed Rail system. Caltrans envisions that the intercity system, including the bus feeder system, will serve as a feeder system to the high-speed rail system, much like the feeder buses serve the intercity rail passenger system. Passengers would take Amtrak intercity passenger rail trains or buses to defined interchange points, which could include joint intercity/high-speed rail stations or a system of bus connections between stations where each system maintains separate stations within the same community. This would allow passengers seeking to use the high speed rail system to continue their journey on high-speed rail trains. At this time an estimated six trains are proposed to operate under the "integrated" system. Additional trains may continue to serve the intercity train demand along the existing BNSF corridor. A specific schedule under this alternative has not been defined, but based on preliminary communications with BNSF, it will require double tracking the whole track alignment between Stockton and Merced (the HSR northern station) to accommodate this alternative. Because the High Speed Rail system has not yet been clearly defined, the exact manner and location of specific connections has not yet been determined, and thus cannot be defined in this document.

1.3.7 Service to Wheeler Ridge

Rail service to Wheeler Ridge (near the Grapevine area along Interstate 5) was analyzed during the earlier phase of Project development based on public comments and stakeholder input, and was presented as an alternative in the San Joaquin Corridor Strategic Plan. Implementation of service would require additional infrastructure in support of an extension of the San Joaquin service south to the Wheeler Ridge/Grapevine area along a new right-of-way.

The acquisition of new right-of-way and construction of new infrastructure for this alternative would result in a high capital cost. In addition, the extent of existing service modification would be high, as coordination with Metrolink along its Antelope Valley line, as well as modifications to the Metrolink or Pacific Surfliner equipment rotations and service timetables would be required. It was determined that these circumstances were prohibitive to implementation of this alternative.[8]

1.4 Permits and Approvals Needed

The following permits, reviews, and approvals would be required for Project construction:

Table 1-3: Permits and Approvals

Agency	Permit/Approval	Status
Corps of Engineers	404 Permit	No Action
Regional Water Board	401	Certification
Department of Fish and Game	Streambed Alteration Agreement	
Department of Fish and Game	CESA Incidental Take Permit	
U.S. Fish and Wildlife Service	FESA Incidental Take Permit	
Local jurisdictions	Encroachment Permits	
Local jurisdictions	Land Use Entitlements	

[8] San Joaquin Corridor Strategic Plan, California Department of Transportation, January 2008. p. 7-6

FIGURES

Figure 1-1: San Joaquin Corridor Intercity Route

Source: J.L. Patterson & Associates, Inc. / Amtrak California

Figure 1-2a: Proposed Track Upgrades – BNSF Bakersfield to Fresno

Source: J.L. Patterson & Associates, Inc.

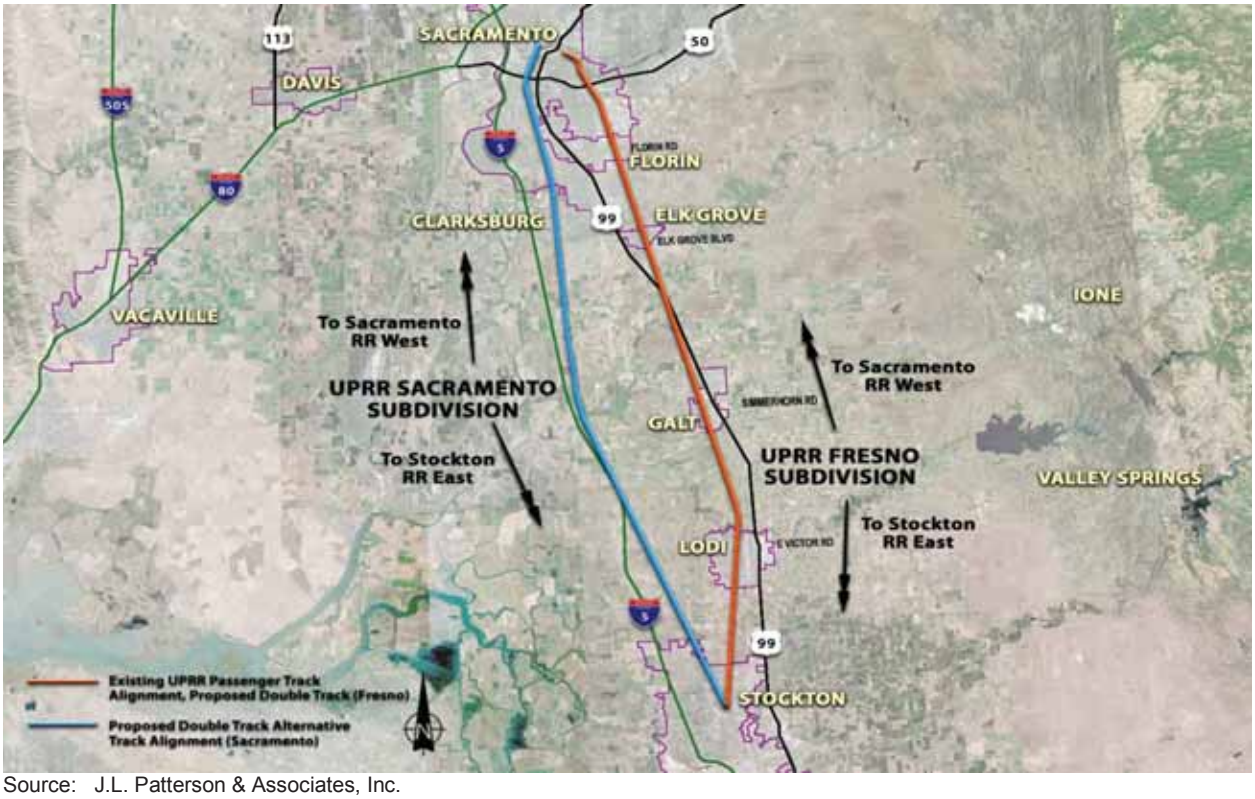
Figure 1-2b: Proposed Track Upgrades – BNSF Fresno to Stockton

Source: J.L. Patterson & Associates, Inc.

Figure 1-2c: Proposed Track Upgrades – UPRR Antioch to Oakland

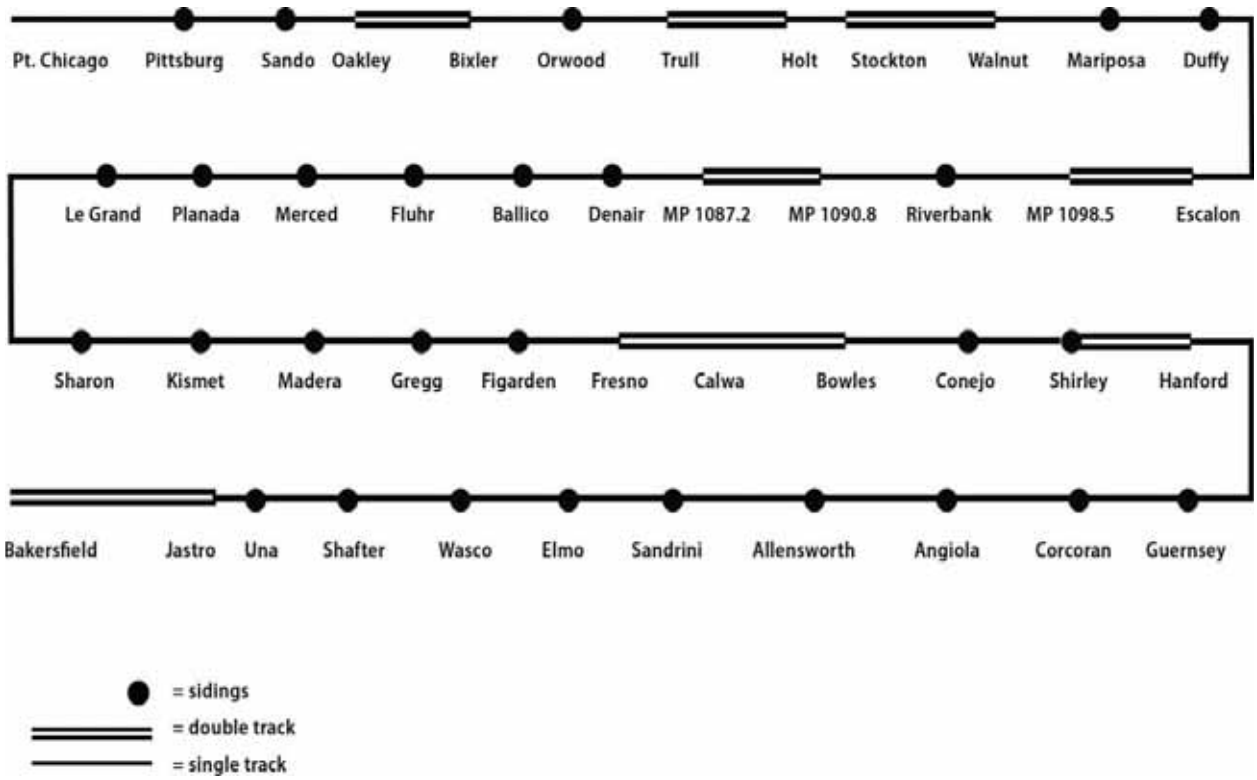
Source: J.L. Patterson & Associates, Inc.

Figure 1-2d: Proposed Track Upgrades – UPRR Stockton to Sacramento



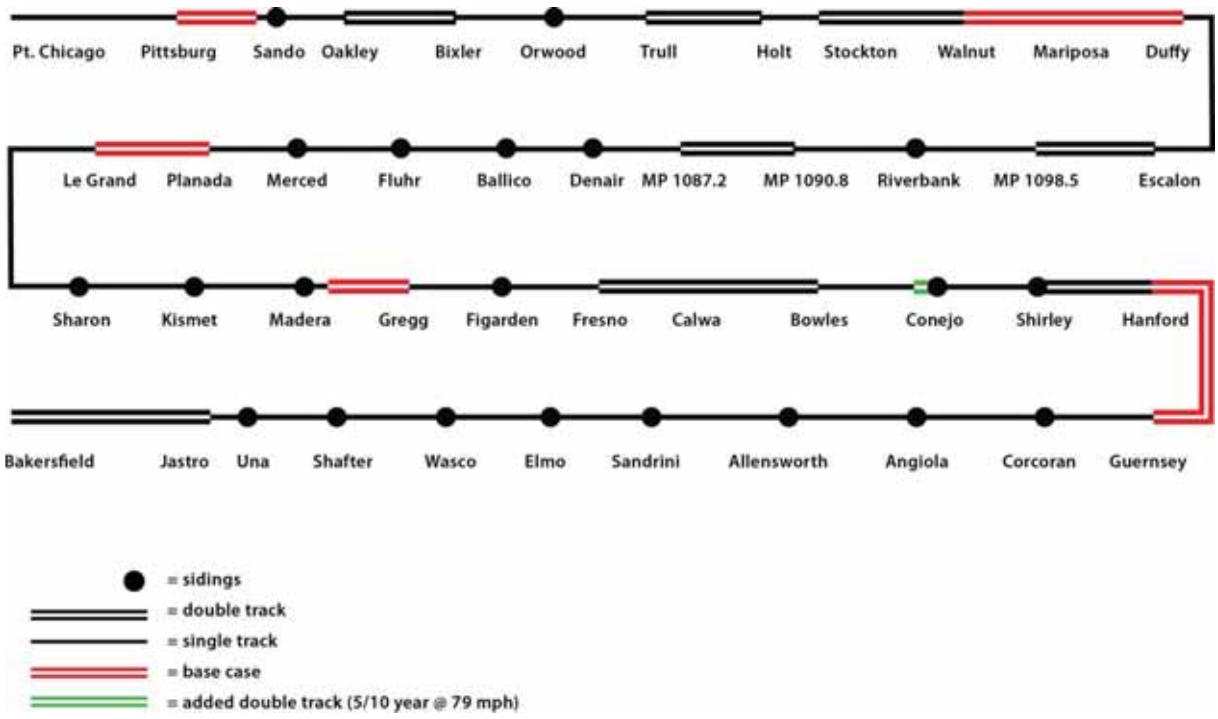
Source: J.L. Patterson & Associates, Inc.

Figure 1-3a: Current BNSF Track Structure



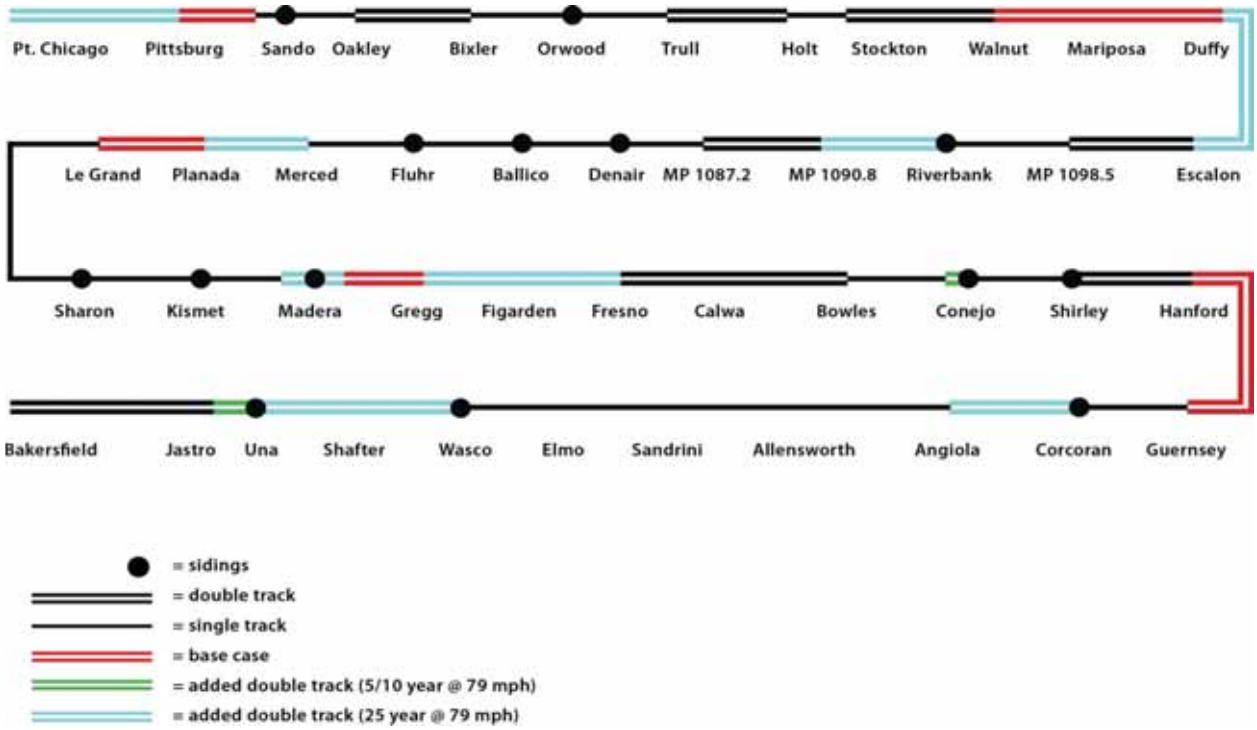
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 1-3b: Proposed BNSF 5 / 10-Year (79 mph) Plan



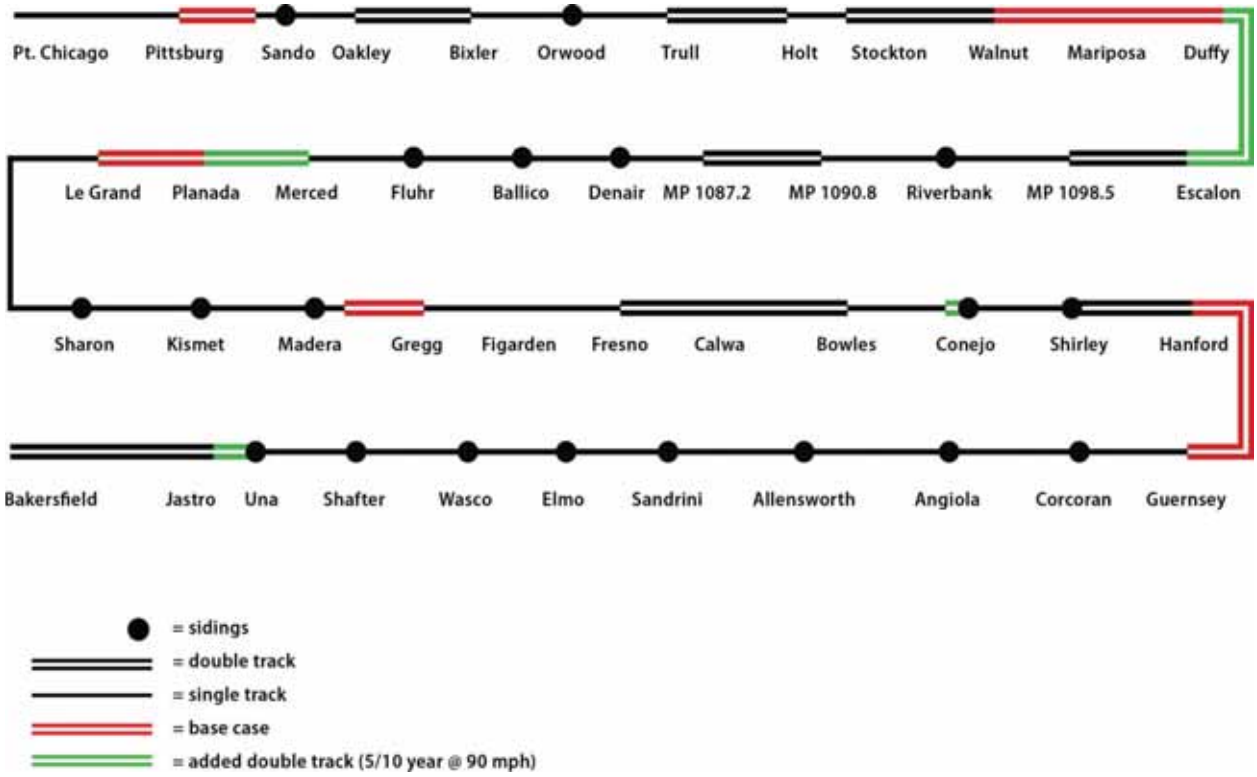
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 1-3c: Proposed BNSF 25-Year (79 mph) Plan



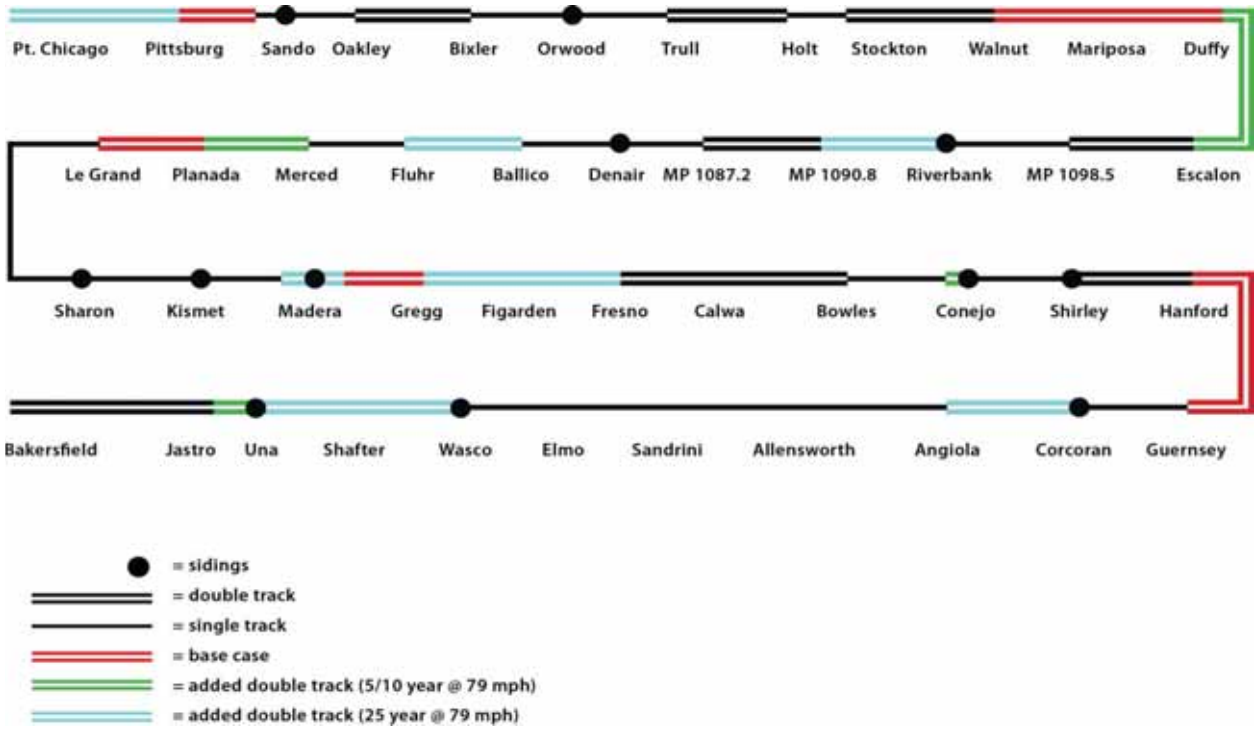
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 1-3d: Proposed BNSF 5 / 10-Year (90 mph) Plan



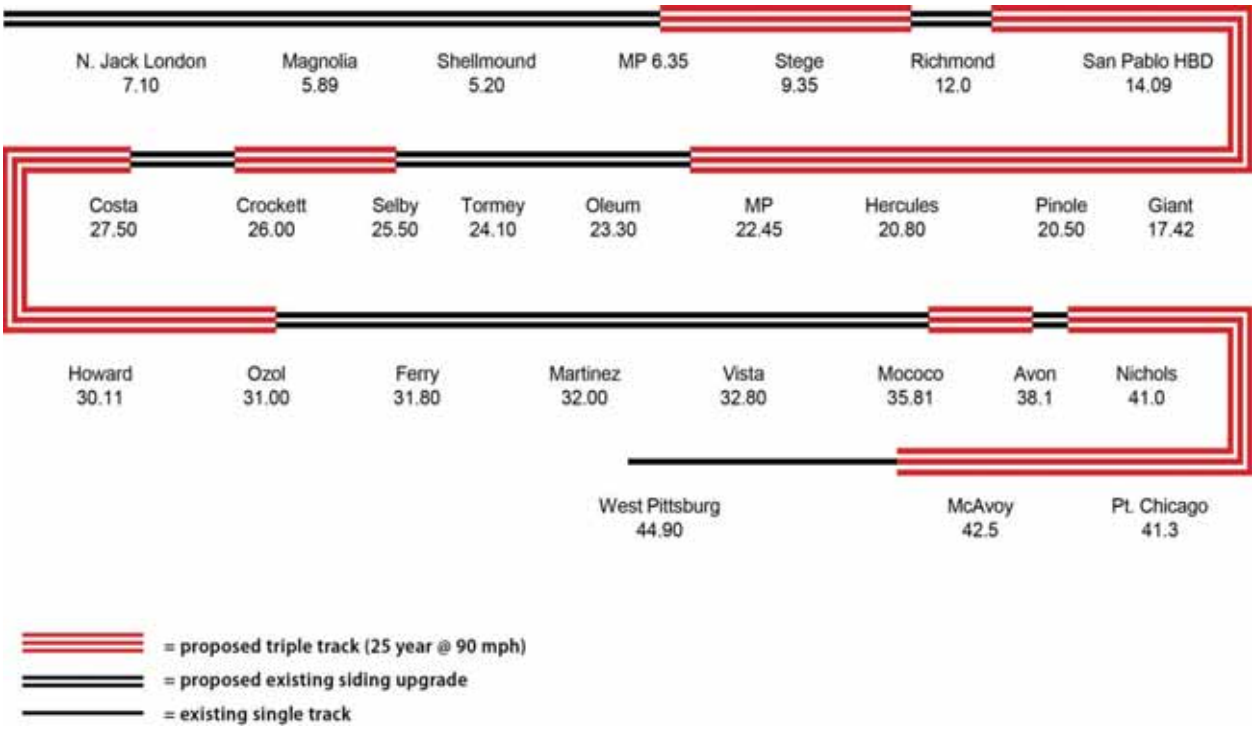
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 1-3e: Proposed BNSF 25-Year (90 mph) Plan



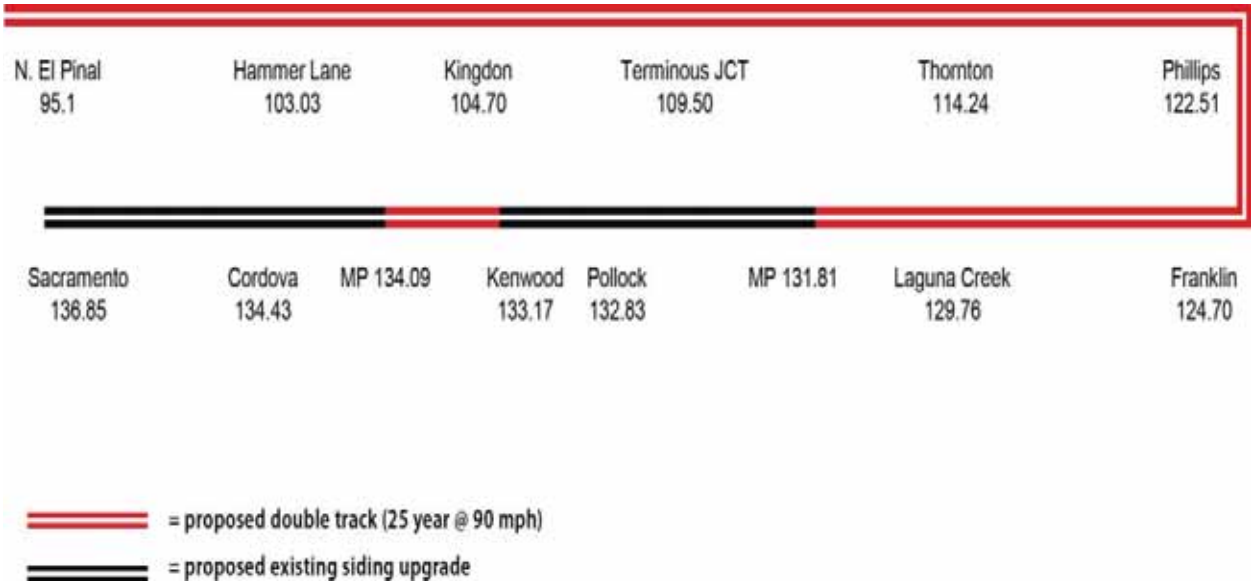
Source: Based on BNSF Railway Modeling Report; Modified from Original

Figure 1-3f: Proposed UPRR 25-Year (90 mph) Plan Niles – Tracy Subdivision



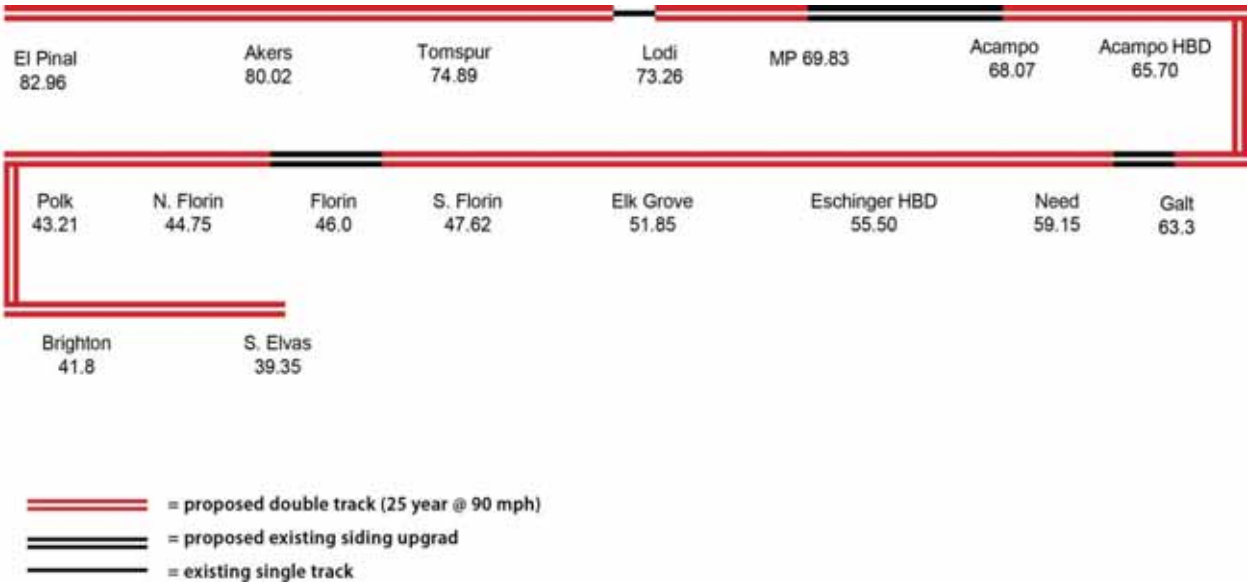
Source: J.L. Patterson & Associates, Inc.

Figure 1-3g: Proposed UPRR 25-Year (90 mph) Plan Sacramento Subdivision



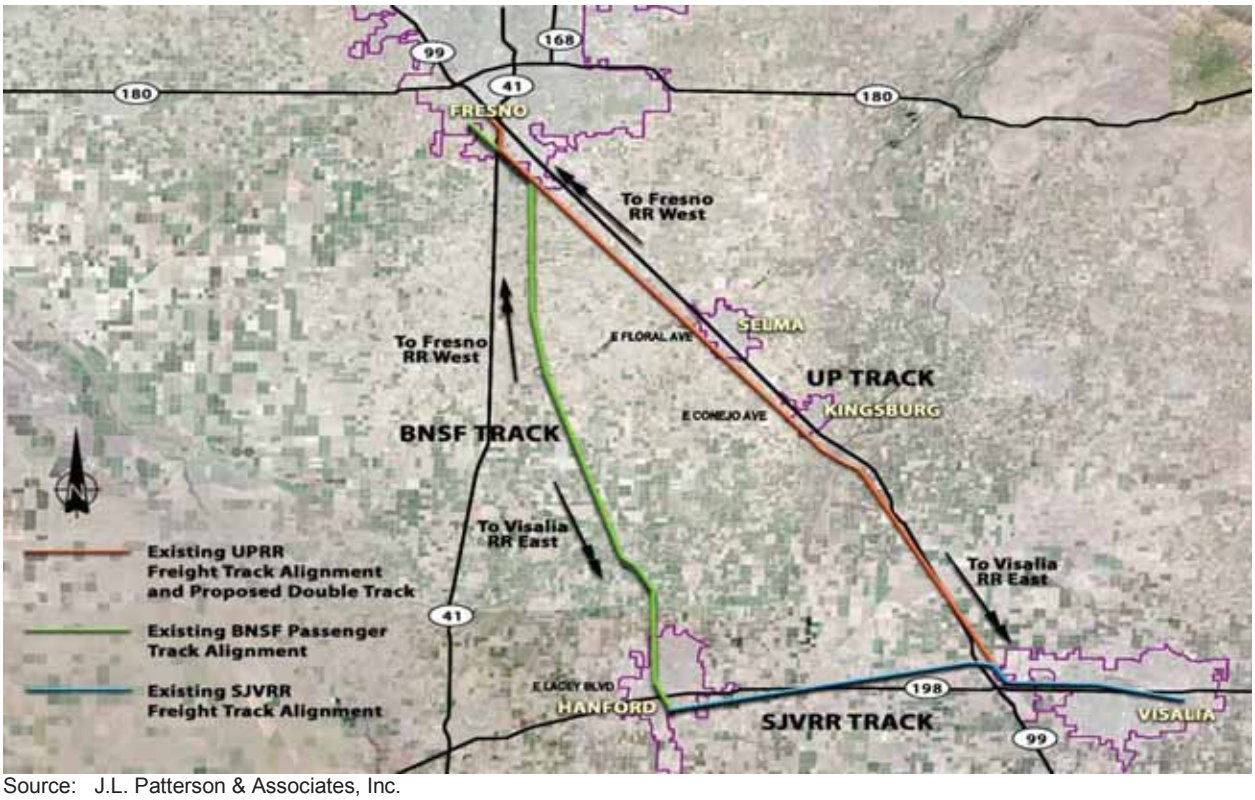
Source: J.L. Patterson & Associates, Inc.

Figure 1-3h: Proposed UPRR 25-Year (90 mph) Plan Fresno Subdivision



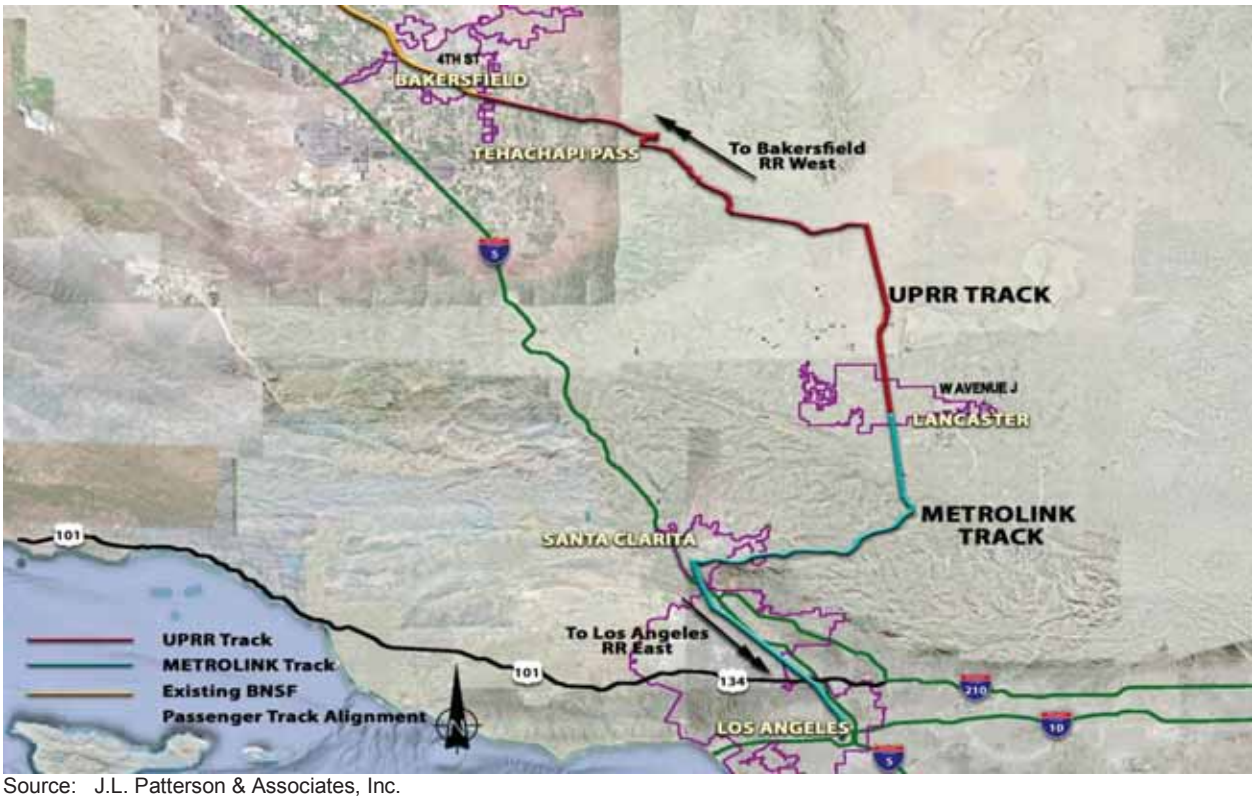
Source: J.L. Patterson & Associates, Inc.

Figure 1-4: Proposed Visalia to Hanford Route



Source: J.L. Patterson & Associates, Inc.

Figure 1-5: Alternative Project – Los Angeles Route
Los Angeles to Bakersfield (includes Tehachapi)



Source: J.L. Patterson & Associates, Inc.

Figure 1-6: Alternative Project – Port Chicago to Richmond on BNSF

Source: J.L. Patterson & Associates, Inc.

Figure 1-7: California Intercity Passenger Service System Map

Source: Amtrak California

Figure 1-8: Railroad Standard Bridge Structure

Source: Tom Dodson & Associates

Figure 1-9: Typical At-Grade Railroad Crossing Design

Source: Tom Dodson & Associates

Figure 1-10: Typical Railroad Equalizer Culvert

Source: Tom Dodson & Associates

Figure 1-11: Proposed Sacramento Maintenance Facility Site
USGS 7.5 Minute Quadrangle Map "Sacramento East"

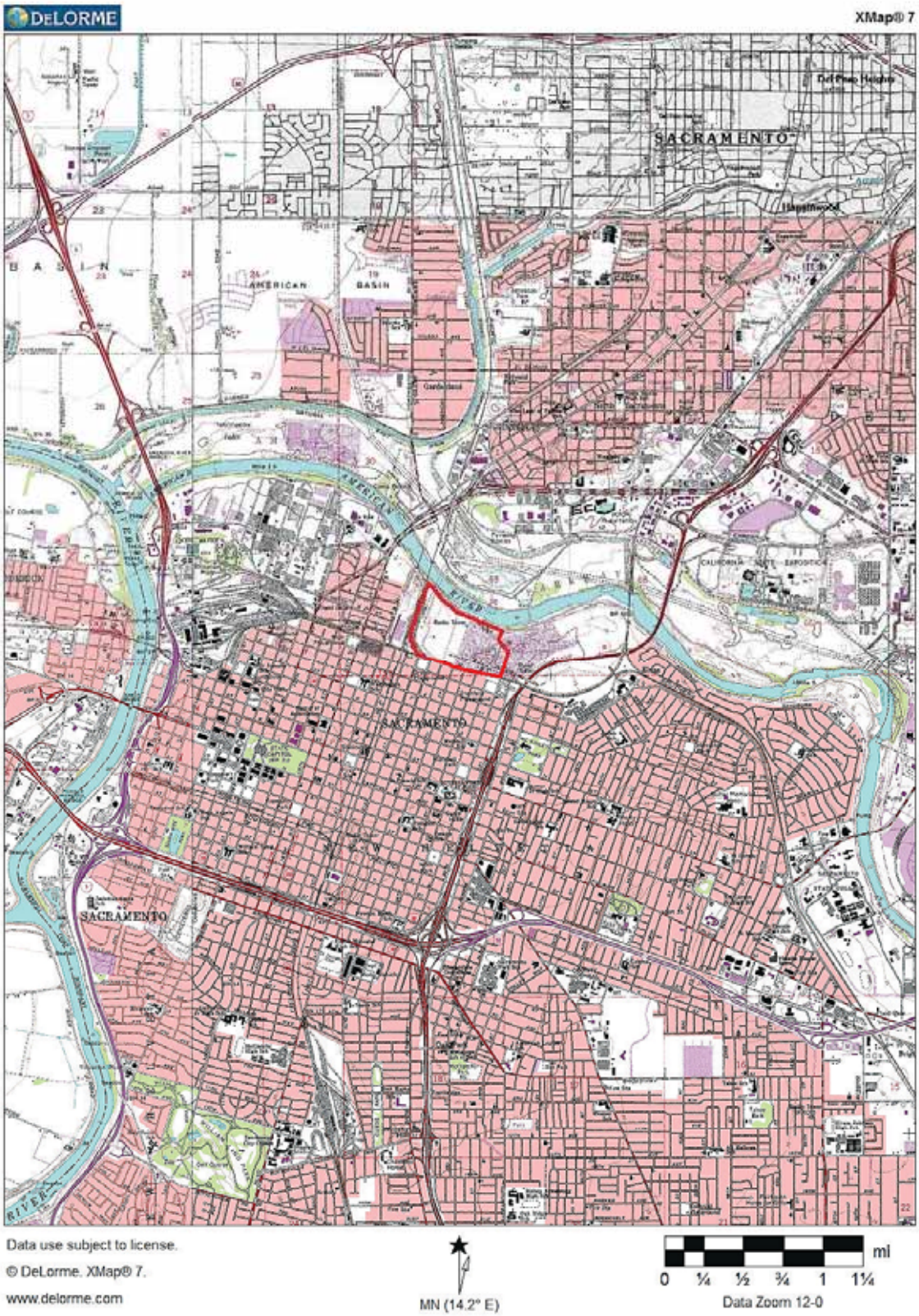
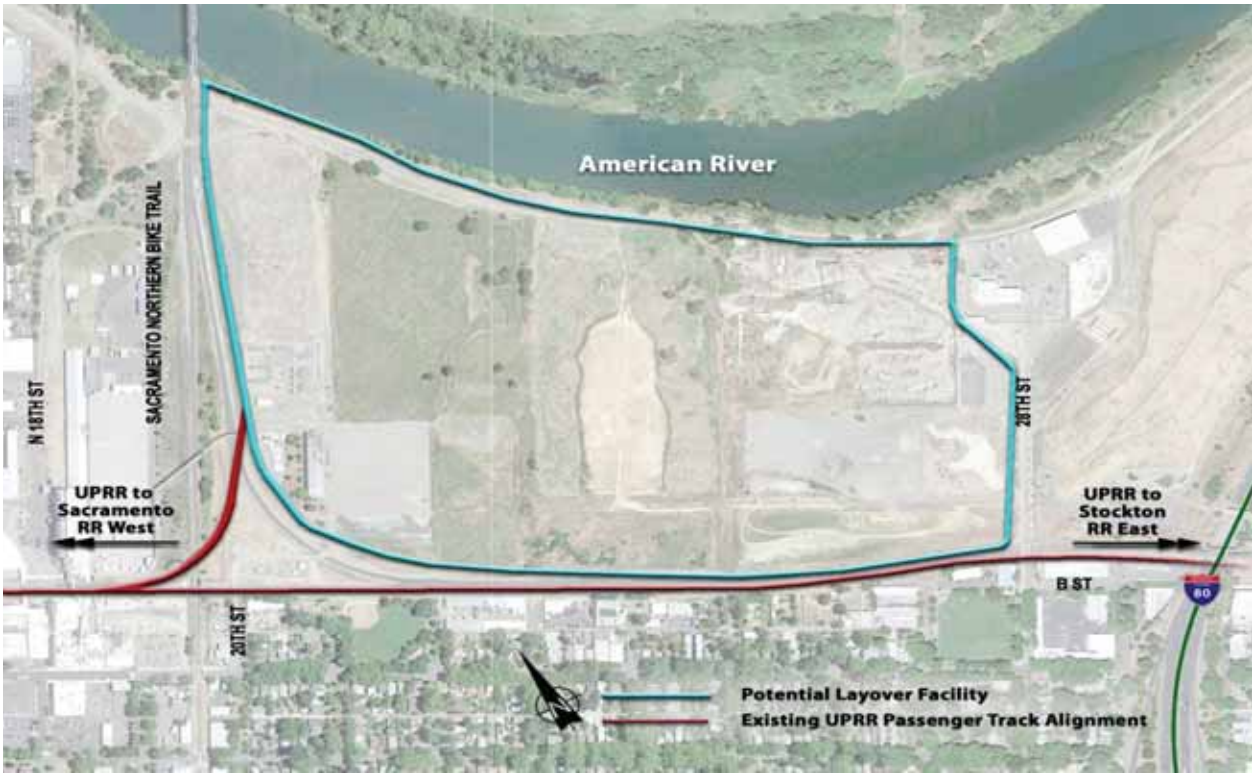


Figure 1-12: Proposed Sacramento Maintenance Facility Site



Source: J.L. Patterson & Associates, Inc.

Figure 1-13: Proposed Stockton Station Alternative Sites
USGS 7.5 Minute Quadrangle Map "Stockton West"

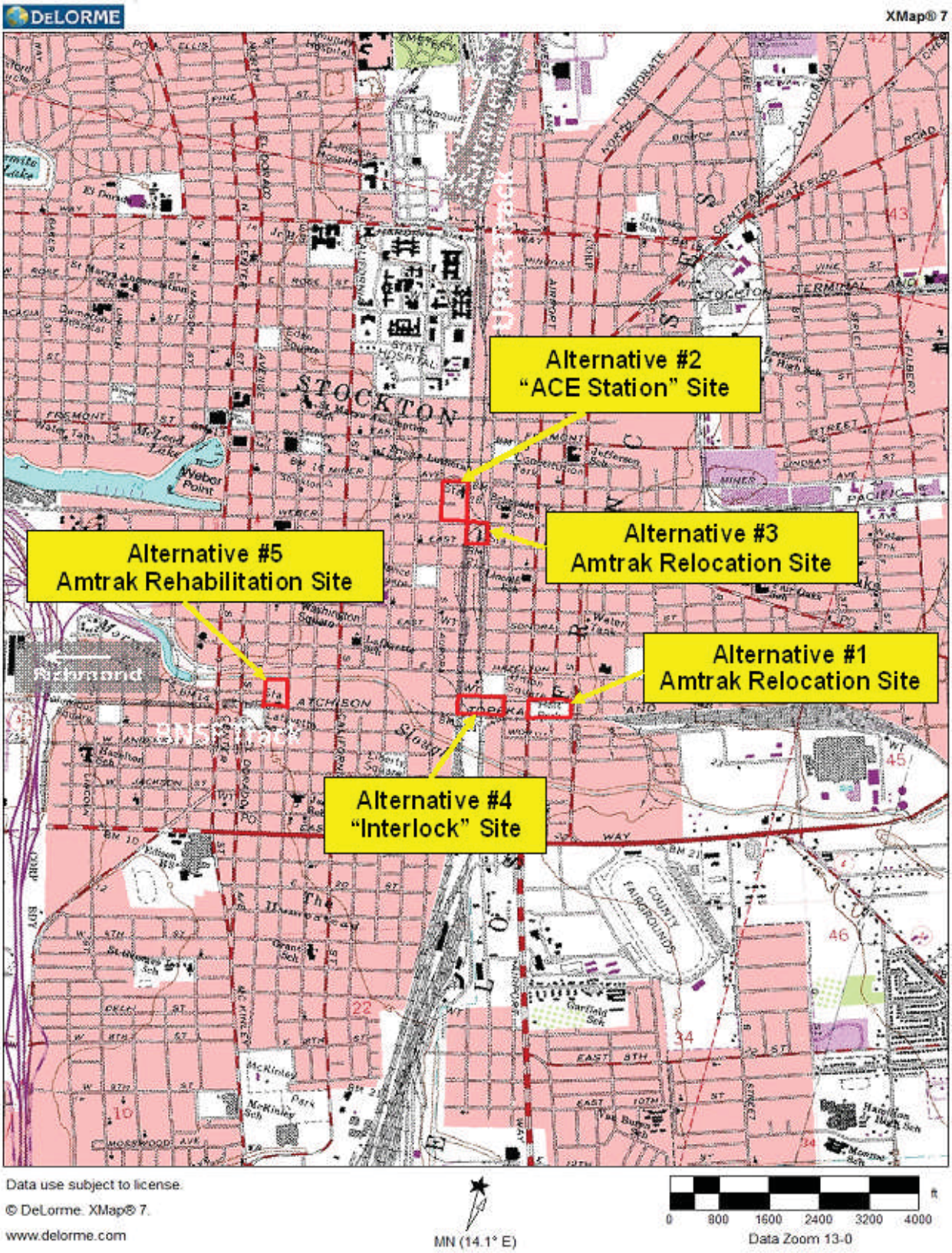
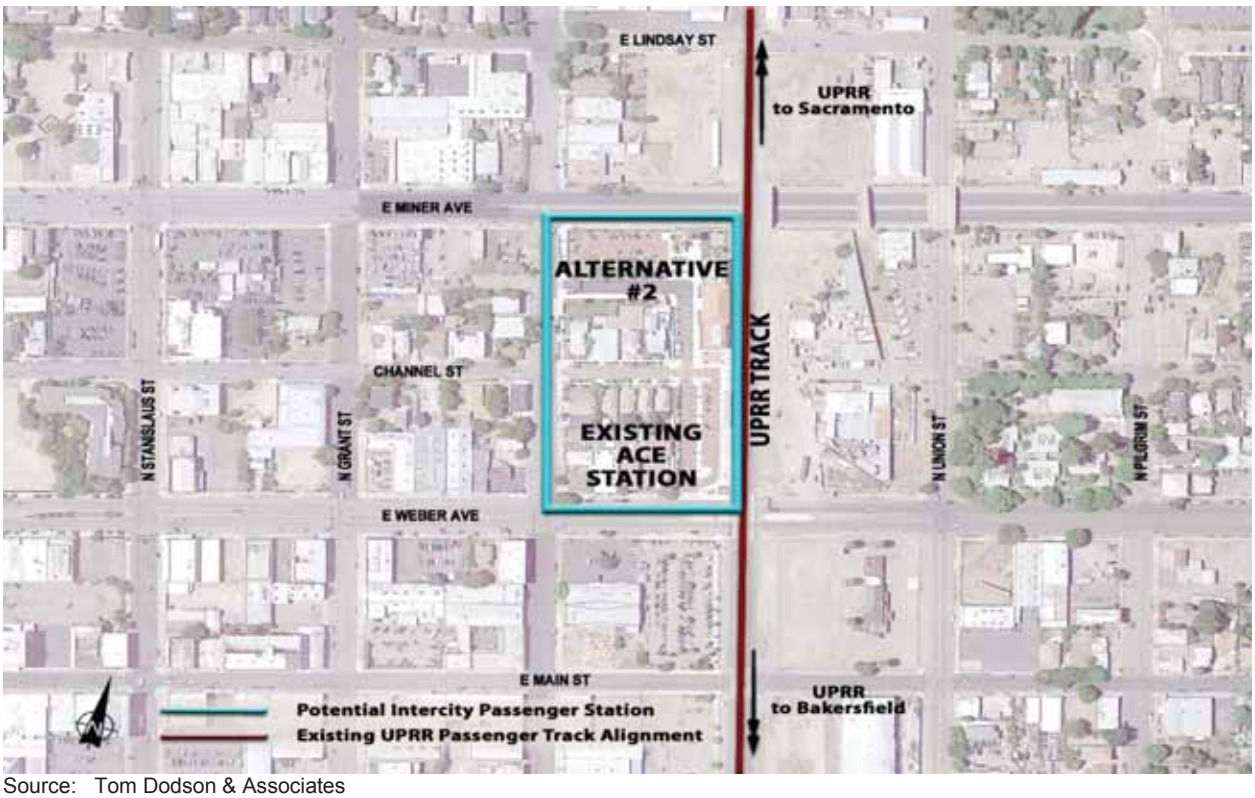


Figure 1-14: Alternative #1 – Stockton Amtrak Station Relocation Site

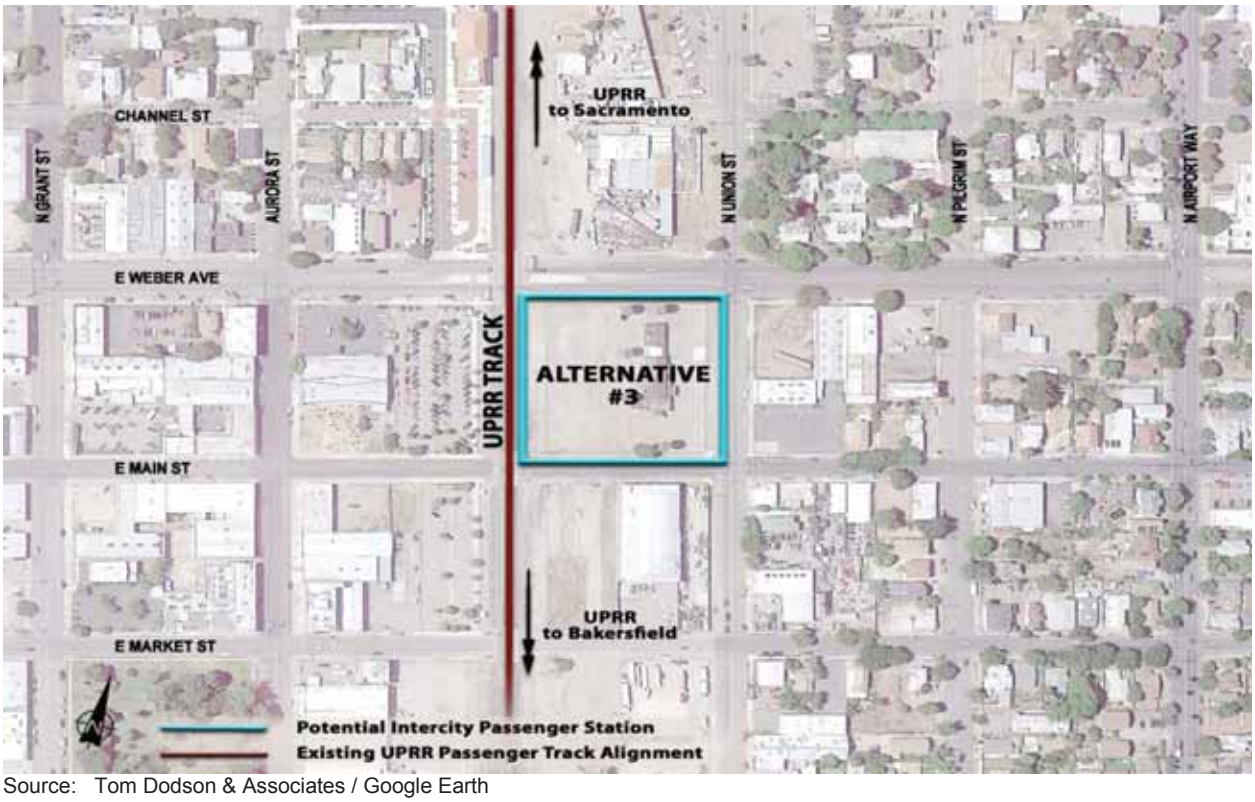
Source: Tom Dodson & Associates

Figure 1-15: Alternative #2 – Stockton Amtrak Station Relocation Site (ACE Station)



Source: Tom Dodson & Associates

Figure 1-16: Alternative #3 – Stockton Amtrak Station Relocation Site



Source: Tom Dodson & Associates / Google Earth

Figure 1-17: Alternative #4 – Stockton Amtrak Station Relocation Site "The Interlock"

Source: Tom Dodson & Associates / Google Earth

Figure 1-18: Alternative #5 – Existing Stockton Amtrak Station Site

Source: Tom Dodson & Associates / Google Earth

Figure 1-19: USGS – Potential Fresno Layover Facility Site
USGS 7.5 Minute Quadrangle Map "Fresno South"

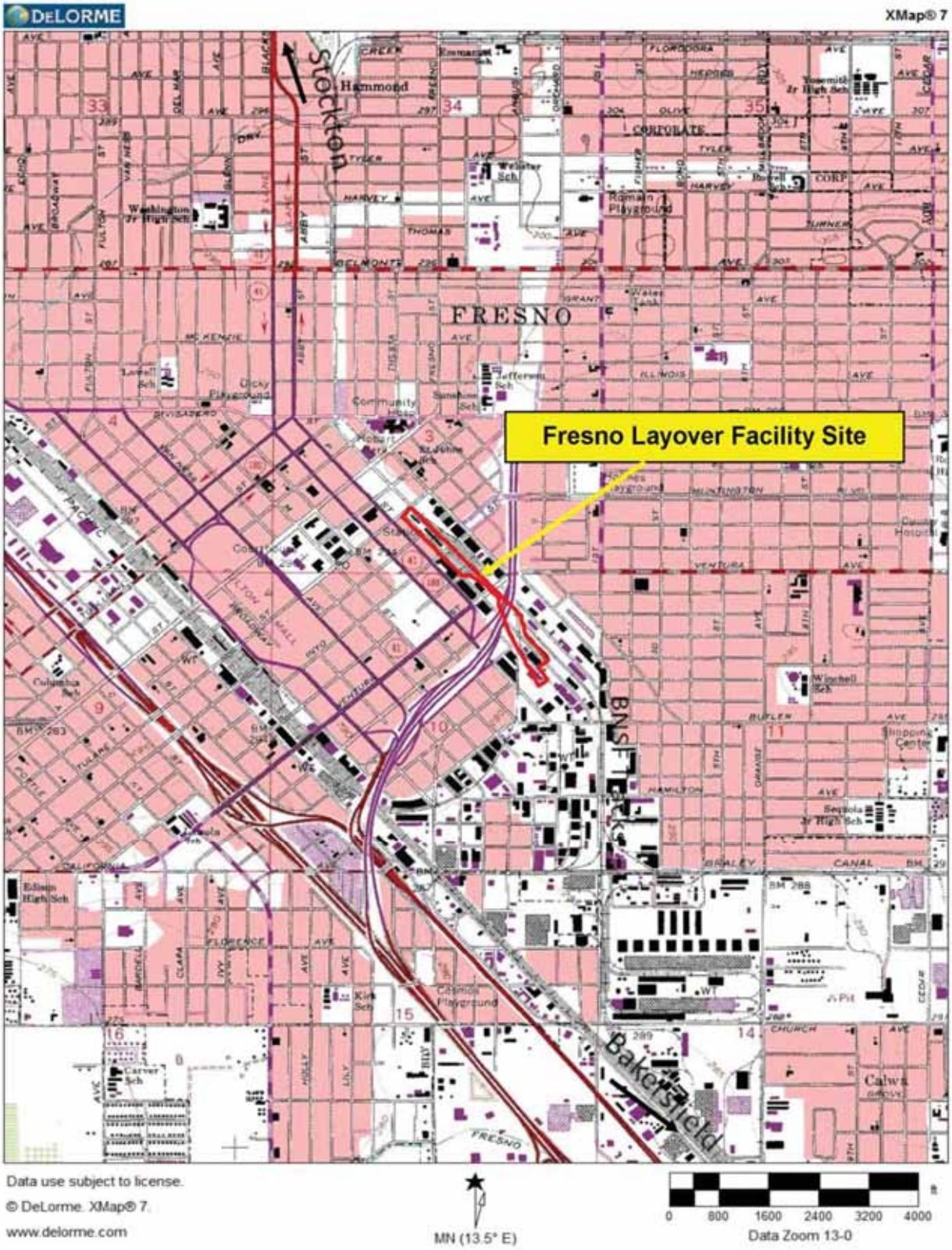


Figure 1-20: Potential Fresno Layover Facility Site

Source: Tom Dodson & Associates / Google Earth

Figure 1-21: USGS – Potential Merced Layover Facility Site
USGS 7.5 Minute Quadrangle Map "Merced"

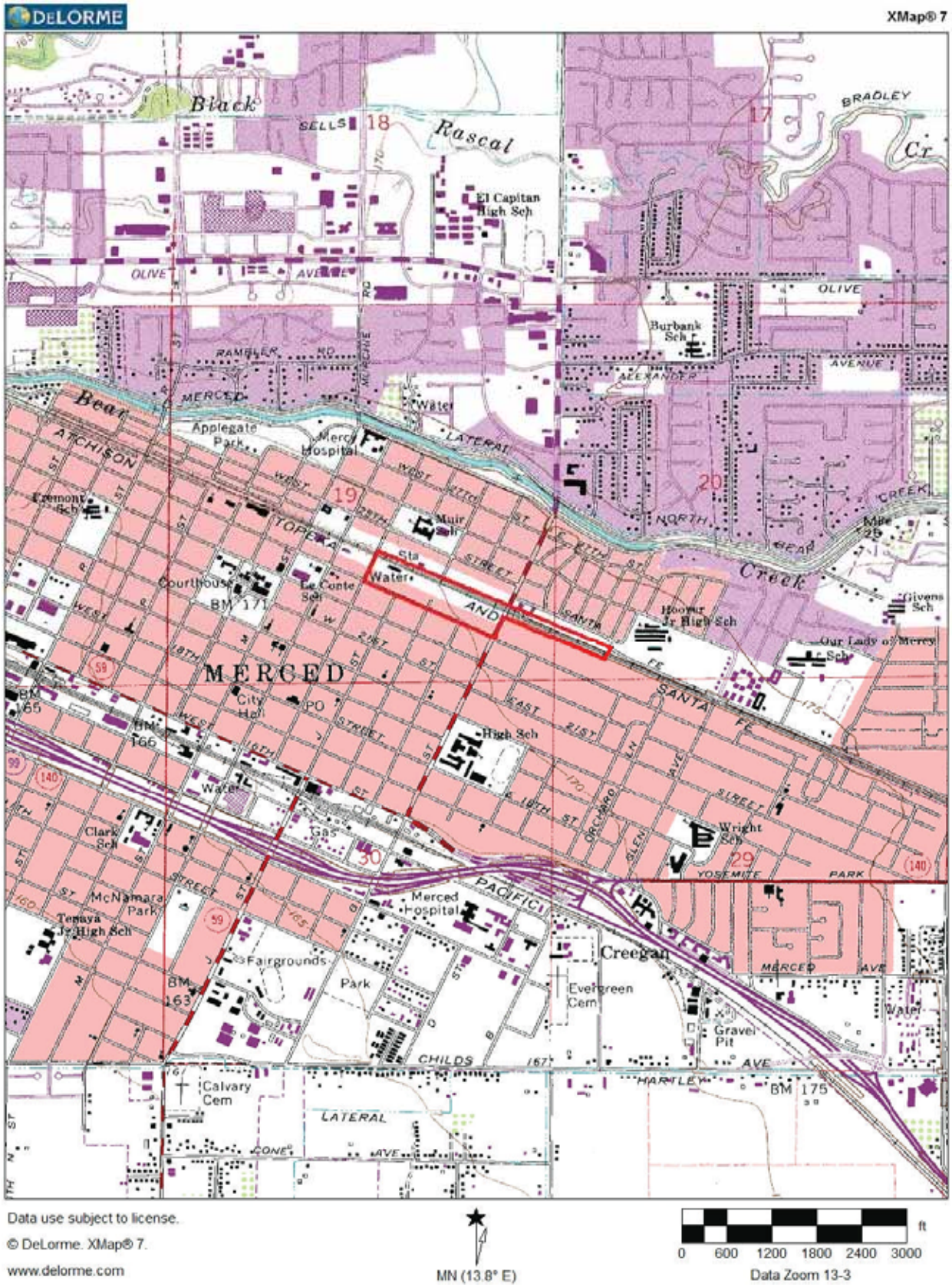
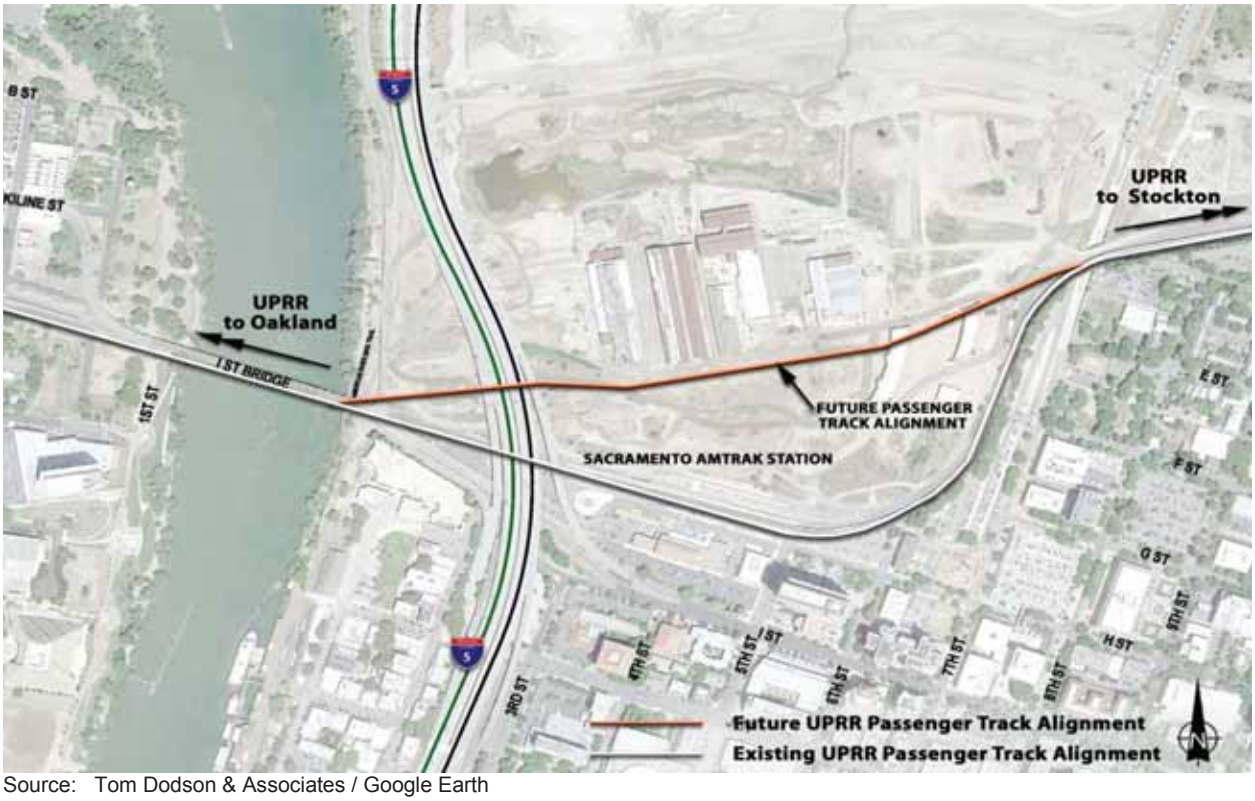


Figure 1-22: Potential Merced Layover Facility Site

Source: Tom Dodson & Associates / Google Earth

Figure 1-23: Sacramento Amtrak Station – Future Track Relocation



Source: Tom Dodson & Associates / Google Earth

APPENDIX 1

San Joaquin Corridor Train and Bus Schedules

AMTRAK CALIFORNIA

OPERATING TIMETABLE

No. 45

Amtrak California℠

Issued By:

Caltrans Division of Rail
P.O. Box 942874, MS 74
Sacramento, California 95814

AmtrakCalifornia.com

Effective Monday, May 7, 2012
2:01 a.m. Pacific Daylight Time

Amtrak California System

Operating Timetable

TABLE OF CONTENTS

Item	Code	Description	Page
Table of Contents			2
List of Routes		Alphabetical/Numberical List (Includes Bus Contractors)	3
Service Change Summary		Systemwide	4-6
General Notes		Used throughout the timetable	7
Types of Bus Service		Dedicated, Mixed-Mode and Interline	8
Wheelchair Accessible Bus Service		Explanation of Procedures	8
***Pacific Surfliner* Route**	PS	San Diego - Los Angeles - Santa Barbara - Goleta - San Luis Obispo	9
		Route Map	10
		Summary of Changes	11
		Pacific Surfliner Route Schedule (Includes Bus Route 4)	12-13
Bus Connections			
Coast Route	17,21	Santa Barbara - San Luis Obispo - Paso Robles - San Francisco - Oakland	14-15
Los Angeles Basin	1	San Pedro - Long Beach - Los Angeles--*to Points South*	16
Los Angeles Basin	1	San Pedro - Long Beach - Los Angeles-- *to Points North*	17
Los Angeles Basin	1	Los Angeles - Bakersfield	18
Inland Empire- Coachella Valley	39	Fullerton - Cabazon - Palm Springs - Indio	19
***San Joaquin* Route**	SJ	Oakland - Martinez/Sacramento - Stockton - Fresno - Bakersfield	20
		Route Map	21-22
		Summary of Changes	23
		San Joaquin Route Schedule	24-25
Bus Connections			
Bay Area-Stockton	34, 6	San Francisco - Oakland - San Jose - Stockton - Lodi	26-27
Sacramento Valley	3	Redding - Suisun/Fairfield - Davis - Sacramento - Stockton	28-29
North Bay/Redwood Empire	7	McKinleyville - Eureka - Ukiah - Santa Rosa - Napa - Martinez	30-31
Yosemite	15	Yosemite National Park - Merced	32
Monterey Peninsula	68	Carmel - Monterey - Salinas	33
Central Coast-Valley	18A	Hanford - San Luis Obispo - Santa Maria	34
Tulare County	18B	Hanford - Visalia	35
Los Angeles Basin	1	Fresno - Bakersfield - Los Angeles Area - San Diego	36-37
South Coast-Valley	10	Bakersfield - Oxnard - Santa Barbara	38
Barstow/Las Vegas	9	Bakersfield - Barstow - Las Vegas	39
Antelope Valley	12	Bakersfield - Lancaster - Victorville	39
Inland Empire-Coachella Valley	19	Bakersfield - Pasadena - Claremont - Riverside - San Bernardino - Hemet - Cabazon - Palm Springs - Palm Desert - La Quinta - Indio	40
Capitol Corridor	CC	Auburn - Sacramento - Martinez - Emeryville - Oakland - San Jose	41
		Route Map	42
		Summary of Changes	43
		Capitol Route Schedule	44-47
Bus Connections			
Trans Bay	99	Oakland - Emeryville - San Francisco	48-51
Highway 17 Express	35	San Jose - Santa Cruz	52-54
High Sierra/Lake Tahoe	20A/C	Sparks - Reno -South Lake Tahoe - Truckee - Auburn - Roseville - Sacramento	55-56
Central Coast	17, 21	San Jose - Salinas - San Luis Obispo - Santa Barbara	57-58
Monterey Bay	55	San Jose - Monterey	57-58
Basic System Trains Serving California			59
		Route Map	60
Coast Starlight	CS	Seattle - Portland - Sacramento - Oakland - San Jose - Los Angeles	61
California Zephyr	CZ	Chicago - Omaha - Denver - Salt Lake City - Sacramento -Emeryville	62
Southwest Chief	SW	Chicago - Kansas City - Albuquerque - San Bernardino - Los Angeles	63
Texas Eagle	TE	Chicago - St. Louis - Dallas - Ft. Worth - El Paso - Tucson - Los Angeles	64
Sunset Limited	SL	New Orleans - Houston - El Paso - Tucson - Los Angeles	65
Connecting Non-Amtrak Services--Contact Information			66
Reference			67
Bus and Train Stop Index		Stop locations, addresses and codes	68-70
Schedule Number Assignments		Map of routes with schedule number series	71
Schedule Number Index		Includes changes for May 12, 2008	72-77
Report of Missing or Damaged information at Train Stations and Bus Stops			78
Timetable Request/Feedback		Additional Copies and Suggestions	79
Contact List		Caltrans, Amtrak & Bus Operators	80

Amtrak California System

Alphabetical/Numerical List of Routes

Code	Route Name	Description	Contractor
		Amtrak California Intercity Train Routes	
CC	*Capitol Corridor*	Auburn - Sacramento - Martinez - Emeryville - Oakland - San Jose	
PS	*Pacific Surfliner* Route	San Diego - Santa Ana - Los Angeles - Santa Barbara - San Luis Obispo	
SJ	*San Joaquin* Route	Oakland - Martinez / Sacramento - Stockton - Fresno - Bakersfield	
		Amtrak California Thruway Bus Routes	
1	Los Angeles Basin	Bakersfield - Los Angeles Basin - San Diego West Side service to UCLA, El Segundo, and Torrance	Coach America
3	Sacramento Valley	Redding - Chico - Suisun/Fairfield - Davis - Sacramento - Stockton	Preferred
4	South Coast	Los Angeles - Oxnard - Santa Barbara (Incl. in Train Schedule)	Coach America
6	South Bay	Stockton - San Jose	Compass/SFO Airporter
7	North Bay/Redwood Empire	Martinez - Vallejo - Napa - Santa Rosa - Ukiah - Willits - Eureka - Arcata - McKinleyville	Preferred
9	High Desert/Las Vegas	Bakersfield - Barstow - Las Vegas	Coach America
10	South Coast-Valley	Bakersfield - Oxnard - Santa Barbara	Silverado Stages
12	Antelope Valley	Bakersfield - Lancaster - Victorville	Coach America
15	Yosemite	Yosemite National Park - Merced	Via/YARTS
17	Central Coast-SBA	Santa Barbara - San Luis Obispo - Paso Robles - San Jose - San Francisco - Oakland	Silverado Stages
18A	Central Coast-Valley	Santa Maria - San Luis Obispo - Paso Robles - Hanford	Orange Belt
18B	Tulare County	Hanford - Visalia (part of Route 18 contract)	Orange Belt
19	Inland Empire-Coachella Valley	Bakersfield - Pasadena - San Bernardino - Hemet - Palm Springs - Indio	Coach America
20A	High Sierra/Sierra Foothills	Sparks - Reno - Truckee - Auburn - Roseville - Sacramento	All West Coachlines
20C	Lake Tahoe	South Lake Tahoe - Placerville - Sacramento	All West Coachlines
21	Central Coast-SJC	Santa Barbara - San Luis Obispo -Paso Robles - Salinas - San Jose	AmericanStar
31	Great America Shuttles	Santa Clara Area Employment Shuttles	Serendipity
34	Bay Area-Stockton	Stockton - Oakland - San Francisco	El Camino
35	Highway 17 Express	San Jose - Santa Cruz	VTA/SCMTD
39	Inland Empire-Coachella Valley	Fullerton - Cabazon - Palm Springs - Indio	Certified Transportation
55	Monterey Peninsula-Capitol	San Jose - Monterey	Monterey-Salinas Transit
68	Monterey Peninsula-Starlight	Salinas - Monterey - Carmel	MV Transportation
99	Trans Bay	Emeryville - Oakland - San Francisco	Compass/SFO Airporter
		Amtrak Basic System Routes Serving California	
CS	*Coast Starlight*	Seattle - Portland - Sacramento - Oakland - San Jose - Santa Barbara - Los Angeles	
CZ	*California Zephyr*	Chicago - Omaha - Denver - Salt Lake - Reno - Sacramento - Emeryville	
SW	*Southwest Chief*	Chicago - Kansas City - Albuquerque - Flagstaff - Los Angeles	
SL	*Sunset Limited*	New Orleans - Houston - San Antonio - El Paso - Tucson - Los Angeles	
TE	*Texas Eagle*	Chicago - St. Louis - Little Rock - Dallas - Ft. Worth - Austin - San Antonio - El Paso - Tucson - Los Angeles	

Amtrak California System

Systemwide Changes and Corrections

This timetable includes schedule changes effective May 7, 2012. The schedule number index starts on page 72.

The AFR (Amtrak Finance Route) is shown at the top of the "Notes" box on each grid. When there are exceptions, these are noted above the particular schedule. Routes 35 (Santa Cruz) and Route 55 (Monterey Bay) do not have an AFR because of the particular nature of the funding arrangements. The AFR information is useful for a few staff members of Amtrak's financial department.

Pacific Surfliner Route

NORTHBOUND
Train 763 will depart five minutes earlier and has time adjustments through Solana Beach. Train 565 now departs five minutes earlier and has time adjustments through Santa Ana. Train 567 has time adjustments from Santa Ana through Los Angeles. Train 769 will leave San Diego now three minutes earlier and has a time adjustment at Old Town, no other changes throughout its schedule. Train 583 will depart 15 minutes earlier and has time adjustments throughout its schedule. Train 785 will depart five minutes earlier and have time adjustments through Solana Beach. Train 591 will have time adjustments from Santa Ana through Fullerton.

SOUTHBOUND
Train 562 will have schedule adjustments from Oceanside to San Diego. Train 580 will depart five minutes earlier and have time adjustments throughout its schedule. Trains 582 and 784 will now stop at Old Town and will arrive into San Diego three minutes later.

Route 17 -- Oakland - San Luis Obispo - Santa Barbara

Bus 4768 has time adjustments from Salinas through Solvang, all other times stay the same. Bus 4764 has five minute adjustments from San Luis Obispo through Solvang. Bus 4790 leaves Oakland now at 7:30a and has time adjustments from Salinas through Paso Robles.

Route 39 -- Fullerton - Cabazon - Palm Springs - Indio

Added Dowtown Palm Springs (PSS) stop in addition to Palm Springs Airport (PSP) stop. As a result, Buses 4968 and 4984 will have five minute adjustments after stop at PSS to the end of their runs. Bus 4969 has time adjustment at La Quinta and Downtown Palm Springs. Bus 4985 will now depart PSP at 3:05p and add PSS at 3:10p.

San Joaquin Route

NORTHBOUND
There are no major schedules changes to any of the trains.

SOUTHBOUND
There are no major schedules changes to any of the trains.

Route 1 -- Los Angeles - Bakersfield - Fresno

Buses 5915, 5917 and 5903 will depart all locations one (1) hour earlier on Friday, May 25 and Friday, August 31.

Bus 5914 is now a daily bus and will depart Van Nuys at 6:40p with time adjustments throughout the rest of the schedule.

Route 3 -- Stockton - Sacramento - Redding

Due to the new platforms at Sacramento station becoming operational on August 6th, there will be time adjustments to allow for a 15 minute connection from the bus bay to the platforms. As a result, please see pages 28 and 29 for all schedule changes.

Route 6 -- Stockton - San Jose

Bus 3912 now departs San Jose at 6:35a, with time adjustments throughout the schedule.

Route 9 -- Las Vegas - Barstow - Bakersfield

Bus 3657 will depart Las Vegas on May 28 and September 3 at 8:35a with schedule adjustments through Barstow.

Route 15 -- Merced - Yosemite
(Note, this route schedule is effective May 14-Sept 30.)

Bus 8416 resumes summer run all the way to Yosemite and is daily. Bus 8417 now leaves Yosemite at 3:40p and is 10 minutes later at all stops.

Readded Bus 8402 from connecting Train 702.

Added Bus 8419 that will leave Yosemite at 4:15p and now connect with Train 704.

The seasonal round trip from Yosemite to Mammoth Lakes will resume during the summer.

Route 19 -- Bakersfield - San Bernardino - Cabazon - Palm Springs - Indio

Added Dowtown Palm Springs (PSS) stop in addition to Palm Springs Airport (PSP) stop. As a result, Buses 5402 and 5414 will have five minute adjustments after stop at PSS to the end of their runs. Buses 5403 and 5415 have time adjustments at Downtown Palm Springs.

Route 34 -- Stockton - Stockton ACE

Bus 3801 is a separate schedule number for those passengers in Stockton who need to get from Stockton San Joaquin St. station to the Stockton ACE station.

Capitol Corridor

WESTBOUND
There are no major schedules changes to any of the trains, however, it is anticipated a new stop at Santa Clara Caltrain will begin sometime in the summer. Stop times and date of service is TBA.

EASTBOUND

There are no major schedules changes to any of the trains, however, it is anticipated a new stop at Santa Clara Caltrain will begin sometime in the summer. Stop times and date of service is TBA.

Route 20 -- Sacramento - Roseville - Auburn - Reno - Sparks

Due to the new platforms at Sacramento station becoming operational on August 6th, there will be time adjustments to allow for a 15 minute connection from the bus bay to the platforms. As a result, please see pages 55 and 56 for all schedule changes.

Buses 3528 and 3534 are now Monday-Friday schedules. Buses 3578 and 3584 have been added for Saturday, Sunday and Holiday schedules.

Nationwide System Trains

The Sunset Limited Train 2 will now leave Los Angeles eastbound at 10:00p (PDT) with adjustments all the way to New Orleans. Train 1 will depart New Orleans now on Wednesday's, Saturday's and Monday's now at 9:00a (CDT). The train will arrive in Los Angeles two days later at 5:35a (PDT). Sleeping car passengers on Train 1 can remain onboard in Los Angeles until 6:30a.

All other nationwide system trains have no major changes except to reflect for daylight savings time.

Amtrak California Home Page

Don't forget to stay current with the Amtrak California Home Page at www.AmtrakCalifornia.com. The Amtrak California Operating Timetable is also posted on the website in easily printed pdf format. Not only that, but these pdfs feature color coding that is not available in the paper version of the timetable. Whenever a schedule changes midstream, an updated or new page will be posted on the website as well. For fare information, consult Amtrak's Home Page at www.amtrak.com.

www.AmtrakCalifornia.com

www.amtrak.com

Amtrak California℠

A service of the California Department of Transportation

Amtrak California System

General Notes

The following notes and symbols are used throughout this timetable. Additional footnotes for each schedule are shown in the "Notes" box, usually located at the bottom of the page.

( ) - Numbers and letters in Parentheses after Station name indicate additional service at that station.
CC - Capitol Corridor (Auburn - Sacramento - Oakland - San Jose)
PS - Pacific Surfliner (San Diego - Los Angeles - Santa Barbara - Goleta - San Luis Obispo)
SJ - San Joaquin (Bakersfield - Fresno - Stockton - Sacramento - Emeryville - Oakland)
Numbers indicate bus routes, see List of Routes on Page 2.

In the Basic System Schedules, these additional codes are used:
CS - Coast Starlight (Seattle - Sacramento - Oakland - San Jose - Los Angeles)
CZ - California Zephyr (Chicago - Denver - Salt Lake - Reno - Sacramento - Emeryville)
SW - Southwest Chief (Chicago - Kansas City - Albuquerque - Los Angeles)
SL - Sunset Limited (New Orleans - Houston - San Antonio - El Paso - Tucson - Los Angeles)
TE - Texas Eagle (Chicago - St. Louis - Dallas - San Antonio - Los Angeles)

AM times are shown in light face type, **PM times are shown in bold face type.**
Changes are shown in red (visible in the electronic version only).
Connections are shown in italics.
When stop location is not identified, stop is at Amtrak Station.
Arrival times for Outbound Buses: Schedules for buses traveling away from the Train Connection are approximate. Actual arrival time will depend on traffic conditions, train connections, and number of passengers for each stop. At "D" stops, arrival time may be either before or after scheduled time.
Shaded areas indicate bus service.
Unshaded areas indicate train service.

AFR: - Amtrak Finance Route.
@ - Stop location to be determined.
b - Bus connection point, connection guaranteed.
c - Train connection point, connection guaranteed.
D - Stops only to discharge passengers, arrival time approximate. Does not stop when there are no passengers getting off at this stop.
® - Reservations required on this train or bus.

An arrow indicates a connection from one schedule to another.
A straight vertical line in the schedule column indicates that the bus or train does not serve the stop.
A horizontal dash in the schedule column indicates that the train passes the stop, but does not stop.

Daily - Schedule operates seven days a week.
XSSH - Schedule operates Daily **except** Saturdays, Sundays and Holidays (see below).
SSH - Schedule operates on Saturdays, Sundays and Holidays **only** (see below).
See "Notes" for other frequency notations.

Holidays: New Years Day, Memorial Day, Independence Day (July 4), Labor Day, Thanksgiving Day, and Christmas Day. The Capitol Corridor and ACE, as well as a few San Joaquin buses, also operate holiday schedules on the day after Thanksgiving. In most cases, Sunday service is operated on these holidays. When one of these holidays falls on a Sunday, the holiday is observed on Monday. The Pacific Surfliners operate a Friday schedule on the day before Thanksgiving (and also on the day after Thanksgiving).

Bicycles: On the San Joaquins and Capitols, each regularly assigned coach car (6400 & 8000 series), and cab car (8300 series) has a bicycle rack that accommodates three bicycles. Cab cars (6900 series) have a baggage room that is used for checked baggage on the San Joaquins. Since the Capitols do not handle checked baggage, this baggage room on 6900 series cab cars can accommodate 13 bicycles when the baggage racks are folded up. Coach-baggage cars (8200 series) Café-Coaches and Dining Cars do not have bicycle racks.

On the Pacific Surfliner trains equipped with the new Surfliner equipment, only coach cars in the 6400 series (usually two on each train) are equipped with bicycle racks.

Passengers on Amtrak California Thruway buses may stow unboxed bicycles in the under-floor luggage space, however these passengers are responsible for loading and unloading their bicycles, and Amtrak assumes no responsibility for damage or loss of bicycles carried on buses. Route 35 (Santa Cruz) buses have bicycle racks on the front of the bus.

Bicycle space is available on a first-come, first-served basis.

Amtrak California System

Types of Bus Services

There are three types of Amtrak Thruway Bus Service shown in this Timetable. Each individual route table indicates which type the bus route is in the box at the top.

Dedicated bus connections are operated exclusively for Amtrak passengers holding Amtrak tickets. State law requires that passengers on these routes must be using the bus in combination with train travel. While schedules are primarily designed to connect with Amtrak trains, passengers may also use these buses to connect with other rail services, such as Caltrain or Metrolink. Local bus-only travel is only permitted when travel is part of a round-trip that includes train travel in the other direction.

Passengers may stop over, within the limit of their ticket's validity, at the transfer point. Most bus routes in the Amtrak California System are operated as Dedicated connections.

Mixed Mode buses are operated in conjunction with regular intercity bus carriers, or transit districts providing intercity service. Amtrak passengers are carried on the same bus as the operator's own passengers. In some cases, mixed mode buses make more stops than those shown in Amtrak timetables. Amtrak passengers may ride the buses to or from these stops, but must purchase their Amtrak ticket to the next Amtrak fare point beyond the stop. Route 18A (Hanford-Santa Maria), Route 18B (Hanford-Visalia), Route 35 (San Jose-Santa Cruz) and Route 55 (San Jose-Monterey) are all mixed-mode feeders. Route 15 (Yosemite) has also been converted to a mixed-mode route.

Interline connections are basically the same as Mixed-Mode service, except that the bus service receives no financial support from Caltrans or Amtrak, other than passenger revenues. Amtrak tickets are honored, and the carrier receives compensation for each Amtrak passenger carried. There are currently no interline connections operating in conjunction with State-supported trains. Amtrak does have an interline agreement with Greyhound for service between Los Angeles and Las Vegas, connecting with long-distance trains.

Passengers without Tickets: In most cases, an Amtrak passenger who does not have a prepurchased Amtrak ticket will present his or her photo ID to the bus driver at the boarding point. The bus driver will collect the ID, and at the next open Amtrak ticket office, usually the transfer point, the passenger will purchase a ticket from the boarding point to his or her destination, at which time the ID will be returned. Outbound passengers from the train must have a valid ticket or ticket receipt before boarding the bus.

All Amtrak passengers must have a government issued photo ID to purchase tickets. Passengers boarding any Amtrak bus must have an Amtrak ticket or a government issued ID to board the bus.

Wheelchair Accessible Bus Service

Buses regularly assigned to California Amtrak service are equipped with wheelchair lifts and tie-down provisions for at least one wheelchair per bus. To assure that space is available for passengers wishing to use a wheelchair lift, advance reservations are suggested, and may be made through Amtrak's Toll-Free Reservation Number (1-800-USA-RAIL).

When a passenger requests use of a wheelchair equipped bus, the ticket agent or reservation agent should reserve a "TW" seat and initiate a Special Service Request through the Philadelphia, PA RSO. 24-hour advance notice is advised for all wheelchair requests, but is not required. The Philadelphia RSO will in turn notify the bus company of the date, time and schedule of the passenger, the passenger's name, and any special instructions. Local station agents are encouraged to also notify the bus operator, to ensure that a wheelchair-lift equipped bus will be assigned to the proper schedule.

pacific Surfliner

Train Service:

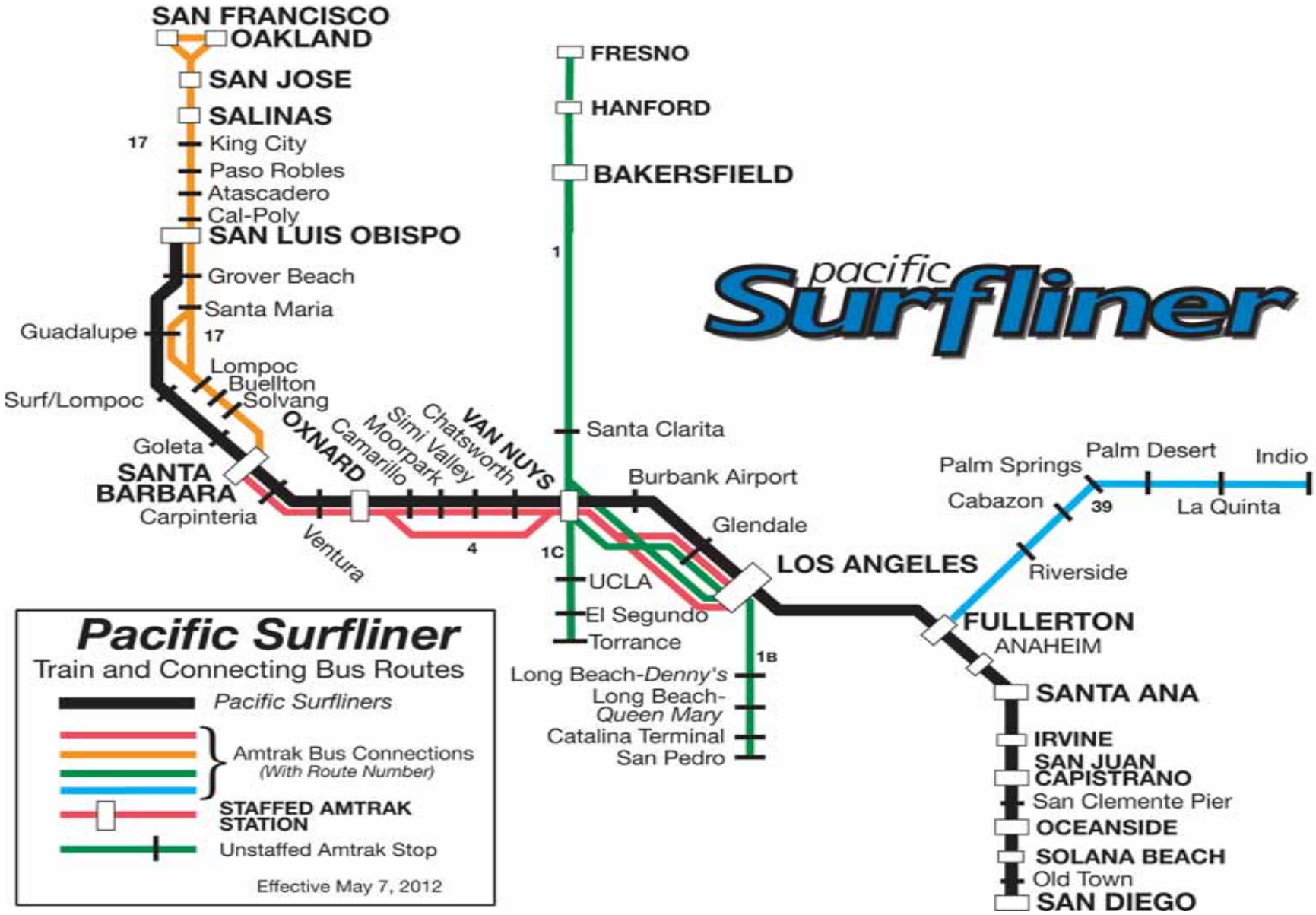
San Diego - Fullerton - Los Angeles
Santa Barbara - Goleta - San Luis Obispo

Connecting Bus Routes:

San Pedro - Long Beach - Los Angeles

Los Angeles - Bakersfield - Fresno

Fullerton - Cabazon - Palm Springs - Indio


pacific Surfliner
SAN FRANCISCO
OAKLAND
SAN JOSE
SALINAS
17
King City
Paso Robles
Atascadero
Cal-Poly
SAN LUIS OBISPO
Grover Beach
Santa Maria
Guadalupe
17
Lompoc
Buellton
Solvang
Surf/Lompoc
Goleta
SANTA BARBARA
Carpinteria
OXNARD
Camarillo
Moorpark
Simi Valley
Chatsworth
VAN NUYS
Ventura
4
1C
FRESNO
HANFORD
BAKERSFIELD
1
Santa Clarita
Burbank Airport
Glendale
LOS ANGELES
UCLA
El Segundo
Torrance
1B
Long Beach-Denny's
Long Beach-Queen Mary
Catalina Terminal
San Pedro
Palm Springs
Palm Desert
Indio
Cabazon
39
La Quinta
Riverside
FULLERTON
ANAHEIM
SANTA ANA
IRVINE
SAN JUAN CAPISTRANO
San Clemente Pier
OCEANSIDE
SOLANA BEACH
Old Town
SAN DIEGO
Pacific Surfliner
Train and Connecting Bus Routes
Pacific Surfliners
Amtrak Bus Connections
(With Route Number)
STAFFED AMTRAK STATION
Unstaffed Amtrak Stop
Effective May 7, 2012

PACIFIC SURFLINER ROUTE

Summary of Changes and Corrections

Train Schedules

Pacific Surfliner Route -- San Diego - Los Angeles - Santa Barbara - San Luis Obispo

NORTHBOUND

Train 763 will depart five minutes earlier and has time adjustments through Solana Beach. Train 565 now departs five minutes earlier and has time adjustments through Santa Ana. Train 567 has time adjustments from Santa Ana through Los Angeles. Train 769 will leave San Diego now three minutes earlier and has a time adjustment at Old Town, no other changes throughout its schedule. Train 583 will depart 15 minutes earlier and has time adjustments throughout its schedule. Train 785 will depart five minutes earlier and have time adjustments through Solana Beach. Train 591 will have time adjustments from Santa Ana through Fullerton.

SOUTHBOUND

Train 562 will have schedule adjustments from Oceanside to San Diego. Train 580 will depart five minutes earlier and have time adjustments throughout its schedule. Trains 582 and 784 will now stop at Old Town and will arrive into San Diego three minutes later.

Bus Schedules

Route 17 -- Oakland - San Luis Obispo - Santa Barbara

Bus 4768 has time adjustments from Salinas through Solvang, all other times stay the same. Bus 4764 has five minute adjustments from San Luis Obispo through Solvang. Bus 4790 leaves Oakland now at 7:30a and has time adjustments from Salinas through Paso Robles.

Route 39 -- Fullerton - Cabazon - Palm Springs - Indio

Added Dowtown Palm Springs (PSS) stop in addition to Palm Springs Airport (PSP) stop. As a result, Buses 4968 and 4984 will have five minute adjustments after stop at PSS to the end of their runs. Bus 4969 has time adjustment at La Quinta and Downtown Palm Springs. Bus 4985 will now depart PSP at 3:05p and add PSS stop8 at 3:10p.

Pacific Surfliner Route -- SAN DIEGO - SANTA ANA - LOS ANGELES - OXNARD - SANTA BARBARA - SAN LUIS OBISPO
Route 4 -- Supplemental Bus Service: LOS ANGELES - OXNARD - SANTA BARBARA

Northbound--Read Down

Effective April 2, 2012						763 Pacific Surfliner Daily		599 Pacific Surfliner XSSH	565 Pacific Surfliner SSH	567 Pacific Surfliner Daily	769 Pacific Surfliner Daily		573 Pacific Surfliner Daily	777 Pacific Surfliner Daily	579 Pacific Surfliner Daily	583 Pacific Surfliner Daily	785 Pacific Surfliner Daily	591 Pacific Surfliner Daily	595 Pacific Surfliner M-Th	597 Pacific Surfliner FSSH	Bus 1A-4 5811 ® Bus Daily
						AM		AM	AM	AM	AM		AM	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**
SAN DIEGO (1)	Lv					6:05		7:07	7:05	8:05	9:24		10:50	**12:05**	**1:40**	**2:40**	**4:00**	**6:15**	**8:25**	**9:15**	**P10:15**
Old Town						R 6:10		--	--	R 8:11	R 9:30		--	--	--	**R 2:46**	**R 4:06**	**A 6:21**	**R 8:31**	**R 9:21**	|
SOLANA BEACH (1)						6:43		7:41	7:38	8:40	10:03		11:26	**12:39**	**2:14**	**3:19**	**4:40**	**6:51**	**9:00**	**9:50**	**P10:45**
OCEANSIDE (1)		1A Bus 2	Bus 1A-1			7:01		7:55	7:53	8:54	10:17		11:43	**12:57**	**2:31**	**3:40**	**4:59**	**7:06**	**9:15**	**10:05**	**P11:15**
San Clemente-*Pier*		5801 ®	5813 ®			--		--	--	--	--		--	--	--	**4:03**	**5:20**	--	--	--	|
SAN JUAN CAPISTRANO (1)		Bus	Bus			7:34		--	8:23	9:28	10:48		**12:12**	**1:27**	**3:01**	**4:19**	**5:32**	**7:41**	**9:44**	**10:34**	**P11:50**
Laguna Niguel/Mission Viejo		Daily	Daily			--		--	M 8:31	M 9:36	--		--	--	--	--	--	--	--	--	|
IRVINE		AM	AM			7:48		8:37	8:39	9:49	11:03		**12:30**	**1:43**	**3:17**	**4:34**	**5:49**	**7:56**	**10:00**	**10:50**	P12:05
SANTA ANA (1)		3:00	P 5:25			7:58		--	8:52	9:59	11:14		**12:40**	**1:53**	**3:27**	**4:45**	**5:59**	**8:08**	**10:12**	**11:02**	P12:25
Orange		|	|			--		--	M 8:58	M10:04	--		--	--	--	--	--	--	--	--	|
ANAHEIM		|	|			8:07		8:54	9:01	10:11	11:23		**12:48**	**2:02**	**3:35**	**4:54**	**6:08**	**8:15**	**10:20**	**11:10**	|
FULLERTON (1)		3:20	P 5:50			8:16		--	9:11	10:19	11:33		**12:57**	**2:12**	**3:45**	**5:04**	**6:16**	**8:25**	**10:29**	**11:19**	P12:45
Norwalk		|	|			--		--	--	--	--		--	--	--	--	--	--	--	--	|
LOS ANGELES (1)	Ar	4:00	c 6:35			8:50		9:35	9:45	10:55	**12:10**		**1:35**	**2:45**	**4:20**	**5:40**	**6:55**	**9:05**	**11:05**	**11:55**	1:30
		AM	AM			|		AM	AM	AM	|		**PM**	|	**PM**	**PM**	|	**PM**	**PM**	**PM**	|
		|	AFR 71			|					|			|			|			|
		|	to	761	1761	|		14 ®			|			|			|	Bus 4-1			|
		|	Bakers-	**Pacific**	**Pacific**	|		**Coast**			|			|			|	4591 ®			|
		|	field	**Surfliner**	**Surfliner**	|		**Starlight**			|			|			|	Bus			|
		|		XSSH	SSH	|		Daily			|			|			|	Daily			|
		|		AM	AM	|		AM			|			|			|	**PM**			|
LOS ANGELES (1)	Lv	4:10		7:35	7:45	9:05		10:15			**12:25**			**3:00**			**7:10**	**c 9:20**			1:45
Glendale (1)		4:25		7:48	7:57	9:17		--			**12:37**			**3:12**			**7:22**	**9:35**			2:00
Burbank-*Bob Hope Airport* (1)		4:40		8:00	8:08	9:27		--			**12:47**			**3:22**			**7:32**	|			2:15
VAN NUYS-*Amtrak* (1)		AM		8:10	8:17	9:36		R10:52			**12:56**			**3:31**			**7:41**	**10:00**			AM
Chatsworth (1)		to		8:26	8:31	9:49		--			**1:09**			**3:44**			**7:54**	**D10:20**			to
Simi Valley (1)		Bakers-		8:45	8:45	10:01		R11:23			**1:21**			**4:00**			**8:06**	**D10:40**			Bakers-
Moorpark		field		8:57	8:57	--		--			**1:34**			--			--	**D10:55**			field
Camarillo				9:10	9:10	10:24	*4763 ®*	--			**1:48**	*4769 ®*	*4759 ®*	**4:21**		*4785 ®*	**8:29**	**D11:05**			
OXNARD (10)				9:21	9:21	10:37	*Bus*	11:55			**1:59**	*Bus*	*Bus*	**4:32**		*Bus*	**8:40**	**D11:15**			
Ventura (10)				9:35	9:35	10:53	*Daily*	--			**2:13**	*Daily*	*Daily*	**4:56**		*Daily*	**8:59**	**D11:30**			
Carpinteria (10)				10:06	10:06	11:15	*AM*	--			**2:41**	***PM***	***PM***	**5:20**		***PM***	**9:21**	**D11:45**			
SANTA BARBARA (10,17,21)	Ar			10:19	10:19	D11:40		**12:48**			**D 3:00**			**5:40**			**D 9:45**	D12:05			
SANTA BARBARA (10,17,21)	Lv			10:22	10:22	D11:40	*11:45*	**12:48**			**D 3:00**	***3:10***	***3:10***	**5:42**		***9:50***	**D 9:45**	D12:05			
Goleta				10:34	10:34	11:53	|	--			**3:13**	|	|	**5:54**		|	**9:58**	D12:20			
Surf/Lompoc (17)				11:40	11:40	AM	|	--			**PM**	|	|	**7:06**		|	**PM**	AM			
Guadalupe (17)				**12:16**	**12:16**		|	--				|	***D 5:05***	**7:43**		|		AFR 72			
Grover Beach (17,18,21)				**12:35**	**12:35**		***D 1:40***	--				|	***D 5:30***	**8:00**		***D11:40***					
SAN LUIS OBISPO (17,18,21)	Ar			**1:00**	**1:00**		***D 2:05***	**3:30**				***D 5:15***	***PM***	**8:30**		*D12:05*					
				PM	**PM**		***PM***	**PM**				***PM***		**PM**		*AM*					
							to San Fran.	to Seattle				to San Fran.				to San Fran.					

Notes:
See Page 5 for general notes.
AM - Light Face Type, **PM - Bold Type**
A - Stops at Old Town Saturdays, Sundays & Holidays Only.
e Will also operate 11/24/2010, 11/25/2010, 12/25/2010, 1/1/2011
h Will not operate 11/25/2010, 12/25/2010, 1/1/2011.
M - Stops weekdays only for Metrolink passengers, not shown in Amtrak public timetables.
P - Stops to pick up or discharge passengers holding prepurchased Amtrak tickets, will also pick up other passengers bound for Los Angeles or beyond. Travel on this bus must be as part of a round trip which includes train travel in the other direction. This bus requires reservations. Passengers without advance reservations will be handled on a space-available basis only.
R - Stops to receive passengers only.
® - Reservations required.
AFR 35 (Except as noted)
3/8/12 DOR/GWS

Pacific Surfliner Route -- SAN LUIS OBISPO - SANTA BARBARA - OXNARD - LOS ANGELES - SANTA ANA - SAN DIEGO
Route 4 -- Supplemental Bus Service: SANTA BARBARA - OXNARD - LOS ANGELES

Southbound--Read Down

Effective April 2, 2012						from San Fran. 4768 ® Bus Daily			774 Pacific Surfliner Daily				from San Fran. 4784 ® Bus Daily	790 Pacific Surfliner XSSH	1790 Pacific Surfliner SSH	from Seattle 11 ® Coast Starlight Daily	from San Fran. 4796 ® Bus Daily	
						AM	768		AM			784	AM	PM	PM	PM	PM	796
SAN LUIS OBISPO (17,18,21)	Lv					4:00	Pacific		6:55			Pacific	11:25	1:35	1:55	3:20	3:40	Pacific
Grover Beach (17,18,21)						4:25	Surfliner		7:14		AFR 72	Surfliner	L 11:00	1:55	2:15	--	4:10	Surfliner
Guadalupe (17)						|	Daily		7:30		Bus 4-1	Daily	|	2:11	2:31	--	|	Daily
Surf/Lompoc (17)						|	AM		8:05		4582 ®	PM	|	2:51	3:11	--	|	PM
Goleta						|	6:30		9:12		Bus	1:50	|	3:57	4:17	--	|	6:45
SANTA BARBARA (10,17,21)	Ar					c 6:30	6:41		9:24		Daily	2:01	c 1:45	4:09	4:32	6:17	c 6:40	6:56
						AM	|		|		PM	|	PM	|	|	PM	|
SANTA BARBARA (10,17,21)	Lv						6:43		9:26		12:55	2:03		4:12	4:35	6:17		6:58
Carpinteria (10)							6:58		9:41		|	2:18		4:27	4:50	--		7:14
Ventura (10)							7:23		10:03		1:25	2:40		4:49	5:16	--		7:36
OXNARD (10)							7:37		10:17		1:50	2:56		5:07	5:30	D 7:05		7:50
Camarillo							7:48		10:36		|	3:07		--	--	--		8:01
Moorpark							8:05		--		|	3:20		5:36	5:59	--		--
Simi Valley (1)							8:20		11:02		|	3:35		5:54	6:15	D 7:38		8:38
Chatsworth (1)							8:35		11:23		|	3:52		6:12	6:28	--		8:50
Northridge							M 8:41		--		|	--		--	--	--		--
VAN NUYS-Amtrak (1)							8:50		11:36		|	4:13		6:25	6:40	D 8:05		9:05
Burbank-*Bob Hope Airport* (1)							8:59		11:44		|	4:22		6:37	6:48	D 8:15		9:13
Glendale (1)		from	from				9:11		11:54		|	4:32		6:50	6:59	--		9:23
LOS ANGELES (1)	Ar	Bakers-	Bakers-				9:25		12:15		c 3:35	4:55		7:10	7:15	9:00		9:45
		field	field				|		|		PM	|			PM		|
		AFR 71	AFR 71				|		|			|					|
		Bus 1A-5	Bus 1A-6	562	564	566	|	572	|	580	582	|						|
		5804 ®	5818 ®	Pacific	Pacific	Pacific	|	Pacific	|	Pacific	Pacific	|						|
		Bus	Bus	Surfliner	Surfliner	Surfliner	|	Surfliner	|	Surfliner	Surfliner	|						|
		Daily	Daily	Daily	Daily	Daily	|	Daily	|	Daily	Daily	|						|
		AM	AM	AM	AM	AM	|	AM	|	PM	PM	|						|
LOS ANGELES (1)	Lv	12:40	2:30	6:15	7:20	8:30	9:40	11:10	12:30	3:00	4:10	5:10		7:30	7:30			10:10
Norwalk		|	|	--	--	--	--	--	--	--	--	--		--	--			--
FULLERTON		D 1:15	D 3:05	6:44	7:49	8:59	10:09	11:39	12:59	3:29	4:39	5:39		8:02	8:02			10:39
ANAHEIM		|	|	6:52	7:58	9:08	10:20	11:48	1:08	3:38	4:48	5:48		8:11	8:11			10:48
Orange		|	|	--	--	M 9:13	--	--	--	--	--	--		--	--			--
SANTA ANA (1)		D 1:30	D 3:20	7:00	8:06	9:19	10:29	11:57	1:17	3:46	4:56	5:57		8:19	8:19			10:57
IRVINE		AM	D 3:40	7:13	8:21	9:30	10:40	12:12	1:29	3:56	5:07	6:09		8:32	8:32			11:08
Laguna Niguel/Mission Viego			|	--	--	M 9:40	--	--	--	--	--	--		--	--			--
SAN JUAN CAPISTRANO (1)			D 3:55	7:26	8:36	9:46	10:57	12:26	1:43	4:11	5:22	6:22		8:48	8:48			11:21
San Clemente-*Pier*			|	--	--	9:57	11:08	--	--	--	--	--		--	--			--
OCEANSIDE (1)			D 4:30	8:07	9:08	12:22	11:29	12:59	2:16	4:45	5:56	6:59		9:19	9:19			11:52
SOLANA BEACH (1)			D 4:50	8:22	9:26	10:42	11:46	1:14	2:31	5:02	6:12	7:20		9:34	9:34			12:08
Old Town	Ar		|	--	D 9:57	D 11:12	D 12:17	--	--	--	D 6:55	D 7:54		D 10:07	D 10:07			D 12:42
SAN DIEGO (1)	Ar		D 5:15	8:57	10:05	11:20	12:25	1:55	3:15	5:47	7:03	8:02		10:15	10:15			12:50
			AM	AM	AM	AM	PM	PM	PM	PM	PM	PM		PM	PM			AM

Notes: AFR 35 (Except as noted)

See Page 5 for general notes.

AM - Light Face Type, **PM - Bold Type.**

e Will also operate

h Will not operate

L - Grover Beach stop is made by local Bus 4764, which also makes other stops (same arrival time as 4784).

M - Stops weekdays only for Metrolink passengers, not shown in Amtrak public timetables.

P - Local travel on this bus must be part of a round trip which includes travel on a train in the other direction.

® - Reservations required.

3/8/12 DOR/GWS

PACIFIC SURFLINER BUS CONNECTIONS

ɔAST ROUTE--San Diego - Los Angeles - Santa Barbara - San Luis Obipso - Salinas - San Jose - San Francisco - Oakland - Sacramento

Includes Bus Service for Routes 4, 17 and 21

rthbound--Read Down

Effective May 7, 2012 DEDICATED FEEDERS AmericanStar (21), Silverado (17) Coach America (4)							763 **Pacific Surfliner** Daily					769 **Pacific Surfliner** Daily				777 **Pacific Surfliner** Daily	785 **Pacific Surfliner** Daily		591 **Pacific Surfliner** Daily	
							AM					AM				**Noon**	**PM**		**PM**	
N DIEGO	Lv						6:10					9:27				**12:05**	**4:05**		**6:15**	
Old Town			AFR 71				G 6:16					--				**--**	**G 4:11**		**A 6:21**	
LANA BEACH			Bus 1A-1				6:46					10:03				**12:39**	**4:45**		**6:51**	
EANSIDE			5813				7:01					10:17				**12:57**	**4:59**		**7:06**	
San Cleamente Pier			Bus				--					--				**--**	**5:20**		--	
N JUAN CAPISTRANO			Daily				7:34					10:48				**1:27**	**5:32**		**7:41**	
INE			AM				7:48					11:03				**1:43**	**5:49**		**7:57**	
NTA ANA			5:25	761	1761		7:58				14 ®	11:14				**1:53**	**5:59**		**8:09**	Bus 4-1
AHEIM			|	**Pacific**	**Pacific**		8:07				**Coast**	11:23				**2:02**	**6:08**		**8:18**	4591 ®
LLERTON			5:50	**Surfliner**	**Surfliner**		8:16				**Starlight**	11:33				**2:12**	**6:16**		**8:29**	Bus
S ANGELES	Ar		6:35	XSSH	SSH		8:50				Daily	**12:10**				**2:45**	**6:55**		**9:05**	Daily
			AM	AM	AM		|				AM	|			|	|		**PM**	**PM**
S ANGELES	Lv			7:35	7:45		9:05				10:15	**12:25**				**3:00**	**7:10**			**c 9:20**
Glendale				7:48	7:57		9:17				--	**12:37**				**3:12**	**7:22**			**9:35**
Burbank Airport				8:00	8:08		9:27				--	**12:47**				**3:22**	**7:32**			|
N NUYS				8:10	8:17		9:36				N 10:47	**12:56**				**3:31**	**7:41**			**10:00**
Chatsworth				8:26	8:31		9:49				--	**1:09**				**3:44**	**7:54**			**D10:20**
Simi Valley				8:45	8:45		10:01				N 11:23	**1:21**				**4:00**	**8:06**			**D10:40**
Moorpark				8:57	8:57		--				--	**1:34**				**--**	**--**			**D10:55**
Camarillo		AFR 73		9:10	9:10		10:24				--	**1:48**				**4:21**	**8:29**			**D11:05**
NARD		Bus 21-1		9:21	9:21		10:37	Bus 17-2			11:55	**1:59**	Bus 17-3	Bus 17-5		**4:32**	**8:40**	Bus 17-1		**D11:15**
Ventura		6234 ®		9:35	9:35		10:53	4763 ®			--	**2:13**	4769 ®	4759 ®		**4:56**	**8:59**	4785 ®		**D11:30**
Carpinteria		Bus		10:06	10:06		11:15	Bus			--	**2:41**	Bus	Bus		**5:20**	**9:21**	Bus		**D11:45**
NTA BARBARA	Ar	Daily		10:19	10:19		D11:40	Daily			**12:48**	**D 3:00**	Daily	Daily		**5:40**	**D 9:45**	Daily		D12:05
		AM		|	|		|	AM			|	|	**PM**	**PM**		|	|	**PM**	|
NTA BARBARA (PS.4.10)	Lv	6:00		10:22	10:22		D11:40	c 11:45			**12:48**	**D 3:00**	**c 3:10**	**c 3:10**		**5:42**	**D 9:45**	**c 9:53**		D12:05
Goleta (PS)	Lv	|		10:34	10:34		11:50	|			--	**3:13**	|	|		**5:54**	**9:58**	|		D12:20
Surf/Lompoc-*Amtrak* (PS)		|		11:40	11:40		AM	|			--	**PM**	|	|		**7:06**	**PM**	|		AM
Buellton-*Buraer King*		|		|	|			**12:30**			|		|	**D 3:55**		|		**10:38**	
Solvang-*Solvang Park*		|		|	|			**12:35**			|		|	**D 4:00**		|		**10:43**	
Lompoc-*Visitors Cntr*		|		|	|			|			|		|	**D 4:30**		|		|	
Guadalupe (PS)		|		**12:16**	**12:16**	Bus 17-4		|			--			|	**D 5:05**	Bus 17-5	**7:43**		|	
Santa Maria-*IHOP* (18)		7:20		|	|	4761 ®		**1:15**			|		**4:35**	|		4777 ®	|		**11:23**	
Grover Beach (PS.18)		7:45		**12:35**	**12:35**	Bus		**1:40**			--		|		**D 5:30**	Bus	**8:00**		**11:48**	
N LUIS OBISPO (PS.18)	Ar	8:05		**1:00**	**1:00**	Daily		**2:05**			**3:30**		**5:15**		**H**	Daily	**8:30**		12:13	
		|		**PM**	**PM**	**PM**		|			|		|	**PM**	**PM**	**PM**		|	
N LUIS OBISPO (PS.18)	Lv	8:10				**c 1:05**		**2:10**			**3:43**		**5:20**			**c 8:31**			12:18	
n Luis Obispo-*Cal Poly* (18)		8:15				**1:15**		**2:20**			|		**5:30**			**D 8:40**			12:28	
Atascadero-*Denny's* (18)		|				|		**2:35**			|		|			**D 9:00**			|	
so Robles (18)		8:55				**1:40**		**2:50**			**4:45**		**5:55**			**D 9:20**			12:53	
King City-*McDonalds*		R 9:45	*3611 ®*			**R 2:50**		**R 4:00**		*3614 ®*	|		**R 6:55**			**PM**			R 2:03	
LINAS (68)	Ar	10:35	*Bus*			**3:45**		**4:55**		*Bus*	**6:36**		**7:50**						2:58	
		|	*Daily*			|		|		*Daily*	|		|					|	
Route 68 Connections		|	*AM*			Coast		Coast		***PM***	|		Coast					Night	
SALINAS	Lv	|	*11:50*			Daylight		Daylight		***6:40***	|		Daylight					Coast	
Monterey-Transit Plaza	Ar	|	***12:35***			Bus		Bus		***7:30***	|		Bus					Bus	
		|	***PM***			|		|		***PM***	|		|					|	
LINAS (68)	Lv	10:40				**3:50**		**5:00**			|		**7:55**						3:03	
Gilroy-*Caltrain*		|				|		|			|		|					|	
N JOSE (CC.6.21.35)	Ar	**c 12:10**				**D 5:05**		**D 6:15**			**8:27**		**D 9:10**						4:18	
N JOSE (CC.6.21.35)	Lv	**PM**				**D 5:05**		**D 6:15**			**8:39**		**D 9:10**						4:18	
KLAND (CC.21. 34. 99)	Ar					|		|			**9:32**		|						|	
N FRANCISCO--						|		|			|		|					|	
FERRY BUILDING (34.99)	Ar					**D 6:20**		**D 7:25**			***e1010***		**D10:25**						D 5:33	
IERYVILLE						|		|			|	**D10:45**						D 5:53	
KLAND (CC.21. 34. 99)	Ar	*532*	*734*			**D 6:45**	*544/744*	**D 7:55**	*546*	*748*	|		**D10:55**						D 6:03	
		Train	*Train*			**PM**	*Train*	**PM**	*Train*	*Train*	|		**PM**			*522*	*720*		AM	
		XSSH	*SSH*				*Daily*		*XSSH*	*SSH*	|					*Train*	*Train*			
Capitol Corridor Connection		***PM***	***PM***				***PM***		***PM***	***PM***	|					*XSSH*	*SSH*			
SAN JOSE	*Lv*	***12:20***	***12:50***				***5:50***		***7:15***	***7:50***	|					*AM*	*AM*			
OAKLAND	*Lv*	***1:25***	***1:55***				***6:55***		***8:20***	***8:55***	**9:47**					*6:30*	*7:20*			
EMERYVILLE	*Ar*	***1:33***	***2:03***				***7:03***		***8:28***	***9:03***	**10:02**					*6:38*	*7:28*			
MARTINEZ	*Ar*	***2:12***	***2:42***				***7:42***		***9:07***	***9:42***	**10:51**					*7:17*	*8:07*			
DAVIS	*Ar*	***2:57***	***3:27***				***8:27***		***9:52***	***10:27***	**11:33**					*8:02*	*8:52*			
SACRAMENTO	*Ar*	***3:25***	***3:55***				***8:55***		***10:25***	***10:55***	**11:59**					*8:28*	*9:18*			
Roseville	*Ar*	***D 4:30***	***D 4:30***				***PM***		***PM***	***PM***	**PM**					*AM*	*D 10:35*			
		PM	***PM***								to Seattle						*AM*			

tes: AFR: 72 (Except as noted)

e Page 6 for general notes.

l - Light Face Type, **PM - Bold Type.**

San Francisco bus connection from Oakland.

Stops Saturdays, Sundays and Holidays only.

Bus 4759 goes to San Luis Obispo only when there are overflow passengers from Bus 4769.

Stops to receive passengers only.

10 minutes rest stop or as time permits.

Reservations required.

3/20/12 DOR/GWS

PACIFIC SURFLINER BUS CONNECTIONS

COAST ROUTE--Sacramento - Oakland - San Francisco - San Jose - Salinas - San Luis Obispo - Santa Barbara - Los Angeles - San Diego

Includes Bus Service for Routes 4, 17 and 21

Southbound--Read Down

Effective May 7, 2012

DEDICATED FEEDERS
AmericanStar (21),
Silverado (17)
Coach America (4)

Capitol Corridor Connection		749 Train SSH	551 Train XSSH							723 Train SSH		523 Train XSSH	from Seattle 11 ® Coast Star-light Daily	727 Train SSH	527 Train XSSH		537/737 Train Daily
												AM					AM
Roseville	Lv	**PM**	**PM**							AM		4:45	AM	AM	AM		11:05
SACRAMENTO	Lv	**7:10**	**7:40**							5:40		5:30	6:35	7:40	7:00		**12:10**
DAVIS	Lv	**7:25**	**7:55**							5:55		5:45	6:50	7:55	7:15		**12:25**
MARTINEZ	Lv	**8:10**	**8:40**	Bus 17-4				Bus 17-2		6:40	Bus 17-3	6:30	7:34	8:40	8:00	Bus 17-1	**1:10**
EMERYVILLE	Lv	**8:50**	**9:20**	4768 ®				4784 ®		7:20	4790 ®	7:10	8:20	9:20	8:40	4796 ®	**1:50**
OAKLAND	Ar	**9:08**	**9:38**	Bus				Bus		7:31	Bus	7:21	8:35	9:31	8:51	Bus	**2:01**
SAN JOSE	Ar	**PM**	**PM**	Daily				Daily		8:45	Daily	8:35	|	10:45	10:10	Daily	**3:15**
				PM				AM		AM	AM	AM	|	AM	AM	AM	**PM**
OAKLAND (CC,21, 34, 99)	Lv			**c 10:00**				5:55			7:30		8:50			9:54	
EMERYVILLE				**10:15**				6:05			|		|			|	
SAN FRANCISCO--				|			|			|		|			|	Bus 21-1
FERRY BUILDING (34, 99)	Lv			**10:45**				6:35			8:00		*e 7:55*			10:29	6237 ®
SAN JOSE (CC,6,21,35)	Ar			**11:55**				7:30			9:15		9:55			11:29	Bus
				|				|			|		|			|	Daily
				|				|			|		|			|	**PM**
SAN JOSE (CC,6,21,35)	Lv			**11:59**				7:35			c 9:15		10:07			c 11:34	**c 3:25**
Gilroy-*Caltrain*				|			|			|		--	*3511 ®*		|	**D 4:05**
SALINAS (68)	Ar			1:15				8:40			10:20		11:48	*Bus*		**12:34**	**4:35**
				|				|			|		| *Daily*		|	|
Route 68 Connections				**Night**				**Coast**			**Coast**		|	*AM*		**Coast**	|
Monterey-Transit Plaza	Lv			**Coast**				**Daylight**			**Daylight**		|	*10:30*		**Daylight**	|
SALINAS	Ar			**Bus**				**Bus**			**Bus**		|	*11:20*		**Bus**	|
				|			Bus 17-5	|			|		|	*AM*		|	|
SALINAS (68)	Lv			1:15			4764 ®	8:45			10:20		11:48			**12:39**	**4:40**
King City-*McDonalds*				R 2:10			Bus	R 9:40			R 11:25		|			**R 1:39**	**R 5:35**
Paso Robles (18)	Lv			3:10	774		Daily	10:40		1790	**12:25**	790	**1:38**			**2:39**	**D 6:20**
Atascadero-*Denny's* (18)				|	**Pacific**		AM	|		**Pacific**	|	**Pacific**	|			**2:54**	|
San Luis Obispo-*Cal Poly* (18)				3:40	**S'liner**		10:10	|		**S'liner**	**1:00**	**S'liner**	|			**3:14**	**D 6:55**
SAN LUIS OBISPO (PS,18)	Ar			3:50	Daily		10:25	11:20		SSH	**c 1:20**	XSSH	**3:10**			**3:29**	**7:10**
				|	AM		|	|		AM	**PM**	AM	|			|	|
SAN LUIS OBISPO (PS,18)	Lv			3:50	6:55		10:30	11:25		**1:55**		**1:35**	**3:20**			**3:39**	|
Grover Beach (PS,18)				4:15	7:19		10:55	|		**2:15**		**1:55**	--			**4:09**	**D 7:30**
Santa Maria-*IHOP* (18)				4:40	|		11:20	|		|		|	|			**4:34**	**D 7:55**
Guadalupe (PS)			768	|	7:30		|	|	784	**2:31**		**2:11**	--		796	|	|
Lompoc-*Visitors Cntr*			**Pacific**	|	|		**12:05**	|	**Pacific**	|		|	|		**Pacific**	|	|
Buellton-*Burger King*			**S'liner**	5:10	|		**12:25**	|	**S'liner**	|		|	|		**S'liner**	**5:04**	**D 8:30**
Solvang-*Solvang Park*			Daily	5:20	|	Bus 4-1	**12:35**	|	Daily	|		|	|		Daily	**5:14**	**D 8:40**
Surf/Lompoc-*Amtrak* (PS)			AM	|	8:05	4582 ®	|	|	**PM**	**3:11**		**2:51**	--		**PM**	|	|
Goleta (PS)			6:30	|	9:12	Bus	|	|	**1:45**	**4:17**		**3:57**	--		**6:45**	|	|
SANTA BARBARA (PS,4,10)	Ar		6:41	c 6:30	9:24	Daily	**c 1:45**	**c 1:45**	**2:00**	**4:32**		**4:09**	**6:17**		**6:56**	**c 6:39**	**9:30**
			|	AM	|	**PM**	**PM**	**PM**	|	|		|	|		|	**PM**	**PM**
SANTA BARBARA	Lv		6:43		9:26	**12:55**			**2:00**	**4:35**		**4:12**	**6:17**		**6:58**		AFR 73
Carpinteria			6:58		9:41	|			**2:16**	**4:50**		**4:27**	--		**7:14**		
Ventura			7:23		10:03	**1:25**			**2:41**	**5:16**		**4:49**	--		**7:36**		
OXNARD			7:37		10:17	**1:50**			**2:58**	**5:30**		**5:07**	**7:08**		**7:50**		
Camarillo			7:48		10:36	|			**3:09**	--		--	--		**8:01**		
Moorpark			8:05		--	|			**3:21**	**5:59**		**5:36**	--		--		
Simi Valley			8:20		11:02	|			**3:37**	**6:15**		**5:54**	**D 7:38**		**8:38**		
Chatsworth			8:35		11:23	|			**3:50**	**6:28**		**6:12**	--		**8:50**		
VAN NUYS			8:50		11:36	|		582	**4:16**	**6:40**	790/1790	**6:25**	**D 8:05**		**9:05**		
Burbank Airport			8:59		11:44	|		**Pacific**	**4:25**	**6:48**	**Pacific**	**6:37**	--		**9:13**		
Glendale			9:11		11:54	|		**S'liner**	**4:38**	**6:59**	**S'liner**	**6:50**	--		**9:23**		
LOS ANGELES	Ar		9:25		**12:15**	**c 3:35**		Daily	**4:55**	**7:15**	Daily	**7:10**	**9:00**		**9:45**		
			|		|	**PM**		**PM**	|	**PM**	**PM**	**PM**	**PM**		|		
LOS ANGELES	Lv		9:40		**12:30**			**4:10**	**5:10**		**7:30**				**10:10**		
FULLERTON			10:09		**12:59**			**4:40**	**5:40**		**7:59**				**10:39**		
ANAHEIM			10:20		**1:08**			**4:49**	**5:49**		**8:08**				**10:48**		
SANTA ANA			10:29		**1:17**			**4:58**	**5:58**		**8:16**				**10:57**		
IRVINE			10:40		**1:29**			**5:09**	**6:11**		**8:30**				**11:08**		
SAN JUAN CAPISTRANO			10:57		**1:43**			**5:23**	**6:25**		**8:43**				**11:21**		
San Clemente Pier			11:08		--			--	--		--				--		
OCEANSIDE			11:29		**2:16**			**5:55**	**6:57**		**9:14**				**11:52**		
SOLANA BEACH			11:46		**2:31**			**6:13**	**7:13**		**9:29**				12:08		
Old Town			**G12:17**		--			--	--		**D 10:02**				D12:42		
SAN DIEGO	Ar		**12:25**		**3:15**			**7:00**	**7:50**		**10:10**				12:50		
			PM		**PM**			**PM**	**PM**		**PM**				AM		

Notes:
See Page 6 for general notes.
AM - Light Face Type, **PM - Bold Type.**
e - San Francisco bus connection via Oakland.
G - Stops Saturdays, Sundays and Holidays only.
R - 10 minutes rest stop.
® - Reservations required.
3/20/12 DOR/GWS

AFR: 72 (Except as noted)

PACIFIC SURFLINER BUS CONNECTIONS

Route 1B (Partial Schedule) -- LONG BEACH - SAN PEDRO

Connections to and from points south

To Long Beach and San Pedro--Read Down

Effective May 7, 2012		TRAIN 573 Daily	TRAIN 579 Daily	TRAIN 785 Daily	TRAIN 591 Daily
Pacific Surfliner Connections		AM	**PM**	**PM**	**PM**
SAN DIEGO	Lv	*10:50*	***1:25***	***4:00***	***6:15***
SOLANA BEACH		*11:26*	***1:59***	***4:40***	***6:51***
OCEANSIDE		*11:43*	***2:14***	***4:59***	***7:06***
SAN JUAN CAPISTRANO		***12:12***	***2:47***	***5:32***	***7:41***
IRVINE		***12:30***	***3:03***	***5:49***	***7:56***
SANTA ANA		***12:40***	***3:14***	***5:59***	***8:08***
ANAHEIM		***12:48***	***3:23***	***6:08***	***8:15***
FULLERTON		***12:57***	***3:34***	***6:16***	***8:25***
LOS ANGELES	Ar	***1:35***	***4:05***	***6:55***	***9:05***
		PM	***PM***	***PM***	***PM***
		1B Bus 1-9	1B Bus 1-10	1B Bus 1-11	1B Bus 1-12
DEDICATED FEEDER *CUSA*		5702 ® Bus Daily	5712 ® Bus Daily	5714 ® Bus Daily	5716 ® Bus Daily
		PM	**PM**	**PM**	**PM**
LOS ANGELES (PS,4)		**c 2:50**	**c 4:30**	**c 7:00**	**c 10:10**
Long Beach-*Denny's Rest.*	Ar	**D 3:45**	**D 5:25**	**D 7:55**	**D11:05**
Long Beach-*Queen Mary*	Ar	**D 4:00**	**D 5:40**	**D 8:10**	**D11:20**
San Pedro-*Catalina Term.*	Ar	**D 4:15**	**D 5:55**	**D 8:25**	**D11:35**
San Pedro-*Library*	Ar	**D 4:25**	**D 6:05**	**D 8:35**	**D11:45**
		PM	**PM**	**PM**	**PM**

From San Pedro and Long Beach--Read Down

			1B Bus 1-9	1B Bus 1-10	1B Bus 1-12	
DEDICATED FEEDER *CUSA*			5713 ® Bus Daily	5715 ® Bus Daily	5703 ® Bus Daily	
			AM	AM	**PM**	
San Pedro-*Library*	Lv		5:15	8:50	**1:10**	
San Pedro-*Catalina Term.*	Lv		5:30	9:05	**1:25**	
Long Beach-*Queen Mary*	Lv		|	|	**1:45**	
Long Beach-*Denny's Rest.*	Lv		5:55	9:30	**2:00**	
LOS ANGELES (PS,4)	Ar		c 7:05	c 10:25	**c 2:55**	
			AM	AM	**PM**	
		1A Bus 9				
		5818 ® Bus Daily	*566 Train Daily*	*572 Train Daily*	*580 Train Daily*	*582 Train Daily*
Pacific Surfliner Connection		*AM*	*AM*	*AM*	***PM***	***PM***
LOS ANGELES	Lv	*D 2:30*	*8:30*	*11:10*	***3:00***	***4:10***
FULLERTON		*D 3:05*	*9:00*	*11:40*	***3:29***	***4:39***
ANAHEIM		|	*9:09*	*11:49*	***3:38***	***4:48***
SANTA ANA		*D 3:20*	*9:20*	*11:58*	***3:46***	***4:56***
IRVINE		*D 3:40*	*9:31*	***12:11***	***3:56***	***5:07***
SAN JUAN CAPISTRANO	Lv	*D 3:55*	*9:48*	***12:25***	***4:11***	***5:22***
OCEANSIDE		*D 4:30*	*10:23*	***12:59***	***4:45***	***5:56***
SOLANA BEACH		*D 4:50*	*10:39*	***1:19***	***5:02***	***6:12***
SAN DIEGO	Ar	*D 5:15*	*11:20*	***1:55***	***5:47***	***7:03***
		AM	*AM*	***PM***	***PM***	***PM***

Note B

Notes: AFR: 71

See Page 6 for general notes.

See Pages 36-37 for complete Route 1 service.

AM - Light Face Type, **PM - Bold Type.**

® - Reservations required.

3/20/12 DOR/GWS

PACIFIC SURFLINER BUS CONNECTIONS
Route 1B and 1C (Partial Schedule) -- SAN PEDRO - LONG BEACH and TORRANCE - EL SEGUNDO - WESTCHESTER - UCLA
Connections to and from points north

From San Pedro, Long Beach, Torrance and west Los Angeles communities--Read Down

Effective May 7, 2012			1B Bus 1-9			1B Bus 1-10		1B Bus 1-12	
DEDICATED FEEDER *CUSA*			5713 ® Bus Daily			5715 ® Bus Daily		5703 ® Bus Daily	
			AM			AM		**PM**	
San Pedro-*Library*	Lv		5:15			8:50		**1:10**	
San Pedro-*Catalina Terminal*	Lv		5:30	1C Bus 1-13	1C Bus 1-14	9:05	1C Bus 1-15	**1:25**	1C Bus 1-16
Long Beach-*Queen Mary*	Lv		I	5913 ® Bus Daily	5915 ® Bus Daily	I	5917 ® Bus Daily	**1:45**	5903 ® Bus Daily
Long Beach-*Denny's Restaurant*	Lv		5:55			9:30		**2:00**	
LOS ANGELES (PS,4)	Ar		c 7:05			c 10:25		**c 2:55**	
			AM	AM	AM	AM	AM	**PM**	**PM**
Torrance - *Alpine Village*	Lv			5:30	8:30		11:00		**1:15**
El Segundo - *Douglas Green Line Stn*	Lv			5:45	8:45		11:15		**1:30**
Westchester - *MTA Bus Stop*	Lv			6:05	9:05		11:35		**1:50**
UCLA-*Gayley/Strathmore*	Lv			6:35	9:35		**12:05**		**2:20**
VAN NUYS (PS,4)	Ar			c 7:10	c 10:20		**c 12:50**		**c 3:05**
				AM	AM		**PM**		**PM**
		*14 **Coast Starlight***	*761 Train XSSH*	*1761 Train SSH*	*14 **Coast Starlight***	*769 Train Daily*		*777 Train Daily*	
Pacific Surfliner Connection		*Daily*	*AM*	*AM*	*Daily*	***PM***		***PM***	
LOS ANGELES	Lv	10:15	*7:35*	*7:45*		***12:25***		***3:00***	
Burbank Airport	Ar	10:42	*8:00*	*8:08*		***12:47***		***3:22***	
VAN NUYS		10:52	*8:10*	*8:17*	10:52	***12:56***		***3:31***	
Simi Valley		*11:23*	*8:45*	*8:45*	*11:23*	***1:21***		***4:00***	
OXNARD		*11:55*	*9:21*	*9:21*	*11:55*	***1:59***		***4:32***	
SANTA BARBARA		***12:48***	*10:19*	*10:19*	***12:48***	***3:00***		***5:40***	
SAN LUIS OBISPO	Ar	***3:43***	***1:00***	***1:00***	***3:43***	***5:15***		***8:30***	
		PM	***PM***	***PM***	***PM***	***PM***		***PM***	

To San Pedro, Long Beach, Torrance and west Los Angeles communities--Read Down

		774 Train Daily		*784 Train Daily*	*790/1790 Train M-F/SSH*	*796 Train Daily*	
Pacific Surfliner Connection		*AM*		*AM*	***PM***	***PM***	
SAN LUIS OBISPO	Lv	*6:55*		*11:25*	***1:35/1:55***	***3:39***	
SANTA BARBARA		*9:26*		***2:00***	***4:12/4:35***	***6:58***	
OXNARD		*10:17*		***2:58***	***5:07/5:30***	***7:50***	
Simi Valley		*11:02*		***3:37***	***5:54/6:15***	***8:38***	
VAN NUYS		*11:36*		***4:16***	***6:25/6:40***	***9:05***	
Burbank Airport		*11:44*		***4:25***	***PM***	***9:13***	
LOS ANGELES	Ar	***12:15***		***4:55***			
		PM		***PM***		***PM***	
		1B Bus 1-9	1B Bus 1-10	1B Bus 1-11		1B Bus 1-12	
DEDICATED FEEDER *CUSA*		5702 ® Bus Daily	5712 ® Bus Daily	5714 ® Bus Daily		5716 ® Bus Daily	
		PM	**PM**	**PM**		**PM**	
LOS ANGELES (PS,4)	Lv	**c 2:50**	**c 4:30**	**c 7:00**		**c 10:10**	
Long Beach-*Denny's Restaurant*	Ar	**D 3:45**	**D 5:25**	**D 7:55**		**D11:05**	
Long Beach-*Queen Mary*	Ar	**D 4:00**	**D 5:40**	**D 8:10**	1C Bus 1-15	**D11:20**	1C Bus 1-16
San Pedro-*Catalina Terminal*	Ar	**D 4:15**	**D 5:55**	**D 8:25**	5914 ® Bus Daily	**D11:35**	5916 Bus Daily
San Pedro-*Library*	Ar	**D 4:25**	**D 6:05**	**D 8:35**		**D11:45**	
		PM	**PM**	**PM**		**PM**	
VAN NUYS (PS,4)	Ar				**D 6:40**		**D 9:50**
VAN NUYS (PS,4)	Lv				**6:45**		**9:50**
UCLA-*Gayley/Strathmore*	Lv				**D 7:15**		**D 10:20**
Westchester - *MTA Bus Stop*	Lv				**D 7:35**		**D 10:30**
El Segundo - *Douglas Green Line Stn*	Lv				**D 7:55**		**D 10:50**
Torrance - *Alpine Village*	Ar				**D 8:15**		**D 11:10**
					PM		**PM**

Notes: AFR: 71

See Page 6 for general notes.

See Pages 36-37 for complete Route 1 service.

AM - Light Face Type, **PM - Bold Type.**

3/20/12 DOR/GWS

PACIFIC SURFLINER BUS CONNECTIONS
Route 1 (Partial Schedule) -- FRESNO -BAKERSFIELD - LOS ANGELES

Southbound--Read Down

Effective May 7, 2012		1B Bus 1	1A Bus 5		1A Bus 9	1A Bus 1	1B Bus 5	1A Bus 3	1A Bus 9
DEDICATED FEEDER *CUSA*		5872 ® Bus Daily	5802 ® Bus Daily		5812 ® Bus Daily	5814 ® Bus Daily	5816 ® Bus Daily	5804 ® Bus Daily	5818 ® Bus Daily
		AM	**PM**		**PM**	**PM**	**PM**	**PM**	**PM**
FRESNO (SJ)		6:00	|		|	|	|	|	|
HANFORD (SJ)		6:50	|		|	|	|	|	|
BAKERSFIELD (SJ,9,10,12,19)	Lv	8:35	**12:10**		**1:50**	**4:20**	**7:30**	**10:10**	**11:59**
Santa Clarita-*Newhall Metrolink*		|	|		|	|	|	**11:35**	1:25
Burbank Airport-*Amtrak* (PS,4)		|	|		|	|	|	**11:59**	1:50
Glendale (PS,4)	Lv	|	|		|	|	|	12:15	2:05
LOS ANGELES (PS,4)	Ar	c 10:45	**c 2:30**		**c 4:10**	**c 6:40**	**c 9:50**	12:30	2:20
		AM	**PM**		**PM**	**PM**	**PM**	|	|
								|	|
		572	*580*	*582*	*784*	*790/1790*	*796*	|	|
		Train	*Train*	*Train*	*Train*	*Train*	*Train*	|	|
Pacific Surfliner Train Connection		*Daily*	*Daily*	*Daily*	*Daily*	*Daily*	*Daily*	|	|
and through Bus Service		*AM*	***PM***	***PM***	***PM***	***PM***	***PM***	|	|
LOS ANGELES	Lv	*11:10*	***3:05***	***4:10***	***5:10***	***7:30***	***10:10***	12:40	2:30
FULLERTON	Ar	*11:39*	***3:34***	***4:39***	***5:39***	***8:02***	***10:39***	D 1:15	D 3:05
SANTA ANA		*11:57*	***3:51***	***4:56***	***5:57***	***8:19***	***10:57***	D 1:30	D 3:20
IRVINE		***12:12***	***4:01***	***5:07***	***6:09***	***8:32***	***11:08***		
SAN JUAN CAPISTRANO		***12:26***	***4:14***	***5:22***	***6:22***	***8:48***	***11:21***	AM	D 3:55
OCEANSIDE		***12:59***	***4:48***	***5:56***	***6:59***	***9:19***	***11:52***		D 4:30
SOLANA BEACH		***1:14***	***5:03***	***6:12***	***7:20***	***9:34***	*12:08*		D 4:50
SAN DIEGO	Ar	***1:55***	***5:50***	***7:00***	***7:59***	***10:15***	*12:50*		D 5:15
		PM	***PM***	***PM***	***PM***	***PM***	*AM*		AM

Northbound--Read Down

							1A Bus 1			
			599	*769*	*777*	*785*	5811 ®			
			Train	*Train*	*Train*	*Train*	Bus			
Pacific Surfliner Train Connection			*XSSH*	*Daily*	*Daily*	*Daily*	Daily			
and through Bus Service			*AM*	*AM*	***Noon***	***PM***	**PM**			
SAN DIEGO	Lv	1A Bus 5	*7:07*	*9:27*	***12:05***	***4:05***	**10:15**			
SOLANA BEACH		5813 ®	*7:41*	*10:03*	***12:39***	***4:45***	**10:45**			
OCEANSIDE		Bus	*7:55*	*10:17*	***12:57***	***4:59***	**11:15**			
SAN JUAN CAPISTRANO		Daily	--	*10:48*	***1:27***	***5:32***	**11:50**			
IRVINE		AM	*8:35*	*11:03*	***1:43***	***5:49***	12:05			
SANTA ANA		5:25	--	*11:14*	***1:53***	***5:59***	12:25			
FULLERTON	Lv	5:50	--	*11:33*	***2:12***	***6:16***	12:45			
LOS ANGELES	Ar	6:35	*9:35*	***12:10***	***2:45***	***6:55***	1:30			
		|	*AM*	***PM***	***PM***	***PM***	|			
		|					|		
		|	1A Bus 9	1A Bus 1	1B Bus 5	1B Bus 9	|			
DEDICATED FEEDER		|	5815 ®	5817 ®	5803 ®	5885 ®	|			
CUSA		|	Bus	Bus	Bus	Bus	|			
		|	Daily	Daily	Daily	Daily	|			
		|	AM	**PM**	**PM**	**PM**	|			
LOS ANGELES (PS,4)	Lv	7:35	c 10:45	**c 1:15**	**c 3:20**	**c 7:05**	1:45			
Glendale (PS,4)	Ar	|	|	|	|	|	2:00			
Burbank Airport-*Amtrak* (PS,4)		|	|	|	|	|	2:15			
Santa Clarita-*Newhall Metrolink*		|	|	|	|	**7:45**	2:40			
BAKERSFIELD (SJ,9,10,12,19)	Ar	c 9:50	**c 1:05**	**c 3:30**	**c 6:05**	**c 9:25**	4:40			
HANFORD (SJ)		AM	**PM**	**PM**	**PM**	**D11:00**	AM			
FRESNO (SJ)						**11:50**				
						PM				

Notes: AFR: 71

See Page 6 for general notes.

See Pages 36-37 for complete Route 1 service.

AM - Light Face Type, **PM - Bold Type.**

® - Reservations required.

3/20/12 DOR/GWS

PACIFIC SURFLINER BUS CONNECTIONS

Route 39 -- FULLERTON - RIVERSIDE - COACHELLA VALLEY

Eastbound-Read Down | Westbound-Read Up

Effective May 7, 2012

768 Train Daily	4768 ® Bus Daily	4784 ® Bus Daily	784 Train Daily	785 Train Daily	Pacific Surfliner Connection			769 Train Daily	4769 ® Bus Daily	785 Train Daily	4785 ® Bus Daily
AM	AM	AM	PM	PM				PM	PM	PM	AM
6:43	4:00	11:25	**1:50**	**6:16**	Lv	SAN LUIS OBISPO	Ar	**3:00**	**5:15**	**9:45**	12:13
7:37	6:30	**1:45**	**2:56**	**6:08**	Lv	SANTA BARBARA	Ar	**1:59**	**3:10**	**8:40**	**9:53**
8:05			**3:20**	5:59	Lv	OXNARD	Ar	**1:34**		|	PM
8:35			**3:52**	5:49	Lv	MOORPARK	Ar	**1:09**		**7:54**	
8:50	572 Train Daily		**4:13**	5:32	Lv	CHATSWORTH	Ar	**12:56**		**7:41**	
8:59			**4:22**	4:59	Lv	VAN NUYS	Ar	**12:47**		**7:32**	
9:11	AM		**4:32**	4:40	Lv	BURBANK	Ar	**12:37**		**7:22**	
9:25	11:10		**4:55**	4:00	Lv	GLENDALE	Ar	**12:25**		**7:10**	
9:40	11:39		**5:10**	PM	Ar	LOS ANGELES	Lv	**12:10**		**6:55**	
10:09			**5:39**		Lv	LOS ANGELES	Ar	11:33		**6:16**	
					Ar	FULLERTON	Lv				
	Bus 39-1		Bus 39-1					Bus 39-1		Bus 39-1	
	4968 ® Bus Daily		4984 ® Bus Daily					4969 ® Bus Daily		4985 ® Bus Daily	
	AM		PM		Lv	**FULLERTON** (PS)	Ar	AM		PM	
	c 11:50		**c 6:20**		Ar	Riverside-*Amtrak Metrolink*	Lv	c11:21		**c 5:25**	
	12:40		**7:05**			Cabazon-*Morongo Casino Hotel*		10:25		**R 4:25**	
	D 1:20		**D 7:45**			Palm Springs-Downtown		R 9:40		**R 3:40**	
	D 1:45		**D 8:15**			Palm Springs-Airport		R 9:05		**R 3:10**	
	1:55		**D 8:20**			Palm Desert-Palm Desert Town Center		R 9:00		**3:05**	
	PM		**D 8:50**			La Quinta-La Quinta Town Center		R 8:30		PM	
			D 9:00		Ar	Indio-*Hwy 111 at Monroe*	Lv	R 8:15			
			D 9:10					8:05			
			PM					AM			
		769 Train Daily		785 Train Daily		Pacific Surfliner Connection			572 Train Daily		784 Train Daily
		AM		PM					AM		PM
		11:33		**6:16**	Ar	FULLERTON	Ar		11:39		**5:39**
		11:23		**6:08**	Lv	ANAHEIM	Ar		11:48		**5:48**
		11:14		**5:59**	Lv	SANTA ANA	Lv		11:57		**5:57**
		11:03		**5:49**	Lv	IRVINE			**12:12**		**6:09**
		10:48		**5:32**	Lv	SAN JUAN CAPISTRANO			**12:26**		**6:22**
		10:17		**4:59**	Lv	OCEANSIDE			**12:59**		**6:59**
		10:03		**4:40**	Lv	SOLANA BEACH			**1:14**		**7:20**
		9:24		**4:00**	Lv	SAN DIEGO	Lv		**1:55**		**8:02**
		AM		PM					PM		PM

Read Up for Northbound Trains
Read Down for Southbound Trains

DEDICATED FEEDER
Certified Transportation

Notes: AFR: 72
See Page 6 for general notes.
AM - Light Face Type, **PM - Bold Type.**

c - Connection with trains indicated
® - Reservations required.
03/20/12 - DOR/GWS

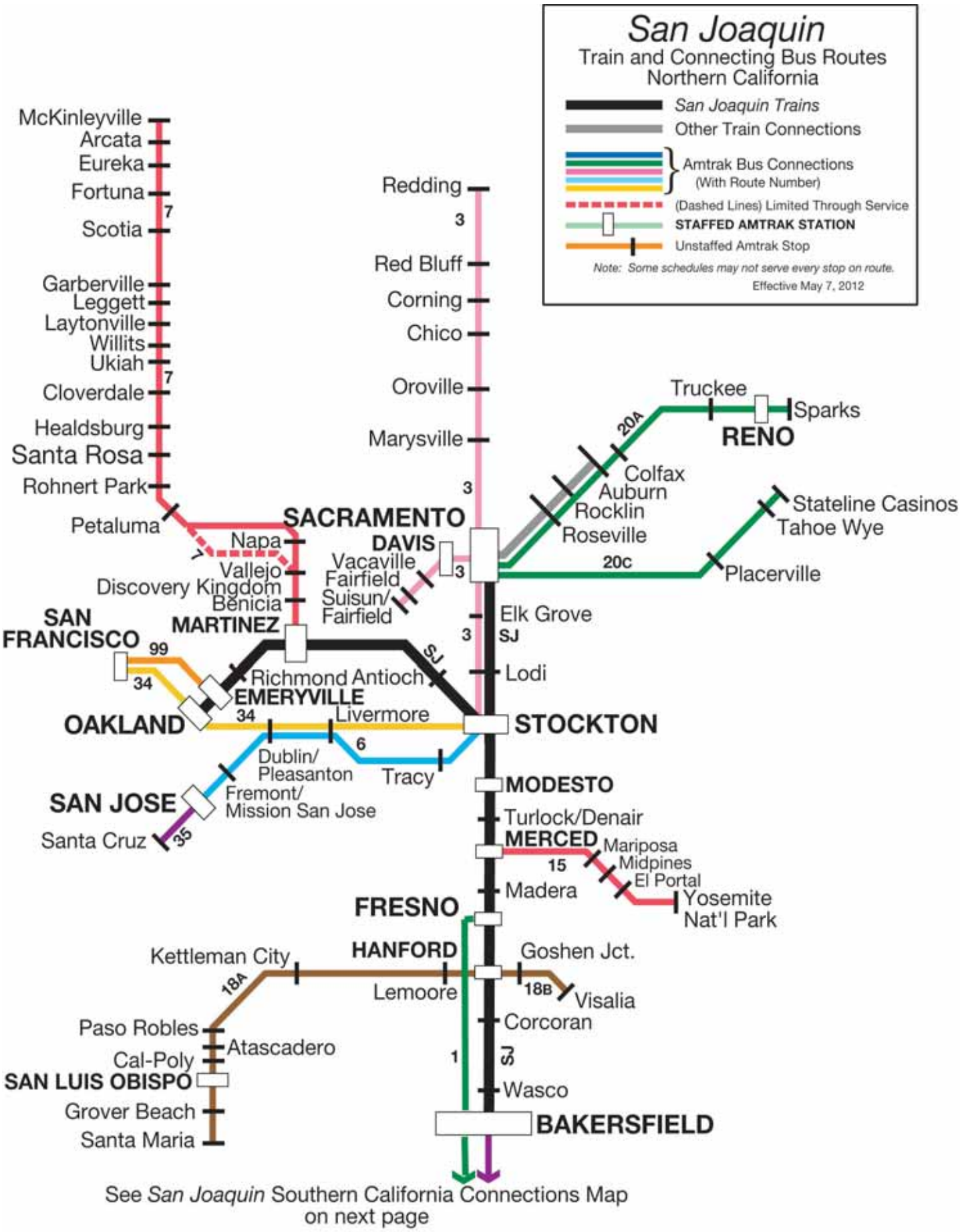
SAN JOAQUIN ROUTE

Train Service:

Oakland - Stockton - Fresno - Bakersfield
Sacramento - Stockton - Fresno - Bakersfield

Connecting Bus Routes:

San Francisco - Oakland - Stockton
San Jose - Stockton
Redding - Chico - Sacramento - Stockton
Suisun/Fairfield - Davis - Sacramento - Stockton
McKinleyville - Santa Rosa - Napa - Martinez
Merced - Yosemite
Santa Maria - San Luis Obispo - Hanford
Visalia - Hanford
Bakersfield - Los Angeles - San Diego
Bakersfield - Oxnard - Santa Barbara
Bakersfield - Barstow - Las Vegas
Bakersfield - Lancaster - Victorville
Bakersfield - San Bernardino - Hemet - Palm Springs - Indio


San Joaquin
Train and Connecting Bus Routes
Northern California
San Joaquin Trains
Other Train Connections
Amtrak Bus Connections
(With Route Number)
(Dashed Lines) Limited Through Service
STAFFED AMTRAK STATION
Unstaffed Amtrak Stop
Note: Some schedules may not serve every stop on route.
Effective May 7, 2012
McKinleyville
Arcata
Eureka
Fortuna
Scotia
Garberville
Leggett
Laytonville
Willits
Ukiah
Cloverdale
Healdsburg
Santa Rosa
Rohnert Park
Petaluma
Napa
Vallejo
Discovery Kingdom
Benicia
MARTINEZ
SAN FRANCISCO
OAKLAND
EMERYVILLE
Richmond Antioch
Livermore
Dublin/ Pleasanton
Tracy
SAN JOSE
Fremont/ Mission San Jose
Santa Cruz
SACRAMENTO
DAVIS
Vacaville
Fairfield
Suisun/ Fairfield
Redding
Red Bluff
Corning
Chico
Oroville
Marysville
Elk Grove
Lodi
STOCKTON
MODESTO
Turlock/Denair
MERCED
Mariposa
Midpines
El Portal
Yosemite Nat'l Park
Madera
FRESNO
HANFORD
Kettleman City
Lemoore
Goshen Jct.
Visalia
Corcoran
Wasco
BAKERSFIELD
Paso Robles
Atascadero
Cal-Poly
SAN LUIS OBISPO
Grover Beach
Santa Maria
Truckee
Sparks
RENO
Colfax
Auburn
Rocklin
Roseville
Stateline Casinos
Tahoe Wye
Placerville
See San Joaquin Southern California Connections Map
on next page

See *San Joaquin* Northern California Connections Map
on preceeding page

SAN JOAQUIN ROUTE

Summary of Changes and Corrections

Train Schedules

San Joaquin Route -- Oakland - Emeryville/Sacramento - Stockton - Fresno - Bakersfield

NORTHBOUND

There are no major schedules changes to any of the trains.

SOUTHBOUND

There are no major schedules changes to any of the trains.

Bus Schedules

Route 1 -- Los Angeles - Bakersfield - Fresno

Buses 5915, 5917 and 5903 will depart all locations one (1) hour earlier on Friday, May 25 and Friday, August 31.

Bus 5914 is now a daily bus and will depart Van Nuys at 6:40p with time adjustments throughout the rest of the schedule.

Route 3 -- Stockton - Sacramento - Redding

Due to the new platforms at Sacramento station becoming operational on August 6th, there will be time adjustments to allow for a 15 minute connection from the bus bay to the platforms. As a result, please see pages 28 and 29 for all schedule changes.

Route 6 -- Stockton - San Jose

Bus 3912 now departs San Jose at 6:35a, with time adjustments throughout the schedule.

Route 9 -- Las Vegas - Barstow - Bakersfield

Bus 3657 will depart Las Vegas on May 28 and September 3 at 8:35a with schedule adjustments through Barstow.

Route 15 -- Merced - Yosemite
(Note, this route schedule is effective May 14-Sept 30.)

Bus 8416 resumes summer run all the way to Yosemite and is daily. Bus 8417 now leaves Yosemite at 3:40p and is 10 minutes later at all stops. Readded Bus 8402 from connecting Train 702. Added Bus 8419 that will leave Yosemite at 4:15p and now connect with Train 704.

The seasonal round trip from Yosemite to Mammoth Lakes will resume during the summer.

Route 19 -- Bakersfield - San Bernardino - Cabazon - Palm Springs - Indio

Added Dowtown Palm Springs (PSS) stop in addition to Palm Springs Airport (PSP) stop. As a result, Buses 5402 and 5414 will have five minute adjustments after stop at PSS to the end of their runs. Buses 5403 and 5415 have time adjustments at Downtown Palm Springs.

Route 34 -- Stockton - Stockton ACE

Bus 3801 is a separate schedule number for those passengers in Stockton who need to get from Stockton San Joaquin St. station to the Stockton ACE station.

San Joaquin Route -- BAKERSFIELD - FRESNO - STOCKTON - SACRAMENTO - EMERYVILLE - OAKLAND

Northbound--Read Down

Effective May 7, 2012		5811 ® Bus Daily						565 Train Daily		769 Train Daily		775 Train Daily	
San Diego Connections		**PM**						AM		AM		**Noon**	
SAN DIEGO	Lv	**10:15**						7:05		9:24		**12:05**	
LOS ANGELES	Ar	1:30						9:45		**12:10**		**2:45**	
								AM		**PM**		**PM**	
													1B Bus 9
				5801 ® Bus Daily		5813 ® Bus Daily		5815 ® Bus Daily		5817 ® Bus Daily		5803 ® Bus Daily	5885 ® Bus Daily
Route 1 Bus Connection				AM		AM		AM		**PM**		**PM**	**PM**
LOS ANGELES	Lv	1:45		4:10		7:35		10:45		**1:15**		**3:20**	**6:55**
BAKERSHIELD	Ar	c 4:40		c 7:00		c 9:50		**c 1:05**		**c 3:30**		**c 6:05**	**9:15**
		AM		AM		AM		**PM**		**PM**		**PM**	
		711 ® **San Joaquin** Daily		701 ® **San Joaquin** Daily		713 ® **San Joaquin** Daily		715 ® **San Joaquin** Daily		717 ® **San Joaquin** Daily		703 ® **San Joaquin** Daily	
		AM		AM		AM		**PM**		**PM**		**PM**	
BAKERSFIELD (1,9,10,12,19)	Lv	4:55		7:15		10:05		**1:20**		**3:45**		**6:20**	**P 9:25**
Wasco		5:21		7:41		10:31		**1:46**		**4:11**		**6:46**	
Corcoran		5:53		8:13		11:07		**2:23**		**4:47**		**7:21**	
HANFORD (18)		6:12		8:32		11:26		**2:42**		**5:06**		**7:40**	**D 11:00**
FRESNO	Ar	6:46		9:06		**12:01**		**3:16**		**5:41**		**8:14**	**11:50**
FRESNO	Lv	6:50		9:10		**12:05**		**3:20**		**5:45**		**8:18**	**PM**
Madera		7:14		9:37		**12:29**		**3:44**		**6:09**		**8:42**	
MERCED (15)		7:48		10:08		**1:08**		**4:22**		**6:42**		**9:15**	
Turlock/Denair		8:09		10:34		**1:29**		**4:43**		**7:10**		**9:36**	
MODESTO (24)		8:28		10:49		**1:42**		**4:57**		**7:25**		**9:52**	
STOCKTON (3,6,34)	Ar	8:57				**2:14**		**5:29**		**7:59**			
			3711 ® Bus Daily		3401 ® Bus Daily		3713 ® Bus Daily		3715 ® Bus Daily		3717 ® Bus Daily		3403 ® Bus Daily
Sacramento Train Service and Route 3 Bus Connection			AM		AM		**PM**		**PM**		**PM**		**PM**
STOCKTON	Lv		c 9:10		c 11:25		**c 2:25**		**c 5:35**		**c 8:10**		**c 10:30**
Stockton-ACE Station (34)	Ar			11:20			**F 2:50**		**A 5:40**		**G 8:10**	10:25	
Lodi (3)	Ar		E 9:35	11:34			**F 3:10**		**A 5:50**		**G 8:30**	10:39	
Elk Grove-*Harbor Pt & Renwick*	Ar		D 9:35				**D 2:50**		**D 6:00**		**D 8:30**		
SACRAMENTO (CC,3,20,23)	Ar		10:00	**12:30**			**3:15**		**6:25**		**8:55**	11:30	
			AM	**PM**			**PM**		**PM**		**PM**	**PM**	
STOCKTON (3,6, 34)	Lv	9:01			11:30	**2:18**		**5:33**		**8:03**			**D10:35**
Antioch		9:36				**2:53**		**6:02**		**8:32**			
MARTINEZ (CC,7)	Ar	10:00				**3:16**		**6:25**		**8:53**			
MARTINEZ (CC,7)	Lv	10:03				**3:19**		**6:28**		**8:56**			
Richmond (CC)		10:28				**3:44**		**6:53**		**9:22**			
EMERYVILLE (CC, 34,99)	Ar	10:46				**4:01**		**7:11**		**9:41**			
EMERYVILLE (CC, 34,99)	Lv	10:48				**4:03**		**7:13**		**9:43**			
OAKLAND (CC,21,34, 36,99)	Ar	11:00			**D 12:50**	**4:15**		**7:25**		**9:55**			**D11:55**
		AM	6611 ® Bus Daily			**PM**	6613 ® Bus Daily	**PM**	6615 ® Bus Daily	**PM**	6617 ® Bus Daily		
Route 99 Bus Connections			AM				**PM**		**PM**		**PM**		
EMERYVILLE	Lv		10:50		**D 1:00**		**4:05**		**7:15**		**9:45**		**D12:10**
SAN FRANCISCO-Ferry Bldg.	Ar		11:20		**1:20**		**4:40**		**7:45**		**10:10**		12:35
			AM		**PM**		**PM**		**PM**		**PM**		AM

Notes: AFR: 39

See Page 5 for general notes.

AM - Light Face Type, **PM - Bold Type.**

A - Stockton ACE and Lodi connection via Bus 3815 instead of 3715.

E - Stockton ACE and Lodi connections via Bus 3811 instead of 3711.

F - Stockton ACE and Lodi connections via Bus 3833 instead of 3813.

G - Stockton ACE and Lodi connections via Bus 3837 instead of 3717.

® - Reservations required.

4/2/12 DOR/GWS

San Joaquin Route -- OAKLAND - EMERYVILLE - SACRAMENTO - STOCKTON - FRESNO - BAKERSFIELD

Southbound-Read Down

Effective May 7, 2012		3402 ® Bus Daily		6612 ® Bus Daily		6614 ® Bus Daily			6616 ® Bus Daily		3404 ® Bus Daily		6618 ® Bus Daily	
Route 99 Bus Connections		*AM*		*AM*	712 ®	*AM*	714 ®		***PM***	716 ®	*AM*		***PM***	718 ®
SAN FRANCISCO-Ferry Bldg.	Lv	*4:50*		*7:05*	**San**	*9:35*	**San**		***12:45***	**San**	***2:35***		***5:15***	**San**
EMERYVILLE	Ar	*5:15*		*7:30*	**Joaquin**	*10:05*	**Joaquin**		***1:15***	**Joaquin**	***3:00***		***5:45***	**Joaquin**
		|		*AM*	Daily	*AM*	Daily		***PM***	Daily	|		***PM***	Daily
		|			AM		AM			**PM**	|			**PM**
OAKLAND (CC,21,36,99)	Lv	*5:30*			7:30		10:05			**1:15**	***3:15***			**5:50**
EMERYVILLE (CC,99)	Ar	|			7:38		10:13			**1:23**	|			**5:58**
EMERYVILLE (CC,99)	Lv	|			7:40		10:15			**1:25**	|			**6:00**
Richmond (CC)		|			7:49		10:24			**1:34**	|			**6:09**
MARTINEZ (CC,7)	Ar	|			8:16		10:51			**2:01**	|			**6:36**
MARTINEZ (CC,7)	Lv	|			8:19		10:54			**2:04**	|			**6:39**
Antioch		|			8:39		11:14			**2:24**	|			**6:59**
STOCKTON (3,6)	Ar	*7:10*			9:13		11:45			**2:59**	***5:15***			**7:30**
		|	702 ®		|		|			|	704 ®		|
		|	**San**	*3712 ® Bus Daily*	|	*3714 ® Bus Daily*	|		*3716 ® Bus Daily*	|	|	**San**	*3718 ® Bus Daily*	|
Sacramento Train Service and Route 3 Bus Connection		|	**Joaquin** Daily		|		|			|	|	**Joaquin** Daily		|
		|	AM	*AM*	|	*AM*	|		***PM***	|	|	**PM**	***PM***	|
SACRAMENTO (CC,3,20,23)	Lv	|	6:40	*7:45*	|	*10:25*	|		***1:55***	|	|	**c 4:55**	***6:25***	|
Elk Grove-*Harbor Pt & Renwick*	Lv	|	|	*8:00*	|	|	|		***2:10***	|	|	|	***6:40***	|
Lodi (3)	Lv	|	7:18	|	|	*11:05*	|		|	|	|	**5:33**	|	|
Stockton-ACE Station	Ar	*7:20*	7:35	|	|	|	|		|	|	***5:25***	**5:50**	|	|
STOCKTON	Ar	*AM*	|	*8:40*	|	*11:35*	|		***2:50***	|	***PM***	|	***7:20***	|
			|	*AM*	|	*AM*	|		***PM***	|		|	***PM***	|
			|		|		|			|		|		|
STOCKTON (3,6)	Lv		|		9:17		11:49			**3:03**		|		**7:34**
MODESTO (24)			8:09		9:45		**12:17**			**3:31**		**6:24**		**8:07**
Turlock/Denair		*5872 ® Bus Daily*	8:27		9:58		**12:30**			**3:44**		**6:37**		**8:20**
MERCED (15)			8:51		10:31		**12:59**			**4:13**		**7:06**		**8:47**
Madera			9:19		10:59		**1:33**			**4:46**		**7:34**		**9:20**
FRESNO	Ar	***PM***	9:51		11:31		**2:06**			**5:16**		**8:02**		**9:51**
FRESNO	Lv	6:00	9:55		11:35		**2:10**			**5:20**		**8:06**		**9:55**
HANFORD (18)		6:50	10:28		**12:09**		**2:44**			**5:54**		**8:39**		**10:28**
Corcoran		|	10:44		**12:25**		**3:00**			**6:10**		**8:55**		**10:44**
Wasco		|	11:20		**12:56**		**3:33**			**6:41**		**9:26**		**11:15**
BAKERSFIELD (1,9,10,12,19)	Ar	8:30	**12:02**		**1:41**		**4:11**			**7:26**		**10:07**		**11:56**
		|	**PM**		**PM**		**PM**			**PM**		**PM**		**PM**
		|												
		|	*5802 ® Bus Daily*		*5812 ® Bus Daily*		*5814 ® Bus Daily*			*5816 ® Bus Daily*		*5804 ® Bus Daily*		*5818 ® Bus Daily*
Route 1 Bus Connection		|	***PM***		***PM***		***PM***			***PM***		***PM***		***PM***
BAKERSFIELD	Lv	8:35	***12:10***		***1:50***		***4:40***			***7:30***		***10:10***		***11:59***
LOS ANGELES	Ar	c 10:45	***c 2:30***		***c 4:10***		***c 6:40***			***c 9:50***		*12:30*		*2:20*
			PM		***PM***		***PM***			***PM***		*AM*		|
														|
		572 Train Daily	*582 Train Daily*	*580 Train SSH*	*784 Train Daily*		*590 Train FSSH*	*592 Train XSSH*		*796 Train Daily*				|
San Diego Connections		***PM***	***PM***	***PM***	***PM***		***PM***	***PM***		***PM***				|
LOS ANGELES	Lv	*11:10*	***4:10***	***5:10***	***5:10***		***0:00***	***7:30***		***10:10***				*2:30*
SAN DIEGO	Ar	***1:55***	***7:03***	***8:02***	***8:02***		***0:00***	***10:15***		*12:50*				*5:15*
		PM	***PM***	***PM***	***PM***		***PM***	***PM***		*AM*				*AM*

Notes: AFR: 39

See Page 5 for general notes.

AM - Light Face Type, **PM - Bold Type.**

A - Via Bus 3832 from Lodi to Stockton

B - Via Bus 3712 from Elk Grove to Stockton.

E - Via Bus 3816 form Lodi to Stockton.

® - Reservations required.

4/2/12 DOR/GWS

Route 6 - SAN JOSE - STOCKTON
ROUTE 34 - SAN FRANCISCO - OAKLAND - STOCKTON

Option A - Retains connections with all trains except 703 (ACE connections with 704 and 718); requires two buses

Eastbound--Read Down

Effective May 7, 2012																	
Route 99 Bus Connection																	
San Fran-Caltrain Lv																	
San Fran-Mkt & 4th Lv																	
San Fran-Pier 39 Lv																	
SAN FRAN-Ferry Building Ar	Bus 34-1 3402 ®																
	Bus Daily AM									Bus 34-1 3404 ® Bus Daily PM							
San Francisco-*Hyatt* Lv	4:45	No								2:35							
SAN FRANCISCO-*Ferry Bldg (99)* Lv	4:50	Santa								3:00							
EMERYVILLE (CC,99)	5:15	Cruz								3:15							
OAKLAND (CC,17,21,99) Lv	5:30	Connex															
		SSH															
		6922 Bus XSSH		*6914 Bus XSSH*	*6974 Bus SSH*	*6916 Bus XSSH*	*6982 Bus SSH*	*6938 Bus XSSH*	*6986 Bus SSH*			*6942 Bus XSSH*		*6968 Bus SSH*			
Route 35 Bus Connection		*AM*		*AM*	*AM*	*AM*	*AM*	***PM***	***PM***			***PM***		***PM***			
Santa Cruz-*Metro Center* Lv		*5:25*		*7:55*	*6:40*	*11:00*	*10:50*	***1:10***	***12:50***			***3:00***		***3:45***			
Scotts Valley-*Transit Center* Lv		*5:40*		*8:10*	*6:55*	*11:15*			***1:05***			***3:15***					
SAN JOSE (CC,21,CT) Ar		*6:17*		*8:57*	*7:35*	*11:55*	*11:40*	***2:00***	***1:50***			***4:00***		***4:35***			
		AM		*AM*	*AM*	*AM*	*AM*	***PM***	***PM***			***PM***		***PM***			
DEDICATED FEEDER *El Camino Lines-Route 34* *Compass Transportation-Route 6*		Bus 6-1 3912 ® Bus Daily			Bus 6-2 3914 ® Bus Daily		Bus 6-1 3916 ® Bus **Daily**		Bus 6-2 3904 ® Bus Daily		3204 ACE 04 XSSH	3218 ACE 06 XSSH	Note E Bus 6-1	Bus 6-1 3968 ® Bus SSH	3278 ACE 08 XSSH		
		AM			AM		**PM**		**PM**		**PM**	**PM**	3918 ®	**PM**	**PM**		
SAN JOSE (CC,21,CT) Lv		b 6:35			b 9:15		**b 12:10**		**b 2:40**		**3:35**	**4:35**	Bus XSSH	**b 4:45**	**5:35**		
Santa Clara-*Caltrain*																	
Great America-*Amtrak*											**3:46**	**4:46**	**PM**	**5:05**	**5:46**		
Fremont/Mission San Jose-*P&R*		7:10			9:40		**12:35**		**3:05**				**5:15**	**5:25**			
Fremont-*Amtrak/ACE*											**4:04**	**5:04**			**6:04**		
Pleasanton-*ACE*											**4:26**	**5:26**			**6:26**		
Dublin/Pleasanton-*BART*	6:00	7:30			10:00		**12:55**		**3:25**				**5:35**	**5:45**			
Livermore-*Transit Center-ACE*	6:10	7:45			10:15		**1:10**		**3:35**		**4:34**	**5:34**		**6:00**	**6:34**		
Vasco Road-*ACE*											**4:39**	**5:39**			**6:39**		
Tracy-*ACE*											**5:09**	**6:09**			**7:09**		
Tracy-*Wendy's*	6:35	8:10			10:40		**1:35**		**4:00**				**6:05**	**6:25**			34-1
Lathrop/Manteca-*ACE*											**5:23**	**6:23**			**7:23**		3837
Stockton-*ACE* Ar											**c 5:45**	**b 6:45**	**7:05**		**b 7:45**		Bus
STOCKTON (SJ,3) Ar	7:10	c 8:50			c 11:20		**c 2:20**		**4:55**	**5:15**	**PM**	**PM**	**c 7:15**	**c 7:15**	**PM**		Daily
STOCKTON (SJ,3) Lv	7:15	AM			11:21		**PM**		**5:00**	**5:20**			**PM**	**7:20**			**8:05**
Stockton-ACE Station Ar	c 7:20				D11:25				**c 5:05**	**c 5:25**				**D 7:25**			**D 8:10**
Lodi (SJ,3) Ar	AM				AM				**PM**	**PM**				**PM**			**D 8:30**
																	PM
	702 ® Train Daily										*704 ® Train Daily*						
San Joaquin Connection	*AM*	*712 ® Train Daily*			*714 ® Train Daily*		*716 ® Train Daily*				***PM***		*718 ® Train Daily*				
Stockton-ACE Lv	*7:35*										***5:50***						
SACRAMENTO Ar		*AM*			*AM*		***PM***						***PM***				
STOCKTON-Amtrak Lv		*9:17*			*11:49*		***3:03***						***7:34***				
MERCED Ar	*8:51*	*10:31*			***12:59***		***4:13***				***7:06***		***8:47***				
FRESNO	*9:51*	*11:31*			***2:06***		***5:16***				***8:02***		***9:51***				
HANFORD	*10:28*	***12:09***			***2:44***		***5:54***				***8:39***		***10:28***				
BAKERSFIELD Ar	***12:02***	***1:41***			***4:11***		***7:26***				***10:07***		***11:56***				
LOS ANGELES Ar	***2:30***	***4:10***			***6:40***		***9:50***				*12:55*		*2:45*				
	PM	***PM***			***PM***		***PM***				*AM*		*AM*				

Notes AFR: 71
See Page 6 for general notes.
See Page 50-52 (Route 35) for complete schedules between Santa Cruz and San Jose.
AM - Light Face Type, **PM - Bold Type.**
ACE Holidays are 05/28/, 07/04 and 09/03/2012.
A - Stops to discharge ACE ticket holders, does not stop on SSH.
B - Stops to pick up ACE ticket holders, does not stop on SSH.
E - After arrival in San Jose as Schedule 3913, Bus 6-2 deadheads to Fremont/MSJ to cover Schedule 3918.

® - Reservations required.
3/20/12 DOR/GWS

SAN JOAQUIN BUS CONNECTIONS

Route 6 - STOCKTON - SAN JOSE
Route 34 - STOCKTON - OAKLAND - SAN FRANCISCO

Westbound--Read Down

Effective May 7, 2012			711 ® Train Daily		701 ® Train Daily		713 ® Train Daily			715 ® Train Daily	717 ® Train Daily			703 ® Train Daily
San Joaquin Connection			AM		AM		AM			AM	PM			PM
LOS ANGELES	Lv		1:25	Bus 34-1	4:00		7:35			10:45	1:15			3:20
BAKERSFIELD	Lv		4:55	3801 ®	7:15		10:05			1:20	3:45			6:20
HANFORD			6:12	Bus	8:32		11:26		704 ®	2:42	5:06			7:40
FRESNO			6:50	Daily	9:10		12:05		Train	3:20	5:45			8:18
MERCED			7:48	AM	10:08		1:08		Daily	4:22	6:42			9:15
STOCKTON-Amtrak	Ar		8:57	11:05	|		2:14		PM	5:29	7:59			|
SACRAMENTO	Lv		AM	|	|		PM		4:55	PM	PM			|
Stockton-ACE	Ar			11:10	11:20				5:50					10:25
				AM	AM				PM					PM
		Bus 34-1												
DEDICATED FEEDER		3832 ®								Bus 6-2				
El Camino Lines		Bus		Bus 34-1	Bus 6-2					3915 ®			Bus 34-1	
		Daily	Bus 6-1	3401 ®	3901 ®		Bus 6-1			Bus	Bus 6-1		3403 ®	
		AM	3911 ®	Bus	Bus		3913 ®			Daily	3917 ®		Bus	
Lodi-*Amtrak (SJ,3)*	Lv	8:25	Bus	Daily	Daily		Bus			PM	Bus		Daily	
STOCKTON *(SJ,3)*	Ar	e 8:50	Daily	AM	AM		Daily			c 5:35	Daily		PM	
Stockton-*ACE Station*	Lv	AM	AM	c 11:25	c 11:25		PM			c 5:51	PM		c 10:30	
STOCKTON (SJ,3)	Lv	connects	c 9:10	11:30	D11:30		c 2:30			|	c 8:05		D10:35	
Stockton-ACE Station		with	D 9:15	|	|		|			|		|	
Lathrop/Manteca-*ACE*		Trains	|	|	|		|			|		|	
Tracy-*Wendy's*		711 & 712	D 9:40	|	D11:55		D 2:55			D 6:15	D 8:30		D11:00	
Tracy-*ACE*			|	|	|		|			|		|	
Vasco Road-*ACE*			|	|	|		|			|		|	
Livermore-*Transit Center-ACE*			D 10:10	|	D 12:25		D 3:25			D 6:45	D 9:00		D11:25	
Dublin/Pleasanton-*BART*			D 10:20	|	D 12:35		D 3:35			D 6:55	D 9:10		D11:30	
Pleasanton-*ACE*			|	|	|		|			|		|	
Fremont-*Amtrak/ACE*			|	|	|		|			|		|	
Fremont/Mission San Jose-*P&R*			D 10:35	|	D12:50		D 3:50			D 7:10	D 9:25		|	
Great America-*Amtrak*			D 10:55	|	|		|			|		|	
Santa Clara-*Caltrain*			|	|	|		|			|		|	
SAN JOSE (CC,21,CT)	Ar		D 11:10	|	b 1:20		b 4:20			b 7:40	b 9:45		|	
			AM	|	PM		PM			PM	PM		|	
				|									|	
				|									|	
		6911	6981	|	6935	6983	6913	6963	6915	6993	6917	6967	|	
		Bus	Bus	|	Bus	Bus	Bus	Bus	Bus	Bus	Bus	Bus	|	
		XSSH	SSH	|	XSSH	SSH	XSSH	SSH	XSSH	SSH	XSSH	SSH	|	
Route 35 Bus Connection		PM	PM	|	PM	PM	PM	PM	PM	PM	PM	PM	|	
SAN JOSE *(CC,21,CT)*	Lv	11:50	12:45	|	1:35	2:00	4:50	4:45	7:45	7:50	10:42	10:10	|	
Scotts Valley-*Transit Center*	Ar	D12:30	|	|	D 2:15	D 2:45	D 5:35	|	D 8:23	|	D11:20	D10:50	|	
Santa Cruz-*Metro Center*	Ar	D12:50	D 1:35	|	D 2:35	D 3:05	D 6:05	D 5:35	D 8:38	D 8:40	D11:35	D11:10	|	
		PM	PM	|	PM	PM	PM	PM	PM	PM	PM	PM	|	
				|									|	
				|									|	
OAKLAND (CC,17,21,99)	Ar			D 12:50									D11:55	
EMERYVILLE (CC,99)	Ar			D 1:00									D12:10	
San Francisco-*Caltrain* (99)	Ar			|									|	
San Francisco-*Hyatt* (99)	Ar			|									D12:30	
SAN FRANCISCO-*Ferry Bldg* (99)	Ar			D 1:20									D12:35	
				PM									AM	
Route 99 Bus Connection														
SAN FRAN-Ferry Bldg	Lv													
San Fran-Pier 39	Ar													
San Fran-Mkt & 4th	Ar													
San Fran-Caltrain	Ar													

Notes AFR: 71

See Page 6 for general notes.

See Page 50-52 (Route 35) for complete schedules between San Jose and Santa Cruz.

AM - Light Face Type. **PM - Bold Type.**

A - Stops to pick up ACE ticket holders, does not stop on SSH.

B - Stops to discharge ACE ticket holders, does not stop on SSH.

ACE Holidays are 05/28/, 07/04 and 09/03/2012.

e - Connects with southbound Train 712.

g- Regular stop XSSH, D stop on SSH.

® - Reservations required.

3/20/12 DOR/GWS

SAN JOAQUIN & CAPITOL CORRIDOR BUS CONNECTIONS

Route 3 -- REDDING - CHICO - AUBURN - DAVIS - SACRAMENTO - STOCKTON

Southbound--Read Down

Effective May 7, 2012 DEDICATED FEEDER *Preferred Charter*																								
				from Seattle						Bus 3-3				Bus 3-5				Bus 3-7			Bus 3-2			
				11 ®						3714 ®				3716 ®				3704 ®			3718 ®			
				Coast						Bus				Bus				Bus			Bus			
				S'light						Daily				Daily				Daily			Daily			
				Daily																				
				AM						AM				AM				**PM**			**PM**			Note F
Redding-*Transit Center (e)* Lv				*e 2:21*						6:10				9:45				**12:40**			**2:25**	Bus 3-6		Bus 20-4
Red Bluff-*Transit Center*	Route 20			|		*529*				6:45				10:20				**1:15**	from		**3:00**	3649		3603
Chico	Bus20-4	Bus 3-1		*3:50*		*Train*				7:50				11:25				**2:20**	San	from	**4:05**	Bus		Bus
Oroville-*Park & Ride*	3623	3625	Bus 3-2	|		*XSSH*	Bus 3-1	Bus 3-4		8:15			Bus 3-1	**11:50**				**2:45**	Jose	Oakland	**4:30**	XSSH		XSSH
Marysville-*Yuba Co Govt Ctr*	Bus	Bus	3802 ®	|		*AM*	3812 ®	3814 ®		8:50			3816 ®	**12:25**				**3:20**	*538*	*736*	**5:05**	**PM**		**PM**
Auburn (CC,20) Lv	XSSH	Daily	Bus	|		6:35	Bus	Bus		|			Bus	|				|	*Train*	*Train*	|	**5:10**		**8:45**
Rocklin (CC,20)	AM	AM	Daily	|		6:58	Daily	Daily		|			Daily	|				|	*XSSH*	*SSH*	|	|		**9:00**
Roseville (CC,20)	4:35	5:25	AM	|		7:08	AM	AM		|			**PM**	|				|	***PM***	***PM***	|	**5:40**		**9:25**
DAVIS (CC) Lv	|	|	5:55	|		|	7:15	9:30		|			**12:50**	|				|	***5:57***	***4:57***	|	|		|
SACRAMENTO (CC,20,23) Ar	c 5:20	c 6:05	c 6:25	*6:15*		7:37	7:45	b10:10		z9:55				**1:20**	**c 1:30**			**c 4:25**	***6:23***	***5:23***	**c 6:10**	**c 6:15**		**c 10:00**
	AM	AM	AM	|		|	|	|		|			|	|			**PM**	***PM***	***PM***	|	**PM**		**PM**
				|		|	|	|		|			|	|						|			
				|		|	|	|		|			|	|						|			
	523	525		|		|	|	|		|	535	733	|	|	541	741	545/745			|	549	749	
	Train	*Train*		|		|	|	|		|	*Train*	*Train*	|	|	*Train*	*Train*	*Train*			|	*Train*	*Train*	
	XSSH	*XSSH*		|		|	|	|		|	*XSSH*	*SSH*	|	|	*XSSH*	*SSH*	*Daily*			|	*XSSH*	*SSH*	
Capitol Corridor Connection	*AM*	*AM*		|		|	|	|		|	*AM*	*AM*	|	|	***PM***	***PM***	***PM***			|	***PM***	***PM***	
SACRAMENTO Lv	*5:30*	*6:20*		*6:35*		*7:40*	|	|		|	*10:10*	*10:40*	|	|	***2:10***	***2:15***	***4:40***			|	***6:40***	***7:10***	
DAVIS Ar	*5:45*	*6:35*		*6:50*		*7:55*	|	|		|	*10:25*	*10:55*	|	|	***2:25***	***2:30***	***4:55***			|	***6:55***	***7:25***	
MARTINEZ Ar	*6:28*	*7:18*		*7:30*		*8:38*	|	|		|	*11:08*	*11:38*	|	|	***3:08***	***3:13***	***5:38***			|	***7:38***	***8:08***	
EMERYVILLE Ar	*7:08*	*7:58*		*8:10*		*9:18*	|	|		|	*11:48*	***12:18***	|	|	***3:48***	***3:53***	***6:18***			|	***8:18***	***8:48***	
SAN FRANCISCO-Ferry Bldg. Ar	*7:55*	*8:40*		*8:55*		*9:50*	|	|		|	***12:25***	***12:55***	|	|	***4:20***	***4:25***	***6:45***			|	***8:50***	***9:25***	
OAKLAND Ar	*7:21*	*8:18*		*8:35*		*9:38*	|	|		|	***12:01***	***12:31***	|	|	***4:08***	***4:06***	***6:38***			|	***8:38***	***9:08***	
SAN JOSE Ar	*8:35*	*AM*	*702 ®*	*9:55*	Bus 3-2	*AM*	|	|		|	***1:15***	***1:45***	|	|	***PM***	***5:20***	***PM***	*704 ®*			|	***PM***	***PM***	
	AM		*Train*	|	3712 ®		|	|	Bus 34-1	|	***PM***	***PM***	|	|		***PM***		*Train*			|			
			Daily	|	Bus		|	|	3832 ®	|			|	|				*Daily*			|			
			AM	|	Daily		|	|	Bus	|			|	|				***PM***			|			
SACRAMENTO (CC,20,23) Lv			*6:40*	|	n 7:45		7:50	10:25	Daily	10:35			**n 1:25**	**1:45**				***4:55***			**6:25**			
Elk Grove-*Harbor Pt. & Renwick*			|	|	8:00		|	|	AM	10:50		|	**2:10**				|			**6:40**			
Lodi-*Amtrak*			*7:18*	|	|		|	11:05	8:25	|			**2:05**	|			***5:33***			|			
Stockton-*ACE Station*			*7:35*	|	|		|	|	|	|			**2:30**	|			***5:50***			|			
STOCKTON (SJ,6) Ar			|	|	c 8:40		c 8:40	c 11:35	8:50	c 11:35			**c 2:40**	**c 2:50**				|			**c 7:20**			
			|	|	AM		AM	AM	AM	AM			**PM**	**PM**				|			**PM**			
			|	|														|						
			|	|		*712 ®*			*714 ®*				*716 ®*					|		*718 ®*			
			|	|		*Train*			*Train*				*Train*					|		*Train*			
			|	|		*Daily*			*Daily*				*Daily*					|		*Daily*			
San Joaquin Connection			|	|		*AM*			*AM*				***PM***					|		***PM***			
STOCKTON Lv			*U 7:35*	|			*9:17*			*11:49*				***3:03***				***U 5:50***			***7:34***			
MERCED Ar			*8:51*	|			*10:31*			***12:59***				***4:13***				***7:06***			***8:47***			
FRESNO Ar			*9:51*	|			*11:31*			***2:06***				***5:16***				***8:02***			***9:51***			
HANFORD Ar			*10:28*	|			***12:09***			***2:44***				***5:54***				***8:39***			***10:28***			
BAKERSFIELD Ar			*12:02*	|			***1:41***			***4:11***				***7:26***				***10:07***			***11:56***			
LOS ANGELES Ar			***2:30***	***9:00***			***4:10***			***6:40***				***9:50***				*12:55*			*2:45*			
			PM	***PM***			***PM***			***PM***				***PM***				*AM*			*AM*			

Notes: AFR: 71

See Page 6 for general notes.

AM - Light Face Type. **PM - Bold Type.**

e - Train No. 11 stops at Amtrak Station in Redding (across the tracks from the transit center).

F - Also connects with Train 14, the northbound Coast Starlight to Portland, Seattle and intermediate points.

n - This schedule time is not shown in ARROW or public timetables.

® - Reservations required.

U - ACE Station

3/12/12 DOR/GWS

SAN JOAQUIN & CAPITOL CORRIDOR BUS CONNECTIONS
Route 3 -- STOCKTON - SACRAMENTO - DAVIS - AUBURN - CHICO - REDDING

Northbound--Read Down

Effective May 7, 2012																										
			711 ® Train Daily				701 ® Train Daily				713 ® Train Daily						715 ® Train Daily					717 ® Train Daily		703 ® Train Daily	14 ® Coast S'light Daily
San Joaquin Connection			AM				AM				AM						AM					PM		PM	AM
LOS ANGELES Lv			1:25				4:00				7:35						10:45					1:15		3:20	10:15
BAKERSFIELD Lv			4:55				7:15				10:05						1:20					3:45		6:20	
HANFORD			6:12				8:32				11:26						2:42					5:06		7:40	
FRESNO			6:50				9:10				12:05						3:20					5:45		8:18	
MERCED			7:48				10:08				1:08						4:22					6:42		9:15	
STOCKTON Ar			8:57				U11:20				2:14						5:29					7:59		U10:25	
			AM								PM						PM					PM			
					Route 34																		Route 34		
			Bus 3-2	Bus 3-1	Bus 34-1						Bus 3-3	Bus 3-3	Bus 3-1				Bus 3-5	Bus 3-1				Bus 3-2	Bus 34-1		
DEDICATED FEEDER *Preferred Charter*			3711 ® Bus Daily	3811 ® Bus Daily	3911 ® Bus Daily						3713 ® Bus XSSH	3763 ® Bus SSH	3813 Bus Daily				3715 ® Bus Daily	3815 ® Bus Daily				3817 ® Bus Daily	3837 Bus Daily		
			AM	AM	AM						PM	PM	PM				PM	PM				PM	PM		
STOCKTON (SJ,6) Lv			c 9:10	c 9:10	c 9:10						c 2:25	c 2:25	2:25				c 5:35	c 5:35				c 8:10	8:05		
Stockton-ACE Station Ar					c 9:15		11:20						D 2:30					D 5:40					D 8:10	10:25	
Lodi-*Amtrak*				9:35	AM		11:34						D 2:50					D 5:50					D 8:30	10:39	
Elk Grove-*Harbor Pt. & Renwick*			9:40								D 2:50	D 2:50					D 6:00					D 8:40	PM		
State Capitol-*10th & N St.*			10:00								E 3:10	E 3:10						E 6:35				E 9:00			
SACRAMENTO (CC,20,23) Ar			10:05	10:10			12:30				3:15	3:15	3:30				6:25	z 6:40				9:05		11:30	
							PM						PM											PM	
	720 Train SSH	524 Train XSSH				528 Train XSSH			728 Train SSH	532 Train XSSH				734 Train SSH	736 Train SSH	538 Train XSSH			738 Train SSH	540 Train XSSH	544/744 Train Daily				
Capitol Corridor Connection						AM			AM	PM				PM	PM	PM									
SAN JOSE Lv	AM	6:40				9:05			9:50	12:20				12:50	2:20	3:00			PM	PM	5:50				8:39
OAKLAND Lv	7:20	7:45				10:15			10:55	1:25				1:55	3:25	4:10			4:25	4:50	6:55				9:47
SAN FRANCISCO-Ferry Bldg. Lv	7:00	7:10				9:45			10:25	12:55				1:25	2:55	3:40			3:55	4:20	6:15				9:05
EMERYVILLE	7:30	7:55				10:25			11:05	1:35				2:05	3:35	4:20			4:35	5:00	7:05				10:12
MARTINEZ	8:09	8:34				11:04			11:44	2:14				2:44	4:14	4:59			5:14	5:39	7:44				10:54
DAVIS	8:52	9:17				11:47			12:27	2:57				3:27	4:57	5:42			5:57	6:22	8:27				11:33
SACRAMENTO Ar	9:18	9:45				12:15			12:55	3:25				3:55	5:23	6:10			6:23	6:48	8:55				11:59
	AM	AM				PM			PM	PM				PM	PM	PM			PM	PM	PM				
							Bus 3-4	Bus 3-4					Bus 3-6							Bus 3-6	Bus 3-1				
							3701 ® Bus XSSH	3751 ® Bus SSH					3634 Bus XSSH	545/745 Train Daily						3640 Bus XSSH	3644 Bus XSSH				
							PM	PM					PM	PM						PM	PM				
SACRAMENTO (CC,20,23) Lv			y 10:15	10:20			c 12:45	c 1:10			c 3:40	c 4:10	c 4:00	4:40			c 6:30	6:45		c 7:00	c 9:10	c 9:10			S12:19
DAVIS (CC) Ar				D10:45										4:55				D 7:10				D 9:30			
Roseville (CC,20)				AM									D 4:30	PM				PM		D 7:30	D 9:40	PM			
Rocklin (CC,20)													D 4:45							D 7:45	D 9:55				
Auburn (CC,20) Ar													D 5:10							D 8:00	D10:10				
Marysville-*Yuba Co Govt Ctr* Ar			D11:05				D 1:45	D 2:10			D4:30	D5:00	PM				D 7:30			PM	PM				
Oroville-*Park & Ride*			D11:40				D 2:20	D 2:45			D5:05	D5:35					D 8:05								
Chico-*Amtrak*			D12:10				D 2:50	D 3:15			D5:35	D6:05					D 8:35								1:55
Red Bluff-*Transit Center*			D 1:00				D 3:40	D 4:05			D6:25	D6:55					D 9:25								
Redding-*Transit Center (A)* Ar			D 1:30				D 4:10	D 4:35			D6:55	D7:25					D9:55								A 3:14
			PM				PM	PM			PM	PM					PM								AM
																									to Seattle

Notes: AFR: 71

See Page 6 for general notes.

AM - Light Face Type. **PM - Bold Type.**

A - Train No. 14 stops at Amtrak Station in Redding (across the tracks from the transit center).

E - On request, bus will drop off passengers at the State Capitol bus stop (10th & N Sts.) enroute to Sacramento depot stop. Driver must be notified before leaving Stockton.

H - Bus departs after train arrives and passengers have transferred, even if train arrives early.

® - Reservations required.

S - Time shown as 11:59pm in ARROW and public timetables to avoid confusion concerning departure date.

U - ACE Station

y - Schedule 3711 may leave Sacramento early when there are no passengers transferring from Schedule 3811, and Train 522 or 720 has arrived.

z - Time set to "board-only" in Arrow.

3/12/12 DOR/GWS

SAN JOAQUIN & CAPITOL CORRIDOR BUS CONNECTIONS

Route 7 -- McKINLEYVILLE - ARCATA - EUREKA - WILLITS - SANTA ROSA - NAPA - VALLEJO - MARTINEZ

Southbound--Read Down

Effective May 7, 2012 DEDICATED FEEDER *Preferred Charter*								Bus 7-3 6316 ® Bus Daily			Bus 7-4 6318 ® Bus Daily
								AM			AM
McKinleyville-*Arcata Airport*	Lv							6:15			10:00
Arcata-*Transit Plaza*								6:30			10:15
Eureka-*Denny's*								6:45			10:30
Fortuna-*Pepper's Restaurant*								7:10			10:55
Rio Dell/Scotia-*Scotia Inn*								7:25			11:10
Garberville-*Waterwheel Restaurant*								8:15			**12:00**
Leggett-*Peg House*								8:45			**12:30**
Laytonville-*Park n Takit Store*		Bus 7-1		Bus 7-2				9:10			**12:55**
Willits-*Skunk Train Depot*	Lv	6412 ®		6414 ®				9:35			**1:20**
Ukiah-*Burger King*		Bus		Bus				R10:30			**R 2:15**
Cloverdale-*Transit Depot*		Daily		Daily		Bus 7-2		11:00	Bus 7-3		**2:45**
Healdsburg-*Singletree Inn*		AM		AM		6516 ®		11:25	6518 ®		**3:10**
Santa Rosa-*Courtyard by Marriott*	Lv	6:00		8:30		Bus		11:50	Bus		**3:40**
Rohnert Park-*acr from Safeway*		6:10		8:40		Daily		**12:01**	Daily		**3:55**
Petaluma-*City Library*		6:25		8:55		**PM**		**12:15**	**PM**		**4:10**
Napa-*Wine Train Station*	Lv	|		|		**12:25**		|	**4:45**		|
Napa-*VINE Transit Center*		|		|		**12:30**		|	**4:50**		|
Vallejo-*Denny's*		7:00		9:20		**12:55**		|	**5:10**		|
Discovery Kingdom-*Main Gate (B)*		|		|		**B1:00**		|	**B 5:15**		N
MARTINEZ (CC,SJ)	Ar	c 7:50		c 10:05		**c 1:45**		**c 1:45**	**c 6:05**		**c 6:05**
		AM		AM		**PM**		**PM**	**PM**		**PM**

			712 ®		*714 ®*		*716 ®*			*718 ®*	
			Train		*Train*		*Train*			*Train*	
			Daily		*Daily*		*Daily*			*Daily*	
San Joaquin Connection			*AM*		*AM*		***PM***			***PM***	
MARTINEZ	*Lv*		*8:19*		*10:54*		***2:04***			***6:39***	
STOCKTON	*Ar*		*9:13*		*11:45*		***2:59***			***7:30***	
MODESTO			*9:45*		***12:17***		***3:31***			***8:07***	
MERCED			*10:31*		***12:59***		***4:13***			***8:47***	
FRESNO			*11:31*		***2:06***		***5:16***			***9:51***	
HANFORD			***12:09***		***2:44***		***5:54***			***10:28***	
BAKERSFIELD	*Ar*		***1:41***		***4:11***		***7:26***			***11:56***	
LOS ANGELES	*Ar*		***4:10***		***6:40***		***9:50***			*2:45*	
			PM		***PM***		***PM***			*AM*	

		720	*524*	*528*	*728*	*532*	*734*		*742*	*542*
		Train	*Train*	*Train*	*Train*	*Train*	*Train*		*Train*	*Train*
		SSH	*XSSH*	*XSSH*	*SSH*	*XSSH*	*SSH*		*SSH*	*XSSH*
Capitol Corridor Connection--East		*AM*	*AM*	*AM*	*AM*	***PM***	***PM***		***PM***	***PM***
MARTINEZ	*Lv*	*8:09*	*8:34*	*11:04*	*11:44*	***2:14***	***2:44***		***6:19***	***6:24***
DAVIS	*Ar*	*8:52*	*9:17*	*11:47*	***12:27***	***2:57***	***3:27***		***7:02***	***7:07***
SACRAMENTO	*Ar*	*9:18*	*9:45*	***12:15***	***12:55***	***3:25***	***3:55***		***7:22***	***7:35***
Roseville	*Ar*	*10:35*	*10:35*	***1:30***	***1:30***	***4:30***	***4:30***		***7:48***	***8:10***
		AM	*AM*	***PM***	***PM***	***PM***	***PM***		***PM***	***PM***

		529	*727*	*535*	*733*		*541*	*741*		*747*	*547*
		Train	*Train*	*Train*	*Train*		*Train*	*Train*		*Train*	*Train*
		XSSH	*SSH*	*XSSH*	*SSH*		*XSSH*	*SSH*		*SSH*	*XSSH*
Capitol Corridor Connection--West		*AM*	*AM*	*AM*	*AM*		***PM***	***PM***		***PM***	***PM***
MARTINEZ	*Lv*	*8:40*	*8:40*	*11:10*	*11:40*		***3:10***	***3:15***		***6:40***	***6:40***
EMERYVILLE	*Ar*	*9:18*	*9:18*	*11:48*	***12:18***		***3:48***	***3:53***		***7:18***	***7:18***
SAN FRANCISCO-Ferry Bldg.	*Ar*	*9:50*	*9:50*	***12:25***	***12:55***		***4:20***	***4:25***		***7:50***	***7:50***
OAKLAND	*Ar*	*9:38*	*9:31*	***12:01***	***12:31***		***4:08***	***4:06***		***7:31***	***7:31***
SAN JOSE	*Ar*	*AM*	*10:45*	***1:15***	***1:45***		***PM***	***5:20***		***8:45***	***8:55***
			AM	***PM***	***PM***			***PM***		***PM***	***PM***

Notes: AFR: 71
See Page 6 for general notes.
AM - Light Face Type, **PM - Bold Type.**
B - No service to or from Discovery Kingdom (Marine World) when park is closed.
N - Stops only when needed to cover for a late running Schedule 6518.
® - Reservations required.
R - Rest Stop
3/20/12 DOR/GWS

SAN JOAQUIN & CAPITOL CORRIDOR BUS CONNECTIONS

Route 7 -- MARTINEZ - VALLEJO - NAPA - SANTA ROSA - WILLITS - EUREKA - ARCATA - McKINLEYVILLE

Northbound--Read Down

Effective May 7, 2012		724 Train SSH		526 Train XSSH	532 Train XSSH		734 Train SSH	742 Train SSH		542 Train XSSH
Capitol Corridor Connection		AM		AM	**PM**		**PM**	**PM**		**PM**
SAN JOSE	Lv	7:50			**12:20**		**12:50**	**4:25**		**4:20**
OAKLAND		8:55		9:15	**1:25**		**1:55**	**5:30**		**5:30**
SAN FRANCISCO-Ferry Bldg.	Lv	8:25		8:45	**12:55**		**1:25**	**5:05**		**5:05**
EMERYVILLE		9:05		9:25	**1:35**		**2:05**	**5:40**		**5:45**
MARTINEZ	Ar	9:42		10:02	**2:12**		**2:42**	**6:17**		**6:22**
		AM		AM	**PM**		**PM**	**PM**		**PM**

		729 Train SSH		533 Train XSSH	541 Train XSSH		741 Train SSH		547/747 Train Daily	
Capitol Corridor Connection		AM								
Roseville	Lv	8:37		AM	**PM**		**PM**		**PM**	
SACRAMENTO		9:10		9:20	**2:10**		**2:15**		**5:40**	
DAVIS		9:25		9:35	**2:25**		**2:30**		**5:55**	
MARTINEZ	Ar	10:08		10:18	**3:08**		**3:13**		**6:38**	
		AM		AM	**PM**		**PM**		**PM**	

			711 ® Train Daily			713 ® Train Daily			715 ® Train Daily	
San Joaquin Connection			AM			AM			AM	
LOS ANGELES	Lv		1:25			7:35			10:45	
BAKERSFIELD	Lv		4:55			10:05			**1:20**	
HANFORD			6:12			11:26			**2:42**	
FRESNO			6:50			**12:05**			**3:20**	
MERCED			7:48			**1:08**			**4:22**	
MODESTO			8:28			**1:42**			**4:57**	
STOCKTON			9:01			**2:18**			**5:33**	
MARTINEZ	Ar		10:00			**3:16**			**6:25**	
			AM			**PM**			**PM**	

DEDICATED FEEDER *Preferred Charter*		Bus 7-1 6311 ® Bus Daily		Bus 7-2 6511 ® Bus Daily	Bus 7-2 6313 ® Bus Daily		Bus 7-3 6513 ® Bus Daily	Bus 7-3 6415 ® Bus Daily		Bus 7-4 6515 ® Bus Daily
		AM		AM	**PM**		**PM**	**PM**		**PM**
MARTINEZ (CC,SJ)	Lv	c 10:25		c 10:25	**c 3:25**		**c 3:25**	**c 6:45**		**c 6:45**
Discovery Kingdom-*Main Gate (B)*		B10:45		B10:45	|		|	|		|
Vallejo-*Denny's*		D10:50		D10:50	|		**D 3:50**	|		**D 7:10**
Napa-*VINE Transit Center*		|		D11:05	|		**D 4:05**	|		**D 7:25**
Napa-*Wine Train Station*	Ar	|		D11:10	|		**D 4:10**	|		**D 7:30**
Petaluma-*City Library*		D11:15		AM	**D 4:15**		**PM**	**D 7:35**		**PM**
Rohnert Park-*acr from Safeway*		D11:30		Note A	**D 4:30**			**D 7:55**		
Santa Rosa-*Courtyard by Marriott*	Ar	D11:40			**D 4:40**			**D 8:05**		
Healdsburg-*Singletree Inn*		**D12:05**			**D 5:05**			**PM**		
Cloverdale-*Transit Depot*		**D12:20**			**D 5:20**					
Ukiah-*Burger King* (R)		**R12:50**			**R 5:50**					
Willits-*Skunk Train Depot*	Ar	**D 1:25**			**D 6:25**					
Laytonville-*Park n Takit Store*		**D 1:55**			**D 6:55**					
Leggett-*Peg House*		**D 2:30**			**D 7:30**					
Garberville-*Waterwheel Restaurant*		**D 3:00**			**D 8:00**					
Rio Dell/Scotia-*Scotia Inn*		**D 3:50**			**D 8:50**					
Fortuna-*Pepper's Restaurant*		**D 4:05**			**D 9:05**					
Eureka-*Denny's*		**D 4:25**			**D 9:20**					
Arcata-*Transit Plaza*		**D 4:40**			**D 9:40**					
McKinleyville-*Arcata Airport*	Ar	**D 4:55**			**D 9:55**					
		PM			**PM**					
		Note A								

Notes: AFR: 71

See Page 6 for general notes.

AM - Light Face Type, **PM - Bold Type.**

A - Bus may depart Martinez early if all connecting trains have arrived and passengers have transferred.

B - No service to or from Discovery Kingdom (Marine World) when park is closed.

® - Reservations required.

R - Rest Stop.

3/20/12 DOR/GWS

SAN JOAQUIN BUS CONNECTIONS
Route 15 -- YOSEMITE - MERCED / MODESTO
Seasonal Service Mammoth Lakes - Yosemite

Westbound--Read Down | Eastbound--Read Up

Effective May 14, 2012-Sept 30, 2012

MIXED-MODE FEEDER
Yosemite Area Regional Transit Service (YARTS)

Westbound	Bus 15-3 8403 ® Bus Daily	Bus 15-1 8419 ® Bus Daily	Bus 15-1 8417 ® Bus Daily	Bus 15-1 8667 Bus Seasonal Sched (S)	Bus 15-2 8413 ® Bus Daily	Bus 15-3 8461 ® Bus XSSH(E)			Bus 15-2 8400 ® Bus XSSH	Bus 15-3 8402 ® Bus Daily	Bus 15-1 8662 Bus Seasonal Sched (S)	Bus 15-1 8412 ® Bus Daily	Bus 15-2 8416 ® Bus Daily	Eastbound
	PM	PM	PM	AM	AM	AM			AM	AM	AM	PM	PM	
	|	|	|	S 8:00	|	|	Lv	*Mammoth Lakes- Mammoth Mtn Inn* Ar		|	**S 8:51**	|	|	
	|	|	|	S 9:00	|	|		*June Lake-Ski Area*		|	**S 8:00**	|	|	
	|	|	|	S 9:30	|	|		*Lee Vining-Lake View Lodge*	|	|	**S 7:30**	|	|	
	|	|	|	S 10:20	|	|		*Yosemite Tuolomne Meadows-Visitor Center*	|	|	**S 6:45**	|	|	
	|	|	|	S 11:00	|	|		*Yosemite White Wolf-Lodge*	|	|	**S 6:00**	|	|	
	|	|	|	S 11:30	|	|		*Yosemite Crane Flat*	|	|	**S 5:30**	|	|	
	|	|	|	**S 12:05**	|	|	Ar	*Yosemite Visitors Center* Lv	|	|	**S 5:00**	|	|	
	5:45	**4:15**	**3:40**		9:32	|	Lv	*Yosemite-Curry Village*	|	|		|	|	
	5:50	**4:20**	**3:45**		9:37	|		*Yosemite - Ahwahnee Hotel*	|	|		|	|	
	5:55	**4:25**	**3:50**		9:42	|	Lv	*Yosemite Visitors Center*	|	|		|	|	
	6:00	**4:30**	**4:00**		10:00	|	Lv	*Yosemite-Lodge (F)* Ar	9:52	11:57		**1:25**	**8:22**	
	|	|	|		|	|		*Yosemite Visitors Center*	9:47	11:52		**1:20**	**8:17**	
	|	|	|		|	|		*Yosemite - Ahwahnee Hotel*	9:42	11:47		**1:15**	**8:12**	
	|	|	|		|	|		*Yosemite-Curry Village*	9:37	11:42		**1:10**	**8:07**	
	6:15	**4:55**	**4:25**		10:25	|		El Portal-*Yosemite View Lodge/Parkline*	9:04	11:09		**12:45**	**7:34**	
	7:07	**5:37**	**5:07**		11:07	6:20		Midpines-*Hostel*	8:22	10:26		**12:10**	**6:52**	
	7:28	**5:58**	**5:28**		11:28	6:41		Mariposa-*Park and Ride (B)*	8:02	10:07		11:52	**6:32**	
	7:31	**6:01**	**5:31**		11:31	6:44		Mariposa-Midtown	7:57	10:02		11:47	**6:27**	
	c 8:17	**c 6:47**	**c 6:17**		**c 12:17**	c 7:30	Ar	**MERCED** (SJ) Lv	c 7:10	c 9:15		c 11:00	**c 5:30**	
	PM	**PM**	**PM**		**PM**	AM			AM	AM		AM	**PM**	

Westbound	Bus 15-3 703 ® Train Daily	Bus 15-1	Bus 15-1 717 ® Train Daily	Bus 15-1	Bus 15-2 713 ® Train Daily	Bus 15-3 711 ® Train Daily				Bus 15-3 702 ® Train Daily	Bus 15-1	Bus 15-1 712 ® Train Daily	Bus 15-2 716 ® Train Daily	Eastbound
3403 ® Bus Daily	PM		PM		PM	AM		*San Joaquin Train Connection*	3402 ® Bus Daily	AM		AM	PM	
PM	**9:15**		**6:42**		**1:08**	7:48	Lv	*MERCED* Ar	AM	8:51		10:31	**4:13**	
|	**9:52**		**7:25**		**1:42**	8:28	Ar	*MODESTO* Lv	|	8:09		9:45	**3:31**	
10:30	|		**7:59**		**2:14**	8:57	Ar	*STOCKTON-Amtrak* Lv	7:20	|		9:17	**3:03**	
|	**10:25**		|		|	|	Ar	*STOCKTON-ACE* Lv	|	7:35		|	|	
D10:35	**11:30**		**8:55**		**3:15**	9:55	Ar	*SACRAMENTO* Lv	7:10	6:40		AM	**PM**	
|	PM		**8:03**		**2:18**	9:01	Lv	*STOCKTON-Amtrak* Ar	|	AM		9:13	**2:59**	
D12:10			**8:53**		**3:16**	10:00	Ar	*MARTINEZ* Lv	|			8:19	**2:04**	
D11:55			**9:41**		**4:01**	10:46	Ar	*EMERYVILLE* Lv	|			7:40	**1:25**	
12:35			**9:55**		**4:15**	11:00	Ar	*OAKLAND* Lv	5:30			7:30	**1:15**	
AM			**10:10**		**4:40**	11:20	Ar	*SAN FRANCISCO-Ferry Bldg.* Lv	4:50			7:05	**12:45**	
			PM		**PM**	AM			AM			AM	**PM**	

Westbound	Bus 15-2 718 ® Train Daily	Bus 15-1 704 ® Train Daily	Bus 15-1	Bus 15-1 714 ® Train Daily	Bus 15-2 702 ® Train Daily	Bus 15-3			Bus 15-2	Bus 15-2 711 ® Train Daily	Bus 15-1	Bus 15-1 701 ® Train Daily	Bus 15-2 715 ® Train Daily	Eastbound
	PM	PM		PM	AM			*San Joaquin Train/Bus Connection*		AM		AM	PM	
	8:47	**7:06**		**12:59**	8:51		Lv	*MERCED* Ar		7:48		10:08	**4:22**	
	23:51	**8:02**		**2:06**	9:51		Ar	*FRESNO* Lv		6:50		9:10	**3:20**	
	10:28	**8:39**		**2:44**	10:28		Ar	*HANFORD* Lv		6:12		8:32	**2:42**	
	11:56	**10:07**		**4:11**	12:02		Ar	*BAKERSFIELD* Lv		4:55		7:15	**1:20**	
	2:45	12:55		**6:40**	**2:30**		Ar	*LOS ANGELES* Lv		1:25		4:00	10:45	
	AM	AM		**PM**	**PM**					AM		AM	AM	

Notes AFR: 71

See Page 6 for general notes.
AM - Light Face Type, **PM - Bold Type.**
A - Bus 8416 serves these stops only if there are Amtrak passengers.
B - Buses also stop at YARTS bus stop, SR 140 at 7th St. (Charles St. Dinner House).
F - Buses make several stops in Yosemite Valley, consult VIA for times and locations.
® - Reservations required.
S - Seasonal Service: SA/SU only June and September, daily July and August.

3/20/12 DOR/GWS

Route 68 -- CARMEL - MONTEREY - SALINAS

Eastbound--Read Down | Westbound--Read Up

Effective May 7, 2012

DEDICATED FEEDERS
MV Transportation

Bus 68-1	Bus 68-1				Bus 68-1	Bus 68-1
3514 ® Bus Daily	3511 ® Bus Daily				3611 ® Bus Daily	3614 ® Bus Daily
PM	AM				**PM**	**PM**
4:30	9:50	Lv	Carmel-*Chevron Station*	Ar	**D 1:10**	**D 7:45**
4:45	10:05		Monterey-*Travelodge*		|	|
4:55	10:15		Monterey-*Aquarium*		**D12:45**	**D 7:35**
5:00	10:20		Monterey-*Marriott*		|	|
5:20	10:30	Lv	Monterey-*Transit Plaza*	Ar	**D12:35**	**D 7:30**
|	|		Monterey-*Travelodge*		**D12:33**	**D 7:23**
|	|		Monterey-*Marriott*		**D12:30**	**D 7:20**
5:30	10:45		Monterey-*Hyatt Regency*		**D12:25**	**D 7:15**
c 6:15	c 11:20	Ar	**SALINAS**-*Amtrak* (17,21,36)	Lv	c 11:50	**c 6:40**
PM	AM		**SALINAS**-*Amtrak* (17,21,36)		AM	**PM**

Notes AFR: 71 (37), or 74 (68)

See Page 6 for general notes.

AM - Light Face Type, **PM - Bold Type.**

Schedules 3511 and 3514 are all reserved. Buses will stop to pick-up passengers at hotel stops only if reservations have been made 60 minutes before departure. The only positive stop is the Monterey Transit Plaza, so passengers who make reservations less than 60 minutes prior to departure should board at the Transit Plaza.

® - Reservations required.

3/20/12 DOR/GWS

SAN JOAQUIN BUS CONNECTIONS

Route 18-A -- SANTA MARIA - SAN LUIS OBISPO - HANFORD

Eastbound-Read Down | Westbound-Read Up

Effective May 7, 2012

MIXED MODE FEEDER
Orange Belt Stages

Bus 18-2	Bus 18-1				Bus 18-1	Bus 18-2
4003 ® Bus Daily	4013 ® Bus Daily				4012 ® Bus Daily	4004 ® Bus Daily
PM	AM				**PM**	**AM**
3:05	7:05	Lv	Santa Maria-*IHOP* (17,21)	Ar	**D 3:55**	D12:15
3:30	7:30		Grover Beach (PS,17,21)		**D 3:30**	**D11:50**
3:55	7:55		**SAN LUIS OBISPO** (PS,17,21,36)		**3:05**	**11:35**
4:05	8:05		San Luis Obispo-*Cal-Poly* (17,21,36)		**3:00**	**11:30**
4:30	8:30		Atascadero-*Denny's* (17,36)		**2:35**	**11:05**
4:50	8:50		Paso Robles (17,21,36)		**2:15**	**10:45**
5:50	9:50		Kettleman City (Avenal)-*Carl's Jr.*		**D 1:00**	**9:30**
|	|		Lemoore Naval Air Sta.-*Main Gate*		|	**D 9:05**
6:20	10:20	Lv	Lemoore-*Chamber of Commerce*	Ar	**D12:30**	**9:00**
c 7:05	c 11:05	Ar	**HANFORD** (SJ,18B)	Lv	**c 12:15**	**c 8:45**
PM	AM				**PM**	**PM**

704 ® Train Daily	712 ® Train Daily				713 ® Train Daily	703 ® Train Daily
PM	**PM**		*San Joaquin Connection*		AM	**PM**
8:39	***12:09***	Lv	*HANFORD*	Ar	*11:26*	***7:40***
10:07	***1:41***	Ar	*BAKERSFIELD*	Lv	*10:05*	***6:20***
12:55	***4:10***	Ar	*LOS ANGELES*	Lv	*7:35*	***3:20***
AM	***PM***				*AM*	***PM***

3403 ® Bus Daily	703 ® Train Daily	713 ® Train Daily				712 ® Train Daily	3404 ® Bus Daily	704 ® Train Daily
			San Joaquin Connection					
3403 ®	***PM***	*AM*				***PM***		***PM***
Bus	***7:40***	*11:26*	Lv	*HANFORD*	Ar	***12:09***	*3404 ®*	***8:39***
Daily	***8:14***	***12:01***	Ar	*FRESNO*		*11:35*	*Bus*	***8:06***
PM	***9:15***	***1:08***		*MERCED*		*10:31*	*Daily*	***7:06***
|	|	***2:14***	Ar	*STOCKTON-Amtrak*	Lv	*9:17*	***PM***	|
10:30	***10:25***	***2:50***	Ar	*STOCKTON-ACE Station*	Lv	|	***5:25***	***5:50***
|	***11:30***	***3:15***	Ar	*SACRAMENTO*	Lv	*AM*	|	***4:55***
D10:35	***PM***	***2:18***	Lv	*STOCKTON-Amtrak*	Ar	*9:13*	***5:20***	***PM***
|		***3:16***		*MARTINEZ*		*8:19*	|	
D12:10		***4:01***	Ar	*EMERYVILLE*	Lv	*7:40*	***3:00***	
D11:55		***4:15***	Ar	*OAKLAND*	Lv	*7:30*	***3:15***	
12:35		***4:40***	Ar	*SAN FRANCISCO-Ferry Bldg.*	Lv	*7:05*	***2:35***	
AM		***PM***				*AM*	***PM***	

Notes: AFR: 71
See Page 6 for general notes.
AM - Light Face Type, **PM - Bold Type.**
® - Reservations required.

3/20/12 DOR/GWS

SAN JOAQUIN BUS CONNECTIONS

Route 18-B -- VISALIA - HANFORD

Westbound-Read Down | Eastbound-Read Up

Effective May 7, 2012

MIXED MODE FEEDER
Orange Belt Stages

	Bus 18-3		Bus 18-3						Bus 18-3		Bus 18-3
	6704 ® Bus Daily		6712 ® Bus Daily						6713 ® Bus Daily		6703 ® Bus Daily
	PM		AM						**PM**		**PM**
	6:35		10:25	Lv	Visalia-*Transit Center*	Ar			**12:40**		**9:20**
	6:50		10:40	Lv	Goshen (Tulare)-*Arco Travel Plaza*	Ar			**12:25**		**9:05**
	c 7:05		c 11:05	Ar	**HANFORD** (SJ)	Lv			**c 12:15**		**c 8:45**
	PM		AM						**PM**		**PM**
704 ® Train Daily		*712 ® Train Daily*			*San Joaquin Connection*			*713 ® Train Daily*		*703 ® Train Daily*	
PM		***PM***			*FRESNO*			*AM*		***PM***	
8:39		***12:09***		Lv	*HANFORD*	Ar		*11:26*		***7:40***	
10:07		***1:41***		Ar	*BAKERSFIELD*	Lv		*10:05*		***6:20***	
12:55		***4:10***		Ar	*LOS ANGELES*	Lv		*7:35*		***3:20***	
AM		***PM***						*AM*		***PM***	
	703 ® Train Daily		*713 ® Train Daily*		*San Joaquin Connection*				*712 ® Train Daily*		*704 ® Train Daily*
	PM		*AM*						***PM***		***PM***
3403 ® Bus Daily	***7:40***		*11:26*	Lv	*HANFORD*	Ar			***12:09***	*3404 ® Bus Daily*	***8:39***
	8:18		***12:05***	Lv	*FRESNO*	Ar			*11:31*		***8:06***
	9:15		***1:08***		*MERCED*				*10:31*		***7:06***
PM	|		***2:14***	Ar	*STOCKTON-Amtrak*	Lv			*9:17*	***PM***	|
c 10:30	***10:25***		***2:50***	Ar	*STOCKTON-ACE Station*	Lv			|	***c 5:25***	***5:50***
|	***11:30***		***3:15***	Ar	*SACRAMENTO*	Lv			*AM*	|	***4:55***
D10:35	***PM***		***2:18***	Lv	*STOCKTON-Amtrak*	Ar			*9:13*	***5:20***	***PM***
|			***3:16***		*MARTINEZ*				*8:19*	|	
D12:10			***4:01***	Ar	*EMERYVILLE*	Lv			*7:40*	***3:00***	
D11:55			***4:15***	Ar	*OAKLAND*	Lv			*7:30*	***3:15***	
12:35			***4:40***	Ar	*SAN FRANCISCO-Ferry Bldg.*	Lv			*7:05*	***2:35***	
AM			***PM***						*AM*	***PM***	

Notes: AFR: 71

See Page 6 for general notes.

AM - Light Face Type, **PM - Bold Type.**

® - Reservations required.

3/20/12 DOR/GWS

SAN JOAQUIN BUS CONNECTIONS

Route 1 -- SAN DIEGO - LOS ANGELES BASIN - BAKERSFIELD

Northbound--Read Down

Effective May 7, 2012		1A Bus 1																		
DEDICATED FEEDER CUSA		5811 ® Bus Daily								599 Train XSSH	565 Train SSH				769 Train Daily			777 Train Daily		785 Train Daily
Pacific Surfliner Connection and through Bus Service		PM								AM	AM				AM			PM		PM
SAN DIEGO Lv		P10:15	1A Bus 2			1A Bus 5				7:07	7:05				9:30			12:00		4:00
SOLANA BEACH		P10:45	5801 ®			5813 ®				7:41	7:39				10:04			12:34		4:40
OCEANSIDE		P11:15	Bus			Bus				7:55	7:55				10:18			12:49		4:59
SAN JUAN CAPISTRANO		P11:50	Daily			Daily				--	8:28				10:49			1:21		5:32
IRVINE		P12:05	AM			AM				8:37	8:46				11:05			1:36		5:49
SANTA ANA		P12:25	3:00			P 5:25				--	8:57				11:17			1:49		5:59
ANAHEIM		|	|			|				8:54	9:08				11:26			1:58		6:08
FULLERTON		P12:45	3:20		1B Bus 3	P 5:50			1B Bus 8	--	9:17		1B Bus11			11:36		1B Bus 6	2:08		6:16
LOS ANGELES Ar		1:30	4:00		5713 ®	6:35			5715 ®	9:35	9:50		5717 ®			12:15		5703 ®	2:40		6:55
		|	|		Bus	|			Bus	AM	AM		Bus			PM		Bus	PM		PM
		|	|		Daily	|			Daily				Daily					Daily			
		|	|		AM	|			AM				AM					PM			
San Pedro-*Library* Lv		|	|		5:15	|		See	8:50			See	11:10			See	1:10			
San Pedro-*Catalina Terminal*		|	|		5:30	|		Footnote	9:05	1A Bus 9		Footnote	11:25	1A Bus 1		Footnote	1:25	1B Bus 5		1B Bus 9
Long Beach-*Queen Mary*		|	|		|	|		Q	|	5815 ®		Q	11:45	5817 ®		Q	1:45	5803 ®		5885 ®
Long Beach-*Dennv's Rstrnt*		|	|	1C Bus 4	5:55	|		1C Bus 7	9:30	Bus		1C Bus10	12:01	Bus		1C Bus12	2:00	Bus		Bus
LOS ANGELES (PS,4) Ar		|	|	5913 ®	7:05	|		5915 ®	10:25	Daily		5917 ®	12:55	Daily		5903 ®	2:55	Daily		Daily
		|	|	Bus	|	|		Bus	|	AM	|	Bus	|	PM	|	Bus	|	PM		PM
LOS ANGELES (PS,4) Lv		1:45	4:10	Daily	n 7:25	7:35			Daily	n10:35	10:45		Daily	1:05	1:15		Daily	n 3:10	3:20		c P7:05
Glendale (PS,4)		2:00	4:25	AM	R 7:45	|			AM	R10:55	|		AM	1:25	|		PM	R 3:30	|		|
Torrance - Alpine Village		|	|	5:30	|	|			8:30	|	|		11:00	|	|		1:15	|	|		|
El Segundo - Douglas Green Line Stn		|	|	5:45	|	|			8:45	|	|		11:15	|	|		1:30	|	|		|
Westchester - MTA Bus Stop		|	|	6:05	|	|			9:05	|	|		11:35	|	|		1:50	|	|		|
UCLA-Gayley/Strathmore		|	|	6:35	|	|			9:35	|	|		12:05	|	|		2:20	|	|		|
|		|	|		|	|			|	|	|		|	|	|		|	|	|		|
VAN NUYS-*Amtrak* (PS,4)		|	|	SA 7:10	|	|			10:20	|	|		SB 12:50	|	|		SC 3:05	|	|		|
Burbank Airport (PS,4)		2:15	4:40	7:30	|	|			10:40	|	|		1:10	|	|		3:25	|	|		|
Santa Clarita/Newhall-*Metrolink*		2:40	5:05	7:55	|	|			11:05	|	|		1:35	|	|		3:50	|	|		P7:45
|		|	|	|	|	|			|	|	|		|	|	|		|	|	|		
BAKERSFIELD (SJ,9,10,12,19) Ar		c 4:40	c 7:00	c 9:50	c 9:50	c 9:50			c 1:05	c 1:05	c 1:05		c 3:30	c 3:30	c 3:30		c 6:05	c 6:05	c 6:05		P9:20
		AM	AM	AM	AM	AM			PM	PM	PM		PM	PM	PM		PM	PM	PM		|
																					|
		711 ® Train Daily	701 ® Train Daily			713 ® Train Daily				715 ® Train Daily					717 ® Train Daily			703 ® Train Daily		|
San Joaquin Connection		AM	AM			AM				PM					PM			PM		|
BAKERSFIELD Lv		4:55	7:15	3401 ®		10:05				1:20					3:45			6:20	3403 ®	P9:25
HANFORD Ar		6:12	8:32	Bus		11:26				2:42					5:06			7:40	Bus	D 11:00
FRESNO		6:46	9:06	Daily		12:01				3:16					5:41			8:14	Daily	11:50
MERCED		7:48	10:08	AM		1:08				4:22					6:42			9:15	PM	PM
STOCKTON Ar		8:57	U11:20	11:30		2:14				5:29					7:59			U10:25	10:30	
SACRAMENTO Ar		9:55	12:30	|		3:15				6:25					8:55			11:30	|	
MARTINEZ Ar		10:00	PM	|		3:16				6:25					8:53			PM	|	
EMERYVILLE Ar		10:46		D1:00		4:01				7:11					9:41				D12:10	
OAKLAND Ar		11:00		D12:50		4:15				7:25					9:55				D11:55	
SAN FRANCISCO-Ferry Bldg. Ar		11:20		D1:20		4:40				7:45					10:10				12:35	
		AM		PM		PM				PM					PM				AM	

Notes: AFR: 71

See Page 6 for general notes.

AM - Light Face Type. **PM - Bold Type.**

n - Time not shown in Public Timetables or ARROW.

P - Schedule 5811, 5813, and 5885 may carry local passengers holding prepurchased Amtrak tickets, as long as their itinerary includes train travel.

R - Stops to receive passengers only.

® - Reservations required.

Q - Buses 5915, 5917 and 5903 will depart all stations one (1) hour earlier on Friday, May 25 and Friday, August 31, 2012.

S - Bus connects at Van Nuys (rest stop) with northbound Pacific Surfliner trains. SA=TRAIN 761/1761 SB = TRAIN 769 SC = TRAIN 777

U - ACE Station

3/20/12 DOR/GWS

SAN JOAQUIN BUS CONNECTIONS

Route 1 -- BAKERSFIELD - LOS ANGELES BASIN - SAN DIEGO

Southbound--Read Down

Effective May 7, 2012				3402 ® Bus Daily			712 ® Train Daily			714 ® Train Daily				716 ® Train Daily		3404 ® Bus Daily		718 ® Train Daily
San Joaquin Connection				AM			AM			AM				PM		PM		PM
SAN FRANCISCO-Ferry Bldg.	Lv		702 ®	4:50			7:05			9:35				**12:45**		**2:35**	704 ®	**5:15**
OAKLAND	Lv		Train	5:30			7:30			10:05				**1:15**		**3:15**	Train	**5:50**
EMERYVILLE	Lv	1B Bus 1	Daily	5:15			7:40			10:15				**1:25**		**3:00**	Daily	**6:00**
MARTINEZ		5872 ®	AM	|			8:19			10:54				**2:04**		|	PM	**6:39**
SACRAMENTO	Lv	Bus	6:40	|			AM			AM				PM		|	4:55	PM
STOCKTON		Daily	U 7:35	7:10			9:17			11:49				**3:03**		**5:15**	U 5:50	**7:34**
MERCED		AM	8:51	AM			10:31			**12:59**				**4:13**		PM	**7:06**	**8:47**
FRESNO		L 6:00	9:55				11:35			**2:10**				**5:20**			**8:06**	**9:55**
HANFORD		L 6:50	10:28				**12:09**			**2:44**				**5:54**			**8:39**	**10:28**
BAKERSFIELD	Ar	L 8:30	**12:02**				**1:41**			**4:11**				**7:26**			**10:07**	**11:56**
		|	AM				PM			PM				PM			PM	PM
		|																
		|	1A Bus 5	1C Bus 4		1B Bus 3	1A Bus 9	1C Bus 7	1B Bus 8	1A Bus 1	1C Bus10		1B Bus11	1B Bus 5	1C Bus12	1B Bus 6	1A Bus 3	1A Bus 9
DEDICATED FEEDER *CUSA*		|	5802 ® Bus Daily	5902 ® Bus Daily		5702 Bus Daily	5812 ® Bus Daily	5912 ® Bus Daily	5712 ® Bus Daily	5814 ® Bus Daily	5914 ® Bus Daily		5714 ® Bus Daily	5816 ® Bus Daily	5916 ® Bus Daily	5716 ® Bus Daily	5804 ® Bus Daily	5818 ® Bus Daily
		|	PM	PM		PM	PM	PM	PM	PM	PM		PM	PM	PM	PM	PM	PM
BAKERSFIELD (SJ,9,10,12,19)	Lv	L 8:35	**c 12:10**	**c 12:10**		**c 12:10**	**c 1:50**	**c 1:50**	**c 1:50**	**c 4:20**	**c 4:20**		**c 4:20**	**c 7:30**	**c 7:30**	**c 7:30**	**c 10:10**	**c 11:59**
|		|	|	|		|	|	|	|	|		|	|	|	|	|	|
Santa Clarita/Newhall-*Metrolink*		|	|	**D 1:55**		|	|	**D 3:25**	|	|	**D 5:55**		|	|	**D 9:05**	|	**D11:35**	D 1:25
Burbank Airport (PS,4)		|	|	**D 2:20**		|	|	**D 3:50**	|	|	**D 6:20**		|	|	**D 9:30**	|	D12:00	D 1:50
VAN NUYS-*Amtrak* (PS,4)	Ar	|	|	**2:40**		|	|	**SA 4:20**	|	|	**SB 6:40**		|	|	**SC 9:50**	|	|	|
|	Lv	|	|	|		|	|	|	|	|	**SB 6:40**		|	|	**SC 9:50**	|	|	|
UCLA-Gayley/Strathmore		|	|	**D 3:10**		|	|	**D 4:50**	|	|	**D 7:15**		|	|	**D 10:20**	|	|	|
Westchester - MTA Bus Stop		|	|	**D 3:30**		|	|	**D 5:15**	|	|	**D 7:35**		|	|	**D 10:30**	|	|	|
El Segundo - Douglas Green Line Stn		|	|	**D 3:50**		|	|	**D 5:35**	|	|	**D 7:55**		|	|	**D 10:50**	|	|	|
Torrance - Alpine Village	Ar	|	|	**D 4:10**		|	|	**D 6:00**	|	|	**D 8:15**		|	|	**D 11:10**	|	|	|
Glendale (PS,4)		|	|	PM		**D 2:20**	|	PM	**D 4:00**	|	PM		**D 6:30**	|	PM	**D 9:40**	D12:15	D 2:05
LOS ANGELES (PS,4)	Ar	c 10:45	**c 2:30**			**n 2:40**	**c 4:10**		**n 4:20**	**c 6:40**			**n 6:50**	**c 9:50**		**n 10:00**	n 12:30	n 2:20
		AM	PM			|	PM		|	PM			|	PM		|	|	|
			|		|			|				|			|	|	|
		572	*580*	*582*		|		*784*	|		*590*	*592*	|	*796*		|	|	|
		Train	*Train*	*Train*		|		*Train*	|		*Train*	*Train*	|	*Train*		|	|	|
Pacific Surfliner Connection		*Daily*	*SSH*	*Daily*		|		*Daily*	|		*FSSH*	*Daily*	|	*Daily*		|	|	|
and through Bus Service		*AM*	*PM*	*PM*		|		*PM*	|		*PM*	*PM*	|	*PM*		|	|	|
LOS ANGELES	Lv	*11:10*	***3:00***	***4:10***		|		***5:10***	|		***7:15***	***8:30***	|	***10:10***		|	L 12:40	L 2:30
FULLERTON		*11:40*	***3:30***	***4:40***		|		***5:40***	|		***7:45***	***9:02***	|	***10:40***		|	D 1:15	D 3:05
ANAHEIM		*11:49*	***3:39***	***4:49***		|		***5:49***	|		***7:54***	***9:11***	|	***10:49***		|	|	|
SANTA ANA		*11:58*	***3:48***	***4:58***		|		***5:58***	|		***8:03***	***9:20***	|	***10:58***		|	D 1:30	D 3:20
IRVINE		***12:11***	***4:02***	***5:09***		|		***6:11***	|		***8:17***	***9:31***	|	***11:09***		|	AM	D 3:40
SAN JUAN CAPISTRANO		***12:25***	***4:16***	***5:23***		|		***6:25***	|		***8:31***	***9:48***	|	***11:23***		|		D 3:55
OCEANSIDE		***12:59***	***4:52***	***5:55***		|		***6:57***	|		***9:03***	***10:19***	|	***11:55***		|		D 4:30
SOLANA BEACH		***1:19***	***5:10***	***6:13***		|		***7:13***	|		***9:19***	***10:35***	|	*12:11*		|		D 4:50
SAN DIEGO	Ar	***1:55***	***5:45***	***7:00***		|		***7:50***	|		***9:55***	***11:15***	|	*12:50*		|		D 5:15
		PM	***PM***	***PM***		|		***PM***	|		***PM***	***PM***	|	*AM*		|		AM
LOS ANGELES (PS,4)	Lv					**2:50**			**4:30**				**7:00**			**10:10**		
Long Beach-*Denny's Rstrnt*						**D 3:45**			**D 5:25**				**D 7:55**			**D11:05**		
Long Beach-*Queen Mary*						**D 4:00**			**D 5:40**				**D 8:10**			**D11:20**		
San Pedro-*Catalina Terminal*						**D 4:15**			**D 5:55**				**D 8:25**			**D11:35**		
San Pedro-*Library*	Ar					**D 4:25**			**D 6:05**				**D 8:35**			**D11:45**		
						PM			**PM**				**PM**			**PM**		

Notes: AFR: 71

See Page 6 for general notes.

AM - Light Face Type. **PM - Bold Type.**

L - Schedules 5804, 5818, and 5872 may carry local passengers holding prepurchased Amtrak tickets, as long as their itinerary includes train travel.

n - Time not shown in Public Timetables or ARROW.

® - Reservations required.

S - Bus holds at Van Nuys (rest stop) for arrival of Pacific Surfliner train from Santa Barbara. SA=TRAIN 784 SB = TRAIN 790/1790 SC = TRAIN 796

U - ACE Station

3/20/12 DOR/GWS

SAN JOAQUIN BUS CONNECTIONS
Route 10 -- BAKERSFIELD - OXNARD - SANTA BARBARA

Westbound-Read Down | Eastbound-Read Up

Effective May 7, 2012

716 ® Train Daily	714 ® Train Daily	3402 ® Bus Daily	702 ® Train Daily		San Joaquin Connection		713 ® Train Daily	715 ® Train Daily	703 ® Train Daily	3403 ® Bus Daily
PM	AM	AM					**PM**	**PM**		**PM**
12:45	9:35	4:50		Lv	SAN FRANCISCO-Ferry Bldg.	Ar	**4:40**	**7:45**		12:35
1:15	10:05	5:30		Lv	OAKLAND	Ar	**4:15**	**7:25**		**D11:55**
1:25	10:15	5:15		Lv	EMERYVILLE	Ar	**4:01**	**7:11**		D12:10
2:04	10:54	|			MARTINEZ	Ar	**3:16**	**6:25**		|
2:59	11:45	7:15	AM	Ar	STOCKTON-Amtrak	Lv	**2:18**	**5:33**	**PM**	**D10:35**
PM	AM	|	6:40	Lv	SACRAMENTO	Ar	**3:15**	**6:25**	**11:30**	|
|	|	7:20	7:35	Lv	Stockton-ACE Station	Ar	**D 2:50**	**D 5:40**	**10:25**	**10:30**
3:03	11:49	AM	|	Lv	STOCKTON-Amtrak	Ar	**2:14**	**5:29**	|	**PM**
4:13	**12:59**		8:51		MERCED		**1:08**	**4:22**	**9:15**	
5:20	**2:10**		9:55		FRESNO		**12:01**	**3:16**	**8:14**	
5:54	**2:44**		10:28	Lv	HANFORD	Ar	11:26	**2:42**	**7:40**	
7:26	**4:11**		**12:02**	Ar	BAKERSFIELD	Lv	10:05	**1:20**	**6:20**	
PM	**PM**		AM				AM	**PM**	**PM**	
Bus 10-3	Bus 10-2		Bus 10-1				Bus 10-1	Bus 10-2	Bus 10-3	
5616 ® Bus Daily	5614 ® Bus Daily		5602 ® Bus Daily		DEDICATED FEEDER *Silverado Stages*		5613 ® Bus Daily	5615 ® Bus Daily	5603 ® Bus Daily	
PM	**PM**		**PM**				AM	**PM**	**PM**	
c 7:30	**c 4:20**		**c 12:10**	Lv	**BAKERSFIELD** (SJ,1,9,12,19)	Ar	c 9:55	**c 1:05**	**c 6:05**	
D 9:10	**D 6:00**		**D 1:50**	Ar	Fillmore-*Int'l House of Pancakes*	Lv	7:55	11:00	**3:55**	
D 9:25	**D 6:15**		**D 2:05**		Santa Paula-*Carrows*		7:40	10:45	**3:40**	
D 9:50	**D 6:40**		**D 2:30**		**OXNARD**-*Trans Center* (PS,4)		7:10	10:15	**3:10**	
D10:10	**D 7:00**		**D 2:50**		Ventura (PS,4)		6:45	9:50	**2:45**	
D10:25	**D 7:15**		**D 3:05**		Carpinteria (PS,4)		6:25	9:30	**2:25**	
D10:45	**D 7:35**		**D 3:25**	Ar	**SANTA BARBARA** (PS,4,17,21)	Lv	6:05	9:10	**2:05**	
PM	**PM**		**PM**				AM	AM	**PM**	

Notes: AFR: 71

See Page 6 for general notes.

AM - Light Face Type, **PM - Bold Type.**

® - Reservations required.

3/20/12 DOR/GWS

SAN JOAQUIN BUS CONNECTIONS

Route 9 -- BAKERSFIELD - BARSTOW - LAS VEGAS
Route 12 -- BAKERSFIELD - LANCASTER - VICTORVILLE

Southbound-Read Down | Northbound-Read Up

Effective May 7, 2012

716 ® Train Daily		712 ® Train Daily		San Joaquin Connection		713 ® Train Daily	715 ® Train Daily		717 ® Train Daily
PM		AM				**PM**	**PM**		**PM**
12:45		7:05	Lv	SAN FRANCISCO-Ferry Bldg.	Ar	**4:40**	**7:45**		**10:10**
1:15		7:30	Lv	OAKLAND	Ar	**4:15**	**7:25**		**9:55**
1:25		7:40	Lv	EMERYVILLE	Ar	**4:01**	**7:11**		**9:41**
2:04		8:19	Lv	MARTINEZ	Ar	**3:16**	**6:25**		**8:53**
3:03		9:17	Lv	STOCKTON-Amtrak	Ar	**2:14**	**5:29**		**7:59**
PM		AM	Lv	SACRAMENTO	Ar	**3:15**	**6:25**		**8:55**
|		|	Lv	STOCKTON-ACE	Ar	**D 2:50**	**D 5:40**		**D 8:10**
3:31		9:45	Lv	STOCKTON-Amtrak	Ar	**1:42**	**4:57**		**7:25**
4:13		10:31		MERCED		**1:08**	**4:22**		**6:42**
5:20		11:35		FRESNO		**12:01**	**3:16**		**5:41**
5:54		12:09	Lv	HANFORD	Ar	11:26	**2:42**		**5:06**
7:26		**1:41**	Ar	BAKERSFIELD	Lv	10:05	**1:20**		**3:45**
PM		**PM**				AM	**PM**		**PM**
						|		|	
Bus 12-2	Bus 9-1	Bus 12-1				Bus 12-1	Bus 12-2	Bus 9-1	Bus 9-1
3416 ® Bus Daily	3612 ® Bus Daily	3412 ® Bus Daily		DEDICATED FEEDER *CUSA*		3413 ® Bus Daily	3415 ® Bus Daily	3617 ® Bus Daily (A)	3657 ® Bus Note B
PM	**PM**	**PM**				AM	**PM**	**PM**	**PM**
c 7:30	**c 1:50**	**c 1:50**	Lv	**BAKERSFIELD** (SJ,1,10,19)	Ar	c 9:50	**c 1:05**	**c 3:30**	**c 3:30**
D 8:15	|	**D 2:35**	Ar	Tehachapi-*Burger King*	Lv	8:45	11:55	**2:20**	**1:20**
D 8:40	|	**D 3:00**		Mojave-*Carls Jr.*		8:20	11:30	**1:50**	**12:50**
D 9:20	|	**D 3:40**		Lancaster-*Metrolink*		7:40	10:50	|	|
D 9:30	|	**D 3:50**		Palmdale-*Transportation Center*		7:25	10:35	|	05/28, 09/03
D 9:45	|	**D 4:05**		Littlerock-*Come & Save Grocery*		7:05	10:15	|	Only
D10:35	|	**D 4:55**	Ar	Victorville-*Transit Center*	Lv	6:10	9:20	|	|
PM	**D 3:50**	**PM**	Ar	Barstow-*Amtrak*	Lv	AM	AM	**12:20**	11:50
	D 3:55		Ar	Barstow-*Barstow Station (M)*	Lv			**12:15**	11:45
	|			|				|	|
	D 6:10		Ar	Primm, NV-*Whiskey Pete's*	Lv			9:45	9:15
	D 6:50		Ar	Las Vegas, NV-*Greyhound Depot*	Lv			9:05	8:35
	PM							AM	AM

Notes: AFR: 71 (Except as noted)

See Page 6 for general notes.

AM - Light Face Type, **PM - Bold Type.**

A - Bus 3617 runs daily except on 05/28 and 09/03, 2012.

B - All departures for Bus 3657 will depart each stop 30 minutes earlier on 05/28 and 09/03, 2012.

M - 15 minute Rest Stop at Barstow Station, or as time permits.

® - Reservations required.

3/20/12 DOR/GWS

SAN JOAQUIN BUS CONNECTIONS

Route 19 -- BAKERSFIELD - INLAND EMPIRE - COACHELLA VALLEY

Southbound-Read Down | Northbound-Read Up

Effective May 7, 2012

716 ® Train Daily	714 ® Train Daily	712 ® Train Daily		3402 ® Bus Daily		San Joaquin Connection		713 ® Train Daily	715 ® Train Daily	717 ® Train Daily		3403 ® Bus Daily
PM	AM	AM		AM				PM	PM	PM		PM
12:45	9:35	7:05		4:45	Lv	SAN FRANCISCO-Ferry Bldg.	Ar	4:40	7:45	10:10		12:35
1:15	10:05	7:30	702 ® Train Daily	5:30	Lv	OAKLAND	Ar	4:15	7:25	9:55	703 ® Train Daily	D11:55
1:25	10:15	7:40		5:15	Lv	EMERYVILLE	Ar	4:01	7:11	9:41		D12:10
2:04	10:54	8:19		|		MARTINEZ	Ar	3:16	6:25	8:53		|
3:03	11:49	9:17	AM	7:15	Ar	STOCKTON-Amtrak	Lv	2:14	5:29	7:59	PM	D10:35
PM	AM	AM	6:40	|	Lv	SACRAMENTO	Ar	3:15	6:25	8:55	11:30	|
|	|	|	7:35	7:20	Lv	Stockton-ACE Station	Ar	D 2:50	D 5:40	D 8:10	10:25	10:30
3:03	11:49	9:17	|	AM	Lv	STOCKTON-Amtrak	Ar	2:14	5:29	7:59	|	PM
4:13	12:59	10:31	8:51			MERCED		1:08	4:22	6:42	9:15	
5:20	2:10	11:35	9:55			FRESNO		12:01	3:16	5:41	8:14	
5:54	2:44	12:09	10:28		Lv	HANFORD	Ar	11:26	2:42	5:06	7:40	
7:26	4:11	1:41	12:02		Ar	BAKERSFIELD	Lv	10:05	1:20	3:45	6:20	
PM	PM	PM	AM					AM	PM	PM	PM	
Bus 19-3	Bus 19-2	Bus 19-1	Bus 19-4			DEDICATED FEEDER *Coach America*		Bus 19-4	Bus 19-1	Bus 19-2	Bus 19-3	
5416 ® Bus Daily	5414 ® Bus Daily	5412 ® Bus Daily	5402 ® Bus Daily					5413 ® Bus Daily	5415 ® Bus Daily	5417 ® Bus Daily	5403 ® Bus Daily	
PM	PM	PM	PM					AM	PM	PM	PM	
c 7:30	c 4:20	c 1:50	c12:10		Lv	**BAKERSFIELD** (SJ,1,9,10,12)	Ar	c 9:50	c 1:05	c 3:30	c 6:05	
D 9:20	D 6:10	D 3:40	D 2:00		Ar	La Crescenta-*Lowell & Honolulu*	Lv	7:40	10:50	1:20	3:25	
D 9:35	D 6:25	D 3:55	D 2:15			Pasadena-*Hilton Hotel*		7:10	10:25	12:55	3:00	
D10:25	D 7:15	D 4:45	D 3:05			Claremont-*Metrolink*		6:25	9:45	12:15	2:25	
D10:40	D 7:30	D 5:00	D 3:20			Ontario-*Amtrak*		6:05	9:20	11:50	2:00	
N10:42	N 7:32	|	|			Ontario-*Andy's Burgers* (N)		|	|	|	|	
D11:05	A	A	|			Riverside-*Metrolink*		5:40	8:55	B	1:40	
D11:25	D 7:50	R 5:20	R 3:40		Ar	San Bernardino-*Amtrak* (ML)	Lv	5:20	8:35	11:25	1:20	
|	D 7:55	5:25	D 3:50		Lv	San Bernardino-*Amtrak* (ML)	Ar	AM	R 8:30	R 11:20	R 1:15	
PM	D 8:20	D 5:50	D 4:10			Riverside-Amtrak/*Metrolink*			|	10:55	|	
	|	D 6:15	|			Moreno Valley-*Big O Tires*			|	10:35	|	
	|	D 6:30	|			Perris-Consult Agent for Location			|	10:20	|	
	|	D 6:45	|			Sun City/Menifee-*Menifee Comm. Cupboard*			|	10:05	|	
	|	D 7:05	|			Hemet-*Coco's Restaurant*			|	9:40	|	
	|	D 7:10	|		Ar	Hemet-*Simpson Center*	Lv		|	9:30	|	
	D 9:00	PM	D 4:50			Cabazon-Morongo Casino Hotel			7:40	AM	12:25	
	D 9:25		D 5:20			Palm Springs-Downtown			7:05		11:50	
	D 9:30		D 5:25			Palm Springs-*Airport*			7:00		11:45	
	D 9:55		D 5:55			Palm Desert-Palm Desert Town Center			6:30		11:15	
	D 10:05		D 6:05			La Quinta - Town Center			6:20		11:05	
	D 10:15		D 6:15		Ar	Indio-*Hwy 111 at Monroe*	Lv		6:10		10:55	
	PM		PM						AM		AM	
4 ® Train Daily								3 ® Train Daily				
PM						Southwest Chief Connection		PM				
8:03					Lv	Riverside	Ar	5:53				
8:29					Lv	SAN BERNARDINO	Ar	5:32				
10:26					Ar	Barstow	Lv	3:39				
12:56						Needles, CA		12:49				
6:11						FLAGSTAFF, AZ (MST)		9:57				
12:12						ALBUQUERQUE, NM (MT)		4:45				
7:26						KANSAS CITY, MO (CT)		10:55				
3:20					Ar	CHICAGO, IL (CT)	Lv	3:15				
PM								PM				

Notes: AFR: 71
See Page 6 for general notes.
AM - Light Face Type, **PM - Bold Type.**
A - Bus stops at Riverside after San Bernardino.
B - Bus stops at Riverside before San Bernardino.
D - Stops to discharge passengers only.
N - Late night alternative drop-off stop.
R - 10 minutes rest stop or as time permits.
Hemet Simpson Center Stop now at 305 E. Devonshire Ave.
® - Reservations required.
3/20/12 DOR/GWS

CAPITOL CORRIDOR

Train Service:

Auburn - Sacramento - Oakland - San Jose

Connecting Bus Routes:

Sparks/Reno - Auburn - Sacramento
South Lake Tahoe - Sacramento
San Jose - Santa Cruz
Emeryville/Oakland - San Francisco
San Jose - Monterey
San Jose - Salinas - San Luis Obispo - Santa Barbara

McKinleyville
Arcata
Eureka
Fortuna
7
Scotia
Garberville
Leggett
Laytonville
Willits
Ukiah
7
Cloverdale
Healdsburg
Santa Rosa
Rohnert Park
Petaluma
7
Napa
Vallejo
Benicia
Richmond
Berkeley
SAN FRANCISCO
99
EMERYVILLE
OAKLAND
Oakland Coliseum
Hayward
Fremont/Centerville
Santa Clara/Great America
SAN JOSE
Scotts Valley
35
Santa Cruz
Morgan Hill
Gilroy
17,21,36
Prunedale
55
Seaside
Monterey
68
SALINAS
King City
Paso Robles
Cal Poly
SAN LUIS OBISPO
Grover Beach
Santa Maria
17,21,36
Buellton
Solvang
SANTA BARBARA
Redding
3
Red Bluff
Corning
Chico
Oroville
Marysville
3
DAVIS
CC
Suisun/ Fairfield
MARTINEZ
3
Lodi
3,20A,
20B
Colfax
Auburn
Rocklin
Roseville
SACRAMENTO
Truckee
Sparks
RENO
20B
20c
Stateline Casinos
Tahoe Wye
Placerville
Capitol Corridor
Train and Connecting Bus Routes
Capitol Trains
Amtrak Bus Connections
(With Route Number)
(Dashed Lines) Limited Through Service
STAFFED AMTRAK STATION
Unstaffed Amtrak Stop
Note: Some schedules may not serve every stop on route.
Effective May 7, 2012

CAPITOL CORRIDOR

Summary of Changes and Corrections

Train Schedules

Capitol Corridor -- Auburn- Sacramento - Emeryville/San Francisco - Oakland - San Jose

WESTBOUND

There are no major schedules changes to any of the trains, however, it is anticipated a new stop at Santa Clara Caltrain will begin sometime in the summer. Stop times and date of service is TBA.

EASTBOUND

There are no major schedules changes to any of the trains, however, it is anticipated a new stop at Santa Clara Caltrain will begin sometime in the summer. Stop times and date of service is TBA.

Bus Schedules

Route 20 -- Sacramento - Roseville - Auburn - Reno - Sparks

Due to the new platforms at Sacramento station becoming operational on August 6th, there will be time adjustments to allow for a 15 minute connection from the bus bay to the platforms. As a result, please see pages 55 and 56 for all schedule changes.

Buses 3528 and 3534 are now Monday-Friday schedules. Buses 3578 and 3584 have been added for Saturday, Sunday and Holiday schedules.

Capitol Corridor -- AUBURN - SACRAMENTO - MARTINEZ - EMERYVILLE - OAKLAND - SAN JOSE

Westbound--Read Down

Final- Effective May 7, 2012			3623 ® Bus XSSH		3625 ® Bus Daily				529 Capitol XSSH			729 Capitol SSH				3537 ® Bus Daily
			AM		AM				AM			AM				AM
Auburn-Nevada St. (20)	LV								6:35			8:05				10:35
Rocklin (20)									6:58			8:28				10:50
Roseville (20)			4:45		5:35				7:08			8:37				11:05
SACRAMENTO (3,20,23)	Ar		5:20		6:10	from			7:37			9:07				11:55
			AM		AM	Seattle			|			|				AM
						AFR 34			|			|				
						11 ®			|		from	|				
		521 Capitol XSSH	523 Capitol XSSH	723 Capitol SSH	525 Capitol XSSH	Coast S'light Daily	527 Capitol XSSH	727 Capitol SSH	|	531 Capitol XSSH	Bakers-field AFR 39	|	533 Capitol XSSH	535 Capitol XSSH	733 Capitol SSH	537/737 Capitol Daily
		AM	AM	AM	AM	AM	AM	AM	|	AM	711 ®	|	AM	AM	AM	**PM**
SACRAMENTO (3,20,23)	Lv	4:30	5:30	5:40	6:20	6:35	7:00	7:40	7:40	8:30	**San**	9:10	9:20	10:10	10:40	**12:10**
DAVIS (3)		4:45	5:45	5:55	6:35	6:50	7:15	7:55	7:55	8:45	**Joaquin**	9:25	9:35	10:25	10:55	**12:25**
Suisun-Fairfield (3)		5:09	6:09	6:19	6:59	--	7:39	8:19	8:19	9:09	Daily	9:49	9:59	10:49	11:19	**12:49**
		6621 Bus XSSH	6623 Bus XSSH	6673 Bus SSH	6625 Bus XSSH	5011 ® Bus Daily	6627 Bus XSSH	6629 Bus Daily	6629 Bus Daily	6631 Bus XSSH	6611 ® Bus Daily	6679 Bus SSH	6633 Bus XSSH	6635 Bus XSSH	6683 Bus SSH	6637 Bus Daily
Route 99 Bus Connection		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	**PM**	**PM**
EMERYVILLE	*Lv*	6:10	7:10	7:20	8:00	8:25	8:40	9:20	9:20	10:10	10:50	10:50	11:00	11:50	**12:20**	**1:50**
SAN FRANCISCO-Ferry Bldg.	*Ar*	6:40	7:55	7:55	8:40	8:55	9:20	9:50	9:50	10:45	11:20	11:15	11:35	**12:25**	**12:55**	**2:25**
		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	**PM**	**PM**	**PM**
MARTINEZ (SJ,7)	Ar	5:28	6:28	6:38	7:18	7:30	7:58	8:38	8:38	9:28	AM	10:08	10:18	11:08	11:38	**1:08**
STOCKTON (SJ,3,6)	Lv	|	|	|	|	|	|	|	|	|	9:01	|	|	|	|	|
Antioch (SJ)		|	|	|	|	|	|	|	|	|	9:36	|	|	|	|	|
MARTINEZ (SJ,7)	Ar	|	|	|	|	|	|	|	|	|	10:00	|	|	|	|	|
MARTINEZ (SJ,7)	Lv	5:30	6:30	6:40	7:20	7:34	8:00	8:40	8:40	9:30	10:03	10:10	10:20	11:10	11:40	**1:10**
Richmond (SJ)		5:55	6:55	7:05	7:45	--	8:25	9:05	9:05	9:55	10:28	10:35	10:45	11:35	**12:05**	**1:35**
Berkeley		6:02	7:02	7:12	7:52	--	8:32	9:12	9:12	10:02	--	10:42	10:52	11:42	**12:12**	**1:42**
EMERYVILLE (SJ,34,99)	Ar	6:08	7:08	7:18	7:58	8:15	8:38	9:18	9:18	10:08	D10:46	10:48	10:58	11:48	**12:18**	**1:48**
		6621 Bus XSSH	6623 Bus XSSH	6673 Bus SSH	6625 Bus XSSH	5011 ® Bus Daily	6627 Bus XSSH	6629 Bus Daily	6629 Bus Daily	6631 Bus XSSH	6611 ® Bus Daily	6679 Bus SSH	6633 Bus XSSH	6635 Bus XSSH	6683 Bus SSH	6637 Bus Daily
Route 99 Bus Connection		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	**PM**	**PM**
EMERYVILLE	*Lv*	6:10	7:10	7:20	8:00	8:25	8:40	9:20	9:20	10:10	10:50	10:50	11:00	11:50	**12:20**	**1:50**
SAN FRANCISCO-Ferry Bldg.	*Ar*	6:40	7:55	7:55	8:40	8:55	9:20	9:50	9:50	10:45	11:20	11:15	11:35	**12:25**	**12:55**	**2:25**
		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	**PM**	**PM**	**PM**
EMERYVILLE (SJ,34,99)	Lv	6:10	7:10	7:20	8:00	8:25	8:40	9:20	9:20	10:10	D10:48	10:50	11:00	11:50	**12:20**	1:50
OAKLAND (SJ,21,34,36,99)	Ar	6:21	7:21	7:31	D 8:18	8:40	8:51	9:31	D 9:38	D10:28	11:00	D11:08	D11:18	**12:01**	**12:31**	**2:01**
		|	|	|	|	|	|	|	|	|	AM	|	|	|	|	|
		|	|	|	|	|	|	|	|	|		|	|	|	|	|
		|	|	|	|	|	|	|	|	|		|	|	|	|	|
		|	|	|	|	|	|	|	|	|		|	|	|	|	|
		|	|	|	|	|	|	|	|	|		|	|	|	|	|
		|	|	|	|	|	|	|	|	|		|	|	|	|	|
OAKLAND (SJ,21,34,36,99)	Lv	6:23	7:23	7:33	D 8:18	8:50	8:53	9:33	D 9:38	D10:28		D11:08	D11:18	**12:03**	**12:33**	**2:03**
Oakland Coliseum		6:32	7:32	7:42	8:25	|	9:02	9:42	9:45	10:35		11:15	11:25	**12:12**	**12:42**	**2:12**
Hayward (21)		6:43	7:43	7:53	AM	|	9:13	9:53	AM	AM		AM	AM	**12:23**	**12:53**	**2:23**
Fremont-Centerville (21)		6:59	7:59	8:09		|	9:29	10:09						**12:39**	**1:09**	**2:39**
Santa Clara-Grt America (21)		L 7:16	L 8:16	L 8:26		--	L 9:46	L 10:26						**L 12:56**	**L 1:26**	**L 2:56**
SAN JOSE (6,21,35,CT)	Ar	7:35	8:35	8:45		9:55	10:10	10:45						**1:15**	**1:45**	**3:15**
		AM	AM	AM		AM	AM	AM						**PM**	**PM**	**PM**
						to Los Angeles										

Notes: AFR 37 (except as noted)
See Page 5 for general notes.
AM - Light Face Type, **PM - Bold Type.**

L - Stops primarily to discharge passengers, may leave early.
® - Reservations required.
4/2/12 DOR:GWS

Capitol Corridor -- AUBURN - SACRAMENTO - MARTINEZ - EMERYVILLE - OAKLAND - SAN JOSE

Westbound--Read Down

Effective May 7, 2012					from Chicago AFR 27												
					5 ® Calif. Zephyr Daily		3543 ® Bus Daily					3649 ® Bus Daily				3551 ® Bus Daily	3603 ® Bus XSSH
					PM		PM					PM				PM	PM
Auburn-Nevada St. (20)	LV				--		2:00					5:10				7:35	8:45
Rocklin (20)					--		2:15					|				7:50	9:00
Roseville (20)					12:57		2:30					5:40				8:05	9:25
SACRAMENTO (3,20,23)	Ar				D 2:10		3:20					6:15				8:55	10:00
					|		PM					PM				PM	PM
		541 Capitol XSSH	741 Capitol SSH	from Bakers-field AFR 39	|		543/743 Capitol Daily	545/745 Capitol Daily	from Bakers-field AFR 39	747 Capitol SSH	547 Capitol XSSH	549 Capitol XSSH	749 Capitol SSH	551 Capitol XSSH	from Bakers-field AFR 39	553/751 Capitol Daily	
		PM	PM	713 ®			PM	PM	715 ®	PM	PM	PM	PM	PM	717 ®	PM	
SACRAMENTO (3,20,23)	Lv	2:10	2:15	San	D 2:13		3:35	4:40	San	5:40	5:40	6:40	7:10	7:40	San	9:10	
DAVIS (3)		2:25	2:30	Joaquin	D 2:44		3:50	4:55	Joaquin	5:55	5:55	6:55	7:25	7:55	Joaquin	9:25	
Suisun-Fairfield (3)		2:49	2:54	Daily	--		4:14	5:19	Daily	6:19	6:19	7:19	7:49	8:19	Daily	9:49	
MARTINEZ (SJ,7)	Ar	3:08	3:13	PM	D 3:24		4:33	5:38	PM	6:38	6:38	7:38	8:08	8:38	PM	10:08	
STOCKTON (SJ,3,6)	Lv	|	|	2:18	|		|	|	5:33	|	|	|	|	|	8:03	|	
Antioch (SJ)		|	|	2:53	|		|	|	6:02	|	|	|	|	|	8:32	|	
MARTINEZ (SJ,7)	Ar	|	|	3:16	|		|	|	6:25	|	|	|	|	|	8:53	|	
MARTINEZ (SJ,7)	Lv	3:10	3:15	3:19	D 3:26		4:35	5:40	6:28	6:40	6:40	7:40	8:10	8:40	8:56	10:10	
Richmond (SJ)		3:35	3:40	3:44	--		5:00	6:05	6:53	7:05	7:05	8:05	8:35	9:05	9:22	10:35	
Berkeley		3:42	3:47	--	--		5:07	6:12	--	7:12	7:12	8:12	8:42	9:12	--	10:42	
EMERYVILLE (SJ,28,99)	Ar	3:48	3:53	D 4:01	4:10		5:13	6:18	D 7:11	7:18	7:18	8:18	8:48	9:18	D 9:41	10:48	
		6641 Bus XSSH	6691 Bus SSH	6613 ® Bus Daily	PM	5005 ® Bus Daily	6643 Bus Daily	6645 Bus Daily	6615 ® Bus Daily	6647 Bus Daily	6647 Bus Daily	6649 Bus XSSH	6699 Bus SSH	6651 Bus SSH	6617 ® Bus Daily	6653 Bus Daily	
Route 99 Bus Connection		PM	PM	PM	6005 ® Bus Daily	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	
EMERYVILLE	Lv	3:50	3:55	4:05		5:25	5:15	6:20	7:15	7:20	7:20	8:20	8:50	9:20	9:45	10:50	
SAN FRANCISCO-Ferry Bldg.	Ar	4:20	4:25	4:40		5:55	5:50	6:45	7:45	7:50	7:50	8:50	9:25	9:55	10:10	11:20	
		PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	
EMERYVILLE (SJ,28,99)	Lv	3:50	3:55	D 4:03	4:25		5:15	6:20	D 7:13	7:20	7:20	8:20	8:50	9:20	D 9:43	10:50	
OAKLAND (SJ,21,34,36,99)	Ar	4:08	4:06	4:15	4:45		5:26	6:38	7:25	7:31	7:31	8:38	9:08	9:38	9:55	11:08	
		PM	|	PM	PM		|	PM	PM	|	|	PM	PM	PM	PM	PM	
			|				|			|	|					
			|				|			|	|			4768 ® Bus Daily		
			|				|			|	|					
			|				|			|	|					
			|				|			|	|					
																PM		
OAKLAND (SJ,21,34,36,99)	Lv		4:08				5:28			7:33	7:33			10:00			
Oakland Coliseum			4:17				5:40			7:42	7:44			|			
Hayward (21)			4:28				5:52			7:53	7:56			|			
Fremont-Centerville (21)			4:44				6:07			8:09	8:15			|			
Santa Clara-Grt America (21)			L 5:01				L 6:27			L 8:26	8:33			|			
SAN JOSE (6,21,35,CT)	Ar		5:20				6:45			8:45	8:55			11:55			
			PM				PM			PM	PM			PM			

Notes: AFR 37 (except as noted)

See Page 5 for general notes.

AM - Light Face Type, **PM - Bold Type.**

L - Stops primarily to discharge passengers, may leave early.

® - Reservations required.

4/2/12 DOR/GWS

Capitol Corridor -- SAN JOSE-OAKLAND-EMERYVILLE-MARTINEZ-SACRAMENTO-AUBURN

Eastbound--Read Down

Effective May 7, 2012				4785 ® Bus Daily			524 Capitol XSSH			724 Capitol SSH			528 Capitol XSSH	728 Capitol SSH		
				AM			AM			AM			AM	AM		
SAN JOSE (6,21,35,CT)	Lv			4:10			6:40			7:50	526		9:05	9:50		
Santa Clara-Grt America (21)				|			6:52			8:02	Capitol		9:19	10:02		
Fremont-Centerville (21)				|			7:09			8:19	XSSH		9:38	10:19		
Hayward (21)				|			7:24			8:34	AM		9:54	10:34		
Oakland Coliseum				|			7:34			8:44	8:55		10:04	10:44		
OAKLAND (SJ,21,34,36,99)	Ar			5:55			7:43			8:53	9:03		10:13	10:53		
						AFR 39	|			|	|	AFR 39	|	|		
						712 ®	|			|	|	714 ®	|	|		
		518 Capitol XSSH	520 Capitol XSSH	522 Capitol XSSH	720 Capitol SSH	San Joaquin Daily	|	6006 ® Bus Daily		|	|	San Joaquin Daily	|	|	530 Capitol XSSH	732 Capitol SSH
		AM	AM	AM	AM	AM	|	AM		|	|	AM	|	|	PM	PM
OAKLAND (SJ,21,34,36,99)	Lv	4:30	5:40	6:30	7:20	7:30	7:45	8:15		8:55	9:15	10:05	10:15	10:55	**12:15**	**12:25**
EMERYVILLE (SJ,28,99)	Ar	4:38	5:48	6:38	7:28	7:38	7:53	c 8:30		9:03	9:23	10:13	10:23	11:03	**12:23**	**12:33**
		|	6620 Bus XSSH	6622 Bus XSSH	6670 Bus SSH	6612 ® Bus Daily	6624 Bus XSSH	AM	5006 ® Bus Daily	6674 Bus SSH	6626 Bus XSSH	6614 ® Bus Daily	6628 Bus XSSH	6678 Bus SSH	6630 Bus XSSH	6682 Bus XSSH
		|						AFR 27							
		|						6 ®							
Route 99 Bus Connection		|	AM	AM	AM	AM	AM	**Calif.**	AM	AM	AM	AM	AM	AM	AM	AM
SAN FRANCISCO-Ferry Bldg.	Lv	|	5:30	6:10	7:00	7:05	7:10	**Zephyr**	7:50	8:25	8:45	9:35	9:45	10:25	11:45	11:55
EMERYVILLE	Ar	|	5:45	6:35	7:25	7:30	7:45	Daily	8:25	8:55	9:15	10:05	10:15	10:55	**12:15**	**12:25**
		|	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	PM	PM
EMERYVILLE (SJ,28,99)	Lv	4:40	5:50	6:40	7:30	7:40	7:55	9:10		9:05	9:25	10:15	10:25	11:05	**12:25**	**12:35**
Berkeley		4:44	5:54	6:44	7:34	--	7:59	--		9:09	9:29	--	10:29	11:09	**12:29**	**12:39**
Richmond (SJ)		4:52	6:02	6:52	7:42	7:49	8:07	--		9:17	9:37	10:24	10:37	11:17	**12:37**	**12:47**
MARTINEZ (SJ,7)	Ar	5:17	6:27	7:17	8:07	8:16	8:32	9:54		9:42	10:02	10:51	11:02	11:42	**1:02**	**1:12**
MARTINEZ (SJ,7)	Lv	|	|	|	|	8:19	|	|		|	|	10:54	|	|	|	|
Antioch (SJ)		|	|	|	|	8:39	|	|		|	|	11:14	|	|	|	|
STOCKTON (SJ,3,6)	Ar	|	|	|	|	9:13	|	|		|	|	11:45	|	|	|	|
MARTINEZ (SJ,7)	Lv	5:19	6:29	7:19	8:09	AM	8:34	9:54		9:44	10:04	AM	11:04	11:44	**1:04**	**1:14**
Suisun-Fairfield (3)		5:38	6:48	7:38	8:28	to	8:53	--		10:03	10:23	to	11:23	**12:03**	**1:23**	**1:33**
DAVIS (3)		6:02	7:12	8:02	8:52	B'field	9:17	10:36		10:27	10:47	Bakers-	11:47	**12:27**	**1:47**	**1:57**
SACRAMENTO (3,20,23)	Ar	6:28	7:38	8:28	9:18		9:45	11:09		10:55	11:13	field	**12:15**	**12:55**	**2:13**	**2:23**
		AM	AM	AM	AM		AM	|		AM	AM		PM	PM	PM	PM
					3522 Bus Daily			|						3528 Bus Daily		
					AM			|						PM		
SACRAMENTO (3,20,23)	Lv				10:05			11:09						**1:00**		
Roseville (20)					D10:35			11:35						**D 1:30**		
Rocklin (20)					D10:50			--						**D 1:45**		
Auburn-Nevada St. (20)	Ar				D11:15			--						**D 2:00**		
					AM			AM						PM		
								to Chicago								

Notes:
See Page 5 for general notes

AM - Light Face Type, **PM - Bold Type.**
® - Reservations required.
4/2/12 DOR/GWS

Capitol Corridor -- SAN JOSE-OAKLAND-EMERYVILLE-MARTINEZ-SACRAMENTO-AUBURN

Eastbound--Read Down

Effective May 7, 2012			532 Capitol XSSH	734 Capitol SSH		736 Capitol SSH		538 Capitol XSSH			542 Capitol XSSH	742 Capitol SSH		544/744 Capitol Daily		546 Capitol XSSH	748 Capitol SSH		from Los Angeles AFR 34 14 ® Coast S'light Daily
			PM	PM		PM		PM			PM	PM		PM		PM	PM		PM
SAN JOSE (6,21,35,CT)	Lv		12:20	12:50		2:20		3:00			4:20	4:25		5:50		7:15	7:50		8:39
Santa Clara-Grt America (21)			12:32	1:02		2:32		3:14			4:32	4:37		6:02		7:27	8:02		--
Fremont-Centerville (21)			12:49	1:19		2:49		3:33			4:49	4:54		6:19		7:43	8:19		|
Hayward (21)			1:04	1:34		3:04		3:49			5:04	5:09		6:34		7:59	8:34		|
Oakland Coliseum			1:14	1:44		3:14		3:59			5:14	5:19		6:44		8:10	8:44		|
OAKLAND (SJ,21,34,36,99)	Ar		1:23	1:53		3:23		4:08			5:23	5:28		6:53		8:18	8:53		9:32
		AFR 39 716 ® **San Joaquin** Daily	|	|	534 Capitol XSSH	|	536 Capitol XSSH	|	738 Capitol SSH	540 Capitol XSSH	|	|	AFR 39 718 ® **San Joaquin** Daily	|	746 Capitol SSH	|	|	548 Capitol XSSH	|
		PM	|	|	PM	|	PM	|	PM	PM	|	|	PM	|	PM	|	|	PM	|
OAKLAND (SJ,21,34,36,99)	Lv	1:15	1:25	1:55	2:50	3:25	3:30	4:10	4:25	4:50	5:30	5:30	5:50	6:55	7:55	8:20	8:55	9:25	9:42
EMERYVILLE (SJ,28,99)	Ar	1:23	1:33	2:03	2:58	3:33	3:38	4:18	4:33	4:58	5:38	5:38	5:58	7:03	8:03	8:28	9:03	9:33	9:57
		6616 ® Bus Daily	*6632 Bus XSSH*	*6684 Bus SSH*	*6634 Bus XSSH*	*6686 Bus SSH*	*6636 Bus XSSH*	*6638 Bus XSSH*	*6688 Bus SSH*	*6640 Bus XSSH*	*6642 Bus Daily*	*6642 Bus Daily*	*6618 ® Bus Daily*	*6644 Bus Daily*	*6696 Bus SSH*	*6646 Bus XSSH*	*6698 Bus SSH*	*6648 Bus XSSH*	*5014 ® Bus Daily*
Route 99 Bus Connection		*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*
SAN FRANCISC	*Lv*	*12:45*	*12:55*	*1:25*	*2:20*	*2:55*	*3:00*	*3:40*	*3:55*	*4:20*	*5:05*	*5:05*	*5:15*	*6:15*	*7:25*	*7:55*	*8:25*	*9:05*	*9:25*
EMERYVILLE	*Ar*	*1:15*	*1:25*	*1:55*	*2:50*	*3:25*	*3:30*	*4:10*	*4:25*	*4:50*	*5:35*	*5:35*	*5:45*	*6:50*	*7:55*	*8:20*	*8:55*	*9:35*	*9:50*
		PM	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*	*PM*
EMERYVILLE (SJ,28,99)	Lv	1:25	1:35	2:05	3:00	3:35	3:40	4:20	4:35	5:00	5:45	5:40	6:00	7:05	8:05	8:30	9:05	9:45	10:07
Berkeley		--	1:39	2:09	3:04	3:39	3:44	4:24	4:39	5:04	5:49	5:44	--	7:09	8:09	8:34	9:09	9:49	--
Richmond (SJ)		1:34	1:47	2:17	3:12	3:47	3:52	4:32	4:47	5:12	5:57	5:52	6:09	7:17	8:17	8:42	9:17	9:57	--
MARTINEZ (SJ,7)	Ar	2:01	2:12	2:42	3:37	4:12	4:17	4:57	5:12	5:37	6:22	6:17	6:36	7:42	8:42	9:07	9:42	10:22	10:46
MARTINEZ (SJ,7)	Lv	2:04	|	|	|	|	|	|	|	|	|	|	6:39	|	|	|	|	|	|
Antioch (SJ)		2:24	|	|	|	|	|	|	|	|	|	|	6:59	|	|	|	|	|	|
STOCKTON (SJ,3,6)	Ar	2:59	|	|	|	|	|	|	|	|	|	|	7:30	|	|	|	|	|	|
MARTINEZ (SJ,7)	Lv	PM	2:14	2:44	3:39	4:14	4:19	4:59	5:14	5:39	6:24	6:19	PM	7:44	8:44	9:09	9:44	10:24	10:54
Suisun-Fairfield (3)		to	2:33	3:03	3:58	4:33	4:38	5:18	5:33	5:58	6:42	6:38	to	8:03	9:03	9:27	10:03	10:43	--
DAVIS (3)		Bakers-	2:57	3:27	4:22	4:57	5:02	5:42	5:57	6:22	7:07	7:02	Bakers-	8:27	9:27	9:52	10:27	11:07	11:33
SACRAMENTO (3,20,23)	Ar	field	3:25	3:55	4:48	5:23	5:22	6:10	6:23	6:48	7:35	7:22	field	8:55	9:53	10:25	10:55	11:33	11:59
			PM	PM	PM	PM	|	PM	*PM*	PM	PM	|		PM	PM	PM	PM	PM	PM
				3634/3534 ® Bus Daily			|			*3640 ® Bus XSSH*	*3642 ® Bus XSSH*	|							to Seattle
				PM			|			*PM*	*PM*	|							
SACRAMENTO (3,20,23)	Lv			*4:00*			5:25			*e 6:50*	*e 7:40*	7:25							
Roseville (20)				*D 4:30*			L 5:48			*D 7:20*	*D 8:10*	7:48							
Rocklin (20)				*D 4:45*			L 5:56			*D 7:35*	*D 8:25*	7:56							
Auburn-Nevada St. (20)	Ar			*D 5:10*			6:30			*D 7:50*	*D 8:40*	8:30							
				PM			PM			*PM*	*PM*	PM							

Notes:
See Page 5 for general notes
AM - Light Face Type, **PM - Bold Type.**

e - Bus departs Sacramento as soon as Train arrives and passengers have transferred.
L - Stops primarily to discharge passengers, may leave early.
® - Reservations required.
4/2/12 DOR/GWS

CAPITOL CORRIDOR, SAN JOAQUIN & BASIC SYSTEM BUS CONNECTIONS

Route 99 -- TRANS BAY (San Francisco - Oakland - Emeryville)

Eastbound--Read Down

Effective May 7, 2012		AFR 83		AFR 83		AFR 83	AFR 82		AFR 83		AFR 74	AFR 74		AFR 83	AFR 83	AFR 82	AFR 83	AFR 83	AFR 83	AFR 83	AFR 82	AFR 83	AFR 83		
		Bus 99-1		Bus 99-3		Bus 99-4	Bus 99-4		Bus 99-6		Bus 99-7	Bus 99-8		Bus 99-7	Bus 99-1	Bus 99-3	Bus 99-6	Bus 99-2	Bus 99-4	Bus 99-4	Bus 99-8	99-10	Bus 99-6		
DEDICATED FEEDER *Compass Transportation*		6620 Bus XSSH	AFR 83 Bus 99-2	3322 Bus XSSH	AFR 83 Bus 99-2	3370 Bus SSH	6662 ® Bus XSSH	AFR 83 Bus 99-5	3324 Bus XSSH		5006 Bus Daily	6011 Bus Daily	AFR 83 Bus 99-5	3374 Bus SSH	6626 Bus XSSH	6614 ® Bus Daily	6628 Bus XSSH	6678 Bus SSH	6630 Bus XSSH	6682 Bus SSH	6616 ® Bus Daily	6632 Bus XSSH	6684 Bus SSH		
SAN FRANCISCO--		AM	6622	AM	6670	AM	AM	6624	AM		AM	AM	6674	AM	AM	AM	AM	AM	AM	AM	AM	**PM**	**PM**		
Caltrain Depot	Lv	5:10	Bus	5:55	Bus	6:40	6:25	Bus	7:00		7:00	6:55	Bus	8:05	8:05	8:45	8:55	9:45	11:05	11:15	**12:05**	**12:05**	**12:45**		
Moscone Center	Lv	|	XSSH	|	SSH	|	|	XSSH	|		|	|	SSH	|	|	|	|	|	|	|	|	|	|		*3404 ®*
Civic Center		|	|	|	|	|	|	|	|		|	|	|	|	|	|	|	|	|	|	|	|		*Bus*
SF Shop Cntr-*Market & 4th*	Lv	5:15	AM	6:05	AM	6:50	6:35	AM	7:10		7:10	7:05	AM	8:15	8:15	8:55	9:05	9:55	11:15	11:25	**12:15**	**12:15**	**12:55**		*Daily*
Pier 39	Lv	|	6:00	|	6:45	|	6:50	6:55	|		7:30	7:25	8:10	|	8:30	9:15	9:25	10:10	11:30	11:40	**12:30**	**12:35**	**1:10**		***PM***
FERRY BUILDING	Lv	5:30	6:10	|	7:00	|	7:05	7:10	|		7:50	7:45	8:25	|	8:45	9:35	9:45	10:25	11:45	11:55	**12:45**	**12:55**	**1:25**		***2:35***
Financial Dist.-*Hyatt Regency*	Lv	|	|	6:10	|	7:00	|	|	7:20		7:15	7:10	|	8:25	|	|	9:10	|	|	|	|	**12:20**	|		|
EMERYVILLE (CC,SJ,28)	Ar	c 5:45	c 6:35	c 6:35	c 7:25	c 7:25	c 7:30	c 7:45	c 7:45		c 8:25	|	c 8:55	c 8:55	c 9:15	c 10:05	c 10:15	c 10:55	**c12:15**	**c12:25**	**c 1:15**	**c 1:25**	**c 1:55**		|
OAKLAND (CC,SJ,21)	Ar	AM	AM	AM	AM	AM	AM	AM	AM		AM	c 8:25	AM	AM	AM	AM	AM	AM	**PM**	**PM**	**PM**	**PM**	**PM**		
										AFR 74		AM													|
										Bus 99-7															|
										6006		*11 ®*													|
		518	*520*	*522*	*720*		*712 ®*		*524*	Bus	*6 ®*	*Train*	*724*		*526*	*714 ®*	*528*	*728*	*530*	*732*	*716 ®*	*532*	*734*		|
		Train	*Train*	*Train*	*Train*		*Train*		*Train*	Daily	*Train*	*Daily*	*Train*		*Train*	*Train*	*Train*	*Train*	*Train*	*Train*	*Train*	*Train*	*Train*		|
Capitol Connection		*XSSH*	*XSSH*	*XSSH*	*SSH*		*Daily*		*XSSH*	AM	*Daily*	*AM*	*SSH*		*XSSH*	*Daily*	*XSSH*	*SSH*	*XSSH*	*SSH*	*Daily*	*XSSH*	*SSH*		|
OAKLAND	Lv	*AM*	*AM*	*AM*	*AM*		*AM*		*AM*	*8:15*	*AM*	*8:50*	*AM*		*AM*	*AM*	*AM*	*AM*	***PM***	***PM***	***PM***	***PM***	***PM***		***3:15***
EMERYVILLE	Lv	*4:40*	*5:50*	*6:40*	*7:30*		*7:40*		*7:55*	*8:30*	*9:10*	|	*9:05*		*9:25*	*10:15*	*10:25*	*11:05*	***12:25***	***12:35***	***1:25***	***1:35***	***2:05***		***3:00***
MARTINEZ	Ar	*5:17*	*6:27*	*7:17*	*8:07*		*8:16*		*8:32*	AM	*9:54*	|	*9:42*		*10:02*	*10:51*	*11:02*	*11:42*	***1:02***	***1:12***	***2:01***	***2:12***	***2:42***		|
DAVIS		*6:02*	*7:12*	*8:02*	*8:52*		|		*9:17*		*10:36*	|	*10:27*		*10:47*	|	*11:47*	***12:27***	***1:47***	***1:57***	|	***2:57***	***3:27***		|
SACRAMENTO	Ar	*6:28*	*7:38*	*8:28*	*9:18*		|		*9:45*		*11:09*	|	*10:55*		*11:13*	|	***12:15***	***12:55***	***2:13***	***2:23***	|	***3:25***	***3:55***		|
Roseville	Ar	*AM*	*AM*	*AM*	*10:35*		|		*10:35*		*11:35*	|	*AM*		*AM*	|	***1:30***	***1:30***	***PM***	***PM***	|	***4:30***	***4:30***		|
					AM		|		*AM*		*AM*	|				|	***PM***	***PM***			|	***PM***	***PM***	*704 ®*	|
							|				to	|				|					|		*Train*	|
San Joaquin Connection							|				Chicago	|				|					|		*Daily*	|
STOCKTON	Ar						*9:13*					|				*11:45*					***2:59***			***PM***	|
Stockton-ACE							|					*via*				|					|		***5:50***	***5:25***
MERCED							*10:31*					*Coast*				***12:59***					***4:13***			***7:06***	
FRESNO							*11:31*					*Route*				***2:06***					***5:16***			***8:02***	
BAKERSFIELD	Ar						***1:41***					|				***4:11***					***7:26***			***10:07***	
LOS ANGELES	Ar						***4:10***					***9:00***				***6:40***					***9:50***			*12:55*	
							PM					***PM***				***PM***					***PM***			*AM*	

Notes: AFR: See listing above each schedule

See Page 6 for general notes.

AM - Light Face Type. **PM - Bold Type.**

C - On SSH, passengers from Caltrain & Market/4th use Bus 3370/6670.

® - Reservations required.

3/20/12 DOR/GWS

CAPITOL CORRIDOR, SAN JOAQUIN & BASIC SYSTEM BUS CONNECTIONS

Route 99 -- TRANS BAY (San Francisco - Oakland - Emeryville)

Eastbound--Read Down

Effective May 7, 2012		AFR 83		AFR 83		AFR 83		AFR 83		AFR 83		AFR 83				AFR 83	AFR 82			AFR 83	AFR 83		AFR 83	AFR 83	AFR 83	AFR 74
		Bus 99-5		Bus 99-2		Bus 99-6		Bus 99-1		Bus 99-		Bus 99-4	AFR 83			Bus 99-4/8	Bus 99-1			Bus 99-2	Bus 99-		Bus 99-5	Bus 99-8	Bus 99-	Bus 99-6
DEDICATED FEEDER		6634		3386		3336		3338		3388		3340	3392			3382	3318 ®			3344	6696		3346	6698	6648	5014 ®
Compass Transportation		Bus	AFR 83	Bus	AFR 83	Bus	AFR 83	Bus	AFR 83	Bus	AFR 83	Bus	**Bus**	AFR 83		Bus	Bus	AFR 82	AFR 83	Bus	Bus	AFR 83	Bus	Bus	Bus	Bus
		XSSH	Bus 99-5	SSH	Bus 99-3	XSSH	Bus 99-9	XSSH	Bus 99-	SSH	Bus 99-2	XSSH	**SSH**	Bus 99-7		XSSH	Daily	Bus 99-9	Bus 99-6	Daily	SSH	Bus 99-7	XSSH	SSH	XSSH	Daily
SAN FRANCISCO--		**PM**	6686	**PM**	6636	**PM**	6638	**PM**	6688	**PM**	6640	**PM**	**PM**	6642	AFR 83	**PM**	**PM**	6618	6644	**PM**	**PM**	6646	**PM**	**PM**	**PM**	**PM**
Caltrain Depot	Lv	**1:35**	Bus	**2:35**	Bus	**2:30**	Bus	**3:10**	Bus	**3:35**	Bus	**3:50**	**4:30**	Bus	Bus 99-3	**4:30**	**4:45**	Bus	Bus	**5:55**	**6:45**	Bus	**7:30**	**7:45**	**8:25**	**8:50**
Moscone Center	Lv	|	SSH	**2:40**	XSSH	**2:35**	XSSH	**3:15**	SSH	**3:40**	XSSH	**3:55**	**4:35**	Daily	3342	**4:35**	**4:50**	Daily	Daily	**6:00**	**6:50**	XSSH	**7:35**	**7:50**	|	|
Civic Center		|				**2:45**		**3:25**		|		**4:05**	|			|	|			|	|		|	|	|	|
SF Shop Cntr-*Market & 4th*	Lv	**1:45**	**PM**	**2:45**	**PM**	**2:50**	**PM**	**3:30**	**PM**	**3:45**	**PM**	**4:10**	**4:50**	**PM**	Bus	**4:50**	**4:55**	**PM**	**PM**	**6:05**	**6:55**	**PM**	**7:40**	**7:55**	**8:35**	**9:00**
Pier 39	Lv	**2:00**	**2:35**	|	**2:40**	|	**3:20**	|	**3:35**	|	**4:00**	|	|	**4:40**	**XSSH**	|	|	**4:50**	**5:55**	|	**7:10**	**7:40**	|	**8:10**	**8:50**	**9:10**
FERRY BUILDING	Lv	**2:20**	**2:55**	|	**3:00**	|	**3:40**	|	**3:55**	|	**4:20**	|	|	**5:05**	**PM**	|	|	**5:15**	**6:15**	|	**7:25**	**7:55**	|	**8:25**	**9:05**	**9:25**
Financial Dist.-*Hyatt Regency*	Lv	|	|	**2:55**	|	**3:00**	|	**3:40**	|	**3:55**	|	**4:20**	**5:05**	|	**5:05**	**5:05**	**5:05**	|	|	**6:15**	|	|	**7:55**	|	|	|
EMERYVILLE (CC,SJ,28)	Ar	**c 2:50**	**c 3:25**	**c 3:25**	**c 3:30**	**c 3:30**	**c 4:10**	**c 4:10**	**c 4:25**	**c 4:25**	**c 4:50**	**c 4:50**	**c 5:35**	**c 5:35**	**c 5:35**	**c 5:35**	**c 5:45**	**c 5:45**	**c 6:50**	**c 6:50**	**c 7:55**	**c 8:20**	**c 8:20**	**c 8:55**	**c 9:35**	**c 9:50**
OAKLAND (CC,SJ,21)	Ar	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**	**PM**
		534		*736*		*536*		*538*		*738*		*540*		*742*	*542*			*718 ®*		*544/744*	*746*		*546*	*748*	*548*	*14 ®*
		Train		*Train*		*Train*		*Train*		*Train*		*Train*		*Train*	*Train*			*Train*		*Train*	*Train*		*Train*	*Train*	*Train*	*Train*
Capitol Connection		*XSSH*		*SSH*		*XSSH*		*XSSH*		*SSH*		*XSSH*		*SSH*	*XSSH*			*Daily*		*Daily*	*SSH*		*XSSH*	*SSH*	*XSSH*	*Daily*
OAKLAND	Lv	***PM***		***PM***		***PM***		***PM***		***PM***		***PM***		***PM***	***PM***			***PM***		***PM***	***PM***		***PM***	***PM***	***PM***	***PM***
EMERYVILLE	Lv	***3:00***		***3:35***		***3:40***		***4:20***		***4:35***		***5:00***		***5:40***	***5:45***			***6:00***		***7:05***	***8:05***		***8:30***	***9:05***	***9:45***	***10:12***
MARTINEZ	Ar	***3:37***		***4:12***		***4:17***		***4:57***		***5:12***		***5:37***		***6:17***	***6:22***			***6:36***		***7:42***	***8:42***		***9:07***	***9:42***	***10:22***	***10:54***
DAVIS		***4:22***		***4:57***		***5:02***		***5:42***		***5:57***		***6:22***		***7:02***	***7:07***			|		***8:27***	***9:27***		***9:52***	***10:27***	***11:07***	***11:33***
SACRAMENTO	Ar	***4:48***		***5:23***		***5:22***		***6:10***		***6:23***		***6:48***		***7:22***	***7:35***			|		***8:55***	***9:53***		***10:25***	***10:55***	***11:33***	***11:59***
Roseville	Ar	***PM***		***PM***		***6:30***		***PM***		***PM***		***7:20***		***7:48***	***8:10***			|		***PM***	***PM***		***PM***	***PM***	***PM***	***PM***
						PM						***PM***		***PM***	***PM***			|								to
																		|								Seattle
San Joaquin Connection																		|								
STOCKTON	Ar																	***7:30***								
Stockton-ACE																		|								
MERCED																		***8:47***								
FRESNO																		***9:51***								
BAKERSFIELD	Ar																	***11:56***								
LOS ANGELES	Ar																	*2:45*								
																		AM								

Notes: AFR: See listing above each schedule

See Page 6 for general notes.

AM - Light Face Type, **PM - Bold Type.**

® - Reservations required.

U- ACE Station.

Z - Bus 6005 connects with arriving Train 5 from Chicago.

3/20/12 DOR/GWS

CAPITOL CORRIDOR, SAN JOAQUIN & BASIC SYSTEM BUS CONNECTIONS

Route 99 -- TRANS BAY (Emeryville - Oakland - San Francisco)

Westbound--Read Down

Effective May 7, 2012																				
San Joaquin Connection																*711 ® Train Daily*				
																AM				
LOS ANGELES	Lv															*1:25*				
BAKERSFIELD	Lv															*4:55*				
FRESNO																*6:50*				
MERCED									from							*7:48*				
STOCKTON	Lv			*523*			*525*		Seattle			*529*				*9:01*		*729*		
		521 Train XSSH		*Train XSSH*		*723 Train SSH*	*Train XSSH*		*11 ® Train Daily*	*527 Train XSSH*		*Train XSSH*	*727 Train SSH*	*531 Train XSSH*		|		*Train SSH*	*533 Train XSSH*	*535 Train XSSH*
Capitol Connection				*AM*			*AM*					*AM*				|		*AM*		
Roseville	Lv	*AM*		*4:45*		*AM*	*5:35*		*AM*	*AM*		*7:08*	*AM*	*AM*		|		*8:37*	*AM*	*AM*
SACRAMENTO		*4:30*		*5:30*		*5:40*	*6:20*		*6:35*	*7:00*		*7:40*	*7:40*	*8:30*		|		*9:10*	*9:20*	*10:10*
DAVIS		*4:45*		*5:45*		*5:55*	*6:35*		*6:50*	*7:15*		*7:55*	*7:55*	*8:45*		|		*9:25*	*9:35*	*10:25*
MARTINEZ		*5:30*		*6:30*		*6:40*	*7:20*		*7:34*	*8:00*		*8:40*	*8:40*	*9:30*		*10:03*		*10:10*	*10:20*	*11:10*
EMERYVILLE	Ar	*6:08*		*7:08*		*7:18*	*7:58*		*8:10*	*8:38*		*9:18*	*9:18*	*10:08*		*10:46*		*10:48*	*10:58*	*11:48*
OAKLAND	Ar	*AM*		*AM*		*AM*	*AM*		*AM*	*AM*		*AM*	*AM*	*AM*		*AM*		*AM*	*AM*	*AM*
		AFR 83	AFR 83	AFR 83	AFR 83	AFR 83	AFR 83	AFR 83	AFR 74	AFR 83	AFR 83	AFR 83	AFR 83	AFR 83	AFR 82	AFR 82	AFR 83	AFR 83	AFR 83	AFR 83
DEDICATED FEEDER		Bus 99-1	Bus 99-7	Bus 99-2	Bus 99-3	Bus 99-2	Bus 99-5	Bus 99-6	Bus 99-4	Bus 99-	Bus 99-	Bus 99-7	Bus 99-8	Bus 99-	Bus 99-3	Bus 99-6	Bus 99-5	Bus 99-1	Bus 99-2	Bus 99-5
Compass Transportation		6621 Bus XSSH	3321 Bus XSSH	6623 Bus XSSH	3323 Bus XSSH	6673 Bus SSH	6625 Bus XSSH	3325 Bus XSSH	5011 Bus Daily	6627 Bus XSSH	3327 Bus XSSH	6629 Bus Daily	3329 Bus Daily	6631 Bus XSSH	6611 ® Bus Daily	3311 ® Bus Daily	6679 Bus SSH	3379 Bus SSH	6633 Bus XSSH	6635 Bus XSSH
OAKLAND (CC,SJ,21)	Lv	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
EMERYVILLE (CC,SJ,28)	Lv	c 6:10	c 6:10	c 7:10	c 7:10	c 7:20	c 8:00	c 8:00	c 8:25	c 8:40	c 8:40	c 9:20	c 9:20	c 10:10	c 10:50	c 10:50	c 10:50	c 10:50	c 11:00	c11:50
SAN FRANCISCO--		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Financial Dist.-*Hyatt*	Ar	D 6:35	|	D 7:50		D 7:50	D 8:35		D 8:55	D 9:15		|	D 9:50	D10:40	|	D11:20	|	D11:15	D11:30	**D12:20**
FERRY BUILDING	Ar	D 6:40	|	D 7:55	|	D 7:55	D 8:40	|	D 9:00	D 9:20	|	D 9:50	|	D10:45	D11:20	|	D11:15	|	D11:35	**D12:25**
Pier 39	Ar	D 6:50	|	D 8:15	|	D 8:10	D 8:50	|	D 9:10	D 9:30	|	D10:00	|	D11:00	D11:30	|	D11:25	|	D11:50	**D12:40**
Civic Ctr - Mkt & 7th			D 6:40		D 7:50			D 8:35			D 9:15									
SF Dntn-*Mkt & 4th*	Ar	AM	D 6:45	AM	D 7:55	D 8:25	AM	D 8:40	D 9:25	AM	D 9:20	AM	D10:00	D11:15	AM	D11:30	AM	D11:25	**D12:05**	**D12:55**
Moscone Center	Ar		D 6:50		D 8:00	|		D 8:45	|		D 9:25		D10:05	D11:20		D11:35		D11:30	**D12:10**	**D 1:00**
Caltrain Depot	Ar		D 6:55		D 8:05	D 8:35		D 8:50	D 9:30		D 9:30		D10:10	D11:25		D11:40		D11:35	**D12:15**	**D 1:05**
			AM		AM	AM		AM	AM		AM		AM	AM		AM		AM	**PM**	**PM**

Note C

Notes: AFR: See listing above each schedule

See Page 6 for general notes.

AM - Light Face Type, **PM - Bold Type.**

C - When both trains arrive approximately on-time, buses will share passengers and split stops.

® - Reservations Required.

3/20/12 DOR/GWS

CAPITOL CORRIDOR, SAN JOAQUIN & BASIC SYSTEM BUS CONNECTIONS

Route 99 -- TRANS BAY (Emeryville - Oakland - San Francisco)

Westbound--Read Down

Effective May 7, 2012			701 ® Train Daily					713 ® Train Daily					715 ® Train Daily					14 ® Train Daily	717 ® Train Daily	
San Joaquin Connection			AM					AM					AM					AM	PM	
LOS ANGELES	Lv		4:10	4401 ®				7:35					10:45					10:15	1:15	
BAKERSFIELD	Lv		7:15	Bus				10:05					1:20					|	3:45	
FRESNO			9:10	Daily				12:05	from				3:20					via	5:45	
MERCED			10:08	AM				1:08	Chicago				4:22					Coast	6:42	
STOCKTON	Lv		11:20	U1120	537/737			2:18	5 ®	543/743			5:33		549			Route	8:03	553/751
		733	AM	|	Train	541	741	|	Train	Train	545/745		|	547/747	Train	749	551	|	|	Train
		Train		|	Daily	Train	Train	|	Daily	Daily	Train		|	Train	XSSH	Train	Train	|	|	Daily
Capitol Connection		SSH		|	AM	XSSH	SSH	|	PM	PM	Daily		|	Daily	PM	SSH	XSSH	|	|	PM
Roseville	Lv	AM		|	11:05	PM	PM	|	12:57	2:30	PM		|	PM	5:40	PM	PM	|	|	8:05
SACRAMENTO		10:40		|	12:10	2:10	2:15	|	2:13	3:35	4:40		|	5:40	6:40	7:10	7:40	|	|	9:10
DAVIS		10:55		|	12:25	2:25	2:30	|	2:44	3:50	4:55		|	5:55	6:55	7:25	7:55	|	|	9:25
MARTINEZ		11:40		|	1:10	3:10	3:15	3:19	3:26	4:35	5:40		6:28	6:40	7:40	8:10	8:40	|	8:56	10:10
EMERYVILLE	Ar	12:18		1:00	1:48	3:48	3:53	4:01	4:10	5:13	6:18		7:11	7:18	8:18	8:48	9:18	|	9:41	10:48
OAKLAND	Ar	PM		12:50	PM	PM	PM	PM	PM	PM	PM		PM	PM	PM	PM	PM	9:32	PM	PM
				|														PM		
				|																
				|					AFR 74									AFR 74		
		AFR 83		|	AFR 83	AFR 83	AFR 83	AFR 82	99-10	AFR 83	AFR 83	AFR 83	AFR 82	AFR 83	AFR 83	AFR 83	AFR 83	99-8/4	AFR 82	AFR 83
DEDICATED FEEDER		99-2		|	Bus 99-4	Bus 99-6	Bus 99-6	Bus 99-5	5005	Bus 99-9	Bus 99-3	Bus 99-7	Bus 99-1	99-4	Bus 99-2	Bus 99-	Bus 99-	6014	99-5/8	Bus 99-6
Compass Transportation		6683		|	6637	6641	6691	6613 ®	Bus	6643	3345	6645	6615 ®	6647	6649	6699	6651	Bus	6617	6653
		Bus		|	Bus	Bus	Bus	Bus	Daily	Bus	Bus	Bus	Bus	Bus	Bus	Bus	Bus	Daily	Bus	Bus
		SSH		|	Daily	XSSH	SSH	Daily	PM	Daily	Daily	Daily	Daily	Daily	XSSH	SSH	XSSH	PM	Daily	Daily
OAKLAND (CC,SJ,21)	Lv	PM		|	PM	PM	PM	PM	c 4:35	PM	PM	PM	PM	PM	PM	PM	PM	c 9:45	PM	PM
EMERYVILLE (CC,SJ,28)	Lv	c12:20		|	c 1:50	c 3:50	c 3:55	c 4:05	c 4:25	c 5:15	c 6:20	c 6:20	c 7:15	c 7:20	c 8:20	c 8:50	c 9:20	|	c 9:45	c 10:50
SAN FRANCISCO--		|		|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Financial Dist.-*Hyatt*	Ar	D12:50		|	D 2:20	D 4:15	D 4:20	D 4:35	|	D 5:45	D 6:45	|	D 7:40	D 7:45	D 8:45	D 9:20	D 9:50	D 10:05	D10:10	D11:15
FERRY BUILDING	Ar	D12:55		1:20	D 2:25	D 4:20	D 4:25	D 4:40	D 5:05	D 5:50	|	D 6:45	D 7:45	D 7:50	D 8:50	D 9:25	D 9:55	D10:10	D10:15	D11:20
Pier 39	Ar	D 1:10		PM	D 2:40	D 4:35	D 4:40	D 4:55	D 5:20	D 6:05	|	D 6:55	D 7:55	D 8:00	D 9:00	D 9:40	D10:10	D10:25	D10:25	D11:30
Civic Ctr - Mkt & 7th																				
SF Dntn-*Mkt & 4th*	Ar	D 1:25			D 2:55	D 4:55	D 5:00	D 5:15	D 5:35	D 6:20	D 6:55	PM	D 8:05	D 8:10	D 9:10	D 9:55	D10:25	D10:40	D10:35	D11:40
Moscone Center	Ar	D 1:30			D 3:00	|	|	|	|	|	|		|	|	|	|	|	PM	|	|
Caltrain Depot	Ar	D 1:35			D 3:05	D 5:05	D 5:10	D 5:25	D 5:45	D 6:30	D 7:05		D 8:15	D 8:20	D 9:20	D10:05	D10:35		D10:40	D11:50
		PM			PM	PM	PM	PM	PM	PM	PM		PM	PM	PM	PM	PM		PM	PM

Notes: AFR: See listing above each schedule

Note C

See Page 6 for general notes.

AM - Light Face Type, **PM - Bold Type.**

C - When both trains arrive approximately on-time, buses will share passengers and split stops.

E - No checked baggage handled at this stop.

U - ACE Station.

® - Reservations Required.

3/20/12 DOR/GWS

CAPITOL CORRIDOR & SAN JOAQUIN BUS CONNECTIONS

Route 35 -- SAN JOSE - SANTA CRUZ -- Highway 17 Express -- WEEKDAY SCHEDULE

Southbound--Read Down

Effective May 7, 2012			521 Train XSSH		523 Train XSSH		527 Train XSSH			535 Train XSSH						537 Train XSSH		
Capitol Train Connection					AM											AM		
Roseville	Lv		AM		4:45		AM			AM						11:05		
SACRAMENTO			4:30		5:30		7:00			10:10						12:10		
DAVIS			4:45		5:45		7:15			10:25						12:25		
MARTINEZ			5:30		6:30		8:00			11:10						1:10		
EMERYVILLE	Lv		6:10		7:10		8:40			11:50						1:50		
OAKLAND	Lv		6:23		7:23		8:53			12:03						2:03		
SAN JOSE	Ar		7:35		8:35		10:10			1:15						3:15		
			AM		AM		AM	711 ® Train Daily		PM	701 ® Train Daily					PM		
San Joaquin Connection								AM			AM							
LOS ANGELES	Lv							1:25			4:00							
BAKERSFIELD	Lv							4:55			7:15							
FRESNO	Lv							6:50			9:10							
STOCKTON	Ar							8:57			U11:20							
Route 6 Bus Connection								3911 Bus										
STOCKTON-Amtrak	Lv							c 9:10			Bus 3901							
STOCKTON-ACE								9:15			11:25							
SAN JOSE	Ar							11:10			1:20							
								AM			PM							

MIXED-MODE FEEDER SCMTD/VTA		6907 Bus XSSH	6919 Bus XSSH	6921 Bus XSSH	6909 Bus XSSH	6923 Bus XSSH	6925 Bus XSSH	6927 Bus XSSH	6911 Bus XSSH	6929 Bus XSSH	6935 Bus XSSH		6901 Bus XSSH	6933 Bus XSSH	6801 Bus XSSH		6937 Bus XSSH	6953 Bus XSSH	6805 Bus XSSH
		AM	AM	AM	AM	AM	AM	AM	AM	PM	PM		PM	PM	PM		PM	PM	PM
SAN JOSE (CC.6.21.CT)	Lv	6:02	7:02	c 7:47	8:30	c 9:05	9:40	c 10:40	11:50	12:40	b 1:35		2:40	3:10	3:30		c 3:45	4:10	4:40
Scotts Valley-*Transit Center*	Ar	D 6:40	D 7:42	D 8:27	D 9:10	D 9:45	D 10:20	D11:20	D 12:30	D1:20	D 2:15		D 3:20	D 3:50	D 4:10		D 4:30	D 4:55	D 5:25
Santa Cruz-*Metro Center*	Ar	D 6:55	D 8:02	D 8:47	D 9:30	D10:05	D 10:40	D11:40	D 12:50	D 1:40	D 2:35		D 3:40	D 4:10	PM		D 4:55	D 5:20	PM
		AM	AM	AM	AM	AM	AM	AM	AM	PM	PM		PM	PM			PM	PM	

Schedules continued on next page

Northbound--Read Down

MIXED-MODE FEEDER SCMTD/VTA		6900 Bus XSSH	6922 Bus XSSH		6854 Bus XSSH	6806 Bus XSSH		6906 Bus XSSH	6908 Bus XSSH	6808 Bus XSSH	6810 Bus XSSH	6812 Bus XSSH	6928 Bus XSSH	6914 Bus XSSH	6930 Bus XSSH	6932 Bus XSSH	6916 Bus XSSH		
		AM	AM		AM	AM		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM		
Santa Cruz-*Metro Center*	Lv	4:45	5:25		AM	AM		6:20	6:45	AM	AM	AM	7:30	7:55	9:05	10:05	11:00		
Scotts Valley-*Transit Center*	Lv	5:00	5:40		5:55	6:15		|	|	6:50	7:05	7:25	7:45	8:10	9:20	10:20	11:15		
SAN JOSE (CC.6.21.CT)	Ar	5:37	c 6:17		b 6:32	6:52		7:10	7:35	7:37	7:52	8:12	c 8:32	b 8:57	10:00	11:00	c 11:55		
		AM	AM		AM	AM		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM		
				3912 ® Bus Daily										3914 ® Bus Daily					Bus 3916
Route 6 Bus Connection				AM										AM					PM
SAN JOSE	Lv			6:55										9:15					12:10
STOCKTON-ACE				|									|					|
STOCKTON-Amtrak	Ar			9:00										11:20					2:20
STOCKTON-ACE	Ar																		
San Joaquin Connection				Train 712										Train 714					Train 716
STOCKTON	Lv			9:17										11:49					3:03
FRESNO	Ar			11:31										2:06					5:16
BAKERSFIELD	Ar			1:41										4:11					7:26
LOS ANGELES	Ar			4:10										6:40					9:50
			524 Train XSSH	PM									528 Train XSSH	PM			532 Train XSSH		PM
Capitol Train Connection			AM										AM				PM		
SAN JOSE	Lv		6:40										9:05				12:20		
OAKLAND			7:43										10:13				1:23		
EMERYVILLE			7:53										10:23				1:33		
MARTINEZ			8:32										11:02				2:12		
DAVIS			9:17										11:47				2:57		
SACRAMENTO			9:45										12:15				3:25		
Roseville	Ar		10:35										1:30				4:30		
			AM										PM				PM		

Schedules continued on next page

CAPITOL CORRIDOR & SAN JOAQUIN BUS CONNECTIONS

Route 35 -- SAN JOSE - SANTA CRUZ -- Highway 17 Express -- WEEKDAY SCHEDULE

Southbound--Read Down

Effective May 7, 2012																
								543 Train XSSH			547 Train XSSH					
Capitol Train Connection																
Roseville	Lv							PM			PM					
SACRAMENTO								3:35			5:40					
DAVIS								3:50			5:55					
MARTINEZ								4:35			6:40					
EMERYVILLE	Lv							5:15			7:20					
OAKLAND	Lv							5:28			7:33					
SAN JOSE	Ar							6:45			8:55					
		713 ® Train Daily						PM	715 ® Train Daily		PM	717 ® Train Daily				
San Joaquin Connection		AM							AM			PM				
LOS ANGELES	Lv	7:35							10:45			1:15				
BAKERSFIELD	Lv	10:05							1:20			3:45				
FRESNO	Lv	12:05							3:20			5:45				
STOCKTON	Ar	2:14							5:29			7:59				
Route 6 Bus Connection		Bus 3913							Bus 3915			Bus 3917				
STOCKTON-Amtrak	Lv	2:30							5:35			8:05				
STOCKTON-ACE		|							5:51			|				
SAN JOSE	Ar	4:20							7:40			9:45				
		PM							PM			PM				
MIXED-MODE FEEDER *SCMTD/VTA*		6913 Bus XSSH	6807 Bus XSSH	6939 Bus XSSH	6941 Bus XSSH	6905 Bus XSSH	6955 Bus XSSH	6943 Bus XSSH	6915 Bus XSSH	6945 Bus XSSH	6947 Bus XSSH	6917 Bus XSSH				
		PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM				
SAN JOSE (CC,6,21,CT)	Lv	b 4:50	5:05	5:25	5:45	6:05	6:25	7:05	b 7:45	8:35	c 9:15	c 10:42				
Scotts Valley-*Transit Cen*	Ar	D 5:35	D 5:50	D 6:10	D 6:30	|	D 7:10	D 7:43	D 8:23	|	D 9:53	D11:20				
Santa Cruz-*Metro Center*	Ar	D 6:05	PM	D 6:30	D 6:50	D 7:00	D 7:30	D 8:03	D 8:38	D 9:20	D10:08	D11:35				
		PM		PM	PM	PM	PM	PM	PM	PM	PM	PM				

Schedules continued from previous page

Northbound--Read Down

MIXED-MODE FEEDER *SCMTD/VTA*		6936 Bus XSSH	6938 Bus XSSH		6920 Bus XSSH	6942 Bus XSSH			6918 Bus XSSH	6924 Bus XSSH	6944 Bus XSSH	6926 Bus XSSH	6910 Bus XSSH	6946 Bus XSSH	6954 Bus XSSH	6958 Bus XSSH
		PM	PM		PM	PM			PM	PM	PM	PM	PM	PM	PM	PM
Santa Cruz-*Metro Center*	Lv	12:00	1:10		2:00	3:00			3:30	4:00	4:30	5:00	5:30	6:15	7:15	9:30
Scotts Valley-*Transit Cen*	Lv	12:15	|		|	3:15			3:45	|	4:45	|	5:45	6:30	|	|
SAN JOSE (CC,6,21,CT)	Ar	12:55	b 2:00		2:50	c 4:00			b 4:30	c 4:50	c 5:30	c 5:50	b 6:30	c 7:15	c 8:05	10:15
		PM	PM		PM	PM			PM	PM	PM	PM	PM	PM	PM	PM
			3904 ® Bus Daily				3218 ACE 06 Train XSSH									
Route 6 Bus Connection			PM				PM	Bus 3918								
SAN JOSE	Lv		2:40				4:35	PM								
STOCKTON-ACE			4:45				6:45	7:05								
STOCKTON-Amtrak	Ar							7:15								
STOCKTON-ACE	Ar															
San Joaquin Connection			Train 704					Train 718								
STOCKTON	Lv		U 5:50					7:34								
FRESNO	Ar		8:02					9:51								
BAKERSFIELD	Ar		10:07					11:56								
LOS ANGELES	Ar		12:55 AM					2:45 AM								
				538 Train XSSH		542 Train XSSH					544 Train XSSH			546 Train XSSH	14 ® Train Daily	
Capitol Train Connection				PM		PM					PM			PM	PM	
SAN JOSE	Lv			3:00		4:20					5:50			7:15	8:39	
OAKLAND	Ar			4:08		5:23					6:53			8:18	9:32	
EMERYVILLE	Ar			4:18		5:38					7:03			8:28	10:02	
MARTINEZ				4:57		6:22					7:42			9:07	10:51	
DAVIS				5:42		7:07					8:27			9:52	11:33	
SACRAMENTO				6:10		7:35					8:55			10:25	11:59	
Roseville	Ar			PM		8:10					PM			PM	PM	
						PM									to Seattle	

Schedules continued from previous page

CAPITOL CORRIDOR & SAN JOAQUIN BUS CONNECTIONS
Route 35 -- SAN JOSE - SANTA CRUZ -- Highway 17 Express -- SATURDAY, SUNDAY & HOLIDAY SCHEDULE

Southbound--Read Down

Effective May 7, 2012			723 Train SSH		727 Train SSH				733 Train SSH	737 Train SSH		741 Train SSH	743 Train SSH			747 Train SSH				
Capitol Train Connection										AM			PM							
Roseville	Lv		AM		AM				AM	11:05		PM	2:30			PM				
SACRAMENTO			5:40		7:40				10:40	12:10		2:15	3:35			5:40				
DAVIS			5:55		7:55				10:55	12:25		2:30	3:50			5:55				
MARTINEZ			6:40		8:40				11:40	1:10		3:15	4:35			6:40				
EMERYVILLE	Lv		7:20		9:20				12:20	1:50		3:55	5:15			7:20				
OAKLAND	Ar		7:31		9:31				12:31	2:01		4:06	5:26			7:31				
			|		|				|			|	|			|			
OAKLAND	Lv		7:33		9:33				12:33	2:03		4:08	5:28			7:33				
SAN JOSE	Ar		8:45		10:45				1:45	3:15		5:20	6:45			8:45				
			AM		AM		711 ® Train Daily	701 ® Train Daily	PM	PM	713 ® Train Daily	PM	PM		715 ® Train Daily	PM	717 ® Train Daily			
San Joaquin Connection							AM	AM			AM				AM		PM			
LOS ANGELES	Lv						1:25	4:00			7:35				10:45		1:15			
BAKERSFIELD	Lv						4:55	7:15			10:05				1:20		3:45			
FRESNO	Lv						6:50	9:10			12:05				3:20		5:45			
STOCKTON	Ar						8:57	U11:20			2:14				5:29		7:59			
Route 6 Bus Connection								Bus 3901												
STOCKTON-ACE	Lv							11:25			Bus 3913				Bus 3915		Bus 3917			
STOCKTON-Amtrak	Lv							11:30			2:30				5:35		8:05			
SAN JOSE	Ar							1:20			4:40				7:40		9:45			
								PM			PM				PM		PM			
MIXED-MODE FEEDER SCMTD/VTA		6969 Bus SSH	6973 Bus SSH	6975 Bus SSH	6977 Bus SSH	6979 Bus SSH	6981 Bus SSH	6983 Bus SSH	6985 Bus SSH	6987 Bus SSH	6963 Bus SSH	6991 Bus SSH	6957 Bus SSH		6993 Bus SSH	6997 Bus SSH	6967 Bus SSH			
		AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM		PM	PM	PM			
SAN JOSE (CC.6.21.CT)	Lv	7:40	c 9:00	9:50	c 11:00	11:50	12:45	2:00	c 2:45	c 3:45	b 4:45	c 5:45	b 6:55		b 7:50	c 9:05	b 10:10			
Scotts Valley-*Transit Center*	Ar	|	D9:35	|	D11:45	|	|	D 2:45	|	D 4:30	|	D 6:30	D 7:40		|	D 9:45	D10:50			
Santa Cruz-*Metro Center*	Ar	D 8:30	D9:50	D10:40	D12:05	D12:40	D 1:35	D3:05	D 3:35	D 4:50	D 5:35	D 6:50	D 8:00		D 8:40	D10:05	D11:10			
		AM	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM		PM	PM	PM			

Northbound--Read Down

MIXED-MODE FEEDER SCMTD/VTA			6974 Bus SSH		6976 Bus SSH	6978 Bus SSH	6980 Bus SSH	6982 Bus SSH	6984 Bus SSH	6986 Bus SSH	6950 Bus SSH	6952 Bus SSH	6968 Bus SSH		6994 Bus SSH		6956 Bus SSH	6998 Bus SSH	6964 Bus SSH	6966 Bus SSH
			AM		AM	AM	AM	AM	AM	PM	PM	PM	PM		PM		PM	PM	PM	PM
Santa Cruz-*Metro Center*	Lv		6:40		8:00	8:40	10:00	10:50	11:40	12:50	1:45	2:35	3:45		4:35		5:45	6:35	8:05	9:00
Scotts Valley-*Transit Center*	Lv		6:55		|	8:55	|	|	11:55	1:05	|	2:50	|	4:50		|	6:50	|	9:15
SAN JOSE (CC,6,21,CT)	Ar		c 7:35		c 8:50	c 9:40	c 10:50	11:40	c 12:40	c 1:50	c 2:35	c 3:35	c 4:35		c 5:35		c 6:35	c 7:35	8:55	10:00
			AM		AM	AM	AM	AM	PM	PM	PM	PM	PM		PM		PM	PM	PM	PM
		3912 ® Bus Daily			3914 ® Bus Daily			3916 ® Bus Daily		3904 ® Bus Daily				3968 ® Bus SSH						
Route 6 Bus Connection		AM			AM			PM		PM				PM						
SAN JOSE	Lv	6:55			9:15			12:10		2:40				4:45						
STOCKTON-Amtrak	Ar	9:00			11:20			2:20		4:45				7:20						
STOCKTON-ACE	Ar									5:05										
San Joaquin Connection		Train 712			Train 714			Train 716		Train 704				Train 718						
STOCKTON	Lv	9:17			11:49			3:03		U 5:50				7:34						
FRESNO	Ar	11:31			2:06			5:16		8:02				9:51						
BAKERSFIELD	Ar	1:41			4:11			7:26		10:07				11:56						
LOS ANGELES	Ar	4:10			6:40			9:50		12:55				2:45						
		PM	724 Train SSH		PM	728 Train SSH		PM	734 Train SSH	AM	736 Train SSH		742 Train SSH	AM	744 Train SSH			748 Train SSH		
Capitol Train Connection			AM			AM			PM		PM		PM		PM			PM		
SAN JOSE	Lv		7:50			9:50			12:50		2:20		4:25		5:50			7:50		
OAKLAND	Ar		8:53			10:53			1:53		3:23		5:28		6:53			8:53		
			|			|			|		|		|	|			|		
OAKLAND	Lv		8:55			10:55			1:55		3:25		5:30		6:55			8:55		
EMERYVILLE	Ar		9:03			11:03			2:03		3:33		5:38		7:03			9:03		
MARTINEZ			9:42			11:42			2:42		4:12		6:17		7:42			9:42		
DAVIS			10:27			12:27			3:27		4:57		7:02		8:27			10:27		
SACRAMENTO			10:55			12:55			3:55		5:23		7:22		8:55			10:55		
Roseville	Ar		AM			1:30			4:30		PM		7:48		PM			PM		
						PM			PM				PM							

Notes AFR: None
See Page 6 for general notes.
AM - Light Face Type, **PM - Bold Type.**
® - Reservations Required.
U - ACE Station.

3/20/12 DOR/GWS

CAPITOL CORRIDOR & SAN JOAQUIN BUS CONNECTIONS

Route 20 -- SACRAMENTO - SOUTH LAKE TAHOE/ROSEVILLE - AUBURN - RENO - SPARKS

Eastbound--Read Down

Effective May 7, 2012			711 ® Train Daily						701 ® Train Daily	713 ® Train Daily					715 ® Train Daily			717 ® San Daily	
San Joaquin Connection			AM						AM	AM					AM			PM	
LOS ANGELES	Lv		1:25						4:00	7:35					10:45			1:15	
BAKERSFIELD	Lv		4:55						7:15	10:05					1:20			3:45	
HANFORD			6:12						8:32	11:26					2:42			5:06	
FRESNO			6:50						9:10	12:05					3:20			5:45	
MERCED	Lv		7:48						10:08	1:08					4:22			6:42	
STOCKTON	Ar		8:57	3711 ®					U11:20	2:14	3713 ®			3715 ®	5:29			7:59	3717 ®
			AM	Bus Daily					|	PM	Bus Daily			Bus Daily	PM			PM	Bus Daily
Train/Route 3 Bus Connection				AM					|		PM			PM					PM
STOCKTON	Lv			9:10					U11:20		2:25			5:35					8:10
SACRAMENTO	Ar			10:05					12:30		3:15			6:25					9:05
				AM					PM		PM			PM					PM
			524 Train XSSH			6 @ Train Daily	528 Train XSSH	728 Train SSH		532 Train XSSH		734 Train SSH	536 Train XSSH		540 Train XSSH	742 Train SSH	542 Train XSSH	544/744 Train Daily	
Capitol Connection		720 Train SSH	AM				AM	AM		PM		PM				PM	PM	PM	
SAN JOSE	Lv	AM	6:40			AM	9:05	9:50		12:20		12:50	PM		PM	4:25	4:20	5:50	
OAKLAND		7:20	7:45			8:25	10:15	10:55		1:25		1:55	3:30		4:50	5:30	5:30	6:55	
SAN FRANCISCO-Ferry Bldg.	Lv	7:00	7:10			7:50	9:45	10:25		12:55		1:25	3:00		4:20	5:05	5:05	6:15	
EMERYVILLE	Lv	7:30	7:55			9:10	10:25	11:05		1:35		2:05	3:40		5:00	5:40	5:45	7:05	
MARTINEZ		8:09	8:34			9:49	11:04	11:44		2:14		2:44	4:19		5:39	6:19	6:24	7:44	
DAVIS	Lv	8:52	9:17			10:31	11:47	12:27		2:57		3:27	5:02		6:22	7:02	7:07	8:27	
SACRAMENTO	Ar	9:18	9:45			11:09	12:15	12:55		3:25		3:55	5:22		6:48	7:22	7:35	8:55	
		AM	AM			|	PM	PM		PM		PM	|		PM	|	PM	PM	
						|							|			|		
						|				Route 3			|		Route 3	|		Route 3
				Bus 20-1	Bus 20-4	|	Bus 20-2	Bus 20-2		Bus 3-6	Bus 20-3	Bus 20-3	|		Bus 3-6	|	Bus 20-4	Bus 3-6
DEDICATED FEEDER *All West Coachlines*				3524 ® Bus Daily	3424 ® Bus Daily	|	3528 ® Bus XSSH	3578 ® Bus SSH		3634 ® Bus XSSH	3534 ® Bus XSSH	3584 ® Bus SSH	|		3640 ® Bus XSSH	|	3642 ® Bus XSSH	3644 ® Bus XSSH	
				AM	AM	|	PM	PM		PM	PM	PM	|		PM	|	PM	PM	
SACRAMENTO (CC.3)	Lv			c 10:15	c 10:15	11:00	c 1:00	c 1:10		c 4:00	c 4:00	c 4:10	5:25		c 7:00	7:25	c 7:45	c 9:10	
Placerville-*Placerville Station*				|	11:15	|	|	|		|	|	|	|		|	|	|	|	|	
Tahoe Wye-*South Y Transit Cntr*				|	12:35	|	|	|		|	|	|	|		|	|	|	|	|	
Stateline Casinos-*Transit Center*	Ar			|	12:45	|	|	|		|	|	|	|		|	|	|	|	|	
Stateline-*Kingsbury Transit Ctr.*				|	12:50	|	|	|		|	|	|	|		|	|	|	|	|	
Roseville (CC.25)	Ar			D10:45	PM	11:35	D 1:30	D 1:40		D 4:30	S	D 4:40	5:48		D 7:30	7:48	D 8:15	D 9:40	
Rocklin (CC)				D11:00		--	D 1:45	D 1:55		D 4:45	S	D 4:55	5:56		D 7:45	7:56	D 8:30	D 9:55	
Auburn-*Nevada Station* (CC.38)				D11:25		--	D 2:00	D 2:10		D 5:10	D 5:10	D 5:20	6:30		D 8:00	8:30	D 8:45	D10:10	
Colfax				D11:40		12:21	D 2:15	D 2:25		PM	D 5:25	D 5:35	PM		PM	PM	PM	PM	
Truckee				D 1:00		2:38	D 3:35	D 3:45		Note G	D 6:45	D 6:55			Note E		Note E		
RENO				D 1:40		4:06	D 4:15	D 4:25			D 7:25	D 7:35							
Sparks-*The Nugget*	Ar			D 2:00		4:16	D 4:35	D 4:45			D 7:45	D 7:55							
				PM		PM	PM	PM			PM	PM							
						to Chicago						Note G							

Notes: AFR: 73

See Page 6 for general notes.

AM - Light Face Type. **PM - Bold Type.**

E - Bus departs Sacramento as soon as Train arrives and passengers have transferred, even if train arrives early.

G - Bus 3534 will hold for San Joaquin passengers from Bus 3713. When Bus 3534 has to hold for late Bus 3713, Bus 3634 will leave at 4:00pm or after Train 534 arrives, whichever occurs last.

K - Trains No. 5 and 6 stop at Amtrak Depot in Sparks.

S - Roseville and Rocklin passengers handled by Bus 3634. When Bus 3534 has to hold for Bus 3713, transfering passengers for Roseville and Rocklin will be dropped off if needed.

® - Reservations Required.

U - ACE Station.

3/20/12 DOR/GWS

CAPITOL CORRIDOR & SAN JOAQUIN BUS CONNECTIONS

Route 20 -- SPARKS - RENO - ROSEVILLE/SOUTH LAKE TAHOE - SACRAMENTO

Westbound--Read Down

Effective May 7, 2012 DEDICATED FEEDER *All West Coachlines*																			
								Bus 20-2 3537 ® Bus Daily AM		from Chicago 5 ® *Train* *Daily*	Bus 20-3 3543 ® Bus Daily AM							Bus 20-1 3553 ® Bus Daily **PM**	*Note C* Bus20-4
Sparks-*The Nugget* Lv		Route 3			*529*	*729*		7:40		*AM*	11:05					Route 3 Bus 3-6 3649		**4:40**	3603
RENO	Bus20-4	Bus 3-2			*Train*	*Train*		8:00		*8:36*	11:25					Bus		**5:00**	Bus
Truckee	3623	3625			*XSSH*	*SSH*		8:40		*9:37*	**12:05**			Bus20-4		XSSH		**5:40**	XSSH
Colfax	Bus	Bus			*AM*	*AM*		10:00		*11:48*	**1:25**			3447 ®		**PM**		**7:00**	**PM**
Auburn-*Nevada Sta.* (CC.38)	XSSH	Daily			*6:35*	*8:05*		10:30		|	**1:55**			Bus		**5:10**		**7:30**	**8:45**
Rocklin (CC)	AM	AM			*6:58*	*8:28*		10:45		|	**2:10**			Daily		|		**7:45**	**9:00**
Roseville (CC) Lv	4:35	5:25			*7:08*	*8:37*		11:00		***12:57***	**2:25**			**PM**		**5:40**		**8:00**	**9:25**
Stateline-*Kingsbury Transit Ctr.* Lv	|	|			|	|	|		|	|			**2:20**		|		|	|
Stateline Casinos-*Transit Center*	|	|			|	|	|		|	|			**2:25**		|		|	|
Tahoe Wye-*South Y Transit Cntr*	|	|			|	|	|		|	|			**2:35**		|		|	|
Placerville-*Placerville Station*	|	|			|	|	|		|	|			**3:55**		|		|	|
SACRAMENTO (CC.3) Ar	c 5:15	c 6:05			*7:37*	*9:07*		c 11:55		***D 2:10***	**c 3:20**			**c 5:25**		**c 6:15**		**c 8:55**	**c 10:00**
	AM	AM			|	|	AM		|	**PM**			**PM**		**PM**		**PM**	**PM**
		Note B			|	|			|									
	523		*525*		|	|	*537/737*		|		*543/743*	*747*	*547*		*549*	*749*	*553/751*	
	Train		*Train*		|	|	*Train*		|		*Train*	*Train*	*Train*		*Train*	*Train*	*Train*	
	XSSH		*XSSH*		|	|	*Daily*		|		*Daily*	*SSH*	*XSSH*		*XSSH*	*SSH*	*Daily*	
Capitol Connection	*AM*		*AM*		|	|	***PM***		|		***PM***	***PM***	***PM***		***PM***	***PM***	***PM***	
SACRAMENTO Lv	*5:30*		*6:20*		*7:40*	*9:10*	***12:10***		***D 2:13***		***3:35***	***5:40***	***5:40***		***6:40***	***7:10***	***9:10***	
DAVIS Ar	*5:45*		*6:35*		*7:55*	*9:25*	***12:25***		***D 2:44***		***3:50***	***5:55***	***5:55***		***6:55***	***7:25***	***9:25***	
MARTINEZ Ar	*6:28*		*7:18*		*8:38*	*10:08*	***1:08***		***D 3:24***		***4:33***	***6:38***	***6:38***		***7:38***	***8:08***	***10:08***	
EMERYVILLE Ar	*7:08*		*7:58*		*9:18*	*10:48*	***1:48***		***4:10***		***5:13***	***7:18***	***7:18***		***9:18***	***8:48***	***10:48***	
SAN FRANCISCO-Ferry Bldg. Ar	*7:55*		*8:40*		*9:50*	*11:15*	***2:25***		***5:10***		***5:50***	***7:50***	***7:50***		***9:55***	***9:25***	***11:20***	
OAKLAND Ar	*7:21*		*8:18*		*9:38*	*11:08*	***2:01***		***PM***		***5:26***	***7:31***	***7:31***		***8:38***	***9:08***	***11:08***	
SAN JOSE Ar	*8:35*		*AM*		*AM*	*AM*	***3:15***				***6:45***	***8:45***	***8:55***		***PM***	***PM***	***PM***	
	AM						***PM***				***PM***	***PM***	***PM***					
		702 ®		*3812*			*3714*		*3716*		*704 ®*				*3718*				
		Train		*Bus*			*Bus*		*Bus*		*Train*				*Bus*				
		Daily		*Daily*			*Daily*		*Daily*		*Daily*				*Daily*				
Train/Route 3 Bus Connection		*AM*		*AM*			*AM*		***PM***		***PM***				***PM***				
SACRAMENTO Lv		*6:40*		*7:50*			*10:35*		***1:45***		***4:55***				***6:25***				
STOCKTON Ar		*U 7:35*		*8:40*	*712 ®*	*714 ®*	*11:35*	*716 ®*	***2:50***		***U 5:50***				***7:20***	*718 ®*			
		|		*AM*	*Train*	*Train*	*AM*	*Train*	***PM***		|				***PM***	*Train*			
		|			*Daily*	*Daily*		*Daily*			|					*Daily*			
San Joaquin Connection		|			*AM*	*AM*		***PM***			|					***PM***			
STOCKTON Lv		*U 7:35*			*9:17*	*11:49*	***3:03***				***U 5:50***					***7:34***			
MERCED Ar		*8:51*			*10:31*	***12:59***	***4:13***				***7:06***					***8:47***			
FRESNO Ar		*9:51*			*11:31*	***2:06***	***5:16***				***8:02***					***9:51***			
HANFORD Ar		*10:28*			***12:09***	***2:44***	***5:54***				***8:39***					***10:28***			
BAKERSFIELD Ar		*12:02*			***1:41***	***4:11***	***7:26***				***10:07***					***11:56***			
LOS ANGELES Ar		***2:30***			***4:10***	***6:40***	***9:50***				*12:55*					*2:45*			
		PM			***PM***	***PM***	***PM***				*AM*					*AM*			

Notes: AFR: 73
See Page 6 for general notes.
AM - Light Face Type, **PM - Bold Type.**
B - After arriving Sacramento, bus deheads to Davis to cover Schedule 3812.
C - Bus 3603 connects with Northbound Train 14 to the Pacific Northwest.
® - Reservations Required.
U - ACE Station.
3/20/12 DOR/GWS

PACIFIC SURFLINER/CAPITOL CORRIDOR BUS CONNECTIONS

COAST ROUTE--Sacramento - Oakland - San Francisco - San Jose - Salinas - Monterey - San Luis Obispo - Santa Barbara - Los Angeles - San Diego

Includes Bus Service for Routes 17, 21 and 55

Southbound--Read Down

Effective May 7, 2012			521 Train XSSH	523 Train XSSH AM		723 Train SSH		from Seattle 11 ® Train Daily	527 Train XSSH		727 Train SSH	535 Train XSSH	733 Train SSH	537/737 Train Daily AM		741 Train SSH	743 Train SSH	749 Train SSH	551 Train XSSH
Captiol Corridor Connection																			
Roseville	Lv		AM	4:45		AM		AM	AM		AM	AM	AM	11:05		PM	PM	PM	PM
SACRAMENTO			4:30	5:30		5:40		6:35	7:00		7:40	10:10	10:40	12:10		2:15	3:35	7:10	7:40
DAVIS			4:45	5:45		5:55		6:50	7:15		7:55	10:25	10:55	12:25		2:30	3:50	7:25	7:55
MARTINEZ			5:30	6:30		6:40		7:34	8:00		8:40	11:10	11:40	1:10		3:15	4:35	8:10	8:40
EMERYVILLE	Lv		6:10	7:10		7:20		8:20	8:40		9:20	11:50	12:20	1:50		3:55	5:13	8:50	9:20
OAKLAND	Ar		6:21	7:21		7:31		8:35	8:51		9:31	12:01	12:31	2:01		4:06	5:26	9:08	9:38
																		PM	PM
DEDICATED FEEDERS AmericanStar (21) Silverado (17) Montery-Salinas Transit (55)*		Route 17 17-4 4784 ® Bus Daily			Route 17 17-2 4790 ® Bus Daily					Route 17 17-3 4796 ® Bus Daily								Route 17 17-1 4768 ® Bus Daily	
		AM			AM					AM								PM	
OAKLAND (CC.SJ.34.99)	Lv	5:55	6:23	7:23	c 7:30	7:33		8:50	8:53	c 9:54	9:33	12:03	12:33	2:03		4:08	5:28	c 10:00	
EMERYVILLE		6:05																10:15	
SAN FRANCISCO-*Ferry Bldg*		6:35			8:00					10:29								10:45	
Oakland Coliseum			6:32	7:32		7:42		--	9:02		9:42	12:12	12:42	2:12		4:17	5:40		
Hayward (CC)			6:43	7:43		7:53			AM		9:53	12:23	12:53	2:23		4:28	5:52		
Fremont/Centerville (CC)			6:59	7:59		8:09					10:09	12:39	1:09	2:39		4:44	6:07		
Santa Clara/Great America (CC)			7:16	8:16		8:26		--			10:26	12:56	1:26	2:56		5:01	6:27		
SAN JOSE (CC.6.35.CT)	Ar	7:30	7:35	8:35	c 9:15	8:45		9:55		11:29	10:45	1:15	1:45	3:15		5:20	6:45	11:55	
			AM	AM		AM					AM	PM	PM	PM		PM	PM		
		Coast Daylight Bus	55-1 6721 Bus XSSH		Coast Daylight Bus		55-1 6773 Bus SSH			Coast Daylight Bus		55-1 6735 Bus XSSH	55-1 6783 Bus SSH	21-1 6237 ® Bus Daily	55-1 6737 Bus XSSH	55-1 6791 Bus SSH		Night Coast Bus	
			AM				AM					PM	PM	PM	PM	PM			
SAN JOSE (CC.6.35.CT)	Lv	7:35	c 7:55		c 9:15		c 9:05	10:07		c 11:34		c 1:35	c 2:05	c 3:25	c 5:53	c 6:00		11:59	
Morgan Hill-*Caltrain Sta. (CT)*			8:40				9:50					2:15	2:50		6:38	6:35			
Gilroy-*Caltrain Station (CT)*			8:57				10:07					2:32	3:07	D 4:05	6:55	6:55			
Prunedale-*Park n Ride*			9:22				10:37					2:57	3:37		7:20	7:25			
Edgewater-*Transit Exchange*			9:42				10:57					3:17	3:57		7:40	7:45			
SALINAS	Ar	8:40			10:20			11:48	3611 ® Bus Daily AM	12:34				4:35				1:15	
Route 55 Thru service & Route 37 & 68 Connections																			
SALINAS (37, 68)	Lv	8:45			10:20			11:48	11:50	12:39				4:40				1:15	
Monterey-Transit Plaza(37,68)	Ar		9:55				11:10		D12:35			3:35	4:10		7:53	7:57			
Monterey Aquarium	Ar		AM				AM		D12:45			PM	PM		PM	PM			
									PM										
King City-*McDonald's*	Lv	9:40			R 11:25					R1:39				R 5:35				R2:10	
Paso Robles (18)		10:40			12:25			1:38		2:39				D 6:20				3:10	
Atascadero-*Denny's (18)*						790/1790 Train M-F/SSH				2:54									
San Luis Ob.-*Cal Poly* (18)					1:00					3:14				D 6:55				3:40	
SAN LUIS OBISPO (PS,18)	Ar	11:20			c 1:20			3:10		3:29				7:10				3:50	
					PM	PM													
SAN LUIS OBISPO	LV	11:25				1:35/1:55		3:20		3:39								3:50	
Grover Beach (PS,18)						1:55/2:15				4:09				D 7:30				4:15	
Santa Maria-*IHOP (18)*	Lv		784 Train Daily							4:34	796 Train Daily			D 7:55				4:40	768 Train Daily
Buellton -*Burger King*										5:04				D 8:30				5:10	
Solvang-*Solvang Park*	Ar									5:14				D 8:40				5:20	
SANTA BARBARA (PS,4.10)	Ar	1:45	PM			4:09/4:32		6:17		6:39	PM			D 9:30				6:30	PM
SANTA BARBARA (PS,4.10)	Lv	PM	1:45 PM			PM		PM		PM	6:45 PM			PM				AM	6:43 PM
		Connects to Los Ang.				to Los Ang.		to Los Ang.		Connects to Los Ang.								Connects to Los Ang.	

PACIFIC SURFLINER/CAPITOL CORRIDOR BUS CONNECTIONS

COAST ROUTE--San Diego - Los Angeles - Santa Barbara - San Luis Obipso - Monterey - Salinas - San Jose - San Francisco - Oakland - Sacramento

Includes Bus Service for Routes 17, 21 and 55

Northbound--Read Down

Effective May 7, 2012

DEDICATED FEEDERS
AmericanStar (21)
Silverado (17)
Monterey-Salinas Transit (55)*

		Connects from Los Angeles													Connects from Los Angeles				Connects from Los Angeles
		Route 17								from					Route 17			from	Route 17
		17-3					21-1			Los Ang.					17-1			Los Ang.	17-2
		4785 ®					6234 ®			761/1761					4763 ®			14 ®	4769 ®
		Bus					Bus			Train					Bus			Train	Bus
		Daily					Daily			M-F/SSH					Daily			Daily	Daily
		PM					AM			AM					AM			PM	PM
SANTA BARBARA (PS.4.10)	Lv	c 9:53					6:00			10:22					c11:45			12:48	c 3:10
Buellton-*Burger King*		10:38					|			|				12:30			|	|
Solvang-*Solvang Park*		10:43					|			|	17-4			12:35			|	|
Santa Maria-IHOP (18)		11:23					7:20			|	4761 ®			1:15			|	4:35
Grover Beach (PS,18)		11:48					7:45			12:35	Bus			1:40			--	|
SAN LUIS OBISPO	Ar	12:13					8:05			1:00	Daily			2:05			3:30	5:15
		|					|			PM	PM			|			|	|
SAN LUIS OBISPO (PS,17,18)	Lv	12:18					8:10				c 1:05			2:10				3:43	5:20
San Luis Obispo-Cal Poly (18)		12:28					8:15				1:15			2:20				|	5:30
Atascadero-*Denny's (18)*		|					|			|			2:35				|	|
Paso Robles (17,18)		12:53		55-1	55-1	55-1	8:55		55-1		1:40		55-1	55-1	2:50			3514 ®	4:45	5:55
King City-*McDonald's*		R 2:03		6774	6728	6732	9:45		6784		R 2:50		6744	6794	R 4:00			Bus	|	R 6:55
Route 55 Thru Service &		|		Bus	Bus	Bus	|		Bus		|		Bus	Bus	|		Daily	|	|
Route 37 & 68 Connections		|		SSH	XSSH	XSSH	|		SSH		|		XSSH	SSH	|		PM	|	|
Monterey Aquarium	Lv	|		AM	AM	AM	|		AM		|		PM	PM	|		4:55	|	|
Monterey-*Transit Plaza*	Lv	|		5:22	5:00	9:50	|		10:24		|		3:18	3:15	|		5:20	|	|
		|		|	|	|												|	|
SALINAS	Ar	2:58		|	|	|	10:35		|		3:45		|	|	4:55		6:15	6:36	7:50
		|		|	|	|	|		|		|		|	|		PM	|	|
SALINAS	Lv	3:03		|	|	|	10:40		|		3:50		|	|	5:00			6:36	7:55
Edgewater-*Transit Exchange*		|		5:34	5:12	10:02	|		10:36		|		3:30	3:27	|			|	|
Prunedale-*Park n Ride*		|		5:56	5:34	10:24	|		10:58		|		3:52	3:49	|			|	|
Gilroy-*Caltrain Station* (CT)		|		6:23	6:01	10:51	|		11:25		|		4:19	4:16	|			--	|
Morgan Hill-*Caltrain Sta. (CT)*		|		6:50	6:28	11:18	|		11:52		|		4:46	4:43	|			--	|
SAN JOSE (CC,6,35,CT)	Ar	4:18		c 7:35	c 7:13	c 12:03	c12:10		c 12:37		c 5:05		c 5:31	c 5:28	c 6:15				8:27	9:10
		|		AM	AM	PM	PM		PM		|		PM	PM	|			|	|
		|									|				|			|	|
		Night		724	528		532	734			Coast	544/744			Coast	546	748		|	Coast
		Coast		Train	Train		Train	Train			Daylight	Train			Daylight	Train	Train		|	Daylight
		Bus		SSH	XSSH		XSSH	SSH			Bus	Daily			Bus	XSSH	SSH		|	Bus
		|		AM	AM		PM	PM			|	PM			|	PM	PM		|	|
SAN JOSE (CC,6,35,CT)	Lv	4:18		7:50	9:05		12:20	12:50			D 5:05	5:50			D 6:15	7:15	7:50		8:39	D 9:10
Santa Clara/Great America (CC)		|		8:02	9:19		12:32	1:02			|	6:02			|	7:27	8:02		--	|
Fremont/Centerville (CC)		|		8:19	9:38		12:49	1:19			|	6:19			|	7:43	8:19		|	|
Hayward (CC)		|		8:34	9:54		1:04	1:34			|	6:34			|	7:59	8:34		|	|
Oakland Coliseum		|		8:44	10:04		1:14	1:44			|	6:44			|	8:10	8:44		--	|
SAN FRANCISCO-*Ferry Bldg*	Ar	D 5:33		|	|		|	|			D 6:20	|			D 7:25	|	|		|	D10:25
EMERYVILLE		D 5:53		|	|		|	|			|	|			|	|	|		|	D10:45
OAKLAND (CC,SJ,34,99)	Ar	c 6:03		8:53	10:13		1:23	1:53			D 6:45	6:53			D 7:55	8:18	8:53		9:32	D10:55
		AM		|	|		|			PM	|			PM	|	|		|	PM
				|	|		|				|				|	|		|	
		522	720	|	|		|				|				|	|		|	
		Train	Train	|	|		|				|				|	|		|	
		XSSH	SSH	|	|		|				|				|	|		|	
Capitol Corridor Connection		AM	AM	|	|		|				|				|	|		|	
OAKLAND	Lv	6:30	7:20	8:55	10:15		1:25	1:55				6:55				8:20	8:55		9:47	
EMERYVILLE	Ar	6:38	7:28	9:03	10:23		1:33	2:03				7:03				8:28	9:03		10:12	
MARTINEZ		7:17	8:07	9:42	11:02		2:12	2:42				7:42				9:07	9:42		10:54	
DAVIS		8:02	8:52	10:27	11:47		2:57	3:27				8:27				9:52	10:27		11:33	
SACRAMENTO		8:28	9:18	10:55	12:15		3:25	3:55				8:55				10:25	10:55		11:59	
Roseville	Ar	AM	10:35	AM	1:30		4:30	4:30				PM				PM	PM		PM	
			AM		PM		PM	PM											to Seattle	

NATIONWIDE SYSTEM

Trains Serving California:

THE COAST STARLIGHT

Seattle - Portland - Eugene - Sacramento
Oakland - San Jose - Santa Barbara - Los Angeles

THE CALIFORNIA ZEPHYR

Chicago - Omaha - Denver - Salt Lake
Reno - Sacramento - Emeryville

THE SOUTHWEST CHIEF

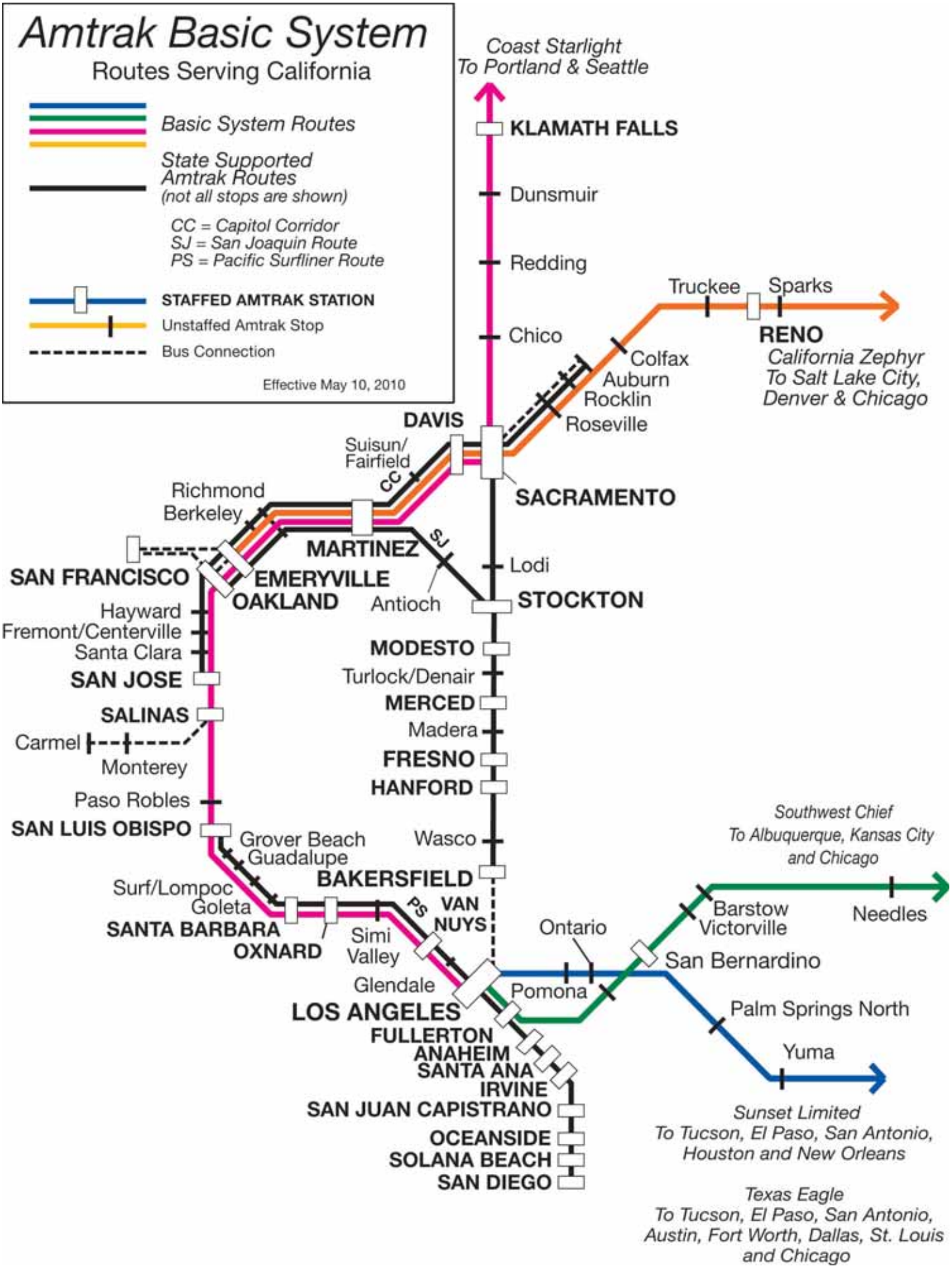
Chicago - Kansas City - Albuquerque
Flagstaff - San Bernardino - Los Angeles

THE SUNSET LIMITED

New Orleans - Houston - San Antonio
El Paso - Tucson - Los Angeles

THE TEXAS EAGLE

Chicago - St. Louis - Little Rock - Dallas - Fort Worth
Austin - San Antonio - El Paso - Tucson - Los Angeles


Amtrak Basic System
Routes Serving California
Basic System Routes
State Supported Amtrak Routes
(not all stops are shown)
CC = Capitol Corridor
SJ = San Joaquin Route
PS = Pacific Surfliner Route
STAFFED AMTRAK STATION
Unstaffed Amtrak Stop
Bus Connection
Effective May 10, 2010
Coast Starlight
To Portland & Seattle
KLAMATH FALLS
Dunsmuir
Redding
Chico
Truckee
Sparks
RENO
California Zephyr
To Salt Lake City, Denver & Chicago
Colfax
Auburn
Rocklin
Roseville
DAVIS
Suisun/ Fairfield
CC
SACRAMENTO
Richmond
Berkeley
MARTINEZ
SJ
Lodi
SAN FRANCISCO
EMERYVILLE
OAKLAND
Antioch
STOCKTON
Hayward
Fremont/Centerville
Santa Clara
SAN JOSE
MODESTO
Turlock/Denair
MERCED
Madera
FRESNO
HANFORD
SALINAS
Carmel
Monterey
Paso Robles
SAN LUIS OBISPO
Grover Beach
Guadalupe
Wasco
BAKERSFIELD
Surf/Lompoc
Goleta
SANTA BARBARA
OXNARD
Simi Valley
PS
VAN NUYS
Glendale
LOS ANGELES
Southwest Chief
To Albuquerque, Kansas City and Chicago
Barstow
Victorville
Needles
Ontario
San Bernardino
Pomona
Palm Springs North
Yuma
FULLERTON
ANAHEIM
SANTA ANA
IRVINE
SAN JUAN CAPISTRANO
OCEANSIDE
SOLANA BEACH
SAN DIEGO
Sunset Limited
To Tucson, El Paso, San Antonio, Houston and New Orleans
Texas Eagle
To Tucson, El Paso, San Antonio, Austin, Fort Worth, Dallas, St. Louis and Chicago

BASIC SYSTEM SERVICE

THE COAST STARLIGHT

Seattle - Portland - Eugene - Sacramento - Oakland - San Jose - Los Angeles

Southbound-Read Down | Northbound-Read Up

Effective May 7, 2012

	11 ® Coast Star-light Daily					14 ® Coast Star-light Daily	
	AM					PM	
	9:45		Lv	**SEATTLE, WA** (NW,EB)	Ar	**8:45**	
	10:31			**TACOMA** (NW)		**7:11**	
	11:21			Olympia-Lacey (NW)		**6:22**	
	11:45			**CENTRALIA** (NW)		**5:57**	
	12:29			Kelso-Longview (NW)		**5:14**	
	1:08			**VANCOUVER, WA** (NW,EB)		**4:36**	
	1:50		Ar	**PORTLAND, OR** (NW,EB)	Lv	**4:20**	
	2:25		Lv	**PORTLAND, OR**	Ar	**3:40**	
	3:37			**SALEM** (NW)		**2:03**	
	4:10			**ALBANY** (NW)		**1:30**	
	5:05		Ar	**EUGENE** (NW)	Lv	**12:44**	
	5:10		Lv	**EUGENE**	Ar	**12:39**	
	8:05			Chemult		9:40	
	9:50		Ar	**KLAMATH FALLS**	Lv	8:25	
	10:00		Lv	**KLAMATH FALLS, OR**	Ar	8:15	
	12:35			Dunsmuir, CA (3)		5:04	
	2:21			Redding (3)		3:14	
	3:50			Chico (3)		1:55	
	6:15		Ar	**SACRAMENTO** (CC,CZ,SJ,3,20,23)	Lv	A12:19	
	6:35		Lv	**SACRAMENTO**	Ar	**11:59**	
	6:50			**DAVIS** (CC,CZ,3)		**11:33**	
	7:30		Ar	**MARTINEZ** (CC,SJ,CZ,7)	Lv	**10:54**	
	7:34		Lv	**MARTINEZ**	Ar	**10:46**	
	8:04			Richmond (CC,SJ,CZ)		**10:20**	
	8:15		Ar	**EMERYVILLE** (CC,SJ,CZ,99)	Lv	**10:07**	
		5011 ® Bus Daily				*5014 ® Bus Daily*	
		AM		*Route 99 Bus Connection*		*PM*	
6011 ® Bus Daily		*c 8:25*	Lv	*EMERYVILLE*	Ar	***c 9:35***	*6014 ® Bus Daily*
		8:55	Ar	*SAN FRANCISCO-Ferry Bldg.*	Lv	***9:05***	
		AM				***PM***	
AM				*Route 99 Bus Connection*			***PM***
7:55			Lv	*SAN FRANCISCO-Ferry Bldg.*	Ar		***10:10***
c 8:25			Ar	*OAKLAND-Jack London Square*	Lv		***c 9:45***
AM							***PM***
	8:25		Lv	**EMERYVILLE**	Ar	**9:57**	
	8:40		Ar	**OAKLAND** (CC,SJ,21,34,36,99)	Lv	**9:42**	
	8:50		Lv	**OAKLAND**	Ar	**9:32**	
	9:55		Ar	**SAN JOSE** (CC,6,17,21,35,36)	Lv	**8:39**	
	10:07		Lv	**SAN JOSE**	Ar	**8:27**	
	11:48			**SALINAS** (17,21,36,37,68)		**6:36**	
	1:38			Paso Robles (17,18,21,36)		**4:45**	
	3:10		Ar	**SAN LUIS OBISPO** (PS,17,18,21,36)	Lv	**3:43**	
	3:20		Lv	**SAN LUIS OBISPO**	Ar	**3:30**	
	6:17			**SANTA BARBARA** (PS,4,10,17,21)		**12:48**	
	7:05			**OXNARD** (PS,4,10)		11:55	
	D 7:38		Ar	Simi Valley (PS,1,4)		R11:23	
	D 8:05		Ar	**VAN NUYS** (PS,1,4)		R10:52	
	D 8:15		Ar	Burbank Airport (PS,1,4)	Lv	R10:42	
	9:00	*796*	Ar	**LOS ANGELES** (PS,SC,SL,TE,1,4)	Lv	10:15	
	PM	*Train*				AM	
		Daily				*Train Daily*	
		PM		*Pacific Surfliner Train Connection*		*AM*	
		10:10	Lv	*LOS ANGELES*	Ar	*8:50*	
		10:38		*FULLERTON*	Lv	*8:16*	
		10:51		*ANAHEIM*		*8:07*	
		11:00		*SANTA ANA*		*7:58*	
		11:11		*IRVINE*		*7:48*	
		11:25		*SAN JUAN CAPISTRANO*		*7:32*	
		11:56		*OCEANSIDE*		*7:02*	
		12:11	Lv	*SOLANA BEACH*		*6:46*	
		12:50	Ar	*SAN DIEGO*	Lv	*6:05*	
		AM				*AM*	

BASIC SYSTEM SERVICE
THE CALIFORNIA ZEPHYR
Chicago - Omaha - Denver - Salt Lake City - Reno - Sacramento - Emeryville

Westbound-Read Down | Eastbound-Read Up

Effective May 7, 2012

TRAIN 5 ® *Calif. Zephyr* Daily				TRAIN 6 ® *Calif. Zephyr* Daily
PM				**PM**
2:00	Lv	**CHICAGO, IL** (SC,EB,TE)(Cent. Time)	Ar	**2:50**
2:34		**NAPERVILLE** (SC)	Ar	**D 1:43**
3:44		Princeton (SC)	Lv	**D 12:23**
4:38		**GALESBURG, IL** (SC)		D 11:31
5:25		Burlington, IA		10:36
5:59		**MT. PLEASANT**		9:54
6:53		**OTTUMWA**		9:09
8:09		Osceola (Des Moines)		7:40
8:41	Lv	Creston, IA		7:04
10:55	Ar	**OMAHA, NE**	Lv	5:14
11:05	Lv	**OMAHA**	Ar	4:59
12:14		**LINCOLN**	Lv	3:26
1:47		**HASTINGS**		1:42
2:34		Holdrege		12:54
3:43		McCook, NE (Central Time)		**11:49**
5:05	Lv	Ft. Morgan, CO (Mountain Time)		**8:25**
7:15	Ar	**DENVER** (Colorado Springs)	Lv	**7:10**
8:05	Lv	**DENVER**	Ar	**6:38**
10:07		Fraser/Winter Park	Lv	**3:50**
10:37		Granby		**3:12**
1:53		**GLENWOOD SPRINGS**		**12:10**
4:10		**GRAND JUNCTION, CO**		10:23
5:58		Green River, UT		7:59
7:20		Helper (Price)		6:37
9:26	Lv	Provo		4:35
11:05	Ar	**SALT LAKE CITY**	Lv	3:30
11:30	Lv	**SALT LAKE CITY, UT** (Mtn. Time)	Ar	3:05
3:03		Elko, NV (Pacific Time)	Lv	**9:31**
5:40	Lv	Winnemucca		**7:08**
8:36		**RENO, NV** (20)	Lv	**4:06**
9:37		Truckee (20)		**2:38**
11:48		Colfax (20)		**12:21**
12:57	Lv	Roseville (CC,20)		11:35
D 2:10	Ar	**SACRAMENTO** (CC,CS,SJ,3,20,23)	Lv	11:09
D 2:13	Lv	**SACRAMENTO**	Ar	11:09
D 2:44	Ar	**DAVIS** (CC,CS,3)	Lv	10:36
D 3:24	Ar	**MARTINEZ** (CC,SJ,CS,7)	Lv	9:54
D 3:26	Lv	**MARTINEZ**	Ar	9:54
D 3:59	Lv	**RICHMOND**	Ar	9:22
4:10	Ar	**EMERYVILLE** (CC,SJ,CS,21,99)	Lv	9:10
PM				AM

5005 ® Bus Daily					5006® Bus Daily
PM		*Route 99 Bus Connection*			AM
4:25	6005 ® Bus Daily	*Lv*	*EMERYVILLE*	*Ar*	*8:25*
4:55		*Ar*	*SAN FRANCISCO-Ferry Bldg.*	*Lv*	*7:50*
PM					*AM*

6006® Bus Daily
AM
8:30
8:15
AM

	PM	*Route 99 Bus Connection*		
	4:25	*Lv*	*EMERYVILLE*	*Ar*
	4:45	*Ar*	*OAKLAND-Jack London Square*	*Lv*
	PM			

4768 ® Bus Daily					4785 ® Bus Daily
PM		*Capitol Corridor and Route 21 bus connection*			AM
10:00		*Lv*	*OAKLAND*	*Ar*	*5:55*
11:55		*Ar*	*SAN JOSE*	*Lv*	*4:10*
PM					*AM*

BASIC SYSTEM SERVICE
THE SOUTHWEST CHIEF
Chicago - Kansas City - Albuquerque - Los Angeles

Westbound-Read Down | Eastbound-Read Up

Effective May 7, 2012

3 ® *South-west Chief* Daily			4 ® *South-west Chief* Daily
PM			PM
2:45	Lv	**CHICAGO, IL** (CZ, EB, TE) (Central Time) Ar	3:15
R 3:20		**NAPERVILLE** (CZ) Ar	D 2:42
4:09		Mendota (CZ) Lv	1:19
4:31		Princeton (CZ)	12:58
5:23		**GALESBURG, IL** (CZ)	12:08
6:27		**FORT MADISON, IA**	11:09
7:36	Lv	La Plata, MO	9:55
9:56	Ar	**KANSAS CITY, MO** (St. Louis) Lv	7:43
10:45	Lv	**KANSAS CITY, MO** Ar	7:24
11:52		Lawrence, KS Lv	5:47
12:29		**TOPEKA**	5:18
2:45		**NEWTON** (Wichita)	2:59
3:20		Hutchinson	2:19
5:25		Dodge City	12:27
6:21		**GARDEN CITY, KS** (Central Time)	11:17
6:59		Lamar, CO (Mountain Time)	8:40
8:30	Dp	**LA JUNTA** Dp	7:41
9:50		Trinidad, CO	5:49
10:56		**RATON, NM**	4:50
12:38		Las Vegas, NM	3:03
2:24		**LAMY** (Santa Fe)	1:15
3:55	Ar	**ALBUQUERQUE** Lv	12:10
4:45	Lv	**ALBUQUERQUE** Ar	11:42
7:08		Gallup, NM (Mountain Time)	8:21
7:50		Winslow, AZ (Mountain Standard Time)	5:39
8:51	Ar	**FLAGSTAFF** (Grand Canyon) Lv	4:41
8:57	Lv	**FLAGSTAFF** Ar	4:36
9:33		Williams Jct.	3:50
11:46		Kingman, AZ (Mountain Standard Time)	1:33
12:49		Needles, CA (Pacific Time)	12:23
3:39		Barstow, CA (9)	9:56
4:18		Victorville (12)	9:10
5:32		San Bernardino (19)	7:59
5:53		Riverside (Hemet) (19)	7:33
D 6:34	Ar	**FULLERTON** (PS,1)	6:50
8:15	Ar	**LOS ANGELES** (PS,1,4,CS,SL,TE) Lv	6:15
AM			PM

564 Train Daily			785 Train Daily
AM		*Pacific Surfliner Train Connection*	PM
7:49	Lv	*FULLERTON* Ar	6:16
7:58		*ANAHEIM*	6:08
8:06		*SANTA ANA*	5:59
8:21		*IRVINE*	5:49
8:36		*SAN JUAN CAPISTRANO*	5:32
9:08		*OCEANSIDE*	4:59
9:26		*SOLANA BEACH*	4:40
10:05 AM	Ar	*SAN DIEGO* Lv	4:00 PM

763 Train Daily			784 Train Daily
AM		*Pacific Surfliner Train Connection*	AM
9:05	Lv	*LOS ANGELES* Ar	4:55
9:17		*GLENDALE*	4:32
9:36		*VAN NUYS*	4:13
10:01		*Simi Valley*	3:35
10:37		*OXNARD*	2:56
11:40	Ar	*SANTA BARBARA* Lv	2:03
AM			PM

THE TEXAS EAGLE

Chicago - St. Louis - Little Rock - Dallas - Fort Worth - San Antonio - El Paso - Tucson - Yuma - Los Angeles

Effective May 7, 2012

Westbound-Read Down	21 ® Texas Eagle				Eastbound-Read Up	22 ® Texas Eagle
	PM				PM	
Daily	1:45	Lv	**CHICAGO, IL** (CZ,SC)	Ar	1:52	Daily
	R 2:40		**JOLIET**		D 12:56	
	3:27		Pontiac		11:39	
	4:04		**BLOOMINGTON/NORMAL**		11:08	
	4:37		Lincoln		10:25	
	5:14		**SPRINGFIELD**		9:55	
	f 5:49		Carlinville		f 9:15	
	6:22		**ALTON, IL**		8:43	
	7:21	Ar	**ST. LOUIS, MO**	Lv	7:55	
	8:00	Lv	**ST. LOUIS**	Ar	7:19	
	11:42		Poplar Bluff, MO		2:44	
	12:37		Walnut Ridge, AR		1:41	
	3:10		**LITTLE ROCK**		11:39	
	f 3:55		Malvern		f 10:26	
	f 4:20		Arkadelphia, AR		f 10:02	
	5:58		**TEXARKANA, AR-TX**		8:43	
	7:50		**MARSHALL, TX**		7:31	
	8:28		**LONGVIEW**		6:15	
	9:25		Mineola		5:15	
	11:30	Ar	**DALLAS**	Lv	3:40	
	11:50	Lv	**DALLAS**	Ar	3:20	
	1:25	Ar	**FORT WORTH**	Lv	2:20	
	2:10	Lv	**FORT WORTH**	Ar	1:58	
	2:52		Cleburne		1:00	
	4:00		McGregor		11:51	
	4:43		**TEMPLE**		11:25	
	5:36		Taylor		10:22	
	6:30		**AUSTIN**		9:31	
	7:12		San Marcos		8:32	
	9:55	Ar	**SAN ANTONIO**	Lv	7:00	
Thursday Sunday & Tuesday	2:45	Lv	**SAN ANTONIO**	Ar	4:50	Monday Thursday & Saturday
	5:49		Del Rio		1:02	
	f 8:24		Sanderson		f 10:36	
	10:38		Alpine (Central Time)		8:45	
	1:22	Ar	**EL PASO** (Mountain Time)	Lv	3:35	
	1:47	Lv	**EL PASO, TX**	Ar	3:10	
	f 3:18		Deming, NM		f 1:10	
	f 4:13		Lordsburg, NM (Mountain Time)		f 12:15	
	f 5:18		Benson, AZ (Mountain Standard Time)		f 9:15	
	6:45	Ar	**TUCSON**	Lv	8:15	
Friday Monday & Wednesday	7:35	Lv	**TUCSON**	Ar	7:28	Sunday Wednesday & Friday
	9:02		Maricopa		5:40	
	11:49		Yuma, AZ (Mountain Standard Time)		2:47	
	2:02		North Palm Springs, CA (Pacific Time)		12:36	
	D 3:57		Ontario (19)		10:54	
	D 4:07		Pomona		10:41	
	5:35	Ar	**LOS ANGELES** (CS,PS,1,4,ML)	Lv	10:00	
	AM				PM	
	562 Train Daily				*591 Train Daily*	
	AM		*Pacific Surfliner Train Connection*		*PM*	
	6:15	Lv	*LOS ANGELES*	Ar	*9:05*	
	8:57	Ar	*SAN DIEGO*	Lv	*6:15*	
	AM				*PM*	

Notes:
See Page 5 for general notes
AM - Light Face Type
PM - Bold Type
f - Flag Stop.
R - Stops to receive passengers only.
Boxes beside schedule indicate days of operation.
4/2/12
DOR/GWS

THE SUNSET LIMITED

New Orleans - Houston - San Antonio - El Paso - Tucson - Yuma - Los Angeles

Westbound-Read Down | Eastbound-Read Up

Effective May 7, 2012

	1 ® Sunset Limited				2 ® Sunset Limited	
	AM				PM	
Wednesday Saturday & Monday	9:00	Lv	**NEW ORLEANS**	Ar	**9:40**	Tuesday Friday & Sunday
	f 10:30		Schriever		**f 7:03**	
	f 11:56		New Iberia		**f 5:41**	
	12:24		Lafayette		**5:15**	
	1:55		Lake Charles, LA		**3:29**	
	3:48		Beaumont, TX		**2:05**	
	6:18	Ar	**HOUSTON**	Lv	**12:10**	
	6:55	Lv	**HOUSTON**	Ar	11:10	
Thursday Sunday & Tuesday	12:05	Ar	**SAN ANTONIO, TX**	Lv	6:25	
	2:45	Lv	**SAN ANTONIO**	Ar	4:50	Monday Thursday & Saturday
	5:49		Del Rio		1:02	
	f 8:24		Sanderson		**f 10:36**	
	10:38		Alpine (Central Time)		**8:45**	
	1:22	Ar	**EL PASO** (Mountain Time)	Lv	**3:35**	
	1:47	Lv	**EL PASO, TX**	Ar	**3:10**	
	f 3:18		Deming, NM		**f 1:10**	
	f 4:13		Lordsburg, NM (Mountain Time)		**f 12:15**	
	f 5:18		Benson, AZ (Mountain Standard Time)		f 9:15	
	6:45	Ar	**TUCSON**	Lv	8:15	
	7:35	Lv	**TUCSON**	Ar	7:28	
Friday Monday & Wednesday	**9:02**		Maricopa (Phoenix)		5:40	Sunday Wednesday & Friday
	11:49		Yuma, AZ (Mountain Standard Time)		2:47	
	2:02		North Palm Springs, CA (Pacific Time)		12:36	
	D 3:57		Ontario (19)		**10:54**	
	D 4:07		Pomona		**10:41**	
	5:35	Ar	**LOS ANGELES** (CS,PS,1,4,ML)	Lv	**10:00**	
	AM				PM	
	562 Train Daily				*591 Train Daily*	
	AM		*Pacific Surfliner Train Connection*		***PM***	
	6:15	Lv	*LOS ANGELES*	Ar	***9:05***	
	8:57	Ar	*SAN DIEGO*	Lv	***6:15***	
	AM				***PM***	

Notes:
See Page 5 for general notes
AM - Light Face Type
PM - Bold Type.
f - Flag Stop.
R - Stops to receive passengers only.
Boxes beside schedule indicate days of operation.
Train 1 Sleeping Car Pax can remain onboard at LAX until 6:30a.
4/2/12 DOR/GWS

CONTACT INFORMATION

Rail Services in California

Amtrak – Nationwide Intercity Rail Service:
Telephone: 800-USA-RAIL
TTY: 800-523-6590
Webpage: www.amtrak.com

Amtrak California – State Supported Intercity Amtrak service in California:
Telephone: 800-USA-RAIL (Amtrak)
Webpage: www.amtrakcalifornia.com

Capitol Corridor – Intercity Rail Service: Auburn – Sacramento – Oakland – San Jose
Telephone: 877-9-RIDECC
Webpage: www.capitolcorridor.org

Coaster – Regional Rail Service: San Diego – Oceanside
Telephone: 800-COASTER or 800-COMMUTE (within service area),
760-722-6283 (outside service area
TTY/TDD: 888-722-4889
Webpage: www.gonctd.com or www.sdcommute.com

Metrolink – Regional Rail Service: Los Angeles Area
Telephone: 800-371-LINK (within service area), 213-347-2800 (outside service area)
TDD: 800-698-4TDD
Webpage: www.metrolinktrains.com

ACE (Altamont Commuter Express) – Regional Rail Service: Stockton - San Jose
Telephone: 800-411-RAIL
Webpage: www.acerail.com

Caltrain – Regional Rail Service: San Francisco – San Jose – Gilroy
Telephone: 800-660-4287 (Peninsula Area), 510-817-1717 (outside service area)
TDD: 650-508-6448
Webpage: www.caltrain.com

BART (Bay Area Rapid Transit District) – Regional Rail Service: San Francisco Bay Area
Telephone: 925-676-BART (Contra Costa County), 510-441-BART (Livermore Area),
510-465-BART (Oakland), 510-236-BART (Richmond),
415-992-BART (San Francisco)
TDD: 510-839-2220
Webpage: www.bart.gov

REFERENCE

Bus and Train Stop Index
Schedule Number Index
Passenger Information Report
Timetable Requests
Contact List

INDEX OF BUS AND TRAIN STOPS

New or Relocated stops shown in Bold Face Type

City/Stop	Code	Location	Address - Zip Code	Routes
ANAHEIM	ANA	Amtrak Station	2150 E. Katella (Edison Stadium) - 92806	PS, 1
ANTIOCH	ACA	Amtrak Station	Foot of "I" St. - 94509	SJ
ARCATA	ARC	Transit Plaza	925 E St. (between 9th & 10th) - 95521	7
ATASCADERO	ATA	Denny's Restaurant	6910 El Camino Real - 93422	17,18A
AUBURN	ARN	Amtrak Station	277 Nevada St. at Fulweiler - 95603	CC,3,20
BAKERSFIELD	BFD	Amtrak Station	601 Truxtun Ave.- 93301	SJ,1.9,10,12,19
BARSTOW	BAR	Amtrak/Harvey House	685 N. 1st Ave. - 92311	SW,9
BARSTOW	BBS	Barstow Station/McDonalds	1611 East Main St. - 92311	9
BERKELEY	BKY	Amtrak Station	University Ave & 3rd St. - 94710	CC
BUELLTON	BUL	Burger King	238 East Highway 246	17, 21
BURBANK-Bob Hope Airport	BUR	Amtrak Station	3750 Empire Ave. - 91505	PS,1,4
CABAZON	CBZ	Morongo Casino Hotel Resort	49500 Seminole Drive - 92230	19, 39
CAMARILLO	CML	Amtrak/Metrolink Station	30 Lewis Rd. - 93010	PS,4
CARMEL	CRM	Chevron Station	3645 Rio Road at Hwy 1-93923	68
CARPINTERIA	CPN	Amtrak Station	475 Linden Ave. - 93013	PS,4,10
CHATSWORTH	CWT	Amtrak/Metrolink Station	10400 Old Depot Plaza Rd. - 91311	PS,1,4
CHICO	CIC	Amtrak Station	W. 5th & Orange St. - 95926	CS,3
CLAREMONT	CLM	Metrolink Station	200 West 1st St. - 91711	19
CLOVERDALE	CLV	Transit Depot	Citrus Fair Dr. at Asti Road - 95425	7
COLFAX	COX	Amtrak Station	99 Railroad Street - 95713	CZ,20
CORCORAN	COC	Amtrak Station	Whitely & Otis Ave. - 93212	SJ
DAVIS	DAV	Amtrak Station	840 2nd St. - 95616	CC,CS,CZ,3
DENAIR		See Turlock/Denair		
DISCOVERY KINGDOM	VMW	Main Gate	Fairgrounds Ave. at Maine World Pkwy - 94589	7
DUBLIN/PLEASANTON	DBP	BART Station	I-580 at Hopyard (Mid-day Parking) - 94588	6, 34
DUNSMUIR	DUN	Amtrak Station	5750 Sacramento Ave. - 96025	CS
EL PORTAL	EPL	Yosemite View Lodge	11136 Highway 140 - 95318	15
EL SEGUNDO	ESG	Douglas Green Line Stn	700 S. Douglas St. - 90245	
ELK GROVE	EKG	Across from McDonald's	Harbor Point Dr. at Renwick Ave. - 95758	3
EMERYVILLE	EMY	Amtrak Station	5885 Horton St. - 94608	CC,SJ,CS, CZ,34,99
EUREKA	EKA	Denny's Restaurant	136 5th St. (bus stop on 6th at C) - 95501	7
FILLMORE	FIL	Intl House of Pancakes	718 Ventura St. (Hwy 126 at Hwy 23) - 93015	10
FORTUNA	FTA	Pepper's Restaurant	719 South Fortuna Blvd. 95540	7
FREMONT/CENTERVILLE	FMT	Amtrak Station	37260 Fremont Blvd. at Peralta Blvd. - 94536	CC,ACE,6
FREMONT/	FRT	Across Mission Blvd from Caltrans Park-n-Ride Lot		
MISSION SAN JOSE			Upper Mission Blvd (Hwy 238) at I-680 - 94538	6
FRESNO	FNO	Amtrak Station	2650 Tulare St. - 93721	SJ, 1
FULLERTON	FUL	Amtrak/Metrolink Station	120 E. Santa Fe Ave. - 92832	PS,SW,1, 39
GARBERVILLE	GBV	Waterwheel Restaurant	924 Redwood Drive - 95440	7
GILROY	GLY	Caltrain Depot	7250 Monterey Rd. at Depot St. - 95020	21,55
GLENDALE	GDL	Amtrak/Metrolink Station	Railroad & Cerritos Ave. - 91204	PS,1,4
GOLETA	GTA	Amtrak Station	North End of La Patera Lane - 93117	PS, 4
GOSHEN JCT.	GSN	Arco Travel Plaza	30829 Highway 99 - 93227	18B
GROVER BEACH	GVB	Amtrak Station	150 Highway 1 at Grand Ave. - 93433	PS,17,18A,21
GUADALUPE	GUA	Amtrak Station	330 Guadalupe St. (Hwy 1) - 93434	PS,17
HANFORD	HNF	Amtrak Station	200 Santa Fe Ave. #A - 93230	SJ,18A,18B
HAYWARD	HAY	Amtrak Station	22555 Meekland Ave. at "A" St. - 94545	CC
HEALDSBURG	HEA	Singletree Inn Restaurant	165 Healdsburg Ave. - 95448	7
HEMET	HET	Coco's Family Restaurant	3246 West Florida Ave. - 92544	19
HEMET	HMT	Simpson Center	304 East Devonshire - 92543	19
INDIO	IDO	Bus Stop	Hwy 111 at Monroe Ave. (NE Corner) - 92201	19, 39
IRVINE	IRV	Transportation Center	15215 Barranca St. - 92618	PS
KETTLEMAN CITY	KTC	Carls Jr. Restaurant	Highway 41 at I-5 - 93239	18A
KING CITY	KGC	McDonald's	1350 Broadway Circle - 93930	17,21
KINGSBURY	SLN	Transit Center	169 Highway 50	20
LA CRESCENTA	LCA	I-210 at Lowell Ave.	Honolulu & Lowell Aves. - 91214	19
LA QUINTA	LQT	La Quinta Town Center	Highway 111 and Adams St. - 92253	19, 39
LANCASTER	LCS	Metrolink Station	44812 N. Sierra Highway - 93543	12
LAS VEGAS, NV	LVS	Greyhound Depot (Door 6)	200 South Main St. - 89101	9

INDEX OF BUS AND TRAIN STOPS

New or Relocated stops shown in Bold Face Type

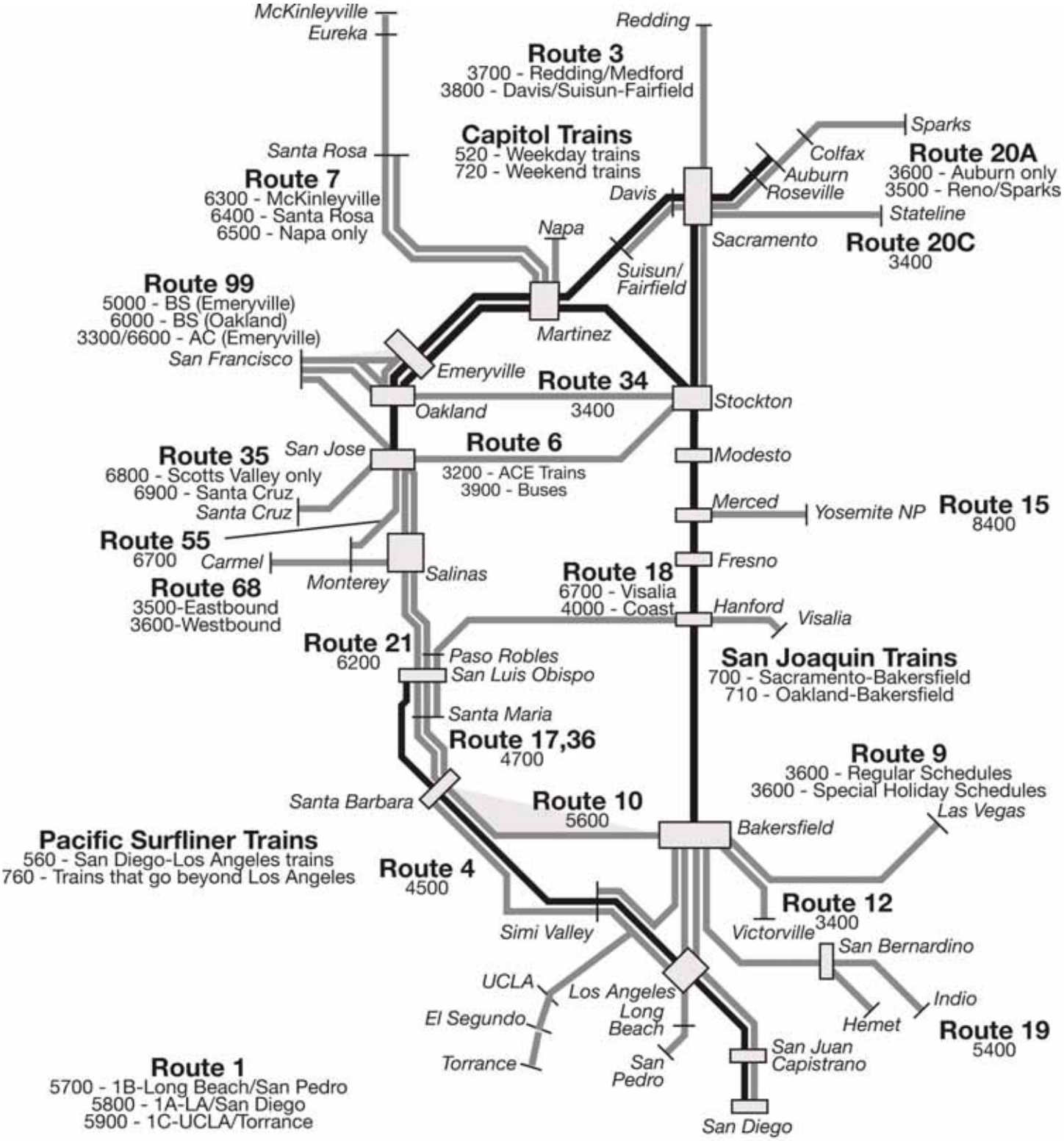
City/Stop	Code	Location	Address - Zip Code	Routes
LATHROP/MANTECA	LTM	ACE Station	17800 Shideler Parkway - 95330	ACE,6
LAYTONVILLE	LTV	Park n Takit Store & Deli	44900 Highway 101 - 95454	7
LEGGETT	LEG	Price's Peg House	69501 Highway 101 - 95585 (Opposite Standish-Hickey State Recreation Area)	7
LEMOORE	LMC	Chamber of Commerce	300 E St. - 93245	18A
LEMOORE (N)	LMN	Naval Air Station	Main Gate, Hwy 198 at 25th Ave.-93245	18A
LITTLEROCK	LTR	Come & Save Grocery	7715 Pearblossom Hwy (Hwy 138)-93543	12
LIVERMORE	LIV	LAVTA Transit Center	2500 Railroad Ave. (near 1st St.) - 94550	ACE,6,34
LODI	LOD	Transportation Center	24 South Sacramento St.-95240	SJ,3,6,34
LOMPOC	LOM	Visitors' Center	111 South I St.-93436	17
LONG BEACH	LBC	Denny's Restaurant	601 N. Long Beach Blvd. - 90802	1
LONG BEACH	LBQ	Queen Mary	1146 Queens Highway - 90802	1
LOS ANGELES	LAX	Union Station	800 N. Alameda St. - 90012	PS,CS,SW,SL,TE,1,4
LOS ANGELES, UCLA	WES	UCLA	592 Gayley Ave @ Strathmore - 90024	1
MADERA	MDR	Amtrak Station	18770 Road 26 - 93638	SJ
MARIPOSA	MRP	YARTS Bus Stop	Hwy 140 at 7th St. - 95338	15
MARIPOSA	MRP	Across from Visitors' Center	Hwy 140 at Hwy 49 - 95338	15
MARTINEZ	MTZ	Amtrak Station	601 Marina Vista Dr. - 94553	CC,SJ,CS,CZ,7
MARYSVILLE	MRV	Yuba County Govt Center	I Street btwn 8th & 9th - 95901	3
McKINLEYVILLE	MKV	Arcata Airport Terminal	Bus Zone in front of lobby - 95521	7
MERCED	MCD	Amtrak Station	324 W. 24th St. - 95340	SJ,15
MIDPINES	MDP	Yosemite Bug Hostel	6979 Highway 140 - 95345	15
MODESTO	MOD	Amtrak Station	Held Dr. & Briggsmore Ave. - 95355	SJ
MOJAVE	MOJ	Carl's Jr. Restaurant	15900 Sierra Highway, 93501	9,12
MONTEREY	MRY	Transit Plaza	Tyler & Pearl - 93940	55,68
MONTEREY-Aquarium	MYA	Monterey Bay Aquarium	886 Cannery Row, at David Ave. - 93940	68
MONTEREY-Hyatt	MYH	Hyatt Regency-Monterey	1 Old Golf Course Rd. - 93940	68
MONTEREY-Marriott	MYM	Monterey Marriott Hotel	350 Calle Principal - 93940	68
MONTEREY-Parking Garage		Parking Garage	Tyler, between Del Monte & Franklin - 93940	55
MONTEREY-Travelodge	MYT	Monterey Travelodge	675 Munras Ave. -93940	68
MOORPARK	MPK	Amtrak/Metrolink Station	High St. at Moorpark Ave. - 93021	PS,4
MORENO VALLEY	MOV	Big O Tires	2650 East Alesando Blvd. - 92508	19
MORGAN HILL	MHC	Caltrain Station	17300 Depot St. - 95037	55
NAPA	NPW	Napa Valley Wine Train Depot	1275 McKinstry St. - 94559	7
NAPA	NAP	VINE Transit Center	Pearl St. at Main St. - 94559	7
NEEDLES	NDL	Amtrak Station	900 Front St. -92363	SW
OAKLAND	OKJ	Amtrak Station	245 2nd St. - 94607	CC,SJ,17,34,99,CS
OAKLAND COLISEUM	OAC	Amtrak Station	700 73rd Ave. - 94621	CC
OCEANSIDE	OSD	Transportation Center	235 S. Tremont Ave. - 92054	PS,1
OLD TOWN	OLT	Transit Center	4005 Taylor St., at Congress St. - 92110	PS
ONTARIO	ONA	Amtrak Station	228 South Plum St. - 91764	19,SL,TE
ONTARIO (N)	ONA	Andy's Burgers	310 E. Holt Blvd. - 91761	19
OROVILLE	ORV	Park & Ride Lot	Highway 70 at Grand Ave. - 95965	3
OXNARD	OXN	Transportation Center	201 E. 4th St. - 93030	PS,CS,4,10
PALM DESERT	PDC	Palm Desert Westfield Mall	72-840 Highway 111 - 92260	19, 39
PALM SPRINGS	PSP	Palm Springs Airport	3400 Tahquitz Canyon Way - 92262	19, 39
PALM SPRINGS DOWNTOWN	PSS	Palm Springs Sunline Stop	Indian Canyon Dr and Andreas Rd -92262	19, 39
PALM SPRINGS NORTH	PSN	Amtrak Station	Indian Ave. at UP Tracks & I-10 - 92258	SL,TE
PALMDALE	PMD	Transportation Center	39000 Clock Tower Plaza Drive - 93550	12
PASADENA	PAS	Hilton Hotel	150 S. Los Robles at Cordova - 91101	19
PASO ROBLES	PRB	Amtrak Station	Pine St. at 8th St. - 93446	17,18,21,CS
PERRIS	PRI	Int'l House of Pancakes	1688-J No. Perris Blvd. - 92570	19
PETALUMA	PTC	City Library	100 Fairgrounds Dr. (nr Washington) - 94952	7
PLACERVILLE	PCV	Placerville Station	Mosquito Road at Clay St. - 95667	20
PLEASANTON	PLS	ACE Station	4950 Pleasanton Ave. - 94566	ACE
POMONA	POS	Amtrak Station	156 W. Commonwealth St. - 91768	SL,TE
PRIMM, NV	PMM	Whiskey Pete's	I-15 at Primm Exit - 89019	9
PRUNEDALE	PDL	Caltrans Park & Ride Lot	Hwy 156 @ US 101 - 93907	55
RED BLUFF	RBF	Taco Bell	228 Main St. - 96080	3
REDDING	RDR	DowntownTransit Center	1530 Yuba St. - 96001	3
REDDING	RDD	Amtrak Station	1620 Yuba St. - 96001	CS
RENO, NV	RNO	Amtrak Station	280 North Center St. - 89501	CZ,20
RICHMOND	RIC	Amtrak/BART Station	16th & MacDonald Ave. - 94802	CC,SJ
RIVERSIDE	RIV	Metrolink Station	4066 Vine St. - 92501	SW, 19, 39
ROCKLIN	RLN	Amtrak Station	Rocklin Rd. at Railroad Ave. - 95677	CC,3,20
ROHNERT PARK	RPC	Across from Safeway	6336 Commerce Blvd. - 94928	7
ROSEVILLE	RSV	Amtrak Station	201 Pacific St., at Church - 95678	CC,CZ,3,20
SACRAMENTO	SAC	Amtrak Station	401 "I" St. (at 5th) - 95814	CC,SJ,CS,CZ,3,20
SACRAMENTO	SCS	State Capitol	10th St. at N Street - 95814	3
SALINAS	SNS	Amtrak Station	11 Station Place - 93901	CS,17,21,68

INDEX OF BUS AND TRAIN STOPS

New or Relocated stops shown in Bold Face Type

City/Stop	Code	Location	Address - Zip Code	Routes
SAN BERNARDINO	SNB	Amtrak/Metrolink Station	1170 W. 3rd St. - 92410	SW,19
SAN CLEMENTE	SNP	Amtrak Station	Municipal Pier-92676	PS
SAN DIEGO	SAN	Santa Fe Depot	1050 Kettner Blvd. 92101	PS,1
SAN FRANCISCO	SFC	Ferry Building	Ag Bldg, 101 The Embarcadero, Ste 118 - 94111	17,34,36,99
"	SFF	Financial District	California & Drumm St. (Hyatt Regency) - 94111	34, 99
"	SFP	Caltrain Station	4th & Townsend Sts. - 94107	34, 99
"	SFS	SF Shopping Center	835 Market St. (at Powell) - 94103	99
"	SFM	Moscone Center	Howard St. at 4th St. - 94103	99
"	SFW	Pier 39	Bus Turnout Main Ent-The Embarcadero - 94133	99
SAN JOSE	SJC	Amtrak/Caltrain Station	65 Cahill St. - 95110	CC,CS,ACE,6,17,21,35,55
SAN JUAN CAPISTRANO	SNC	Amtrak Station	26701 Verdugo St. - 92675	PS,1
SAN LUIS OBISPO	SLO	Amtrak Station	1011 Railroad Ave. at Santa Rosa - 93401	PS,CS, 17,18A,21
SAN LUIS OBISPO	SLP	Cal Poly	Vista Grande Rest. on Grand Ave.	17,18A,21
SAN PEDRO	SPD	Catalina Terminal	Berth 95 (under Vincent Thomas Br) - 90731	1
SAN PEDRO	SPO	Public Library	931 South Gaffey St. - 90731	1
SANTA ANA	SNA	Regional Trans. Center	1000 Santa Ana Blvd. - 92701	PS,1
SANTA BARBARA	SBA	Amtrak Station	209 State St. - 93101	PS,CS,4,10,17,21
SANTA CLARA/GREAT AMERICA	GAC	Amtrak Station	Stars & Stripes Dr at Tasman Dr O'pass - 95054	CC,ACE,6
SANTA CLARITA/NEWHALL	NHL	Newhall Metrolink Station	24300 Railroad Ave. at Market - 91321	1
SANTA CRUZ	SCZ	Metro Center	920 Pacific Ave. - 95060	35
SANTA MARIA	SAT	Int'l House of Pancakes	Nicholson Ave. (US 101 @ Main St.) - 93454	17,18A,21
SANTA PAULA	SAP	Carrow's Restaurant	245 South Palm Ave. at Hwy 126 - 93060	10
SANTA ROSA	SRC	Courtyard by Marriott	175 Railroad St. - 95401	7
SCOTIA/RIO DELL	RDS	Scotia Inn	Main & Mill St., Scotia - 95565	7
SCOTTS VALLEY	SVY	Cavallaro Transit Center	246 Kings Village Rd. - 95066	35
SEASIDE	SES	Edgewater Transit Exchange	Playa Ave. @ California Ave. - 93955	55
SIMI VALLEY	SIM	Amtrak/Metrolink Station	5000 Los Angeles Ave. near Stearns - 93063	PS,CS,1,4
SOLANA BEACH	SOL	Amtrak Station	105 Cedros Ave. - 92075	PS,1
SOLVANG	SLV	Solvang Park	1630 Mission Dr. at 1st St. - 93463	17,21
SOUTH LAKE TAHOE	SLT	South Y Transit Station	1000 Lake Tahoe Blvd. at Emerald Bay Rd - 96151	20
SPARKS, NV	SPX	The Nugget	1100 Nugget Ave. (11th St. Entrance) - 89431	20
STATELINE, NV	SLH	Transit Center	4114 Lake Tahoe Blvd (South Lake Tahoe). - 96150	20
STOCKTON	SKN	Amtrak Station	735 S. San Joaquin St. - 95203	SJ,3,6,34
STOCKTON	SKT	ACE Station	North Aurora at East Weber Streets - 95202	SJ,ACE,3,6,34
SURF/LOMPOC	LPS	Amtrak Station	End of Ocean Ave. at Surf Beach	PS
SUISUN/FAIRFIELD	SUI	Amtrak Station	177 Main St. (under Highway 12) - 94585	CC
SUN CITY	SUT	CL Travel	26908 Cherry Hills Blvd. - 92586	19
TEHACHAPI	TEH	Burger King	Mulberry St. at Tehachapi Blvd. - 93561	9,12
TORRANCE	TOA	Alpine Village	20575 Hamilton Ave. - 90502	1
TRACY	TRC	ACE Station	4800 Tracy Blvd. - 95377	ACE,6
TRACY	TRA	Wendy's Restaurant	725 W. Clover Rd. at Tracy Blvd. - 95376	6
TRUCKEE	TRU	Amtrak Station	10065 Donner Pass Rd. - 96161	CZ,20
TURLOCK/DENAIR	TRK	Amtrak Station	Santa Fe Ave. & Elm St. (Denair) - 95316	SJ
UKIAH	UKH	Burger King	711 E. Perkins St. - 95481	7
VALLEJO	VAL	Denny's Restaurant	4355 Sonoma Blvd. - 94589	7
VAN NUYS	VNC	Amtrak/Metrolink Station	7724 Van Nuys Blvd - 91405	PS,1,4,CS
VASCO ROAD	VAS	ACE Station	575 South Vasco Rd. (Livermore) - 94559	ACE
VENTURA	VEC	Amtrak Station	Harbor & Figueroa (County Fairgrnds) - 93003	PS,4,10
VICTORVILLE	VRV	Victor Valley Trans. Center	16858 D St. - 92392 (Platform)	SW
VICTORVILLE	VRB	Victor Valley Trans. Center	16838 D St. - 92392 (Building)	12
VISALIA	VIS	Transit Center	425 East Oak St. - 93291	18B
WASCO	WAC	Amtrak Station	700 G St. - 93280	SJ
WILLITS	WTS	California Western Depot	297 E. Commercial St. at CWR/NWP Tks - 95490	7
YOSEMITE	YOS	Yosemite Lodge	Yosemite National Park - 95389	15
YOSEMITE	YOA	Ahwahnee Hotel	Yosemite National Park - 95389	15
YOSEMITE	YOC	Curry Village	Yosemite National Park - 95389	15
YOSEMITE	YOF	Crane Flat Gas Station	Yosemite National Park - 95389	15
YOSEMITE	YOT	Tuolumne Meadows	Yosemite National Park - 95389	15

N - Late Night Alternative Drop-off Stop.


McKinleyville
Eureka
Redding
Route 3
3700 - Redding/Medford
3800 - Davis/Suisun-Fairfield
Capitol Trains
520 - Weekday trains
720 - Weekend trains
Sparks
Colfax
Auburn
Roseville
Route 20A
3600 - Auburn only
3500 - Reno/Sparks
Stateline
Route 20C
3400
Santa Rosa
Route 7
6300 - McKinleyville
6400 - Santa Rosa
6500 - Napa only
Davis
Napa
Sacramento
Suisun/
Fairfield
Route 99
5000 - BS (Emeryville)
6000 - BS (Oakland)
3300/6600 - AC (Emeryville)
Martinez
San Francisco
Emeryville
Route 34
3400
Oakland
Stockton
Route 35
6800 - Scotts Valley only
6900 - Santa Cruz
San Jose
Route 6
3200 - ACE Trains
3900 - Buses
Modesto
Santa Cruz
Merced
Yosemite NP
Route 15
8400
Route 55
6700
Carmel
Monterey
Salinas
Fresno
Route 68
3500-Eastbound
3600-Westbound
Route 18
6700 - Visalia
4000 - Coast
Hanford
Visalia
Route 21
6200
Paso Robles
San Luis Obispo
San Joaquin Trains
700 - Sacramento-Bakersfield
710 - Oakland-Bakersfield
Santa Maria
Route 17,36
4700
Route 9
3600 - Regular Schedules
3600 - Special Holiday Schedules
Santa Barbara
Route 10
5600
Las Vegas
Bakersfield
Pacific Surfliner Trains
560 - San Diego-Los Angeles trains
760 - Trains that go beyond Los Angeles
Route 4
4500
Route 12
3400
Victorville
Simi Valley
San Bernardino
UCLA
Los Angeles
Indio
El Segundo
Long
Beach
Hemet
Route 19
5400
Torrance
San
Pedro
San Juan
Capistrano
Route 1
5700 - 1B-Long Beach/San Pedro
5800 - 1A-LA/San Diego
5900 - 1C-UCLA/Torrance
San Diego

Amtrak California System--Schedule Numbers

Schedule Number	Route No.	Route	Frequency	Comments
518	CC	Oakland-Sacramento	XSSH	
520	CC	Oakland-Sacramento	XSSH	
521	CC	Sacramento-San Jose	XSSH	
522	CC	San Jose-Sacramento	XSSH	
523	CC	Sacramento-San Jose	XSSH	
524	CC	San Jose-Sacramento	XSSH	
525	CC	Sacramento-Oakland Coliseum	XSSH	
526	CC	Oakland Coliseum-Sacramento	XSSH	
527	CC	Sacramento-San Jose	XSSH	
528	CC	San Jose-Sacramento	XSSH	
529	CC	Auburn-Oakland Coliseum	XSSH	
530	CC	Oakland-Sacramento	XSSH	
531	CC	Sacramento-Oakland Coliseum	XSSH	
532	CC	San Jose-Sacramento	XSSH	
533	CC	Sacramento-Oakland Coliseum	XSSH	
534	CC	Oakland-Sacramento	XSSH	
535	CC	Sacramento-San Jose	XSSH	
536	CC	Oakland-Auburn	XSSH	
537	CC	Sacramento-San Jose	XSSH	
538	CC	San Jose-Sacramento	XSSH	
540	CC	Oakland-Sacramento	XSSH	
541	CC	Sacramento-Oakland	XSSH	
542	CC	San Jose-Sacramento	XSSH	
543	CC	Sacramento-San Jose	XSSH	
544	CC	San Jose-Sacramento	XSSH	
545	CC	Sacramento-Oakland	XSSH	
546	CC	San Jose-Sacramento	XSSH	
547	CC	Sacramento-San Jose	XSSH	
548	CC	Oakland-Sacramento	XSSH	
549	CC	Sacramento-Oakland	XSSH	
551	CC	Sacramento-Oakland	XSSH	
553	CC	Sacramento-Oakland	XSSH	
562	PS	Los Angeles-San Diego	Daily	
564	PS	Los Angeles-San Diego	Daily	
565	PS	San Diego-Los Angeles	Daily	
566	PS	Los Angeles-San Diego	Daily	
567	PS	San Diego-Los Angeles	Daily	
571	PS	San Diego-Los Angeles	SSH	
572	PS	Los Angeles-San Diego	Daily	
573	PS	San Diego-Los Angeles	Daily	
577	PS	San Diego-Los Angeles	SSH	
578	PS	Los Angeles-San Diego	Daily	
579	PS	San Diego-Los Angeles	Daily	
580	PS	Los Angeles-San Diego	Daily	
582	PS	Los Angeles-San Diego	Daily	
583	PS	San Diego-Los Angeles	Daily	
587	PS	San Diego-Los Angeles	SSH	
589	PS	San Diego-Los Angeles	XSSH	
590	PS	Los Angeles-San Diego	FSSH	
591	PS	San Diego-Los Angeles	Daily	
592	PS	Los Angeles-San Diego	Daily	
595	PS	San Diego-Los Angeles	Daily	
597	PS	San Diego-Los Angeles	FSSH	
599	PS	San Diego-Los Angeles	XSSH	
701	SJ	Bakersfield-Sacramento	Daily	
702	SJ	Sacramento-Bakersfield	Daily	
703	SJ	Bakersfield-Sacramento	Daily	
704	SJ	Sacramento-Bakersfield	Daily	
711	SJ	Bakersfield-Oakland	Daily	
712	SJ	Oakland-Bakersfield	Daily	
713	SJ	Bakersfield-Oakland	Daily	
714	SJ	Oakland-Bakersfield	Daily	
715	SJ	Bakersfield-Oakland	Daily	
716	SJ	Oakland-Bakersfield	Daily	
717	SJ	Bakersfield-Oakland	Daily	
718	SJ	Oakland-Bakersfield	Daily	
720	CC	Oakland-Sacramento	SSH	
723	CC	Sacramento-San Jose	SSH	
724	CC	San Jose-Sacramento	SSH	
727	CC	Sacramento-San Jose	SSH	
728	CC	San Jose-Sacramento	SSH	
729	CC	Auburn-Oakland Coliseum	SSH	

Amtrak California System--Schedule Numbers

Schedule Number	Route No.	Route	Frequency	Comments
732	CC	Oakland-Sacramento	SSH	
733	CC	Sacramento-San Jose	SSH	
734	CC	San Jose-Sacramento	SSH	
736	CC	San Jose-Sacramento	SSH	
737	CC	Sacramento-San Jose	SSH	
738	CC	Oakland-Sacramento	SSH	
741	CC	Sacramento-San Jose	SSH	
742	CC	San Jose-Auburn	SSH	
743	CC	Sacramento-San Jose	SSH	
744	CC	San Jose-Sacramento	SSH	
745	CC	Sacramento-Oakland	SSH	
746	CC	Oakland-Sacramento	SSH	
747	CC	Sacramento-San Jose	SSH	
748	CC	San Jose-Sacramento	SSH	
749	CC	Sacramento-Oakland	SSH	
751	CC	Sacramento-Oakland	SSH	
761	PS	Los Angeles-San Luis Obispo	XSSH	
763	PS	San Diego-Goleta	Daily	
768	PS	Goleta-San Diego	Daily	
769	PS	San Diego-Goleta	Daily	
774	PS	San Luis Obispo-San Diego	Daily	
777	PS	San Diego-San Luis Obispo	Daily	
784	PS	Goleta-San Diego	Daily	
785	PS	San Diego-Goleta	Daily	
790	PS	San Luis Obispo-Los Angeles	XSSH	
796	PS	Goleta-San Diego	Daily	
1761	PS	Los Angeles-San Luis Obispo	SSH	
1790	PS	San Luis Obispo-Los Angeles	XSSH	
3204	6	Stockton ACE-San Jose	XSSH	
3218	6	San Jose-Stockton ACE	XSSH	
3278	6	San Jose-Stockton ACE	XSSH	
3311	99	Emeryville-San Francisco	Daily	
3318	99	San Francisco-Emeryville	Daily	
3321	99	Emeryville-San Francisco	XSSH	
3322	99	San Francisco-Emeryville	XSSH	
3323	99	Emeryville-San Francisco	XSSH	
3324	99	San Francisco-Emeryville	XSSH	
3325	99	Emeryville-San Francisco	XSSH	
3327	99	Emeryville-San Francisco	XSSH	
3329	99	Emeryville-San Francisco	Daily	
3336	99	San Francisco-Emeryville	XSSH	
3338	99	San Francisco-Emeryville	XSSH	
3340	99	San Francisco-Emeryville	XSSH	
3342	99	San Francisco-Emeryville	XSSH	
3344	99	San Francisco-Emeryville	Daily	
3345	99	Emeryville-San Francisco	Daily	
3346	99	San Francisco-Emeryville	XSSH	
3370	99	San Francisco-Emeryville	SSH	
3374	99	San Francisco-Emeryville	SSH	
3379	99	Emeryville-San Francisco	SSH	
3386	99	San Francisco-Emeryville	SSH	
3388	99	San Francisco-Emeryville	SSH	
3392	99	San Francisco-Emeryville	SSH	
3401	34	Stockton-San Francisco	Daily	
3402	34	San Francisco-Stockton	Daily	
3403	34	Stockton-San Francisco	Daily	
3404	34	San Francisco-Stockton	Daily	
3412	12	Bakersfield-Victorville	Daily	
3413	12	Victorville-Bakersfield	Daily	
3415	12	Victorville-Bakersfield	Daily	
3416	12	Bakersfield-Victorville	Daily	
3424	20	Sacramento-Stateline	Daily	
3447	20	Stateline-Sacramento	Daily	
3511	68	Carmel-Salinas	Daily	
3514	68	Salinas-Carmel	Daily	
3524	20	Sacramento-Sparks	Daily	
3528	20	Sacramento-Sparks	XSSH	
3534	20	Sacramento-Sparks	XSSH	
3537	20	Sparks-Sacramento	Daily	
3543	20	Sparks-Sacramento	Daily	
3553	20	Sparks-Sacramento	Daily	
3578	20	Sacramento-Sparks	SSH	
3584	20	Sacramento-Sparks	SSH	
3603	3	Auburn-Sacrmaneto	XSSH	
3612	9	Bakersfield-Las Vegas	Daily	
3611	68	Carmel-Salinas	Daily	
3614	68	Salinas-Carmel	Daily	

Amtrak California System--Schedule Numbers

Schedule Number	Route No.	Route	Frequency	Comments
3617	9	Las Vegas-Bakersfield	Daily exH	
3623	20	Roseville-Sacramento	XSSH	
3625	3	Roseville-Sacramento	Daily	
3634	3	Sacramento-Auburn	XSSH	
3640	3	Sacramento-Auburn	XSSH	
3642	20	Sacramento-Auburn	XSSH	
3644	3	Sacramento-Auburn	XSSH	
3649	3	Auburn-Sacramento	XSSH	
3657	9	Las Vegas-Bakersfield	SSH	
3701	3	Sacramento-Redding	Daily	
3704	3	Redding-Sacramento	Daily	
3711	3	Stockton-Redding	Daily	
3712	3	Redding-Stockton	Daily	
3713	3	Stockton-Redding	Daily	
3714	3	Redding-Stockton	Daily	
3715	3	Stockton-Redding	Daily	
3716	3	Redding-Stockton	Daily	
3717	3	Stockton-Redding	Daily	
3718	3	Redding-Stockton	Daily	
3751	3	Sacramento-Redding	SSH	
3763	3	Stockton-Redding	SSH	
3801	34	Stockton-Stockton ACE	Daily	
3802	3	Davis-Sacramento	Daily	
3811	3	Stockton-Davis	Daily	
3812	3	Davis-Stockton	Daily	
3814	3	Davis-Sacramento	Daily	
3815	3	Stockton-Davis	Daily	
3816	3	Davis-Stockton	Daily	
3817	3	Sacramento-Davis	Daily	
3818	3	Davis-Sacramento	Daily	
3832	34	Lodi-Stockton	Daily	
3833	3	Stockton-Lodi	Daily	
3837	34	Stockton-Lodi	Daily	
3901	6	Stockton-San Jose	Daily	
3903	6	Stockton-San Jose	Daily	
3904	6	San Jose-Stockton	Daily	
3910	6	San Jose-Stockton	Daily	
3911	34	Stockton-Stockton ACE	XSSH	
3912	6	San Jose-Stockton-ACE	XSSH	
3913	6	Stockton-San Jose	Daily	
3914	6	San Jose-Stockton	XSSH	
3915	6	Stockton ACE-San Jose	Daily	
3916	6	San Jose-Stockton	Daily	
3917	6	Stockton-San Jose	Daily	
3918	6	Fremont/Mission San Jose-Stockton	XSSH	
3961	6	Stockton-San Jose	SSH	
3962	6	San Jose-Stockton	SSH	
3964	6	San Jose-Stockton-ACE	SSH	
3966	6	San Jose-Stockton	SSH	
3968	6	San Jose-Stockton	SSH	
4003	18-A	Santa Maria-Hanford	Daily	
4004	18-A	Hanford-Santa Maria	Daily	
4012	18-A	Hanford-Santa Maria	Daily	
4013	18-A	Santa Maria-Hanford	Daily	
4582	4	Santa Barbara-Los Angeles	Daily	
4591	4	Los Angeles-Santa Barbara	Daily	
4759	17	Santa Barbara-Grover Beach	Daily	
4761	17	San Luis Obispo-Oakland	Daily	
4763	17	Santa Barbara-Oakland	Daily	
4764	17	San Luis Obispo-Santa Barbara	Daily	
4768	17	Oakland-Santa Barbara	Daily	
4769	17	Santa Barbara-Oakland	Daily	
4777	17	San Luis Obispo-Paso Robles	Daily	
4784	17	Oakland-Santa Barbara	Daily	
4785	17	Santa Barbara-San Francisco	Daily	
4790	17	Oakland-San Luis Obispo	Daily	
4796	17	Oakland-Santa Barbara	Daily	
4968	39	Fullerton-Palm Springs	Daily	
4969	39	Indio-Fullerton	Daily	
4984	39	Fullerton-Indio	Daily	
4985	39	Palm Springs-Fullerton	Daily	
5005	99	Emeryville-San Francisco	Daily	
5006	99	San Francisco-Emeryville	Daily	
5011	99	Emeryville-San Francisco	Daily	
5014	99	San Francisco-Emeryville	Daily	
5402	19	Bakersfield-Indio	Daily	
5403	19	Indio-Bakersfield	Daily	
5412	19	Bakersfield-Hemet	Daily	

Amtrak California System--Schedule Numbers

Schedule Number	Route No.	Route	Frequency	Comments
5413	19	San Bernardino-Bakersfield	Daily	
5414	19	Bakersfield-Indio	Daily	
5415	19	Indio-Bakersfield	Daily	
5416	19	Bakersfield-San Bernardino	Daily	
5417	19	Hemet-Bakerfield	Daily	
5602	10	Bakersfield-Santa Barbara	Daily	
5603	10	Santa Barbara-Bakersfield	Daily	
5613	10	Santa Barbara-Bakersfield	Daily	
5614	10	Bakersfield-Santa Barbara	Daily	
5615	10	Santa Barbara-Bakersfield	Daily	
5616	10	Bakersfield-Santa Barbara	Daily	
5701	1B	Los Angeles-Bakersfield	Daily	
5702	1B	Bakersfield-San Pedro	Daily	
5703	1B	San Pedro-Bakersfield	Daily	
5711	1B	San Pedro-Los Angeles	Daily	
5712	1B	Bakersfield-San Pedro	Daily	
5713	1B	San Pedro-Bakersfield	Daily	
5714	1B	Bakersfield-San Pedro	Daily	
5715	1B	San Pedro-Bakersfield	Daily	
5716	1B	Bakersfield-San Pedro	Daily	
5717	1B	San Pedro-Bakersfield	Daily	
5802	1A	Bakersfield-Los Angeles	Daily	
5803	1A	Los Angeles-Bakersfield	Daily	
5804	1A	Bakersfield-Long Beach	Daily	
5811	1A	San Diego-Bakersfield	Daily	
5812	1A	Bakersfield-Los Angeles	Daily	
5813	1A	Santa Ana-Bakersfield	Daily	
5814	1A	Bakersfield-Los Angeles	Daily	
5815	1A	Los Angeles-Bakersfield	Daily	
5816	1A	Bakersfield-Los Angeles	Daily	
5817	1A	Los Angeles-Bakersfield	Daily	
5818	1A	Bakersfield-San Diego	Daily	
5872	1A	Fresno-Los Angeles	Daily	
5885	1A	Los Angeles-Fresno	Daily	
5902	1C	Bakersfield-Torrance	Daily	
5903	1C	Torrance-Bakersfield	Daily	
5912	1C	Bakersfield-Torrance	Daily	
5913	1C	Torrance-Bakersfield	Daily	
5914	1C	Bakersfield-Torrance	Daily	
5915	1C	Torrance-Bakersfield	Daily	
5916	1C	Bakersfield-Torrance	Daily	
5917	1C	Torrance-Bakersfield	Daily	
6006	99	Oakland-Emeryville	Daily	
6011	99	San Francisco-Oakland	Daily	
6014	99	Oakland-San Francisco	Daily	
6234	21	Santa Barbara-San Jose	Daily	
6237	21	San Jose-Santa Barbara	Daily	
6311	7	Martinez-McKinleyville	Daily	
6313	7	Martinez-McKinleyville	Daily	
6316	7	McKinleyville-Martinez	Daily	
6318	7	McKinleyville-Martinez	Daily	
6412	7	Santa Rosa-Martinez	Daily	
6414	7	Santa Rosa-Martinez	Daily	
6415	7	Martinez-Santa Rosa	Daily	
6511	7	Martinez-Napa	Daily	
6513	7	Martinez-Napa	Daily	
6515	7	Martinez-Napa	Daily	
6516	7	Napa-Martinez	Daily	
6518	7	Napa-Martinez	Daily	
6611	99	Emeryville-San Francisco	Daily	
6613	99	Emeryville-San Francisco	Daily	
6614	99	San Francisco-Emeryville	Daily	
6615	99	Emeryville-San Francisco	Daily	
6616	99	San Francisco-Emeryville	Daily	
6617	99	Emeryville-San Francisco	Daily	
6618	99	San Francisco-Emeryville	Daily	
6620	99	San Francisco-Emeryville	XSSH	
6621	99	Emeryville-San Francisco	XSSH	
6622	99	San Francisco-Emeryville	XSSH	
6623	99	Emeryville-San Francisco	XSSH	
6624	99	San Francisco-Emeryville	XSSH	
6625	99	Emeryville-San Francisco	XSSH	

Schedule Number	Route No.	Route		Frequency	Comments
6626	99	San Francisco-Emeryville		XSSH	
6627	99	Emeryville-San Francisco		XSSH	
6628	99	San Francisco-Emeryville		XSSH	
6629	99	Emeryville-San Francisco		Daily	
6630	99	San Francisco-Emeryville		XSSH	
6631	99	Emeryville-San Francisco		XSSH	
6632	99	San Francisco-Emeryville		XSSH	
6633	99	Emeryville-San Francisco		XSSH	
6634	99	San Francisco-Emeryville		XSSH	
6635	99	Emeryville-San Francisco		XSSH	
6636	99	San Francisco-Emeryville		XSSH	
6637	99	Emeryville-San Francisco		Daily	
6638	99	San Francisco-Emeryville		XSSH	
6640	99	San Francisco-Emeryville		XSSH	
6641	99	Emeryville-San Francisco		XSSH	
6642	99	San Francisco-Eneryville		Daily	
6643	99	Emeryville-San Francisco		Daily	
6644	99	San Francisco-Emeryville		Daily	
6645	99	Emeryville-San Francisco		Daily	
6646	99	San Francisco-Emeryville		XSSH	
6647	99	Emeryville-San Francisco		Daily	
6648	99	San Francisco-Emeryville		XSSH	
6649	99	Emeryville-San Francisco		XSSH	
6651	99	Emeryville-San Francisco		XSSH	
6653	99	Emeryville-San Francisco		Daily	
6662	99	San Francisco-Emeryville		XSSH	
6670	99	San Francisco-Emeryville		SSH	
6673	99	Emeryville-San Francisco		SSH	
6674	99	San Francisco-Emeryville		SSH	
6678	99	San Francisco-Emeryville		SSH	
6679	99	Emeryville-San Francisco		SSH	
6682	99	San Francisco-Emeryville		SSH	
6683	99	Emeryville-San Francisco		SSH	
6684	99	San Francisco-Emeryville		SSH	
6686	99	San Francisco-Emeryville		SSH	
6688	99	San Francisco-Emeryville		SSH	
6691	99	Emeryville-San Francisco		SSH	
6696	99	San Francisco-Emeryville		SSH	
6698	99	San Francisco-Emeryville		SSH	
6699	99	Emeryville-San Francisco		SSH	
6703	18-B	Hanford-Visalia		Daily	
6704	18-B	Visalia-Hanford		Daily	
6712	18-B	Visalia-Hanford		Daily	
6713	18-B	Hanford-Visalia		Daily	
6721	55	San Jose-Monterey	(Mixed Mode)	XSSH	
6728	55	Monterey-San Jose	(Mixed Mode)	XSSH	
6732	55	Monterey-San Jose	(Mixed Mode)	XSSH	
6735	55	San Jose-Monterey	(Mixed Mode)	XSSH	
6737	55	San Jose-Monterey	(Mixed Mode)	XSSH	
6744	55	Monterey-San Jose	(Mixed Mode)	XSSH	
6773	55	San Jose-Monterey	(Mixed Mode)	SSH	
6774	55	Monterey-San Jose	(Mixed Mode)	SSH	
6783	55	San Jose-Monterey	(Mixed Mode)	SSH	
6784	55	Monterey-San Jose	(Mixed Mode)	SSH	
6791	55	San Jose-Monterey	(Mixed Mode)	SSH	
6794	55	Monterey-San Jose	(Mixed Mode)	SSH	
6801	35	San Jose-Scotts Valley	(Mixed Mode)	XSSH	
6805	35	San Jose-Scotts Valley	(Mixed Mode)	XSSH	
6806	35	Scotts Valley-San Jose	(Mixed Mode)	XSSH	
6807	35	San Jose-Scotts Valley	(Mixed Mode)	XSSH	
6808	35	Scotts Valley-San Jose	(Mixed Mode)	XSSH	
6810	35	Scotts Valley-San Jose	(Mixed Mode)	XSSH	
6812	35	Scotts Valley-San Jose	(Mixed Mode)	XSSH	
6854	35	Scotts Valley-San Jose	(Mixed Mode)	XSSH	
6900	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6901	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6905	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6906	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6907	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6908	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6909	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6910	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	

Amtrak California System--Schedule Numbers

Schedule Number	Route No.	Route		Frequency	Comments
6916	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6917	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6918	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6919	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6920	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6921	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6922	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6923	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6924	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6925	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6926	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6927	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6928	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6929	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6930	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6932	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6933	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6935	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6936	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6937	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6938	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6939	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6941	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6942	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6943	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6944	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6945	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6946	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6947	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6950	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6952	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6953	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6954	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6955	35	San Jose-Santa Cruz	(Mixed Mode)	XSSH	
6956	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6957	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6958	35	Santa Cruz-San Jose	(Mixed Mode)	XSSH	
6963	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6964	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6966	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6967	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6968	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6969	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6973	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6974	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6975	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6976	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6978	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6977	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6980	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6981	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6982	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6983	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6984	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6985	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6986	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6987	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6991	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6993	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6994	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
6997	35	San Jose-Santa Cruz	(Mixed Mode)	SSH	
6998	35	Santa Cruz-San Jose	(Mixed Mode)	SSH	
8400	15	Merced-Yosemite	(Interline)	Daily	
8402	15	Merced-Yosemite	(Interline)	Daily	
8403	15	Yosemite-Merced	(Interline)	Daily	
8412	15	Merced-Yosemite	(Interline)	Daily	
8413	15	Yosemite-Merced	(Interline)	Daily	
8416	15	Merced-Yosemite	(Interline)	Daily	
8417	15	Yosemite-Merced	(Interline)	Daily	
8419	15	Yosemite-Merced	(Interline)	Daily	
8461	15	Midpines-Merced	(Interline)	XSSH	
8463	15	Yosemite-Merced	(Interline)	XSSH	
8662	15	Yosemite-Mammoth Lakes	(Interline)	Seasonal	
8667	15	Mammoth Lakes-Yosemite	(Interline)	Seasonal	

GWS/DOR 04/11/12

Infopost Repair/Replace Order Form

It is difficult for us to keep track of the passenger information items at every train station and bus stop in the Amtrak California System. We are asking for your help. To report damaged or missing information, fill out the form below.

Via US Mail, send the form to.

Caltrans-Division of Rail
PO Box 942874 MS #74
Sacramento, CA 94274-0001
Attn: Schedule and Bus Coordinator

Via email, attach an electronic copy of the form to an email with "Damage Report" in the subject line and send to:

rail.program@dot.ca.gov

Passenger Information displayed at the following Stop:

_____

is ☐ Missing ☐ Damaged

Item(s) missing or damaged:

☐ Bus Stop Sign (12 x 18 or 18 x 24 aluminum "Amtrak Bus Stop" sign, see page 60).

☐ Infopost (6-1/2" x 24" or 6-1/2" x 30" aluminum display case with glass or plastic face, displaying schedule information).

☐ A-10 (Large format Route Information and Schedule display--usually two sided, free standing installation).

At many stops there is more than one Infopost and/or A-10. If this is (or was) the case, describe, as best you can, which one is damaged or missing. Include information like "The one showing San Joaquin schedules is still there, the other one is empty" or "the glass on the one closest to 1st Street is broken".

_____

_____

_____

Describe the damage and add any other information that you think might be useful.

_____

_____

_____

_____

_____

_____

_____

_____

Submitted by (optional): _____

Date & Time of Observation: _____

THANK YOU FOR YOUR HELP!

TIMETABLE REQUESTS

In order to reduce operational costs, and to become more enviromentally responsible, we will no longer be mailing out individual copies of the California Operating Timetable. In lieu of mailing out the paper copies at each service change, the operating timetables are available on the web in a color, printable PDF format. You may access and print this and future timetables, as well as other Division of Rail documents, at the following web address:

www.dot.ca.gov/rail

We will continue to send the California Operating Timetable to Amtrak offices, as well as organizations and vendors associated with the Amtrak California rail and bus network.

TIMETABLE AND PROGRAM FEEDBACK

We welcome your feedback and suggestions on the Operating Timetable, and the Amtrak California program.

You may send your comments to us either by US Mail or by e-mail:

Caltrans
Division of Rail
PO Box 942874
MS 74
Sacramento, CA 94274-0001
Attn: Will Schilling, Statewide Bus Operations Coordinator

will_schilling@dot.ca.gov
rail.program@dot.ca.gov

Amtrak California System

CONTACT NUMBERS

Caltrans Division of Rail

1120 N Street, Room 3400
PO Box 942874 MS #74
Sacramento, CA 94274-0001
(Shipping: 1415 11th St. MS #74, Sacramento, CA 95814)

(916) 653-3060
FAX (916) 653-4565
www.amtrakcalifornia.com
ARROW PRINTER ID: Q-396

Bill Bronte- Chief, Division of Rail	(916) 654-6542
Leo Hoyt, Chief, Office of Captial Projects and Marketing	(916) 654-6327
Lea Simpson - Chief, Capitol Projects, South Branch	(916) 654-7184
TBA - Chief, Capitol Projects, North Branch	(916) 654-9777
Will Schilling - Statewide Bus and Schedule Coordinator	(916) 654-6702
TBA - Chief, Rail Marketing Branch	(916) 654-5908

Amtrak

Union Station
810 North Alameda Street, 3rd Floor
Los Angeles, CA 90012
FAX: (213) 891-3494

Port of Oakland Building
530 Water Street, 5th Floor
Oakland, CA 94607
www.amtrak.com

Mike Chandler- Superintendent, SW Division	(213) 891-3526
Lynn Berberian - Supt. Passenger Svcs., SW Division	(213) 891-3444
Niecie Patterson - Director, System Operations	(800) 683-4114
Rick Peterson - Director of Bus Operations	(213) 683-6792
Andrew Felden - Manager of Bus Operations, North	(916) 444-2330
Barbara Ruditis - Manager of Bus Operations, South	(510) 714-5175
Juanita Jones - Supervisor of Bus Operations	(213) 683-6883
Capt. Jim Martino - Amtrak Police	(800) 331-8000
Toll Free Reservations and Information	(800) USA-RAIL
Lou Bellotti - Superintendent, Bay District	(510) 714-9573
Tommy Andrews - Asst. Supt. Road Ops.-CC	(916) 554-1095
Mike Hamilton - Asst. Supt. Road Ops.-SJ	(510) 873-6166
Matt Cahoon - Asst. Supt. Road Ops.-PS	(213) 683-3242
Anthony Chapa - Asst. Supt. Pax Svcs.-CC & SJ	(510) 238-4365
Marcos Gonzalez - Asst. Supt. of Pax Svcs.-PS	(213) 683-6923
Shannon Davis - Dist. Manager, CC Stations	(510) 714-8919
Cindy Camara - Dist. Manager, SJ Stations	(510) 772-9244
Carol Crego - Dist. Manager, PS Stations	(805) 884-0866

Capitol Corridor Joint Powers Authority

300 Lakeside Drive., 14th Floor East
Oakland, CA 94612

Customer Service: (530) 464-6995
FAX: (510) 464-6901

David Kutrosky - Managing Director, Capitol Corridor	(510) 464-6990
Priscilla Kalugdan - Marketing Manager	(510) 464-6992
Hubert Hanrahan - Transportation Officer	(510) 464-6991

Bus Operators

All West Coachlines	(800) 843-2121 or (916) 423-4000
7701 Wilbur Way, Sacramento, CA 95828	FAX: (916) 689-5926
Altamont Commuter Express (ACE)	(800) 411-7245 or (209) 944-6220
949 East Channel St., Stockton, CA 95202	Operations Center - (209) 944-6255
AmericanStar Tours	(888) 343-4443
Shop: 4554 S. Broad St., Ste. 100, San Luis Obispo, CA 93401	(805) 543-9999
Mailing Address: 897 Oak Park #204, Pismo Beach, CA 93449	FAX: (805) 543-9915
Coach America	(800) 320-6850
Main Office: 3333 E. 69th St., Long Beach, CA 90805	(800) 642-3287, FAX: (562) 634-5818
2530 F St., Bakersfield, CA 93301	(661) 327-2157
498 Lambert St., Oxnard, CA 93030	(800) 881-9521
Compass/SFO Airporter	(650) 246-2775 or 246-2782
160 South Linden Ave., Ste 300, South San Francisco, CA 94080	FAX: (650) 246-2778
El Camino Charter Lines	(650) 588-0256
214 Shaw Rd., Ste. T (PO Box 828), South San Francisco, CA 94083-0828	FAX: (650) 952-1565
Orange Belt Stages	(559) 733-4408, (800) 266-7433
2134 E. Mineral King (PO Box 949), Visalia, CA 93279	FAX: (559) 733-0538
Preferred Charter	(800) 367-7141
520 Todd Rd., Santa Rosa, CA 95407	FAX: (707) 584-4713
MV Transportation	(831) 754-0644
621 W. Market St., Salinas, CA 93901	FAX: (831) 754-6345
Silverado Stages	(805) 545-8400 Dispatch (805) 431-4615
241 B Prado Road, San Luis Obispo, CA 93401	FAX: (805) 545-8404
650 Ward Drive, Santa Barbara, CA 93111	(805) 967-5007
VIA Charter Lines (Yosemite Connection)	(209) 384-1315, (800) VIA-LINE
300 Grogan Ave., Merced, CA 95340	FAX: (209) 384-7441

APPENDIX 2

Passenger Demand Forecast Modeling

Forecast Results for Future San Joaquin Valley Service
(prepared 6/21/11)

	Baseline 2011		Baseline 2012		10 year Plan 79mph service 2020	10 year Plan 90mph service 2020	25 year Plan 90mph service 2035
Annual Forecasts							
Ridership	1,016,300	*	1,069,500	**	1,665,600	1,721,200	3,044,500
Ticket Revenue	$31,341,000	*	$34,748,000	**	$67,896,000	$70,732,000	$144,527,000
Passenger-Miles	139,410,000	*	149,140,000	**	248,330,000	258,920,000	461,890,000
Service Characteristics							
Train Frequency	Daily		Daily		Daily	Daily	Daily
Oakland - Stockton	4		4		6	6	10
Sacramento - Stockton	2		2		3	3	6
Stockton - Merced	6		6		7	7	10
Merced - Bakersfield	6		6		8	8	11
Avg. Travel Time (minutes)							
Oakland - Bakersfield	368		368		346 (-6%)	327 (-11%)	324 (-12%)
Sacramento - Bakersfield	318		318		312 (-2%)	302 (-5%)	300 (-6%)

Notes:

These forecasts are based solely upon information available to AECOM as of 6/21/11.
These forecasts are provided for the sole use of Amtrak and Caltrans.
They are not intended for disclosure in a financial offering statement.

* FY11 Estimate (prepared May 2011)
** FY12 Budget (prepared May 2011)

Market Growth
Based on California Department of Finance growth and population projections
Auto Congestion
Auto travel times increase by 2% every five years due to increased congestion
Service Changes
Changes in frequency and travel time as shown above (timetables provided by Caltrans 5/21/11 & 5/31/11)
OTP at 90% in all years
Pricing Actions
+2% per year applied to all prices (assume no ridership loss since increase matches inflation rate)

2020 Forecast Results by Train for Future San Joaquin Valley Service

(prepared 6/21/11)

Future Ten Year Plan - 79-mph service*

Train	Time at Bakersfield	North End	Ridership 2020	
new 1	2:25 AM	Oakland	41,494	Northbound
711	4:55 AM	Oakland	75,962	
701	→	Sacramento	29,836	
new 3	8:25 AM	Oakland	116,071	
713	10:25 AM	Oakland	112,518	
new 5	→	Sacramento	65,911	
715	12:55 PM	Oakland	149,126	
717exp	3:35 PM	Oakland	128,503	
703	6:25 PM	Sacramento	82,407	
new 7	8:25 PM	Merced	18,027	
new 2	8:29 AM	Merced	34,979	Southbound
702	11:59 AM	Sacramento	110,652	
712	1:59 PM	Oakland	126,854	
714	3:59 PM	Oakland	119,263	
new 4	←	Sacramento	54,894	
716exp	6:49 PM	Oakland	140,969	
new 6	9:59 PM	Oakland	101,927	
704	←	Sacramento	51,675	
718	11:59 PM	Oakland	72,591	
new 8	1:59 AM	Oakland	31,939	
TOTAL			1,665,600	

Future 10 Year Plan - 90-mph service**

Train	Time at Bakersfield	North End	Ridership 2020	
new 1	2:36 AM	Oakland	42,665	Northbound
711	5:06 AM	Oakland	79,573	
701	→	Sacramento	32,082	
new 3	8:36 AM	Oakland	122,561	
713	10:36 AM	Oakland	111,396	
new 5	→	Sacramento	67,438	
715	1:06 PM	Oakland	149,862	
717exp	3:43 PM	Oakland	132,906	
703	6:36 PM	Sacramento	89,761	
new 7	8:36 PM	Merced	18,614	
new 2	8:21 AM	Merced	36,202	Southbound
702	11:51 AM	Sacramento	115,807	
712	1:51 PM	Oakland	130,322	
714	3:51 PM	Oakland	123,648	
new 4	←	Sacramento	57,765	
716exp	6:43 PM	Oakland	147,675	
new 6	9:51 PM	Oakland	105,437	
704	←	Sacramento	55,079	
718	11:51 PM	Oakland	72,475	
new 8	1:51 AM	Oakland	29,932	
TOTAL			1,721,200	

Notes:

These forecasts are based solely upon information available to AECOM as of 6/21/11.
These forecasts are provided for the sole use of Amtrak and Caltrans.
They are not intended for disclosure in a financial offering statement.

* Proposed future San Joaquin valley service (timetables provided by Caltrans 5/21/11)
** Proposed future San Joaquin valley service (timetables provided by Caltrans 5/31/11)
*** Ridership on Sacramento split trains only includes travel to/from/within Sacramento-Stockton segment; all local ridership between Stockton and Bakersfield is included with the Oakland-Bakersfield train

2035 Forecast Results by Train for Future San Joaquin Valley Service

(prepared 6/21/11)

Future 25-Year Plan - 90-mph service**

	Train	Time at Bakersfield	North End	Ridership 2035
Northbound	1	2:36 AM	Oakland	50,498
	3	→	Sacramento	21,728
	5	4:43 AM	Oakland	85,377
	7	6:36 AM	Oakland	122,651
	9	→	Sacramento	52,016
	11	8:43 AM	Oakland	130,768
	13	10:36 AM	Oakland	152,228
	15	→	Sacramento	88,960
	17	12:36 PM	Oakland	158,742
	19	→	Sacramento	95,844
	21	2:43 PM	Oakland	164,388
	23	4:36 PM	Oakland	131,570
	25	→	Sacramento	70,615
	27	6:43 PM	Oakland	90,688
	29	8:36 PM	Oakland	41,157
	31	→	Sacramento	12,234
	33	9:36 PM	Merced	15,776
Southbound	2	7:51 AM	Merced	46,659
	4	←	Sacramento	64,571
	6	11:51 AM	Oakland	150,081
	8	1:43 PM	Oakland	119,237
	10	←	Sacramento	75,170
	12	2:51 PM	Oakland	121,257
	14	3:43 PM	Oakland	127,609
	16	←	Sacramento	76,276
	18	5:51 PM	Oakland	169,078
	20	←	Sacramento	72,971
	22	7:51 PM	Oakland	165,889
	24	9:43 PM	Oakland	108,009
	26	←	Sacramento	61,043
	28	10:51 PM	Oakland	79,309
	30	11:43 PM	Oakland	67,114
	32	←	Sacramento	19,967
	34	1:51 AM	Oakland	35,021
	TOTAL			3,044,500

Notes:

These forecasts are based solely upon information available to AECOM as of 6/21/11.
These forecasts are provided for the sole use of Amtrak and Caltrans.
They are not intended for disclosure in a financial offering statement.

** Proposed future San Joaquin valley service (timetables provided by Caltrans 5/31/11)

*** Ridership on Sacramento split trains only includes travel to/from/within Sacramento-Stockton segment; all local ridership between Stockton and Bakersfield is included with the Oakland-Bakersfield train

Proposed San Joaquin Service - Expansion Grid - CalTrans - Version 1 - Five Year Plan & Ten Year Plan

(79MPH Maximum Speed)

SOUTHWARD / EASTWARD -- READ DOWN:

	new 2	702	712	new 4	714	716exp	704	new 6	718	new 8	Stations, sidings, and double-track segments:
	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	
Dp			8:10 AM		10:05 AM	1:20 PM		4:05 PM	6:10 PM	8:10 PM	Oakland, CA
Dp			8:20 AM		10:15 AM	1:30 PM		4:15 PM	6:20 PM	8:20 PM	Emeryville, CA
Dp			8:29 AM		10:24 AM	1:39 PM		4:24 PM	6:29 PM	8:29 PM	Richmond, CA
Dp			8:59 AM		10:54 AM	2:09 PM		4:54 PM	6:59 PM	8:59 PM	Martinez, CA
			9:03 AM		10:58 AM	2:13 PM		4:58 PM	7:03 PM	9:03 PM	Mococco (EEDT)
			9:07 AM		11:02 AM	2:17 PM		5:02 PM	7:07 PM	9:07 PM	Port Chicago (UP)
			9:07 AM		11:02 AM	2:17 PM		5:02 PM	7:07 PM	9:07 PM	Port Chicago (BNSF)
			9:13 AM		11:08 AM	2:23 PM		5:08 PM	7:13 PM	9:13 PM	Pittsburg (sdg)
Dp			9:19 AM		11:14 AM	2:27 PM		5:14 PM	7:19 PM	9:19 PM	Antioch-Pittsburg, CA
			9:23 AM		11:18 AM	2:29 PM		5:18 PM	7:23 PM	9:23 PM	Sando (sdg)
			9:25 AM		11:20 AM	2:31 PM		5:20 PM	7:25 PM	9:25 PM	Oakley (WEDT)
			9:30 AM		11:25 AM	2:36 PM		5:25 PM	7:30 PM	9:30 PM	Bixler (EEDT)
			9:32 AM		11:27 AM	2:38 PM		5:27 PM	7:32 PM	9:32 PM	Orwood (sdg)
			9:35 AM		11:30 AM	2:41 PM		5:30 PM	7:35 PM	9:35 PM	Trull (WEDT)
			9:39 AM		11:34 AM	2:45 PM		5:34 PM	7:39 PM	9:39 PM	Holt (EEDT)
			9:44 AM		11:39 AM	2:50 PM		5:39 PM	7:44 PM	9:44 PM	West Stockton (WEDT)
Dp			9:46 AM		11:41 AM	2:52 PM		5:41 PM	7:46 PM	9:46 PM	Stockton, CA (SKN)
Dp		6:50 AM		10:40 AM			4:40 PM				Sacramento, CA
		6:58 AM		10:48 AM			4:48 PM				XEC - Elvas, CA
		7:03 AM		10:53 AM			4:53 PM				Polk (SEDT)
		7:12 AM		11:02 AM			5:02 PM				S. Elk Grove (SEDT)
		7:17 AM		11:07 AM			5:07 PM				S. Need (SEDT)
		7:23 AM		11:13 AM			5:13 PM				Acampo (sdg)
Dp		7:28 AM		11:18 AM			5:18 PM				Lodi, CA (S.T., at N.E. sdg)
		7:30 AM		11:20 AM			5:20 PM				S. E. Lodi (sdg)
		7:33 AM		11:23 AM			5:23 PM				Tomspur (sdg)
		7:35 AM		11:25 AM			5:25 PM				Akers (NEDT)
Dp		7:42 AM		11:32 AM			5:32 PM				Stockton, CA (SKT)
		7:48 AM		11:38 AM			5:38 PM				Church (BNSF Conn. Trk.)
		7:50 AM	9:47 AM	11:40 AM	11:42 AM	2:53 PM	5:40 PM	5:42 PM	7:47 PM	9:47 PM	Keddie Jct. (SAC trains)
Ar		7:53 AM	9:53 AM	11:43 AM	11:47 AM	2:59 PM	5:43 PM	5:47 PM	7:53 PM	9:53 PM	New BNSF Stockton
Dp		7:57 AM	9:57 AM	→	11:57 AM	3:03 PM	→	5:57 PM	7:57 PM	9:57 PM	Station (MP1120.3)
		8:00 AM	10:00 AM		12:00 PM	3:06 PM		6:00 PM	8:00 PM	10:00 PM	Wheat (EEDT)
		8:06 AM	10:06 AM		12:06 PM	3:12 PM		6:06 PM	8:06 PM	10:06 PM	Duffy (sdg)
		8:11 AM	10:11 AM		12:11 PM	3:17 PM		6:11 PM	8:11 PM	10:11 PM	W. Escalon (WEDT)
		8:14 AM	10:14 AM		12:14 PM	3:20 PM		6:14 PM	8:14 PM	10:14 PM	E. Escalon (EEDT)
		8:17 AM	10:17 AM		12:17 PM	3:23 PM		6:17 PM	8:17 PM	10:17 PM	Riverbank (sdg)
Dp		8:22 AM	10:22 AM		12:22 PM	3:28 PM		6:22 PM	8:22 PM	10:22 PM	Modesto, CA
		8:26 AM	10:26 AM		12:26 PM	3:32 PM		6:26 PM	8:26 PM	10:26 PM	Modesto-Empire Jct. (sdg)
		8:31 AM	10:31 AM		12:31 PM	3:37 PM		6:31 PM	8:31 PM	10:31 PM	W. E. Denair (sdg)
Dp		8:34 AM	10:34 AM		12:34 PM	3:38 PM		6:34 PM	8:34 PM	10:34 PM	Denair, CA (& E.E. sdg)
		8:42 AM	10:42 AM		12:42 PM	3:44 PM		6:42 PM	8:42 PM	10:42 PM	Ballico (sdg)
		8:48 AM	10:48 AM		12:48 PM	3:50 PM		6:48 PM	8:48 PM	10:48 PM	Fluhr (sdg)
Dp	5:30 AM	9:00 AM	11:00 AM		1:00 PM	4:02 PM		7:00 PM	9:00 PM	11:00 PM	Merced, CA (& W.E.sdg)
	5:33 AM	9:03 AM	11:03 AM		1:03 PM	4:05 PM		7:03 PM	9:03 PM	11:03 PM	E.E. Merced (sdg)
	5:39 AM	9:09 AM	11:09 AM		1:09 PM	4:11 PM		7:09 PM	9:09 PM	11:09 PM	Planada (sdg)
	5:43 AM	9:13 AM	11:13 AM		1:13 PM	4:15 PM		7:13 PM	9:13 PM	11:13 PM	Legrand (sdg)
	5:51 AM	9:21 AM	11:21 AM		1:21 PM	4:23 PM		7:21 PM	9:21 PM	11:21 PM	Sharon (sdg)
	5:55 AM	9:25 AM	11:25 AM		1:25 PM	4:27 PM		7:25 PM	9:25 PM	11:25 PM	Kismet (sdg)
Dp	6:01 AM	9:31 AM	11:31 AM		1:31 PM	4:30 PM		7:31 PM	9:31 PM	11:31 PM	Madera, CA (& W.E.sdg)
	6:03 AM	9:33 AM	11:33 AM		1:33 PM	4:31 PM		7:33 PM	9:33 PM	11:33 PM	E.E. Madera (sdg)
	6:09 AM	9:39 AM	11:39 AM		1:39 PM	4:37 PM		7:39 PM	9:39 PM	11:39 PM	Gregg (sdg)
	6:14 AM	9:44 AM	11:44 AM		1:44 PM	4:42 PM		7:44 PM	9:44 PM	11:44 PM	Figarden (sdg)
Ar	6:26 AM	9:56 AM	11:56 AM		1:56 PM	4:54 PM		7:56 PM	9:56 PM	11:56 PM	Fresno, CA (& WEDT)
Dp	6:30 AM	10:00 AM	12:00 PM		2:00 PM	4:58 PM		8:00 PM	10:00 PM	12:00 AM	
	6:43 AM	10:13 AM	12:13 PM		2:13 PM	5:11 PM		8:13 PM	10:13 PM	12:13 AM	Floral (EEDT)
	6:47 AM	10:17 AM	12:17 PM		2:17 PM	5:15 PM		8:17 PM	10:17 PM	12:17 AM	Conejo (sdg)
	6:55 AM	10:25 AM	12:25 PM		2:25 PM	5:23 PM		8:25 PM	10:25 PM	12:25 AM	E.E. Shirley (sdg & WEDT)
Dp	7:03 AM	10:33 AM	12:33 PM		2:33 PM	5:31 PM		8:33 PM	10:33 PM	12:33 AM	Hanford, CA
	7:06 AM	10:36 AM	12:36 PM		2:36 PM	5:34 PM		8:36 PM	10:36 PM	12:36 AM	E. Hanford (EEDT)
	7:11 AM	10:41 AM	12:41 PM		2:41 PM	5:39 PM		8:41 PM	10:41 PM	12:41 AM	Guernsey (sdg)
	7:16 AM	10:46 AM	12:46 PM		2:46 PM	5:43 PM		8:46 PM	10:46 PM	12:46 AM	W.E. Corcoran (sdg)
Dp	7:19 AM	10:49 AM	12:49 PM		2:49 PM	5:44 PM		8:49 PM	10:49 PM	12:49 AM	Corcoran, CA
	7:21 AM	10:51 AM	12:51 PM		2:51 PM	5:45 PM		8:51 PM	10:51 PM	12:51 AM	E.E. Corcoran (sdg)
	7:28 AM	10:58 AM	12:58 PM		2:58 PM	5:52 PM		8:58 PM	10:58 PM	12:58 AM	Angiola (sdg)
	7:35 AM	11:05 AM	1:05 PM		3:05 PM	5:59 PM		9:05 PM	11:05 PM	1:05 AM	Allensworth (sdg)
	7:41 AM	11:11 AM	1:11 PM		3:11 PM	6:05 PM		9:11 PM	11:11 PM	1:11 AM	Sandrini (sdg)
	7:45 AM	11:15 AM	1:15 PM		3:15 PM	6:09 PM		9:15 PM	11:15 PM	1:15 AM	Elmo (sdg)
Dp	7:51 AM	11:21 AM	1:21 PM		3:21 PM	6:13 PM		9:21 PM	11:21 PM	1:21 AM	Wasco,CA(S.T.=W.E.sdg)
	7:54 AM	11:24 AM	1:24 PM		3:24 PM	6:14 PM		9:24 PM	11:24 PM	1:24 AM	E.E. Wasco (sdg)
	7:59 AM	11:29 AM	1:29 PM		3:29 PM	6:19 PM		9:29 PM	11:29 PM	1:29 AM	W.E. Shafter (sdg)
	8:01 AM	11:31 AM	1:31 PM		3:31 PM	6:21 PM		9:31 PM	11:31 PM	1:31 AM	E.E. Shafter (sdg)
	8:05 AM	11:35 AM	1:35 PM		3:35 PM	6:25 PM		9:35 PM	11:35 PM	1:35 AM	Una (sdg)
	8:08 AM	11:38 AM	1:38 PM		3:38 PM	6:28 PM		9:38 PM	11:38 PM	1:38 AM	Lopez (WEDT)
	8:14 AM	11:44 AM	1:44 PM		3:44 PM	6:34 PM		9:44 PM	11:44 PM	1:44 AM	Bakersfield (Atk Lead begins)
Ar	8:29 AM	11:59 AM	1:59 PM		3:59 PM	6:49 PM		9:59 PM	11:59 PM	1:59 AM	Bakersfield, CA

NORTHWARD / WESTWARD -- READ UP:

	new 1	711	701	new 3	713	new 5	715	717exp	703	new 7
	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily
Ar	8:13 AM	10:49 AM		2:13 PM	4:19 PM		6:43 PM	9:04 PM		
Dp	D 8:03 AM	D 10:39 AM		D 2:03 PM	D 4:09 PM		D 6:33 PM	D 8:54 PM		
Dp	7:44 AM	10:20 AM		1:44 PM	3:50 PM		6:14 PM	8:35 PM		
Dp	7:17 AM	9:53 AM		1:17 PM	3:23 PM		5:47 PM	8:08 PM		
	7:10 AM	9:46 AM		1:10 PM	3:16 PM		5:40 PM	8:01 PM		
	7:06 AM	9:42 AM		1:06 PM	3:12 PM		5:36 PM	7:57 PM		
	7:06 AM	9:42 AM		1:06 PM	3:12 PM		5:36 PM	7:57 PM		
	7:00 AM	9:35 AM		1:00 PM	3:06 PM		5:30 PM	7:51 PM		
Dp	6:55 AM	9:31 AM		12:55 PM	3:01 PM		5:25 PM	7:48 PM		
	6:50 AM	9:26 AM		12:50 PM	2:56 PM		5:20 PM	7:45 PM		
	6:48 AM	9:24 AM		12:48 PM	2:54 PM		5:18 PM	7:43 PM		
	6:43 AM	9:19 AM		12:43 PM	2:49 PM		5:13 PM	7:38 PM		
	6:41 AM	9:17 AM		12:41 PM	2:47 PM		5:11 PM	7:36 PM		
	6:38 AM	9:14 AM		12:38 PM	2:44 PM		5:08 PM	7:33 PM		
	6:34 AM	9:10 AM		12:34 PM	2:40 PM		5:04 PM	7:29 PM		
	6:29 AM	9:05 AM		12:29 PM	2:35 PM		4:59 PM	7:24 PM		
Dp	6:27 AM	9:03 AM		12:27 PM	2:33 PM		4:57 PM	7:22 PM		
Ar			10:17 AM			3:47 PM			11:37 PM	
			9:49 AM			3:19 PM			11:09 PM	
			9:44 AM			3:14 PM			11:04 PM	
			9:35 AM			3:05 PM			10:55 PM	
			9:30 AM			3:00 PM			10:50 PM	
			9:24 AM			2:54 PM			10:44 PM	
Dp			9:21 AM			2:51 PM			10:41 PM	
			9:18 AM			2:48 PM			10:38 PM	
			9:15 AM			2:45 PM			10:35 PM	
			9:13 AM			2:43 PM			10:33 PM	
Dp			9:08 AM			2:38 PM			10:28 PM	
			9:06 AM			2:36 PM			10:26 PM	
	6:25 AM	9:01 AM	9:05 AM	12:25 PM	2:31 PM	2:35 PM	4:55 PM	7:20 PM	10:25 PM	
Dp	6:24 AM	9:00 AM	9:04 AM	12:24 PM	2:20 PM	2:34 PM	4:54 PM	7:19 PM	10:24 PM	
Ar	6:20 AM	8:50 AM	↑	12:20 PM	2:20 PM	↑	4:50 PM	7:15 PM	10:20 PM	
	6:12 AM	8:42 AM		12:12 PM	2:12 PM		4:42 PM	7:07 PM	10:12 PM	
	6:06 AM	8:36 AM		12:06 PM	2:06 PM		4:36 PM	7:01 PM	10:06 PM	
	6:01 AM	8:31 AM		12:01 PM	2:01 PM		4:31 PM	6:56 PM	10:01 PM	
	5:58 AM	8:28 AM		11:58 AM	1:58 PM		4:28 PM	6:53 PM	9:58 PM	
	5:55 AM	8:25 AM		11:55 AM	1:55 PM		4:25 PM	6:50 PM	9:55 PM	
Dp	5:52 AM	8:22 AM		11:52 AM	1:52 PM		4:22 PM	6:47 PM	9:52 PM	
	5:46 AM	8:16 AM		11:46 AM	1:52 PM		4:16 PM	6:41 PM	9:46 PM	
	5:41 AM	8:11 AM		11:41 AM	1:41 PM		4:11 PM	6:37 PM	9:41 PM	
Dp	5:39 AM	8:09 AM		11:39 AM	1:39 PM		4:09 PM	6:36 PM	9:39 PM	
	5:30 AM	8:00 AM		11:30 AM	1:30 PM		4:00 PM	6:28 PM	9:30 PM	
	5:24 AM	7:54 AM		11:24 AM	1:24 PM		3:54 PM	6:22 PM	9:24 PM	
Dp	5:18 AM	7:48 AM		11:18 AM	1:18 PM		3:48 PM	6:16 PM	9:18 PM	11:12 PM
	5:09 AM	7:39 AM		11:09 AM	1:09 PM		3:39 PM	6:07 PM	9:09 PM	11:09 PM
	5:03 AM	7:33 AM		11:03 AM	1:03 PM		3:33 PM	6:01 PM	9:03 PM	11:03 PM
	4:59 AM	7:29 AM		10:59 AM	12:59 PM		3:29 PM	5:57 PM	8:59 PM	10:59 PM
	4:51 AM	7:21 AM		10:51 AM	12:51 PM		3:21 PM	5:49 PM	8:51 PM	10:51 PM
	4:47 AM	7:17 AM		10:47 AM	12:47 PM		3:17 PM	5:45 PM	8:47 PM	10:47 PM
Dp	4:42 AM	7:12 AM		10:42 AM	12:42 PM		3:12 PM	5:42 PM	8:42 PM	10:42 PM
	4:39 AM	7:09 AM		10:39 AM	12:39 PM		3:09 PM	5:41 PM	8:39 PM	10:39 PM
	4:33 AM	7:03 AM		10:33 AM	12:33 PM		3:03 PM	5:35 PM	8:33 PM	10:33 PM
	4:28 AM	6:58 AM		10:28 AM	12:28 PM		2:58 PM	5:30 PM	8:28 PM	10:28 PM
Dp	4:21 AM	6:51 AM		10:21 AM	12:21 PM		2:51 PM	5:23 PM	8:21 PM	10:21 PM
Ar	4:17 AM	6:47 AM		10:17 AM	12:17 PM		2:47 PM	5:19 PM	8:17 PM	10:17 PM
	4:00 AM	6:30 AM		10:00 AM	12:00 PM		2:30 PM	5:02 PM	8:00 PM	10:00 PM
	3:56 AM	6:26 AM		9:56 AM	11:56 AM		2:26 PM	4:58 PM	7:56 PM	9:56 PM
	3:48 AM	6:18 AM		9:48 AM	11:48 AM		2:18 PM	4:50 PM	7:48 PM	9:48 PM
Dp	3:43 AM	6:13 AM		9:43 AM	11:43 AM		2:13 PM	4:45 PM	7:43 PM	9:43 PM
	3:37 AM	6:07 AM		9:37 AM	11:37 AM		2:07 PM	4:39 PM	7:37 PM	9:37 PM
	3:32 AM	6:02 AM		9:32 AM	11:32 AM		2:02 PM	4:34 PM	7:32 PM	9:32 PM
	3:27 AM	5:57 AM		9:27 AM	11:27 AM		1:57 PM	4:30 PM	7:27 PM	9:27 PM
Dp	3:25 AM	5:55 AM		9:25 AM	11:25 AM		1:55 PM	4:29 PM	7:25 PM	9:25 PM
	3:22 AM	5:52 AM		9:22 AM	11:22 AM		1:52 PM	4:28 PM	7:22 PM	9:22 PM
	3:15 AM	5:45 AM		9:15 AM	11:15 AM		1:45 PM	4:21 PM	7:15 PM	9:15 PM
	3:08 AM	5:38 AM		9:08 AM	11:15 AM		1:38 PM	4:14 PM	7:08 PM	9:08 PM
	3:02 AM	5:32 AM		9:02 AM	11:02 AM		1:32 PM	4:08 PM	7:02 PM	9:02 PM
	2:58 AM	5:28 AM		8:58 AM	10:58 AM		1:28 PM	4:04 PM	6:58 PM	8:58 PM
Dp	2:53 AM	5:23 AM		8:53 AM	10:53 AM		1:23 PM	4:01 PM	6:53 PM	8:53 PM
	2:53 AM	5:19 AM		8:49 AM	10:49 AM		1:19 PM	3:59 PM	6:49 PM	8:49 PM
	2:44 AM	5:14 AM		8:44 AM	10:44 AM		1:14 PM	3:54 PM	6:44 PM	8:44 PM
	2:42 AM	5:12 AM		8:42 AM	10:42 AM		1:12 PM	3:52 PM	6:42 PM	8:42 PM
	2:38 AM	5:08 AM		8:38 AM	10:38 AM		1:08 PM	3:48 PM	6:38 PM	8:38 PM
	2:35 AM	5:05 AM		8:35 AM	10:35 AM		1:05 PM	3:45 PM	6:35 PM	8:35 PM
	2:29 AM	4:59 AM		8:29 AM	10:29 AM		12:59 PM	3:39 PM	6:29 PM	8:29 PM
Dp	2:25 AM	4:55 AM		8:25 AM	10:25 AM		12:55 PM	3:35 PM	6:25 PM	8:25 PM

5/6/10

Notes:

New BNSF Stockton station assumed for all trains.

No time added for single track meed, assume 2 MT capacity to be added.

Proposed San Joaquin Service - Expansion Grid - CalTrans - Version 1 - Five Year Plan & Ten Year Plan

(90 MPH Maximum Speed)

SOUTHWARD / EASTWARD -- READ DOWN:

	new 2	702	712	new 4	714	716exp	704	new 6	718	new 8		Stations, sidings, and double-track segments:		new 1	711	701	new 3	713	new 5	715	717exp	703	new 7
	700	**702**	**712**	**---**	**714**	**716 (exp)**	**---**	**718**	**720**	**722**				**709**	**711**	**---**	**713**	**715**	**---**	**717**	**719 (Exp)**	**703**	**721**
	Daily	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**				**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**
			08:21 AM		**10:15 AM**	**01:32 PM**		**04:15 PM**	**06:21 PM**	**08:21 PM**	Dp	**Oakland, CA**	Ar	**08:05 AM**	**10:41 AM**		**02:05 PM**	**04:11 PM**		**06:35 PM**	**08:55 PM**		
			09:18 AM		*11:12 AM*	*02:29 PM*		*05:12 PM*	*07:18 PM*	*09:18 PM*		*Port Chicago (BNSF/UP)*		*06:58 AM*	*09:34 AM*		*12:58 PM*	*03:04 PM*		*05:28 PM*	*7:48 PM*		
		7:01 AM		**10:51 AM**			**4:51 PM**				Dp	**Sacramento, CA**	Ar			**10:06 AM**			**03:36 PM**			**11:26 PM**	
		8:01 AM		*11:51 AM*			*5:51 PM*					*Keddie Jct. (SAC trains)*				*8:54 AM*			*2:24 PM*			*10:14 PM*	
		8:04 AM	**10:04 AM**	**11:54 AM**	**11:58 AM**	**3:13 PM**	**5:54 PM**	**5:58 PM**	**8:04 PM**	**10:04 PM**	Ar	**New BNSF Stockton**	Dp	**6:13 AM**	**8:49 AM**	**8:53 AM**	**12:13 PM**	**2:19 PM**	**2:23 PM**	**4:43 PM**	**7:05 PM**	**10:13 PM**	
		08:08 AM	**10:08 AM**		**12:08 PM**	**03:17 PM**		**06:08 PM**	**08:08 PM**	**10:08 PM**	Dp	**Station (MP1120.3)**	Ar	**06:09 AM**	**08:39 AM**		**12:09 PM**	**02:09 PM**		**04:39 PM**	**7:01 PM**	**10:09 PM**	
	5:37 AM										Dp	**Merced, CA** ***(& W.E.sdg)***	Ar										**11:11 PM**
	6:26 AM	**9:56 AM**	**11:56 AM**		**1:56 PM**	**4:56 PM**		**7:56 PM**	**9:56 PM**	**11:56 PM**	Ar	**Fresno**	Dp	**4:20 AM**	**6:50 AM**		**10:20 AM**	**12:20 PM**		**2:50 PM**	**5:20 PM**	**8:20 PM**	**10:20 PM**
	6:30 AM	**10:00 AM**	**12:00 PM**		**2:00 PM**	**5:00 PM**		**8:00 PM**	**10:00 PM**	**12:00 AM**	Dp	**Fresno**	Ar	**4:16 AM**	**6:46 AM**		**10:16 AM**	**12:16 PM**		**2:46 PM**	**5:16 PM**	**8:16 PM**	**10:16 PM**
	6:42 AM	*10:12 AM*	*12:12 PM*		*2:12 PM*	*5:12 PM*		*8:12 PM*	*10:12 PM*	*12:12 AM*		*Floral*		*4:00 AM*	*6:30 AM*		*10:00 AM*	*12:00 PM*		*2:30 PM*	*5:00 PM*	*8:00 PM*	*10:00 PM*
	08:21 AM	**11:51 AM**	**01:51 PM**		**03:51 PM**	**06:43 PM**		**09:51 PM**	**11:51 PM**	**01:51 AM**	Ar	**Bakersfield, CA**	Dp	**2:36 AM**	**5:06 AM**		**8:36 AM**	**10:36 AM**		**1:06 PM**	**3:43 PM**	**6:36 PM**	**8:36 PM**

Oakland Train Transfer Times

Sacramento Train Transfer Times

Proposed San Joaquin Service - Expansion Grid - CalTrans - Version 1 - Twenty Year Plan

(80 MPH Maximum Speed)

SOUTHWARD / EASTWARD – READ DOWN:

	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
	700	702-s	702	712(exp)	714-s	714	716(exp)	718-s	718	720-s	720	722(exp)	724-s	724	726(exp)	728-s	728
	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily			Daily		Daily
Sa			06:15 AM	06:32 AM		09:15 AM	10:32 AM		12:15 PM		02:15 PM	04:32 PM		05:15 PM	06:32 PM		08:15 PM
			07:22 AM	03:29 AM		10:22 AM	11:29 AM		05:12 PM		03:12 PM	05:29 PM		06:12 PM	07:29 PM		09:12 PM
Dv		06:31 AM			09:01 AM			12:31 PM		02:31 PM			05:31 PM			08:31 PM	
		07:31 AM			03:53 AM			05:53 PM		03:53 PM			06:53 PM			09:53 PM	
Ar		7:54 AM	7:56 AM	10:13 AM	10:54 AM	10:58 AM	12:13 PM	1:54 PM	1:56 PM	3:54 PM	3:58 PM	6:13 PM	6:54 PM	6:56 PM	8:13 PM	9:54 PM	9:56 PM
Sa			05:00 AM	10:17 AM		11:00 AM	12:17 PM		02:00 PM		04:00 PM	06:17 PM		07:00 PM	08:17 PM		10:00 PM
Sa	5:07 AM																12:11 AM
	5:08 AM		9:56 AM	11:56 AM		12:56 PM	1:56 PM		3:56 PM		5:56 PM	7:56 PM		8:56 PM	9:56 PM		11:56 PM
	6:00 AM		10:00 AM	12:00 PM		1:00 PM	2:00 PM		4:00 PM		6:00 PM	8:00 PM		9:00 PM	10:00 PM		12:00 AM
	6:12 AM		10:12 AM	12:12 PM		1:12 PM	2:12 PM		4:12 PM		6:12 PM	8:12 PM		9:12 PM	10:12 PM		12:12 AM
Ar	07:51 AM		11:51 AM	01:43 PM		02:51 PM	03:43 PM		05:51 PM		07:51 PM	09:43 PM		10:51 PM	11:43 PM		01:51 AM

	Stations, sidings, and double-track segments
Oa	Oakland, CA
	Port Chicago (BNSF/UP)
Sa	Sacramento, CA
	Auburn Jct. (UP/ BNSF)
Ar	New BNSF Stockton
Sa	Station (MP1020.3)
Sa	Merced, CA (@ W.E.only)
Sa	Fresno
Sa	Fresno
	Floral
Sa	Bakersfield, CA

NORTHWARD / WESTWARD – READ UP:

	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33
	709	709-s	711(exp)	713	713-s	715(exp)	717	717-s	719	719-s	721(exp)	723	723-s	725(exp)	727	727-s	729
	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily			Daily			Daily
Oa	06:11 AM		09:55 AM	12:11 PM		01:55 PM	04:11 PM		06:11 PM		07:55 PM	10:11 PM		11:55 PM	02:11 AM		
	07:04 AM		*06:48 AM*	*03:04 PM*		*22:48 PM*	*03:04 PM*		*05:04 PM*		*06:48 PM*	*09:04 PM*		*10:48 PM*	*01:04 AM*		
Sa		7:36 AM			11:36 AM			3:36 PM		5:36 PM		9:36 PM				1:36 AM	
		6:24 AM			*05:24 AM*			*2:24 PM*		*4:24 PM*		*8:24 PM*				*12:24 AM*	
Sa	6:15 AM	6:23 AM	8:05 AM	10:19 AM	10:23 AM	12:05 PM	2:19 PM	2:23 PM	4:19 PM	4:23 PM	6:05 PM	8:19 PM	8:23 PM	10:05 PM	12:19 AM	12:23 AM	
A	06:00 AM		09:01 AM	10:59 AM		12:01 PM	02:59 PM		04:59 PM		06:01 PM	08:59 PM		10:01 PM	12:59 AM		
A																	
Sa	4:30 AM		8:20 AM	8:30 AM		10:20 AM	12:30 PM		2:30 PM		4:20 PM	6:30 PM		8:30 PM	10:30 PM		11:30 PM
A	4:16 AM		6:16 AM	8:16 AM		10:16 AM	12:16 PM		2:16 PM		4:16 PM	6:16 PM		8:16 PM	10:16 PM		11:16 PM
	4:00 AM		*6:00 AM*	*8:00 AM*		*10:00 AM*	*12:00 PM*		*2:00 PM*		*4:00 PM*	*6:00 PM*		*8:00 PM*	*10:00 PM*		*11:00 PM*
Sa	02:36 AM		04:43 AM	06:36 AM		08:43 AM	10:36 AM		12:36 PM		02:43 PM	04:36 PM		06:43 PM	08:36 PM		09:36 PM

Oakland Train Transfer Times

Sacramento Train Transfer Tims

ASSUMPTIONS

General

• The pivot point for meets is Floral-Fresno. Though the length of double-track is likely to be extended south by the 25-year scenario, the lack of specific projects guides the assumption remain the same.

• Northbound trains, as practical, arrive at Floral as a southbound leaves Fresno.

• BNSF estimates two minutes saved Fresno-Hanford at 90mph. Although slightly optimistic, I removed one minute from the running time for Frenso-Floral, about 9 miles of the 27 miles Calwa-Hanford.

• No changes on UP – assumed no 90mph running.

• Merced – Fresno :49; Fresno – Merced :51 w/2 min. pad.

• Merced is a stop on all trains; not shown for through trains as not significant time point except on trains that start/stop there.

• Express Trains miss Antioch, Denair, Madera, Cocoran and Wasco.

• Endpoint Pads: 10-minute pad into Oakland; 20-minute or 12-minute pad into Sacramento (depending on reference used); 11-minute pad into Bakersfield.

Note that some cells are filled with formulas and others are times. I used whatever was most efficient to fill the complex train patterns.

5-10 Year Only

• Assume a bus operates to the opposite end point (Sacramento or Oakland) from that at which the train terminates, on non-split trains.

• One express round trip.

25 Year Only

• Due to higher frequencies and more splits, assume no connecting buses to northern endpoints not served by a particular train.

• Changed pattern to four express each direction due to six-seven daily trains already serving each non-express stop and the fortunate spacing of trains in this scenario.

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	40,142		0	0		0	0		0	44,236		0	0		0	0		0	41,896		0	0		0	0		0
		0			40,142			0			0			44,236			0			0			41,896			0			0	
Lodi	0		0	1,532		776	0		0	0		0	1,638		813	0		0	0		0	1,506		1,389	0		0	0		0
		0			40,898			0			0			45,061			0			0			42,013			0			0	
Stockton-Downtown	0		0	8,733		930	0		0	0		0	9,020		1,621	0		0	0		0	8,273		2,679	0		0	0		0
		0			48,701			0			0			52,460			0			0			47,607			0			0	
Oakland	0		0	0		0	12,695		0	10,734		0	0		0	12,670		0	11,378		0	0		0	11,667		0	5,659		0
		0			48,701			12,695			10,734			52,460			12,670			11,378			47,607			11,667			5,659	
Emeryville	0		0	0		0	16,670		52	16,081		62	0		0	19,130		50	15,549		48	0		0	12,773		99	6,386		47
		0			48,701			29,313			26,753			52,460			31,750			26,879			47,607			24,341			11,998	
Richmond	0		0	0		0	7,977		28	6,916		27	0		0	8,467		23	8,428		23	0		0	6,488		45	3,037		23
		0			48,701			37,262			33,642			52,460			40,194			35,284			47,607			30,784			15,012	
Martinez	0		0	0		0	17,543		3,199	14,476		1,579	0		0	17,254		1,851	15,073		1,950	0		0	10,076		4,099	4,611		2,032
		0			48,701			51,606			46,539			52,460			55,597			48,407			47,607			36,761			17,591	
Antioch-Pittsburg	0		0	0		0	5,937		834	5,332		632	0		0	0		0	6,181		1,199	0		0	3,597		866	1,650		456
		0			48,701			56,709			51,239			52,460			55,597			53,389			47,607			39,492			18,785	
Stockton	0		0	15,060		500	22,889		11,329	16,103		9,900	0		0	30,704		11,502	14,611		16,097	0		0	14,377		12,733	7,018		5,930
		0			63,261			68,269			57,442			52,460			74,799			51,903			47,607			41,136			19,873	
Modesto	0		0	7,931		4,279	6,608		4,406	8,302		3,458	0		2,985	9,129		5,385	6,103		5,319	0		4,457	2,711		4,956	1,371		2,144
		0			66,913			70,471			62,286			49,475			78,543			52,687			43,150			38,891			19,100	
Denair	0		0	2,154		737	1,712		967	2,342		836	0		563	0		0	1,810		1,178	0		802	708		1,059	306		457
		0			68,330			71,216			63,792			48,912			78,543			53,319			42,348			38,540			18,949	
Merced	4,667		0	6,225		5,836	5,034		6,618	6,092		5,966	0		3,550	7,331		9,112	4,346		7,648	0		4,683	1,810		6,579	614		3,083
		4,667			68,719			69,632			63,918			45,362			76,762			50,017			37,665			33,771			16,480	
Madera	775		60	918		1,516	843		1,591	997		1,498	0		988	0		0	666		1,861	0		1,257	289		1,291	49		677
		5,382			68,121			68,884			63,417			44,374			76,762			48,822			36,408			32,769			15,852	
Fresno	20,454		1,356	19,599		20,091	20,125		21,399	21,193		18,846	0		13,290	28,725		30,123	13,054		22,222	0		16,077	6,298		14,587	896		8,081
		24,480			67,629			67,610			65,764			31,084			75,364			39,654			20,331			24,480			8,667	
Hanford	6,815		8,669	6,213		14,723	6,690		14,311	7,697		14,421	0		6,288	7,559		22,766	3,523		13,675	0		6,352	1,459		7,103	255		2,237
		22,626			59,119			59,989			59,040			24,796			60,157			29,502			13,979			18,836			6,685	
Corcoran	1,056		1,843	1,133		2,036	1,132		2,252	1,499		2,735	0		641	0		0	623		2,148	0		590	221		910	41		212
		21,839			58,216			58,869			57,804			24,155			60,157			27,977			13,389			18,147			6,514	
Wasco	1,212		538	1,012		1,268	999		1,319	1,499		1,485	0		677	0		0	582		1,047	0		518	117		597	46		108
		22,513			57,960			58,549			57,818			23,478			60,157			27,512			12,871			17,667			6,452	
Bakersfield	0		22,513	0		57,960	0		58,549	0		57,818	0		23,478	0		60,157	0		27,512	0		12,871	0		17,667	0		6,452
Max Load		**24,480**			**68,719**			**71,216**			**65,764**			**52,460**			**78,543**			**53,389**			**47,607**			**41,136**			**19,873**	
Total	**34,979**		**34,979**	**110,652**		**110,652**	**126,854**		**126,854**	**119,263**		**119,263**	**54,894**		**54,894**	**140,969**		**140,969**	**101,927**		**101,927**	**51,675**		**51,675**	**72,591**		**72,591**	**31,939**		**31,939**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	3,971		0	19,566		0	7,520		0	46,407		0	50,365		0	26,403		0	63,308		0	58,118		0	47,464		0	13,329		0
		3,971			19,566			7,520			46,407			50,365			26,403			63,308			58,118			47,464			13,329	
Wasco	198		61	795		416	313		0	1,376		931	1,039		842	669		0	1,513		1,062	0		0	1,283		1,379	250		785
		4,108			19,945			7,833			46,852			50,562			27,072			63,759			58,118			47,368			12,794	
Corcoran	464		70	1,952		411	352		0	2,367		933	1,871		1,011	668		0	2,527		1,201	0		0	2,333		1,345	708		741
		4,502			21,486			8,185			48,286			51,422			27,740			65,085			58,118			48,356			12,761	
Hanford	3,967		477	13,057		3,210	3,809		0	15,000		5,459	13,110		5,695	7,175		0	16,344		6,741	19,107		6,877	12,485		7,254	3,208		3,844
		7,992			31,333			11,994			57,827			58,837			34,915			74,688			70,348			53,587			12,125	
Fresno	9,755		2,167	16,017		12,797	8,994		0	21,993		16,497	20,223		18,146	16,928		0	26,788		21,836	27,380		26,541	11,359		20,196	512		9,659
		15,580			34,553			20,988			63,323			60,914			51,843			79,640			71,187			44,750			2,978	
Madera	892		92	1,222		483	696		0	1,642		731	1,486		832	1,253		0	2,358		1,098	0		0	900		914	20		400
		16,380			35,292			21,684			64,234			61,568			53,096			80,900			71,187			44,736			2,598	
Merced	4,994		834	5,515		3,323	2,739		0	6,997		4,436	6,044		5,514	4,396		0	9,131		6,690	8,434		7,642	2,916		4,369	0		2,598
		20,540			37,484			24,423			66,795			62,098			57,492			83,341			71,979			43,283			0	
Denair	803		338	756		1,167	447		0	1,035		1,611	801		1,864	674		0	1,470		2,463	0		0	434		1,596	0		0
		21,005			37,073			24,870			66,219			61,035			58,166			82,348			71,979			42,121			0	
Modesto	4,153		1,351	3,576		4,120	2,446		0	4,884		6,098	3,620		7,177	3,598		0	6,480		8,672	4,998		8,818	2,170		5,018	0		0
		23,807			36,529			27,316			65,005			57,478			61,764			80,156			68,159			39,273			0	
Stockton-SJ	9,911		9,668	11,389		9,832	0		0	11,137		26,304	10,038		15,362	0		0	15,202		34,238	8,955		31,686	256		8,536	0		0
		24,050			38,086			27,316			49,838			52,154			61,764			61,120			45,428			30,993			0	
Antioch-Pittsburg	700		2,392	683		3,769	0		0	644		4,708	789		4,838	0		0	1,173		6,991	0		0	0		0	0		0
		22,358			35,000			27,316			45,774			48,105			61,764			55,302			45,428			30,993			0	
Martinez	1,631		5,943	1,366		10,114	0		0	2,489		13,355	3,014		14,761	0		0	2,745		17,969	1,458		15,355	0		0	0		0
		18,046			26,252			27,316			34,908			36,358			61,764			40,078			31,531			30,993			0	
Richmond	16		4,203	18		5,988	0		0	25		6,905	31		7,243	0		0	25		9,129	19		7,137	0		0	0		0
		13,859			20,282			27,316			28,028			29,146			61,764			30,974			24,413			30,993			0	
Emeryville	39		7,496	50		11,861	0		0	75		16,268	87		16,792	0		0	62		17,785	34		14,641	0		0	0		0
		6,402			8,471			27,316			11,835			12,441			61,764			13,251			9,806			30,993			0	
Oakland	0		6,402	0		8,471	0		0	0		11,835	0		12,441	0		0	0		13,251	0		9,806	0		0	0		0
		0			0			27,316			0			0			61,764			0			0			30,993			0	
Stockton-Downtown	0		0	0		0	1,658		5,010	0		0	0		0	2,697		12,282	0		0	0		0	475		6,793	0		0
		0			0			23,964			0			0			52,179			0			0			24,675			0	
Lodi	0		0	0		0	862		790	0		0	0		0	1,450		1,916	0		0	0		0	332		1,076	0		0
		0			0			24,036			0			0			51,713			0			0			23,931			0	
Sacramento	0		0	0		0	0		24,036	0		0	0		0	0		51,713	0		0	0		0	0		23,931	0		0
Max Load		**24,050**			**38,086**			**27,316**			**66,795**			**62,098**			**61,764**			**83,341**			**71,979**			**53,587**			**13,329**	
Total	**41,494**		**41,494**	**75,962**		**75,962**	**29,836**		**29,836**	**116,071**		**116,071**	**112,518**		**112,518**	**65,911**		**65,911**	**149,126**		**149,126**	**128,503**		**128,503**	**82,407**		**82,407**	**18,027**		**18,027**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	41,712		0	0		0	0		0	45,499		0	0		0	0		0	43,801		0	0		0	0		0
		0			41,712			0			0			45,499			0			0			43,801			0			0	
Lodi	0		0	1,621		739	0		0	0		0	1,829		720	0		0	0		0	1,686		1,252	0		0	0		0
		0			42,594			0			0			46,608			0			0			44,235			0			0	
Stockton-Downtown	0		0	9,434		865	0		0	0		0	10,437		1,371	0		0	0		0	9,592		2,259	0		0	0		0
		0			51,163			0			0			55,674			0			0			51,568			0			0	
Oakland	0		0	0		0	13,013		0	11,669		0	0		0	12,850		0	11,521		0	0		0	11,060		0	4,543		0
		0			51,163			13,013			11,669			55,674			12,850			11,521			51,568			11,060			4,543	
Emeryville	0		0	0		0	17,310		0	16,109		0	0		0	19,170		0	15,799		0	0		0	12,708		0	6,005		0
		0			51,163			30,323			27,778			55,674			32,020			27,320			51,568			23,768			10,548	
Richmond	0		0	0		0	8,227		29	6,892		35	0		0	8,461		22	8,527		23	0		0	6,345		40	2,858		16
		0			51,163			38,521			34,635			55,674			40,459			35,824			51,568			30,073			13,390	
Martinez	0		0	0		0	17,766		3,269	14,722		2,815	0		0	17,552		2,194	15,331		2,112	0		0	9,897		3,713	4,464		1,147
		0			51,163			53,018			46,542			55,674			55,817			49,043			51,568			36,257			16,707	
Antioch-Pittsburg	0		0	0		0	5,973		795	5,510		603	0		0	0		0	6,258		1,180	0		0	3,545		801	1,614		401
		0			51,163			58,196			51,449			55,674			55,817			54,121			51,568			39,001			17,920	
Stockton	0		0	16,214		465	23,597		11,050	17,152		9,458	0		0	33,450		10,825	15,372		15,433	0		0	14,554		12,015	6,949		5,284
		0			66,912			70,743			59,143			55,674			78,442			54,060			51,568			41,540			19,585	
Modesto	0		0	8,711		4,257	7,008		4,228	8,948		3,327	0		2,983	10,407		5,120	6,647		4,962	0		4,370	2,874		4,541	1,317		1,957
		0			71,366			73,523			64,764			52,691			83,729			55,745			47,198			39,873			18,945	
Denair	0		0	2,375		739	1,849		938	2,551		802	0		563	0		0	2,004		1,115	0		798	770		977	298		422
		0			73,002			74,434			66,513			52,128			83,729			56,634			46,400			39,666			18,821	
Merced	5,303		0	6,500		6,006	5,306		6,652	6,426		5,889	0		3,685	7,988		9,110	4,627		7,570	0		4,879	1,938		6,294	589		2,957
		5,303			73,496			73,088			67,050			48,443			82,607			53,691			41,521			35,310			16,453	
Madera	817		68	940		1,619	864		1,664	1,035		1,540	0		1,037	0		0	706		1,947	0		1,353	305		1,320	50		681
		6,052			72,817			72,288			66,545			47,406			82,607			52,450			40,168			34,295			15,822	
Fresno	20,854		1,538	19,849		21,372	20,416		22,411	21,723		19,374	0		14,054	29,807		31,620	13,605		23,158	0		17,301	6,524		14,887	907		8,107
		25,368			71,294			70,293			68,894			33,352			80,794			42,897			22,867			25,932			8,622	
Hanford	6,944		8,663	6,294		15,291	6,812		14,594	7,858		14,545	0		6,641	7,990		23,380	3,750		14,080	0		6,933	1,567		7,223	255		2,338
		23,649			62,297			62,511			62,207			26,711			65,404			32,567			15,934			20,276			6,539	
Corcoran	1,071		1,841	1,157		2,098	1,170		2,283	1,542		2,720	0		675	0		0	676		2,232	0		653	250		937	40		230
		22,879			61,356			61,398			61,029			26,036			65,404			31,011			15,281			19,589			6,349	
Wasco	1,213		565	1,000		1,352	1,011		1,391	1,511		1,546	0		729	0		0	614		1,149	0		592	138		625	43		117
		23,527			61,004			61,018			60,994			25,307			65,404			30,476			14,689			19,102			6,275
Bakersfield	0		23,527	0		61,004	0		61,018	0		60,994	0		25,307	0		65,404	0		30,476	0		14,689	0		19,102	0		6,275
Max Load		**25,368**			**73,496**			**74,434**			**68,894**			**55,674**			**83,729**			**56,634**			**51,568**			**41,540**			**19,585**	
Total	**36,202**		**36,202**	**115,807**		**115,807**	**130,322**		**130,322**	**123,648**		**123,648**	**57,765**		**57,765**	**147,675**		**147,675**	**105,437**		**105,437**	**55,079**		**55,079**	**72,475**		**72,475**	**29,932**		**29,932**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	6,623		0	23,510		0	9,059		0	53,669		0	48,183		0	26,991		0	63,627		0	60,149		0	52,680		0	13,983		0
		6,623			23,510			9,059			53,669			48,183			26,991			63,627			60,149			52,680			13,983	
Wasco	220		83	865		479	354		0	1,452		1,011	1,091		790	721		0	1,599		1,031	0		0	1,374		1,376	253		764
		6,760			23,896			9,413			54,110			48,484			27,712			64,195			60,149			52,678			13,472	
Corcoran	485		101	1,999		476	382		0	2,388		1,053	1,907		961	711		0	2,587		1,177	0		0	2,372		1,397	701		748
		7,144			25,419			9,795			55,445			49,430			28,423			65,605			60,149			53,653			13,425	
Hanford	4,059		677	13,294		3,614	4,097		0	15,242		6,204	13,316		5,362	7,593		0	16,730		6,565	19,713		6,731	12,998		7,660	3,193		4,018
		10,526			35,099			13,892			64,483			57,384			36,016			75,770			73,131			58,991			12,600	
Fresno	9,910		2,685	16,654		13,780	9,597		0	22,573		18,259	20,744		17,426	17,789		0	27,921		21,453	29,204		26,237	12,434		21,256	465		10,115
		17,751			37,973			23,489			68,797			60,702			53,805			82,238			76,098			50,169			2,950	
Madera	899		115	1,272		536	739		0	1,695		807	1,538		808	1,322		0	2,469		1,091	0		0	992		961	19		410
		18,535			38,709			24,228			69,685			61,432			55,127			83,616			76,098			50,200			2,559	
Merced	4,545		1,019	5,397		3,801	2,825		0	6,765		5,089	6,024		5,479	4,590		0	9,034		6,841	8,813		8,086	3,073		5,037	0		2,559
		22,061			40,305			27,053			71,361			61,977			59,717			85,809			76,825			48,236			0	
Denair	720		392	715		1,332	445		0	976		1,816	776		1,897	681		0	1,418		2,575	0		0	442		1,842	0		0
		22,389			39,688			27,498			70,521			60,856			60,398			84,652			76,825			46,836			0	
Modesto	3,703		1,566	3,335		4,625	2,401		0	4,562		6,879	3,425		7,164	3,578		0	6,089		8,904	4,991		9,874	2,217		5,892	0		0
		24,526			38,398			29,899			68,204			57,117			63,976			81,837			71,942			43,161			0	
Stockton-SJ	9,078		10,089	10,493		10,636	0		0	10,406		28,220	10,866		15,050	0		0	13,858		35,051	8,540		34,321	280		9,684	0		0
		23,515			38,255			29,899			50,390			52,933			63,976			60,644			46,161			33,757			0	
Antioch-Pittsburg	667		2,334	664		3,832	0		0	614		4,860	730		4,989	0		0	1,107		6,887	0		0	0		0	0		0
		21,848			35,087			29,899			46,144			48,674			63,976			54,864			46,161			33,757			0	
Martinez	1,741		5,965	1,357		10,347	0		0	2,199		13,881	2,759		14,871	0		0	3,394		17,764	1,482		15,368	0		0	0		0
		17,624			26,097			29,899			34,462			36,562			63,976			40,494			32,275			33,757			0	
Richmond	15		4,075	18		5,926	0		0	20		6,871	37		7,502	0		0	29		9,049	14		7,209	0		0	0		0
		13,564			20,189			29,899			27,611			29,097			63,976			31,474			25,080			33,757			0	
Emeryville	0		7,316	0		11,869	0		0	0		16,221	0		16,920	0		0	0		17,877	0		15,124	0		0	0		0
		6,248			8,320			29,899			11,390			12,177			63,976			13,597			9,956			33,757			0	
Oakland	0		6,248	0		8,320	0		0	0		11,390	0		12,177	0		0	0		13,597	0		9,956	0		0	0		0
		0			0			29,899			0			0			63,976			0			0			33,757			0	
Stockton-Downtown	0		0	0		0	1,403		6,008	0		0	0		0	2,212		13,274	0		0	0		0	520		7,852	0		0
		0			0			25,294			0			0			52,914			0			0			26,425			0	
Lodi	0		0	0		0	780		928	0		0	0		0	1,250		2,006	0		0	0		0	379		1,210	0		0
		0			0			25,146			0			0			52,158			0			0			25,594			0	
Sacramento	0		0	0		0	0		25,146	0		0	0		0	0		52,158	0		0	0		0	0		25,594	0		0
Max Load		**24,526**			**40,305**			**29,899**			**71,361**			**61,977**			**63,976**			**85,809**			**76,825**			**58,991**			**13,983**	
Total	**42,665**		**42,665**	**79,573**		**79,573**	**32,082**		**32,082**	**122,561**		**122,561**	**111,396**		**111,396**	**67,438**		**67,438**	**149,862**		**149,862**	**132,906**		**132,906**	**89,761**		**89,761**	**18,614**		**18,614**

2020 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	153		0	0		0	0		0	168		0	0		0	0		0	159		0	0		0	0		0
		0			153			0			0			168			0			0			159			0			0	
Lodi	0		0	6		3	0		0	0		0	6		3	0		0	0		0	6		5	0		0	0		0
		0			155			0			0			171			0			0			160			0			0	
Stockton-Downtown	0		0	33		4	0		0	0		0	34		6	0		0	0		0	31		10	0		0	0		0
		0			185			0			0			199			0			0			181			0			0	
Oakland	0		0	0		0	48		0	41		0	0		0	48		0	43		0	0		0	44		0	22		0
		0			185			48			41			199			48			43			181			44			22	
Emeryville	0		0	0		0	63		0	61		0	0		0	73		0	59		0	0		0	49		0	24		0
		0			185			111			102			199			121			102			181			92			46	
Richmond	0		0	0		0	30		0	26		0	0		0	32		0	32		0	0		0	25		0	12		0
		0			185			142			128			199			153			134			181			117			57	
Martinez	0		0	0		0	67		12	55		6	0		0	66		7	57		7	0		0	38		16	18		8
		0			185			196			177			199			211			184			181			140			67	
Antioch-Pittsburg	0		0	0		0	23		3	20		2	0		0	0		0	23		5	0		0	14		3	6		2
		0			185			215			195			199			211			203			181			150			71	
Stockton	0		0	57		1	87		43	61		38	0		0	117		44	56		61	0		0	55		48	27		23
		0			240			259			218			199			284			197			181			156			76	
Modesto	0		0	30		16	25		17	32		13	0		11	35		20	23		20	0		17	10		19	5		8
		0			254			268			237			188			298			200			164			148			73	
Denair	0		0	8		3	7		4	9		3	0		2	0		0	7		4	0		3	3		4	1		2
		0			260			271			242			186			298			203			161			146			72	
Merced	18		0	24		22	19		25	23		23	0		13	28		35	17		29	0		18	7		25	2		12
		18			261			265			243			172			292			190			143			128			63	
Madera	3		0	3		6	3		6	4		6	0		4	0		0	3		7	0		5	1		5	0		3
		20			259			262			241			169			292			186			138			125			60	
Fresno	78		5	74		76	76		81	81		72	0		51	109		114	50		84	0		61	24		55	3		31
		93			257			257			250			118			286			151			77			93			33	
Hanford	26		33	24		56	25		54	29		55	0		24	29		87	13		52	0		24	6		27	1		9
		86			225			228			224			94			229			112			53			72			25	
Corcoran	4		7	4		8	4		9	6		10	0		2	0		0	2		8	0		2	1		3	0		1
		83			221			224			220			92			229			106			51			69			25	
Wasco	5		2	4		5	4		5	6		6	0		3	0		0	2		4	0		2	0		2	0		0
		86			220			222			220			89			229			105			49			67			25	
Bakersfield	0		86	0		220	0		222	0		220	0		89	0		229	0		105	0		49	0		67	0		25
Max Load		**93**			**261**			**271**			**250**			**199**			**298**			**203**			**181**			**156**			**76**	
Total	**133**		**133**	**420**		**420**	**482**		**482**	**453**		**453**	**209**		**209**	**536**		**536**	**387**		**387**	**196**		**196**	**276**		**276**	**121**		**121**

2020 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	15		0	74		0	29		0	176		0	191		0	100		0	241		0	221		0	180		0	51		0
		15			74			29			176			191			100			241			221			180			51	
Wasco	1		0	3		2	1		0	5		4	4		3	3		0	6		4	0		0	5		5	1		3
		16			76			30			178			192			103			242			221			180			49	
Corcoran	2		0	7		2	1		0	9		4	7		4	3		0	10		5	0		0	9		5	3		3
		17			82			31			183			195			105			247			221			184			48	
Hanford	15		2	50		12	14		0	57		21	50		22	27		0	62		26	73		26	47		28	12		15
		30			119			46			220			224			133			284			267			204			46	
Fresno	37		8	61		49	34		0	84		63	77		69	64		0	102		83	104		101	43		77	2		37
		59			131			80			241			231			197			303			271			170			11	
Madera	3		0	5		2	3		0	6		3	6		3	5		0	9		4	0		0	3		3	0		2
		62			134			82			244			234			202			307			271			170			10	
Merced	19		3	21		13	10		0	27		17	23		21	17		0	35		25	32		29	11		17	0		10
		78			142			93			254			236			218			317			274			164			0	
Denair	3		1	3		4	2		0	4		6	3		7	3		0	6		9	0		0	2		6	0		0
		80			141			95			252			232			221			313			274			160			0	
Modesto	16		5	14		16	9		0	19		23	14		27	14		0	25		33	19		34	8		19	0		0
		90			139			104			247			218			235			305			259			149			0	
Stockton-SJ	38		37	43		37	0		0	42		100	38		58	0		0	58		130	34		120	1		32	0		0
		91			145			104			189			198			235			232			173			118			0	
Antioch-Pittsburg	3		9	3		14	0		0	2		18	3		18	0		0	4		27	0		0	0		0	0		0
		85			133			104			174			183			235			210			173			118			0	
Martinez	6		23	5		38	0		0	9		51	11		56	0		0	10		68	6		58	0		0	0		0
		69			100			104			133			138			235			152			120			118			0	
Richmond	0		16	0		23	0		0	0		26	0		28	0		0	0		35	0		27	0		0	0		0
		53			77			104			107			111			235			118			93			118			0	
Emeryville	0		28	0		45	0		0	0		62	0		64	0		0	0		68	0		56	0		0	0		0
		24			32			104			45			47			235			50			37			118			0	
Oakland	0		24	0		32	0		0	0		45	0		47	0		0	0		50	0		37	0		0	0		0
		0			0			104			0			0			235			0			0			118			0	
Stockton-Downtown	0		0	0		0	6		19	0		0	0		0	10		47	0		0	0		0	2		26	0		0
		0			0			91			0			0			198			0			0			94			0	
Lodi	0		0	0		0	3		3	0		0	0		0	6		7	0		0	0		0	1		4	0		0
		0			0			91			0			0			197			0			0			91			0	
Sacramento	0		0	0		0	0		91	0		0	0		0	0		197	0		0	0		0	0		91	0		0
Max Load		**91**			**145**			**104**			**254**			**236**			**235**			**317**			**274**			**204**			**51**	
Total	**158**		**158**	**289**		**289**	**113**		**113**	**441**		**441**	**428**		**428**	**250**		**250**	**567**		**567**	**488**		**488**	**313**		**313**	**69**		**69**

2020 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	159		0	0		0	0		0	173		0	0		0	0		0	166		0	0		0	0		0
		0			159			0			0			173			0			0			166			0			0	
Lodi	0		0	6		3	0		0	0		0	7		3	0		0	0		0	6		5	0		0	0		0
		0			162			0			0			177			0			0			168			0			0	
Stockton-Downtown	0		0	36		3	0		0	0		0	40		5	0		0	0		0	36		9	0		0	0		0
		0			195			0			0			212			0			0			196			0			0	
Oakland	0		0	0		0	49		0	44		0	0		0	49		0	44		0	0		0	42		0	17		0
		0			195			49			44			212			49			44			196			42			17	
Emeryville	0		0	0		0	66		0	61		0	0		0	73		0	60		0	0		0	48		0	23		0
		0			195			115			106			212			122			104			196			90			40	
Richmond	0		0	0		0	31		0	26		0	0		0	32		0	32		0	0		0	24		0	11		0
		0			195			146			132			212			154			136			196			114			51	
Martinez	0		0	0		0	68		12	56		11	0		0	67		8	58		8	0		0	38		14	17		4
		0			195			201			177			212			212			186			196			138			63	
Antioch-Pittsburg	0		0	0		0	23		3	21		2	0		0	0		0	24		4	0		0	13		3	6		2
		0			195			221			196			212			212			206			196			148			68	
Stockton	0		0	62		2	90		42	65		36	0		0	127		41	58		59	0		0	55		46	26		20
		0			254			269			225			212			298			205			196			158			74	
Modesto	0		0	33		16	27		16	34		13	0		11	40		19	25		19	0		17	11		17	5		7
		0			271			279			246			200			318			212			179			152			72	
Denair	0		0	9		3	7		4	10		3	0		2	0		0	8		4	0		3	3		4	1		2
		0			277			283			253			198			318			215			176			151			72	
Merced	20		0	25		23	20		25	24		22	0		14	30		35	18		29	0		19	7		24	2		11
		20			279			278			255			184			314			204			158			134			63	
Madera	3		0	4		6	3		6	4		6	0		4	0		0	3		7	0		5	1		5	0		3
		23			277			275			253			180			314			199			153			130			60	
Fresno	79		6	75		81	78		85	83		74	0		53	113		120	52		88	0		66	25		57	3		31
		96			271			267			262			127			307			163			87			99			33	
Hanford	26		33	24		58	26		55	30		55	0		25	30		89	14		54	0		26	6		27	1		9
		90			237			238			236			102			249			124			61			77			25	
Corcoran	4		7	4		8	4		9	6		10	0		3	0		0	3		8	0		2	1		4	0		1
		87			233			233			232			99			249			118			58			74			24	
Wasco	5		2	4		5	4		5	6		6	0		3	0		0	2		4	0		2	1		2	0		0
		89			232			232			232			96			249			116			56			73			24	
Bakersfield	0		89	0		232	0		232	0		232	0		96	0		249	0		116	0		56	0		73	0		24
Max Load		**96**			**279**			**283**			**262**			**212**			**318**			**215**			**196**			**158**			**74**	
Total	**138**		**138**	**440**		**440**	**495**		**495**	**470**		**470**	**220**		**220**	**561**		**561**	**401**		**401**	**209**		**209**	**275**		**275**	**114**		**114**

2020 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	25		0	89		0	34		0	204		0	183		0	103		0	242		0	229		0	200		0	53		0
		25			89			34			204			183			103			242			229			200			53	
Wasco	1		0	3		2	1		0	6		4	4		3	3		0	6		4	0		0	5		5	1		3
		26			91			36			206			184			105			244			229			200			51	
Corcoran	2		0	8		2	1		0	9		4	7		4	3		0	10		4	0		0	9		5	3		3
		27			97			37			211			188			108			249			229			204			51	
Hanford	15		3	51		14	16		0	58		24	51		20	29		0	64		25	75		26	49		29	12		15
		40			133			53			245			218			137			288			278			224			48	
Fresno	38		10	63		52	36		0	86		69	79		66	68		0	106		82	111		100	47		81	2		38
		67			144			89			261			231			204			313			289			191			11	
Madera	3		0	5		2	3		0	6		3	6		3	5		0	9		4	0		0	4		4	0		2
		70			147			92			265			233			209			318			289			191			10	
Merced	17		4	21		14	11		0	26		19	23		21	17		0	34		26	33		31	12		19	0		10
		84			153			103			271			236			227			326			292			183			0	
Denair	3		1	3		5	2		0	4		7	3		7	3		0	5		10	0		0	2		7	0		0
		85			151			104			268			231			230			322			292			178			0	
Modesto	14		6	13		18	9		0	17		26	13		27	14		0	23		34	19		38	8		22	0		0
		93			146			114			259			217			243			311			273			164			0	
Stockton-SJ	34		38	40		40	0		0	40		107	41		57	0		0	53		133	32		130	1		37	0		0
		89			145			114			191			201			243			230			175			128			0	
Antioch-Pittsburg	3		9	3		15	0		0	2		18	3		19	0		0	4		26	0		0	0		0	0		0
		83			133			114			175			185			243			208			175			128			0	
Martinez	7		23	5		39	0		0	8		53	10		57	0		0	13		68	6		58	0		0	0		0
		67			99			114			131			139			243			154			123			128			0	
Richmond	0		15	0		23	0		0	0		26	0		29	0		0	0		34	0		27	0		0	0		0
		52			77			114			105			111			243			120			95			128			0	
Emeryville	0		28	0		45	0		0	0		62	0		64	0		0	0		68	0		57	0		0	0		0
		24			32			114			43			46			243			52			38			128			0	
Oakland	0		24	0		32	0		0	0		43	0		46	0		0	0		52	0		38	0		0	0		0
		0			0			114			0			0			243			0			0			128			0	
Stockton-Downtown	0		0	0		0	5		23	0		0	0		0	8		50	0		0	0		0	2		30	0		0
		0			0			96			0			0			201			0			0			100			0	
Lodi	0		0	0		0	3		4	0		0	0		0	5		8	0		0	0		0	1		5	0		0
		0			0			96			0			0			198			0			0			97			0	
Sacramento	0		0	0		0	0		96	0		0	0		0	0		198	0		0	0		0	0		97	0		0
Max Load		**93**			**153**			**114**			**271**			**236**			**243**			**326**			**292**			**224**			**53**	
Total	**162**		**162**	**302**		**302**	**122**		**122**	**466**		**466**	**423**		**423**	**256**		**256**	**569**		**569**	**505**		**505**	**341**		**341**	**71**		**71**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	40,142		0	0		0	0		0	44,236		0	0		0	0		0	41,896		0	0		0	0		0
		0			40,142			0			0			44,236			0			0			41,896			0			0	
Lodi	0		0	1,532		776	0		0	0		0	1,638		813	0		0	0		0	1,506		1,389	0		0	0		0
		0			40,898			0			0			45,061			0			0			42,013			0			0	
Stockton-Downtown	0		0	8,733		930	0		0	0		0	9,020		1,621	0		0	0		0	8,273		2,679	0		0	0		0
		0			48,701			0			0			52,460			0			0			47,607			0			0	
Oakland	0		0	0		0	12,695		0	10,734		0	0		0	12,670		0	11,378		0	0		0	11,667		0	5,659		0
		0			48,701			12,695			10,734			52,460			12,670			11,378			47,607			11,667			5,659	
Emeryville	0		0	0		0	16,670		52	16,081		62	0		0	19,130		50	15,549		48	0		0	12,773		99	6,386		47
		0			48,701			29,313			26,753			52,460			31,750			26,879			47,607			24,341			11,998	
Richmond	0		0	0		0	7,977		28	6,916		27	0		0	8,467		23	8,428		23	0		0	6,488		45	3,037		23
		0			48,701			37,262			33,642			52,460			40,194			35,284			47,607			30,784			15,012	
Martinez	0		0	0		0	17,543		3,199	14,476		1,579	0		0	17,254		1,851	15,073		1,950	0		0	10,076		4,099	4,611		2,032
		0			48,701			51,606			46,539			52,460			55,597			48,407			47,607			36,761			17,591	
Antioch-Pittsburg	0		0	0		0	5,937		834	5,332		632	0		0	0		0	6,181		1,199	0		0	3,597		866	1,650		456
		0			48,701			56,709			51,239			52,460			55,597			53,389			47,607			39,492			18,785	
Stockton	0		0	15,060		500	22,889		11,329	16,103		9,900	0		0	30,704		11,502	14,611		16,097	0		0	14,377		12,733	7,018		5,930
		0			63,261			68,269			57,442			52,460			74,799			51,903			47,607			41,136			19,873	
Modesto	0		0	7,931		4,279	6,608		4,406	8,302		3,458	0		2,985	9,129		5,385	6,103		5,319	0		4,457	2,711		4,956	1,371		2,144
		0			66,913			70,471			62,286			49,475			78,543			52,687			43,150			38,891			19,100	
Denair	0		0	2,154		737	1,712		967	2,342		836	0		563	0		0	1,810		1,178	0		802	708		1,059	306		457
		0			68,330			71,216			63,792			48,912			78,543			53,319			42,348			38,540			18,949	
Merced	4,667		0	6,225		5,836	5,034		6,618	6,092		5,966	0		3,550	7,331		9,112	4,346		7,648	0		4,683	1,810		6,579	614		3,083
		4,667			68,719			69,632			63,918			45,362			76,762			50,017			37,665			33,771			16,480	
Madera	775		60	918		1,516	843		1,591	997		1,498	0		988	0		0	666		1,861	0		1,257	289		1,291	49		677
		5,382			68,121			68,884			63,417			44,374			76,762			48,822			36,408			32,769			15,852	
Fresno	20,454		1,356	19,599		20,091	20,125		21,399	21,193		18,846	0		13,290	28,725		30,123	13,054		22,222	0		16,077	6,298		14,587	896		8,081
		24,480			67,629			67,610			65,764			31,084			75,364			39,654			20,331			24,480			8,667	
Hanford	6,815		8,669	6,213		14,723	6,690		14,311	7,697		14,421	0		6,288	7,559		22,766	3,523		13,675	0		6,352	1,459		7,103	255		2,237
		22,626			59,119			59,989			59,040			24,796			60,157			29,502			13,979			18,836			6,685	
Corcoran	1,056		1,843	1,133		2,036	1,132		2,252	1,499		2,735	0		641	0		0	623		2,148	0		590	221		910	41		212
		21,839			58,216			58,869			57,804			24,155			60,157			27,977			13,389			18,147			6,514	
Wasco	1,212		538	1,012		1,268	999		1,319	1,499		1,485	0		677	0		0	582		1,047	0		518	117		597	46		108
		22,513			57,960			58,549			57,818			23,478			60,157			27,512			12,871			17,667			6,452	
Bakersfield	0		22,513	0		57,960	0		58,549	0		57,818	0		23,478	0		60,157	0		27,512	0		12,871	0		17,667	0		6,452
Max Load		**24,480**			**68,719**			**71,216**			**65,764**			**52,460**			**78,543**			**53,389**			**47,607**			**41,136**			**19,873**	
Total	**34,979**		**34,979**	**110,652**		**110,652**	**126,854**		**126,854**	**119,263**		**119,263**	**54,894**		**54,894**	**140,969**		**140,969**	**101,927**		**101,927**	**51,675**		**51,675**	**72,591**		**72,591**	**31,939**		**31,939**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	3,971		0	19,566		0	7,520		0	46,407		0	50,365		0	26,403		0	63,308		0	58,118		0	47,464		0	13,329		0
		3,971			19,566			7,520			46,407			50,365			26,403			63,308			58,118			47,464			13,329	
Wasco	198		61	795		416	313		0	1,376		931	1,039		842	669		0	1,513		1,062	0		0	1,283		1,379	250		785
		4,108			19,945			7,833			46,852			50,562			27,072			63,759			58,118			47,368			12,794	
Corcoran	464		70	1,952		411	352		0	2,367		933	1,871		1,011	668		0	2,527		1,201	0		0	2,333		1,345	708		741
		4,502			21,486			8,185			48,286			51,422			27,740			65,085			58,118			48,356			12,761	
Hanford	3,967		477	13,057		3,210	3,809		0	15,000		5,459	13,110		5,695	7,175		0	16,344		6,741	19,107		6,877	12,485		7,254	3,208		3,844
		7,992			31,333			11,994			57,827			58,837			34,915			74,688			70,348			53,587			12,125	
Fresno	9,755		2,167	16,017		12,797	8,994		0	21,993		16,497	20,223		18,146	16,928		0	26,788		21,836	27,380		26,541	11,359		20,196	512		9,659
		15,580			34,553			20,988			63,323			60,914			51,843			79,640			71,187			44,750			2,978	
Madera	892		92	1,222		483	696		0	1,642		731	1,486		832	1,253		0	2,358		1,098	0		0	900		914	20		400
		16,380			35,292			21,684			64,234			61,568			53,096			80,900			71,187			44,736			2,598	
Merced	4,994		834	5,515		3,323	2,739		0	6,997		4,436	6,044		5,514	4,396		0	9,131		6,690	8,434		7,642	2,916		4,369	0		2,598
		20,540			37,484			24,423			66,795			62,098			57,492			83,341			71,979			43,283			0	
Denair	803		338	756		1,167	447		0	1,035		1,611	801		1,864	674		0	1,470		2,463	0		0	434		1,596	0		0
		21,005			37,073			24,870			66,219			61,035			58,166			82,348			71,979			42,121			0	
Modesto	4,153		1,351	3,576		4,120	2,446		0	4,884		6,098	3,620		7,177	3,598		0	6,480		8,672	4,998		8,818	2,170		5,018	0		0
		23,807			36,529			27,316			65,005			57,478			61,764			80,156			68,159			39,273			0	
Stockton-SJ	9,911		9,668	11,389		9,832	0		0	11,137		26,304	10,038		15,362	0		0	15,202		34,238	8,955		31,686	256		8,536	0		0
		24,050			38,086			27,316			49,838			52,154			61,764			61,120			45,428			30,993			0	
Antioch-Pittsburg	700		2,392	683		3,769	0		0	644		4,708	789		4,838	0		0	1,173		6,991	0		0	0		0	0		0
		22,358			35,000			27,316			45,774			48,105			61,764			55,302			45,428			30,993			0	
Martinez	1,631		5,943	1,366		10,114	0		0	2,489		13,355	3,014		14,761	0		0	2,745		17,969	1,458		15,355	0		0	0		0
		18,046			26,252			27,316			34,908			36,358			61,764			40,078			31,531			30,993			0	
Richmond	16		4,203	18		5,988	0		0	25		6,905	31		7,243	0		0	25		9,129	19		7,137	0		0	0		0
		13,859			20,282			27,316			28,028			29,146			61,764			30,974			24,413			30,993			0	
Emeryville	39		7,496	50		11,861	0		0	75		16,268	87		16,792	0		0	62		17,785	34		14,641	0		0	0		0
		6,402			8,471			27,316			11,835			12,441			61,764			13,251			9,806			30,993			0	
Oakland	0		6,402	0		8,471	0		0	0		11,835	0		12,441	0		0	0		13,251	0		9,806	0		0	0		0
		0			0			27,316			0			0			61,764			0			0			30,993			0	
Stockton-Downtown	0		0	0		0	1,658		5,010	0		0	0		0	2,697		12,282	0		0	0		0	475		6,793	0		0
		0			0			23,964			0			0			52,179			0			0			24,675			0	
Lodi	0		0	0		0	862		790	0		0	0		0	1,450		1,916	0		0	0		0	332		1,076	0		0
		0			0			24,036			0			0			51,713			0			0			23,931			0	
Sacramento	0		0	0		0	0		24,036	0		0	0		0	0		51,713	0		0	0		0	0		23,931	0		0
Max Load		**24,050**			**38,086**			**27,316**			**66,795**			**62,098**			**61,764**			**83,341**			**71,979**			**53,587**			**13,329**	
Total	**41,494**		**41,494**	**75,962**		**75,962**	**29,836**		**29,836**	**116,071**		**116,071**	**112,518**		**112,518**	**65,911**		**65,911**	**149,126**		**149,126**	**128,503**		**128,503**	**82,407**		**82,407**	**18,027**		**18,027**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	41,712		0	0		0	0		0	45,499		0	0		0	0		0	43,801		0	0		0	0		0
		0			41,712			0			0			45,499			0			0			43,801			0			0	
Lodi	0		0	1,621		739	0		0	0		0	1,829		720	0		0	0		0	1,686		1,252	0		0	0		0
		0			42,594			0			0			46,608			0			0			44,235			0			0	
Stockton-Downtown	0		0	9,434		865	0		0	0		0	10,437		1,371	0		0	0		0	9,592		2,259	0		0	0		0
		0			51,163			0			0			55,674			0			0			51,568			0			0	
Oakland	0		0	0		0	13,013		0	11,669		0	0		0	12,850		0	11,521		0	0		0	11,060		0	4,543		0
		0			51,163			13,013			11,669			55,674			12,850			11,521			51,568			11,060			4,543	
Emeryville	0		0	0		0	17,310		0	16,109		0	0		0	19,170		0	15,799		0	0		0	12,708		0	6,005		0
		0			51,163			30,323			27,778			55,674			32,020			27,320			51,568			23,768			10,548	
Richmond	0		0	0		0	8,227		29	6,892		35	0		0	8,461		22	8,527		23	0		0	6,345		40	2,858		16
		0			51,163			38,521			34,635			55,674			40,459			35,824			51,568			30,073			13,390	
Martinez	0		0	0		0	17,766		3,269	14,722		2,815	0		0	17,552		2,194	15,331		2,112	0		0	9,897		3,713	4,464		1,147
		0			51,163			53,018			46,542			55,674			55,817			49,043			51,568			36,257			16,707	
Antioch-Pittsburg	0		0	0		0	5,973		795	5,510		603	0		0	0		0	6,258		1,180	0		0	3,545		801	1,614		401
		0			51,163			58,196			51,449			55,674			55,817			54,121			51,568			39,001			17,920	
Stockton	0		0	16,214		465	23,597		11,050	17,152		9,458	0		0	33,450		10,825	15,372		15,433	0		0	14,554		12,015	6,949		5,284
		0			66,912			70,743			59,143			55,674			78,442			54,060			51,568			41,540			19,585	
Modesto	0		0	8,711		4,257	7,008		4,228	8,948		3,327	0		2,983	10,407		5,120	6,647		4,962	0		4,370	2,874		4,541	1,317		1,957
		0			71,366			73,523			64,764			52,691			83,729			55,745			47,198			39,873			18,945	
Denair	0		0	2,375		739	1,849		938	2,551		802	0		563	0		0	2,004		1,115	0		798	770		977	298		422
		0			73,002			74,434			66,513			52,128			83,729			56,634			46,400			39,666			18,821	
Merced	5,303		0	6,500		6,006	5,306		6,652	6,426		5,889	0		3,685	7,988		9,110	4,627		7,570	0		4,879	1,938		6,294	589		2,957
		5,303			73,496			73,088			67,050			48,443			82,607			53,691			41,521			35,310			16,453	
Madera	817		68	940		1,619	864		1,664	1,035		1,540	0		1,037	0		0	706		1,947	0		1,353	305		1,320	50		681
		6,052			72,817			72,288			66,545			47,406			82,607			52,450			40,168			34,295			15,822	
Fresno	20,854		1,538	19,849		21,372	20,416		22,411	21,723		19,374	0		14,054	29,807		31,620	13,605		23,158	0		17,301	6,524		14,887	907		8,107
		25,368			71,294			70,293			68,894			33,352			80,794			42,897			22,867			25,932			8,622	
Hanford	6,944		8,663	6,294		15,291	6,812		14,594	7,858		14,545	0		6,641	7,990		23,380	3,750		14,080	0		6,933	1,567		7,223	255		2,338
		23,649			62,297			62,511			62,207			26,711			65,404			32,567			15,934			20,276			6,539	
Corcoran	1,071		1,841	1,157		2,098	1,170		2,283	1,542		2,720	0		675	0		0	676		2,232	0		653	250		937	40		230
		22,879			61,356			61,398			61,029			26,036			65,404			31,011			15,281			19,589			6,349	
Wasco	1,213		565	1,000		1,352	1,011		1,391	1,511		1,546	0		729	0		0	614		1,149	0		592	138		625	43		117
		23,527			61,004			61,018			60,994			25,307			65,404			30,476			14,689			19,102			6,275
Bakersfield	0		23,527	0		61,004	0		61,018	0		60,994	0		25,307	0		65,404	0		30,476	0		14,689	0		19,102	0		6,275
Max Load		**25,368**			**73,496**			**74,434**			**68,894**			**55,674**			**83,729**			**56,634**			**51,568**			**41,540**			**19,585**	
Total	**36,202**		**36,202**	**115,807**		**115,807**	**130,322**		**130,322**	**123,648**		**123,648**	**57,765**		**57,765**	**147,675**		**147,675**	**105,437**		**105,437**	**55,079**		**55,079**	**72,475**		**72,475**	**29,932**		**29,932**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	6,623		0	23,510		0	9,059		0	53,669		0	48,183		0	26,991		0	63,627		0	60,149		0	52,680		0	13,983		0
		6,623			23,510			9,059			53,669			48,183			26,991			63,627			60,149			52,680			13,983	
Wasco	220		83	865		479	354		0	1,452		1,011	1,091		790	721		0	1,599		1,031	0		0	1,374		1,376	253		764
		6,760			23,896			9,413			54,110			48,484			27,712			64,195			60,149			52,678			13,472	
Corcoran	485		101	1,999		476	382		0	2,388		1,053	1,907		961	711		0	2,587		1,177	0		0	2,372		1,397	701		748
		7,144			25,419			9,795			55,445			49,430			28,423			65,605			60,149			53,653			13,425	
Hanford	4,059		677	13,294		3,614	4,097		0	15,242		6,204	13,316		5,362	7,593		0	16,730		6,565	19,713		6,731	12,998		7,660	3,193		4,018
		10,526			35,099			13,892			64,483			57,384			36,016			75,770			73,131			58,991			12,600	
Fresno	9,910		2,685	16,654		13,780	9,597		0	22,573		18,259	20,744		17,426	17,789		0	27,921		21,453	29,204		26,237	12,434		21,256	465		10,115
		17,751			37,973			23,489			68,797			60,702			53,805			82,238			76,098			50,169			2,950	
Madera	899		115	1,272		536	739		0	1,695		807	1,538		808	1,322		0	2,469		1,091	0		0	992		961	19		410
		18,535			38,709			24,228			69,685			61,432			55,127			83,616			76,098			50,200			2,559	
Merced	4,545		1,019	5,397		3,801	2,825		0	6,765		5,089	6,024		5,479	4,590		0	9,034		6,841	8,813		8,086	3,073		5,037	0		2,559
		22,061			40,305			27,053			71,361			61,977			59,717			85,809			76,825			48,236			0	
Denair	720		392	715		1,332	445		0	976		1,816	776		1,897	681		0	1,418		2,575	0		0	442		1,842	0		0
		22,389			39,688			27,498			70,521			60,856			60,398			84,652			76,825			46,836			0	
Modesto	3,703		1,566	3,335		4,625	2,401		0	4,562		6,879	3,425		7,164	3,578		0	6,089		8,904	4,991		9,874	2,217		5,892	0		0
		24,526			38,398			29,899			68,204			57,117			63,976			81,837			71,942			43,161			0	
Stockton-SJ	9,078		10,089	10,493		10,636	0		0	10,406		28,220	10,866		15,050	0		0	13,858		35,051	8,540		34,321	280		9,684	0		0
		23,515			38,255			29,899			50,390			52,933			63,976			60,644			46,161			33,757			0	
Antioch-Pittsburg	667		2,334	664		3,832	0		0	614		4,860	730		4,989	0		0	1,107		6,887	0		0	0		0	0		0
		21,848			35,087			29,899			46,144			48,674			63,976			54,864			46,161			33,757			0	
Martinez	1,741		5,965	1,357		10,347	0		0	2,199		13,881	2,759		14,871	0		0	3,394		17,764	1,482		15,368	0		0	0		0
		17,624			26,097			29,899			34,462			36,562			63,976			40,494			32,275			33,757			0	
Richmond	15		4,075	18		5,926	0		0	20		6,871	37		7,502	0		0	29		9,049	14		7,209	0		0	0		0
		13,564			20,189			29,899			27,611			29,097			63,976			31,474			25,080			33,757			0	
Emeryville	0		7,316	0		11,869	0		0	0		16,221	0		16,920	0		0	0		17,877	0		15,124	0		0	0		0
		6,248			8,320			29,899			11,390			12,177			63,976			13,597			9,956			33,757			0	
Oakland	0		6,248	0		8,320	0		0	0		11,390	0		12,177	0		0	0		13,597	0		9,956	0		0	0		0
		0			0			29,899			0			0			63,976			0			0			33,757			0	
Stockton-Downtown	0		0	0		0	1,403		6,008	0		0	0		0	2,212		13,274	0		0	0		0	520		7,852	0		0
		0			0			25,294			0			0			52,914			0			0			26,425			0	
Lodi	0		0	0		0	780		928	0		0	0		0	1,250		2,006	0		0	0		0	379		1,210	0		0
		0			0			25,146			0			0			52,158			0			0			25,594			0	
Sacramento	0		0	0		0	0		25,146	0		0	0		0	0		52,158	0		0	0		0	0		25,594	0		0
Max Load		**24,526**			**40,305**			**29,899**			**71,361**			**61,977**			**63,976**			**85,809**			**76,825**			**58,991**			**13,983**	
Total	**42,665**		**42,665**	**79,573**		**79,573**	**32,082**		**32,082**	**122,561**		**122,561**	**111,396**		**111,396**	**67,438**		**67,438**	**149,862**		**149,862**	**132,906**		**132,906**	**89,761**		**89,761**	**18,614**		**18,614**

2035 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

Southbound Trains

Station	2			4			6			8			10			12			14			16			18			20			22			24			26			28			30			32			34		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	50,400		0	0		0	0		0	60,846		0	0		0	0		0	61,998		0	0		0	58,125		0	0		0	0		0	50,558		0	0		0	0		0	16,206		0	0		0
		0			50,400			0			0			60,846			0			0			61,998			0			58,125			0			0			50,558			0			0			16,206			0	
Lodi	0		0	2,143		866	0		0	0		0	2,340		869	0		0	0		0	2,326		842	0		0	2,275		1,063	0		0	0		0	1,645		1,383	0		0	0		0	531		548	0		0
		0			51,677			0			0			62,317			0			0			63,482			0			59,337			0			0			50,820			0			0			16,189			0	
Stockton-Downtown	0		0	12,028		1,531	0		0	0		0	11,984		1,627	0		0	0		0	11,952		1,600	0		0	12,571		1,992	0		0	0		0	8,840		2,407	0		0	0		0	3,230		927	0		0
		0			62,174			0			0			72,674			0			0			73,834			0			69,916			0			0			57,253			0			0			18,492			0	
Oakland	0		0	0		0	13,535		0	13,549		0	0		0	12,729		0	12,268		0	0		0	15,568		0	0		0	15,098		0	13,308		0	0		0	11,151		0	12,639		0	0		0	6,508		0
		0			62,174			13,535			13,549			72,674			12,729			12,268			73,834			15,568			69,916			15,098			13,308			57,253			11,151			12,639			18,492			6,508	
Emeryville	0		0	0		0	17,238		0	16,728		0	0		0	15,478		0	17,821		0	0		0	19,931		0	0		0	19,963		0	17,458		0	0		0	13,090		0	14,265		0	0		0	7,399		0
		0			62,174			30,773			30,277			72,674			28,207			30,089			73,834			35,499			69,916			35,061			30,766			57,253			24,241			26,904			18,492			13,907	
Richmond	0		0	0		0	8,282		27	7,449		42	0		0	6,524		47	7,195		34	0		0	8,612		46	0		0	9,804		40	8,654		31	0		0	7,010		38	6,501		49	0		0	3,475		27
		0			62,174			39,028			37,684			72,674			34,684			37,250			73,834			44,065			69,916			44,825			39,389			57,253			31,213			33,356			18,492			17,355	
Martinez	0		0	0		0	16,794		3,514	16,337		4,617	0		0	12,977		4,333	17,056		2,672	0		0	17,130		4,750	0		0	19,240		4,040	16,208		3,339	0		0	11,863		3,888	10,215		4,673	0		0	5,244		2,423
		0			62,174			52,308			49,404			72,674			43,328			51,634			73,834			56,445			69,916			60,025			52,258			57,253			39,188			38,898			18,492			20,176	
Antioch-Pittsburg	0		0	0		0	6,305		952	0		0	0		0	6,909		858	0		0	0		0	6,428		742	0		0	7,349		1,036	0		0	0		0	6,509		1,457	0		0	0		0	2,184		574
		0			62,174			57,661			49,404			72,674			49,379			51,634			73,834			62,131			69,916			66,338			52,258			57,253			44,240			38,898			18,492			21,786	
Stockton	0		0	0		0	22,768		12,003	16,937		9,061	0		0	14,460		8,932	21,075		8,721	0		0	19,264		11,121	0		0	23,052		14,923	18,503		13,449	0		0	10,103		12,424	8,164		11,826	0		0	5,408		6,854
		0			62,174			68,426			57,280			72,674			54,907			63,988			73,834			70,274			69,916			74,467			57,312			57,253			41,919			35,236			18,492			20,340	
Modesto	0		0	0		3,736	12,337		4,365	9,026		3,287	0		3,758	8,515		2,856	11,546		3,547	0		4,088	11,730		4,084	0		4,780	11,498		5,448	8,467		4,937	0		5,297	4,081		4,041	3,593		3,689	0		1,850	1,792		1,946
		0			58,438			76,398			63,019			68,916			60,566			71,987			69,746			77,920			65,136			80,517			60,842			51,956			41,959			35,140			16,642			20,186	
Denair	0		0	0		673	3,406		1,017	0		0	0		677	3,476		1,036	0		0	0		751	3,544		1,029	0		862	3,365		1,276	0		0	0		940	1,689		1,353	0		0	0		322	449		483
		0			57,765			78,787			63,019			68,239			63,006			71,987			68,995			80,435			64,274			82,606			60,842			51,016			42,295			35,140			16,320			20,152	
Merced	5,897		0	0		4,614	9,087		7,736	6,594		5,891	0		4,581	6,930		5,040	7,797		6,610	0		5,249	9,735		7,659	0		5,892	9,397		9,537	5,729		8,112	0		6,086	2,668		6,597	2,435		5,937	0		2,049	795		3,096
		5,897			53,151			80,138			63,722			63,658			64,896			73,174			63,746			82,511			58,382			82,466			58,459			44,930			38,366			31,638			14,271			17,851	
Madera	944		63	0		1,238	1,326		1,929	0		0	0		1,286	1,463		1,992	0		0	0		1,458	1,582		2,059	0		1,605	1,401		2,505	0		0	0		1,558	537		2,203	0		0	0		532	84		763
		6,778			51,913			79,535			63,722			62,372			64,367			73,174			62,288			82,034			56,777			81,362			58,459			43,372			36,700			31,638			13,739			17,172	
Fresno	27,464		1,536	0		16,717	27,318		24,177	25,231		19,730	0		18,340	20,925		17,836	25,063		21,471	0		20,170	36,060		25,689	0		21,991	32,932		31,972	16,287		25,991	0		19,459	7,109		17,396	7,853		13,915	0		6,674	1,226		8,381
		32,706			35,196			82,676			69,223			44,032			67,456			76,766			42,118			92,405			34,786			82,322			48,755			23,913			26,413			25,576			7,065			10,017	
Hanford	9,535		10,831	0		7,192	8,707		17,146	7,386		14,816	0		8,279	7,442		12,271	7,788		16,362	0		9,069	13,945		21,427	0		8,885	9,752		24,790	3,395		16,096	0		7,169	2,453		8,432	1,449		7,292	0		2,127	347		2,546
		31,410			28,004			74,237			61,793			35,753			62,627			68,192			33,049			84,923			25,901			67,284			36,054			16,744			20,434			19,733			4,938			7,818	
Corcoran	1,349		2,277	0		666	1,627		2,673	0		0	0		790	1,799		2,954	0		0	0		864	2,577		3,959	0		794	1,623		3,848	0		0	0		623	578		1,828	0		0	0		163	56		301
		30,482			27,338			73,191			61,793			34,963			61,472			68,192			32,185			83,541			25,107			65,059			36,054			16,121			19,184			19,733			4,775			7,573	
Wasco	1,470		734	0		683	1,351		1,588	0		0	0		845	1,630		1,808	0		0	0		893	2,972		2,138	0		776	1,415		1,881	0		0	0		555	468		986	0		0	0		112	54		157
		31,218			26,655			72,954			61,793			34,118			61,294			68,192			31,292			84,375			24,331			64,593			36,054			15,566			18,666			19,733			4,663			7,470
Bakersfield	0		31,218	0		26,655	0		72,954	0		61,793	0		34,118	0		61,294	0		68,192	0		31,292	0		84,375	0		24,331	0		64,593	0		36,054	0		15,566	0		18,666	0		19,733	0		4,663	0		7,470
Max Load		**32,706**			**62,174**			**82,676**			**69,223**			**72,674**			**67,456**			**76,766**			**73,834**			**92,405**			**69,916**			**82,606**			**60,842**			**57,253**			**44,240**			**38,898**			**18,492**			**21,786**	
Total	**46,659**		**46,659**	**64,571**		**64,571**	**150,081**		**150,081**	**119,237**		**119,237**	**75,170**		**75,170**	**121,257**		**121,257**	**127,609**		**127,609**	**76,276**		**76,276**	**169,078**		**169,078**	**72,971**		**72,971**	**165,889**		**165,889**	**108,009**		**108,009**	**61,043**		**61,043**	**79,309**		**79,309**	**67,114**		**67,114**	**19,967**		**19,967**	**35,021**		**35,021**

Northbound Trains

Station	1			3			5			7			9			11			13			15			17			19			21			23			25			27			29			31			33		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	7,751		0	3,483		0	22,306		0	44,850		0	17,691		0	62,601		0	63,571		0	34,817		0	70,714		0	38,924		0	74,919		0	62,254		0	26,928		0	54,709		0	27,029		0	6,568		0	12,975		0
		7,751			3,483			22,306			44,850			17,691			62,601			63,571			34,817			70,714			38,924			74,919			62,254			26,928			54,709			27,029			6,568			12,975	
Wasco	329		141	127		0	0		0	1,752		1,552	548		0	0		0	1,812		1,256	943		0	1,846		1,370	997		0	0		0	2,103		2,085	827		0	0		0	639		1,124	161		0	285		639
		7,939			3,610			22,306			45,050			18,239			62,601			64,127			35,760			71,190			39,921			74,919			62,272			27,755			54,709			26,544			6,729			12,621	
Corcoran	757		173	176		0	0		0	3,624		1,292	565		0	0		0	3,080		1,544	967		0	3,007		1,595	964		0	0		0	4,580		2,187	806		0	0		0	1,331		1,120	135		0	540		703
		8,523			3,786			22,306			47,382			18,804			62,601			65,663			36,727			72,602			40,885			74,919			64,665			28,561			54,709			26,755			6,864			12,458	
Hanford	4,461		969	2,240		0	14,611		2,055	15,936		6,923	6,192		0	16,985		6,988	17,402		6,978	10,558		0	16,015		7,701	10,205		0	21,390		8,600	20,516		11,111	8,816		0	13,516		8,443	5,547		4,680	1,438		0	1,818		3,412
		12,015			6,026			34,862			56,395			24,996			72,598			76,087			47,285			80,916			51,090			87,709			74,070			37,377			59,782			27,622			8,302			10,864	
Fresno	10,221		3,495	7,160		0	23,272		13,334	23,977		19,653	15,382		0	23,808		24,297	28,150		22,208	24,715		0	25,261		23,740	24,368		0	31,865		31,609	21,103		31,490	20,205		0	12,227		28,027	4,506		11,374	2,773		0	151		8,738
		18,741			13,186			44,800			60,719			40,378			72,109			82,029			72,000			82,437			75,458			87,965			63,683			57,582			43,982			20,754			11,075			2,277	
Madera	1,203		207	614		0	0		0	2,509		1,178	1,161		0	0		0	2,552		1,310	1,770		0	2,460		1,414	1,864		0	0		0	2,048		1,646	1,414		0	0		0	365		622	165		0	7		430
		19,737			13,800			44,800			62,050			41,539			72,109			83,271			73,770			83,483			77,322			87,965			64,085			58,996			43,982			20,497			11,240			1,854	
Merced	4,885		1,313	2,700		0	7,144		4,706	8,028		6,041	4,307		0	7,428		6,981	8,252		7,010	6,051		0	8,661		8,205	7,080		0	11,114		10,409	5,704		7,683	5,089		0	3,310		6,919	674		3,022	528		0			1,854
		23,309			16,500			47,238			64,037			45,846			72,556			84,513			79,821			83,939			84,402			88,670			62,106			64,085			40,373			18,149			11,768			0	
Denair	921		687	455		0	0		0	1,327		2,838	628		0	0		0	1,309		2,973	885		0	1,428		3,358	1,073		0	0		0	929		3,450	705		0	0		0	99		1,394	61		0	0		0
		23,543			16,955			47,238			62,526			46,474			72,556			82,849			80,706			82,009			85,475			88,670			59,585			64,790			40,373			16,854			11,829			0	
Modesto	3,688		1,971	2,726		0	3,855		5,607	4,433		7,522	3,413		0	4,220		9,444	4,708		8,904	4,875		0	5,275		10,417	6,054		0	6,193		13,780	3,173		9,449	3,769		0	1,832		7,702	256		4,109	295		0	0		0
		25,260			19,681			45,486			59,437			49,887			67,332			78,653			85,581			76,867			91,529			81,083			53,309			68,559			34,503			13,001			12,124			0	
Stockton-SJ	12,708		6,277	0		0	11,269		11,713	12,293		15,256	0		0	12,164		17,894	15,692		18,692	0		0	16,912		21,042	0		0	15,365		27,596	7,110		19,054	0		0	4,345		11,791	445		6,526	0		0	0		0
		31,691			19,681			45,042			56,474			49,887			61,602			75,653			85,581			72,737			91,529			68,852			41,365			68,559			27,057			6,920			12,124			0	
Antioch-Pittsburg	1,136		3,793	0		0	0		0	962		6,742	0		0	0		0	1,256		8,111	0		0	1,510		8,349	0		0	0		0	592		6,317	0		0	0		0	35		1,162	0		0	0		0
		29,034			19,681			45,042			50,694			49,887			61,602			68,798			85,581			65,898			91,529			68,852			35,640			68,559			27,057			5,793			12,124			0	
Martinez	2,417		7,956	0		0	2,890		12,900	2,926		14,659	0		0	3,531		18,777	4,391		20,766	0		0	5,608		20,498	0		0	3,510		20,903	1,440		13,108	0		0	744		9,248	228		1,849	0		0	0		0
		23,495			19,681			35,032			38,961			49,887			46,356			52,423			85,581			51,008			91,529			51,459			23,972			68,559			18,553			4,172			12,124			0	
Richmond	21		5,476	0		0	30		7,646	34		8,033	0		0	31		8,947	53		10,696	0		0	45		10,746	0		0	32		10,639	18		5,663	0		0	5		3,991	3		625	0		0	0		0
		18,040			19,681			27,416			30,962			49,887			37,440			41,780			85,581			40,307			91,529			40,852			18,327			68,559			14,567			3,550			12,124			0	
Emeryville	0		9,616	0		0	0		15,718	0		17,995	0		0	0		21,836	0		24,041	0		0	0		22,065	0		0	0		23,736	0		10,925	0		0	0		8,742	0		2,161	0		0	0		0
		8,424			19,681			11,698			12,967			49,887			15,604			17,739			85,581			18,242			91,529			17,116			7,402			68,559			5,825			1,389			12,124			0	
Oakland	0		8,424	0		0	0		11,698	0		12,967	0		0	0		15,604	0		17,739	0		0	0		18,242	0		0	0		17,116	0		7,402	0		0	0		5,825	0		1,389	0		0	0		0
		0			19,681			0			0			49,887			0			0			85,581			0			91,529			0			0			0			68,559			0			0			12,124			0	
Stockton-Downtown	0		0	1,302		3,066	0		0	0		0	1,393		7,804	0		0	0		0	2,168		12,620	0		0	2,743		14,655	0		0	0		0	1,358		14,371	0		0	0		0	74		3,867	0		0
		0			17,917			0			0			43,476			0			0			75,129			0			79,617			0			0			55,546			0			0			8,331			0	
Lodi	0		0	745		502	0		0	0		0	736		1,463	0		0	0		0	1,211		2,508	0		0	1,572		2,786	0		0	0		0	698		2,608	0		0	0		0	36		631	0		0
		0			18,160			0			0			42,749			0			0			73,832			0			78,403			0			0			53,636			0			0			7,736			0	
Sacramento	0		0	0		18,160	0		0	0		0	0		42,749	0		0	0		0	0		73,832	0		0	0		78,403	0		0	0		0	0		53,636	0		0	0		0	0		7,736	0		0
Max Load		**31,691**			**19,681**			**47,238**			**64,037**			**49,887**			**72,598**			**84,513**			**85,581**			**83,939**			**91,529**			**88,670**			**74,070**			**68,559**			**59,782**			**27,622**			**12,124**			**12,124**		
Total	**50,498**		**50,498**	**21,728**		**21,728**	**85,377**		**85,377**	**122,651**		**122,651**	**52,016**		**52,016**	**130,768**		**130,768**	**152,228**		**152,228**	**88,960**		**88,960**	**158,742**		**158,742**	**95,844**		**95,844**	**164,388**		**164,388**	**131,570**		**131,570**	**70,615**		**70,615**	**90,688**		**90,688**	**41,157**		**41,157**	**12,234**		**12,234**	**15,776**		**15,776**

2035 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

Southbound Trains

Station	2			4			6			8			10			12			14			16			18			20			22			24			26			28			30			32			34		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	192		0	0		0	0		0	231		0	0		0	0		0	236		0	0		0	221		0	0		0	0		0	192		0	0		0	0		0	62		0	0		0
		0			192			0			0			231			0			0			236			0			221			0			0			192			0			0			62			0	
Lodi	0		0	8		3	0		0	0		0	9		3	0		0	0		0	9		3	0		0	9		4	0		0	0		0	6		5	0		0	0		0	2		2	0		0
		0			196			0			0			237			0			0			241			0			225			0			0			193			0			0			62			0	
Stockton-Downtown	0		0	46		6	0		0	0		0	46		6	0		0	0		0	45		6	0		0	48		8	0		0	0		0	34		9	0		0	0		0	12		4	0		0
		0			236			0			0			276			0			0			281			0			266			0			0			218			0			0			70			0	
Oakland	0		0	0		0	51		0	51		0	0		0	48		0	47		0	0		0	59		0	0		0	57		0	51		0	0		0	42		0	48		0	0		0	25		0
		0			236			51			51			276			48			47			281			59			266			57			51			218			42			48			70			25	
Emeryville	0		0	0		0	66		0	64		0	0		0	59		0	68		0	0		0	76		0	0		0	76		0	66		0	0		0	50		0	54		0	0		0	28		0
		0			236			117			115			276			107			114			281			135			266			133			117			218			92			102			70			53	
Richmond	0		0	0		0	31		0	28		0	0		0	25		0	27		0	0		0	33		0	0		0	37		0	33		0	0		0	27		0	25		0	0		0	13		0
		0			236			148			143			276			132			142			281			167			266			170			150			218			119			127			70			66	
Martinez	0		0	0		0	64		13	62		18	0		0	49		16	65		10	0		0	65		18	0		0	73		15	62		13	0		0	45		15	39		18	0		0	20		9
		0			236			199			188			276			165			196			281			214			266			228			199			218			149			148			70			77	
Antioch-Pittsburg	0		0	0		0	24		4	0		0	0		0	26		3	0		0	0		0	24		3	0		0	28		4	0		0	0		0	25		6	0		0	0		0	8		2
		0			236			219			188			276			188			196			281			236			266			252			199			218			168			148			70			83	
Stockton	0		0	0		0	87		46	64		34	0		0	55		34	80		33	0		0	73		42	0		0	88		57	70		51	0		0	38		47	31		45	0		0	21		26
		0			236			260			218			276			209			243			281			267			266			283			218			218			159			134			70			77	
Modesto	0		0	0		14	47		17	34		12	0		14	32		11	44		13	0		16	45		16	0		18	44		21	32		19	0		20	16		15	14		14	0		7	7		7
		0			222			290			239			262			230			274			265			296			248			306			231			197			159			134			63			77	
Denair	0		0	0		3	13		4	0		0	0		3	13		4	0		0	0		3	13		4	0		3	13		5	0		0	0		4	6		5	0		0	0		1	2		2
		0			220			299			239			259			239			274			262			306			244			314			231			194			161			134			62			77	
Merced	22		0	0		18	35		29	25		22	0		17	26		19	30		25	0		20	37		29	0		22	36		36	22		31	0		23	10		25	9		23	0		8	3		12
		22			202			305			242			242			247			278			242			314			222			313			222			171			146			120			54			68	
Madera	4		0	0		5	5		7	0		0	0		5	6		8	0		0	0		6	6		8	0		6	5		10	0		0	0		6	2		8	0		0	0		2	0		3
		26			197			302			242			237			245			278			237			312			216			309			222			165			139			120			52			65	
Fresno	104		6	0		64	104		92	96		75	0		70	80		68	95		82	0		77	137		98	0		84	125		121	62		99	0		74	27		66	30		53	0		25	5		32
		124			134			314			263			167			256			292			160			351			132			313			185			91			100			97			27			38	
Hanford	36		41	0		27	33		65	28		56	0		31	28		47	30		62	0		34	53		81	0		34	37		94	13		61	0		27	9		32	6		28	0		8	1		10
		119			106			282			235			136			238			259			126			323			98			256			137			64			78			75			19			30	
Corcoran	5		9	0		3	6		10	0		0	0		3	7		11	0		0	0		3	10		15	0		3	6		15	0		0	0		2	2		7	0		0	0		1	0		1
		116			104			278			235			133			234			259			122			317			95			247			137			61			73			75			18			29	
Wasco	6		3	0		3	5		6	0		0	0		3	6		7	0		0	0		3	11		8	0		3	5		7	0		0	0		2	2		4	0		0	0		0	0		1
		119			101			277			235			130			233			259			119			321			92			245			137			59			71			75			18			28	
Bakersfield	0		119	0		101	0		277	0		235	0		130	0		233	0		259	0		119	0		321	0		92	0		245	0		137	0		59	0		71	0		75	0		18	0		28
Max Load		**124**			**236**			**314**			**263**			**276**			**256**			**292**			**281**			**351**			**266**			**314**			**231**			**218**			**168**			**148**			**70**			**83**	
Total	**177**		**177**	**245**		**245**	**570**		**570**	**453**		**453**	**286**		**286**	**461**		**461**	**485**		**485**	**290**		**290**	**642**		**642**	**277**		**277**	**630**		**630**	**410**		**410**	**232**		**232**	**301**		**301**	**255**		**255**	**76**		**76**	**133**		**133**

Northbound Trains

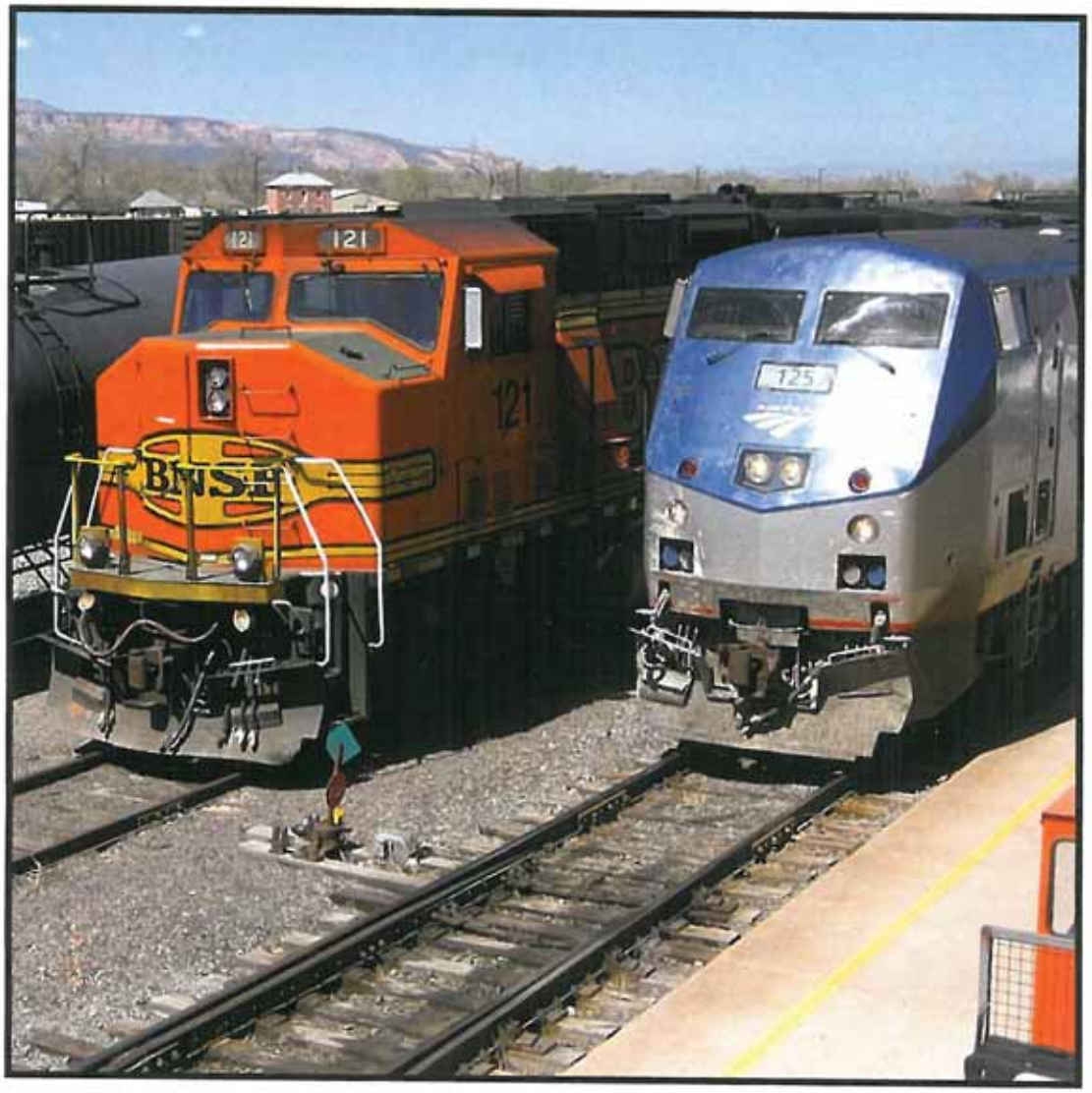
Station	1			3			5			7			9			11			13			15			17			19			21			23			25			27			29			31			33		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	29		0	13		0	85		0	170		0	67		0	238		0	242		0	132		0	269		0	148		0	285		0	237		0	102		0	208		0	103		0	25		0	49		0
		29			13			85			170			67			238			242			132			269			148			285			237			102			208			103			25			49	
Wasco	1		1	0		0	0		0	7		6	2		0	0		0	7		5	4		0	7		5	4		0	0		0	8		8	3		0	0		0	2		4	1		0	1		2
		30			14			85			171			69			238			244			136			271			152			285			237			105			208			101			26			48	
Corcoran	3		1	1		0	0		0	14		5	2		0	0		0	12		6	4		0	11		6	4		0	0		0	17		8	3		0	0		0	5		4	1		0	2		3
		32			14			85			180			71			238			250			140			276			155			285			246			109			208			102			26			47	
Hanford	17		4	9		0	56		8	61		26	24		0	65		27	66		27	40		0	61		29	39		0	81		33	78		42	34		0	51		32	21		18	5		0	7		13
		46			23			132			214			95			276			289			180			307			194			333			281			142			227			105			32			41	
Fresno	39		13	27		0	88		51	91		75	58		0	90		92	107		84	94		0	96		90	93		0	121		120	80		120	77		0	46		107	17		43	11		0	1		33
		71			50			170			231			153			274			312			274			313			287			334			242			219			167			79			42			9	
Madera	5		1	2		0	0		0	10		4	4		0	0		0	10		5	7		0	9		5	7		0	0		0	8		6	5		0	0		0	1		2	1		0	0		2
		75			52			170			236			158			274			316			280			317			294			334			244			224			167			78			43			7	
Merced	19		5	10		0	27		18	31		23	16		0	28		27	31		27	23		0	33		31	27		0	42		40	22		29	19		0	13		26	3		11	2		0	0		7
		89			63			180			243			174			276			321			303			319			321			337			236			244			153			69			45			0	
Denair	3		3	2		0	0		0	5		11	2		0	0		0	5		11	3		0	5		13	4		0	0		0	4		13	3		0	0		0	0		5	0		0	0		0
		89			64			180			238			177			276			315			307			312			325			337			226			246			153			64			45			0	
Modesto	14		7	10		0	15		21	17		29	13		0	16		36	18		34	19		0	20		40	23		0	24		52	12		36	14		0	7		29	1		16	1		0	0		0
		96			75			173			226			190			256			299			325			292			348			308			203			261			131			49			46			0	
Stockton-SJ	48		24	0		0	43		45	47		58	0		0	46		68	60		71	0		0	64		80	0		0	58		105	27		72	0		0	17		45	2		25	0		0	0		0
		120			75			171			215			190			234			287			325			276			348			262			157			261			103			26			46			0	
Antioch-Pittsburg	4		14	0		0	0		0	4		26	0		0	0		0	5		31	0		0	6		32	0		0	0		0	2		24	0		0	0		0	0		4	0		0	0		0
		110			75			171			193			190			234			261			325			250			348			262			135			261			103			22			46			0	
Martinez	9		30	0		0	11		49	11		56	0		0	13		71	17		79	0		0	21		78	0		0	13		79	5		50	0		0	3		35	1		7	0		0	0		0
		89			75			133			148			190			176			199			325			194			348			196			91			261			71			16			46			0	
Richmond	0		21	0		0	0		29	0		31	0		0	0		34	0		41	0		0	0		41	0		0	0		40	0		22	0		0	0		15	0		2	0		0	0		0
		69			75			104			118			190			142			159			325			153			348			155			70			261			55			13			46			0	
Emeryville	0		37	0		0	0		60	0		68	0		0	0		83	0		91	0		0	0		84	0		0	0		90	0		42	0		0	0		33	0		8	0		0	0		0
		32			75			44			49			190			59			67			325			69			348			65			28			261			22			5			46			0	
Oakland	0		32	0		0	0		44	0		46	0		0	0		59	0		67	0		0	0		69	0		0	0		65	0		28	0		0	0		22	0		5	0		0	0		0
		0			75			0			0			190			0			0			325			0			348			0			0			261			0			0			46			0	
Stockton-Downtown	0		0	5		12	0		0	0		0	5		30	0		0	0		0	8		48	0		0	10		56	0		0	0		0	5		55	0		0	0		0	0		15	0		0
		0			68			0			0			165			0			0			285			0			303			0			0			211			0			0			32			0	
Lodi	0		0	3		2	0		0	0		0	3		6	0		0	0		0	5		10	0		0	6		11	0		0	0		0	3		10	0		0	0		0	0		2	0		0
		0			69			0			0			162			0			0			281			0			298			0			0			204			0			0			29			0	
Sacramento	0		0	0		69	0		0	0		0	0		162	0		0	0		0	0		281	0		0	0		298	0		0	0		0	0		204	0		0	0		0	0		29	0		0
Max Load		**120**			**75**			**180**			**243**			**190**			**276**			**321**			**325**			**319**			**348**			**337**			**281**			**261**			**227**			**105**			**46**			**49**	
Total	**192**		**192**	**83**		**83**	**324**		**324**	**466**		**466**	**198**		**198**	**497**		**497**	**578**		**578**	**338**		**338**	**603**		**603**	**364**		**364**	**625**		**625**	**500**		**500**	**268**		**268**	**345**		**345**	**156**		**156**	**46**		**46**	**60**		**60**

APPENDIX 3

BNSF Report *San Joaquin Valley Capacity Analysis, Summary of RTC Simulations*

BNSF Railway

Line Capacity Planning: San Joaquin Double Track projects



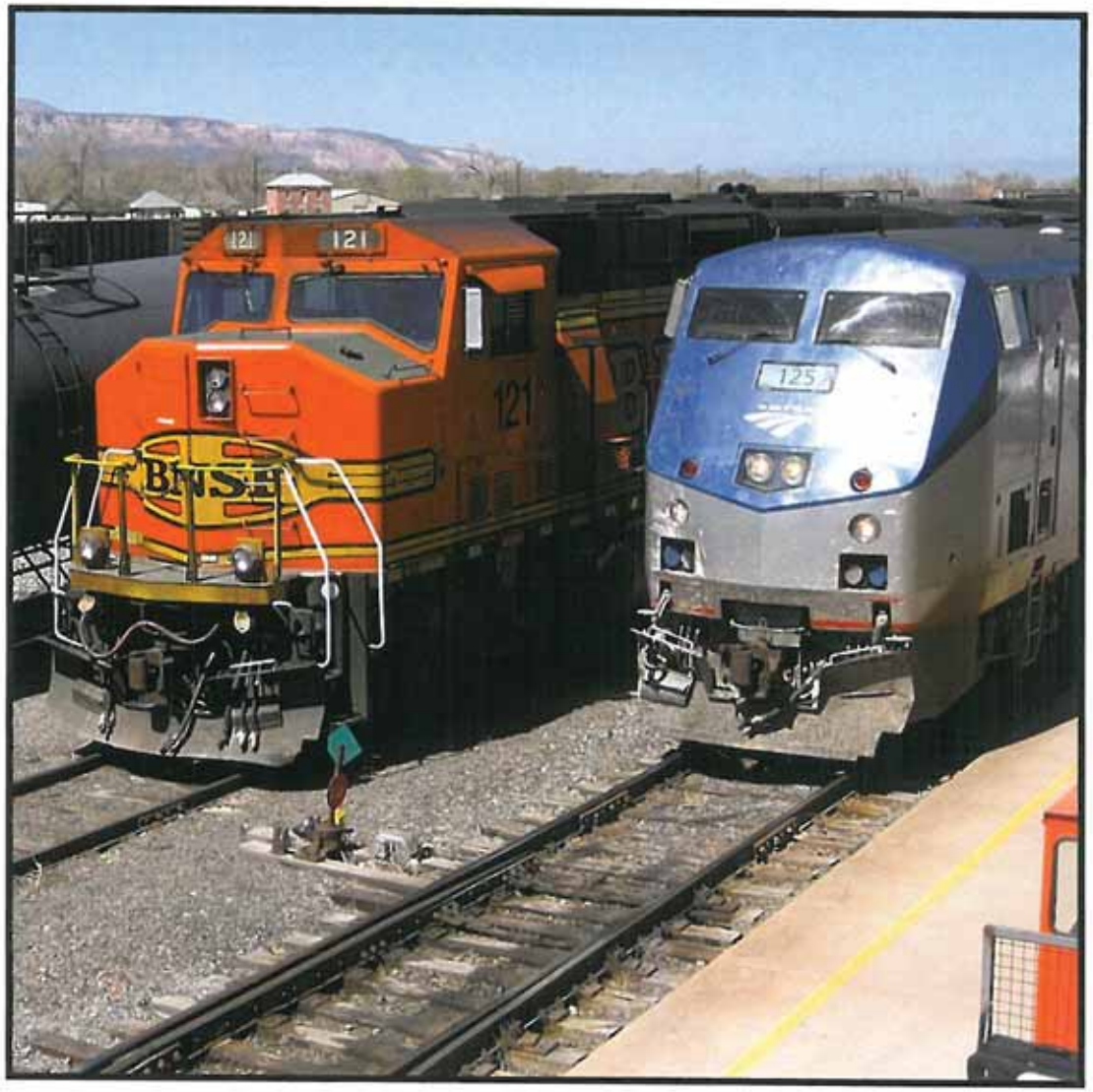
San Joaquin Valley Capacity Analysis

Summary of RTC Simulations

Amtrak/BNSF/Caltrans Meeting – San Bernardino CA
October 20, 2010

BNSF Railway

Line Capacity Planning: San Joaquin Double Track projects



San Joaquin Valley Capacity Analysis

October 8, 2010

Summary of RTC Simulations

Modeling completed by
Willard Keeney

Summary prepared by
Gary Agnew

Click to edit Master title style

Section Headline

Presenter's Name

Line Capacity Planning: San Joaquin DT projects

- **The State of California approached BNSF in March 2010 about potential changes to the San Joaquin passenger train services. There is no funding available at this time to add more train services, but the State wanted to identify future capacity needs in order to prepare for required environmental, permitting, and engineering design work.**
- **Current San Joaquin passenger train plan:**
  - 6 trains per day each way on the Bakersfield – Stockton segment (total of 12 trains).
  - 4 trains per day each way on the Stockton – Port Chicago segment (total of 8 trains).
- **Four different schedule proposals were analyzed:**
  - 8 trains per day each way on the full Bakersfield – Port Chicago segment (total of 16 trains) with the passenger trains operating at a maximum speed of 79 mph (the 5/10 year 79 mph plan).
  - 11 trains per day each way on the full Bakersfield – Port Chicago segment (total of 22 trains) with the passenger trains operating at a maximum speed of 79 mph (the 25 year 79 mph plan).
  - 8 trains per day each way on the full Bakersfield – Port Chicago segment (total of 16 trains) with the passenger trains operating at a maximum speed of 90 mph (the 5/10 year 90 mph plan).
  - 11 trains per day each way on the full Bakersfield – Port Chicago segment (total of 22 trains) with the passenger trains operating at a maximum speed of 90 mph (the 25 year 90 mph plan).
  - Each of the 5/10 cases reflects a scenario where 1 passenger train pair is an "express" schedule, with intermediate stops at Stockton, Modesto, Merced, Fresno, and Hanford only. The other 5/10 cases reflect all trains stopping at all stations.
  - ***In the 5/10 cases the freight counts were increased by 14 trains per week (2 intermodal Z1-7, 10 intermodal Q/S and 2 unit). The freight counts were then kept at those levels for the 25 year cases (in order to identify just the scope of projects needed for the changed passenger services beyond the 5/10 year plan).***

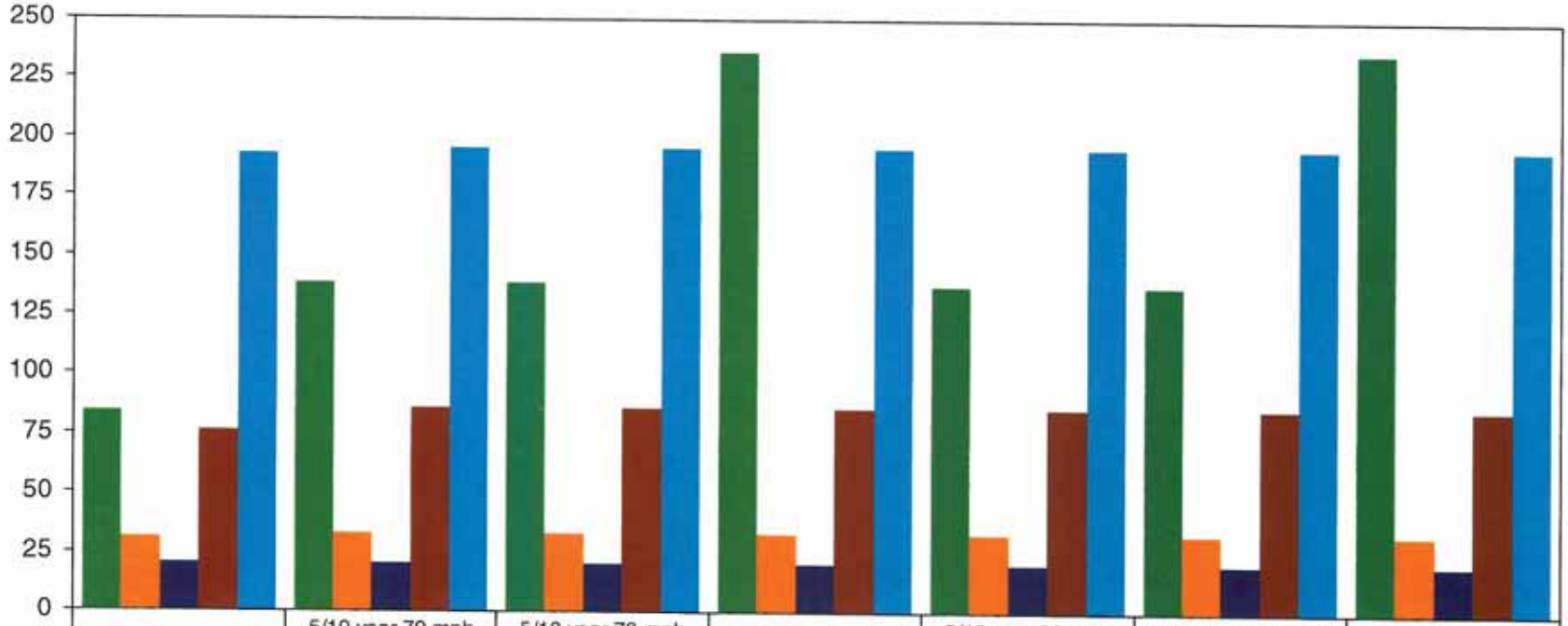
BNSF RAILWAY

Line Capacity Planning: San Joaquin DT projects

- **The following 5 projects were assumed to be part of the "base case":**
  - Double track Guernsey - Hanford, with crossovers in between. Retains Shirley siding (6 miles).
  - Convert Gregg siding to double track segment milepost 1008.9 to 1013.9 (5 miles).
  - Double track LeGrand to Planada with crossovers in between (9 miles).
  - Double track milepost 1107.0 to Walnut with associated crossover and power turnout work (9 miles).
  - Convert Pittsburg siding to double track and extend east to milepost 1152.7 (5 miles).
- **With regard to the above listed projects:**
  - Grading is complete for 4 miles of new double track in the Guernsey - Hanford segment. This 4 mile segment is expected to be completed by January 2011.
  - Funding is in place for the design work for the Gregg siding project.
  - Funding is in place for the design work for the LeGrand - Planada project.

Line Capacity Planning: San Joaquin DT projects

RTC results: Measured trains per week

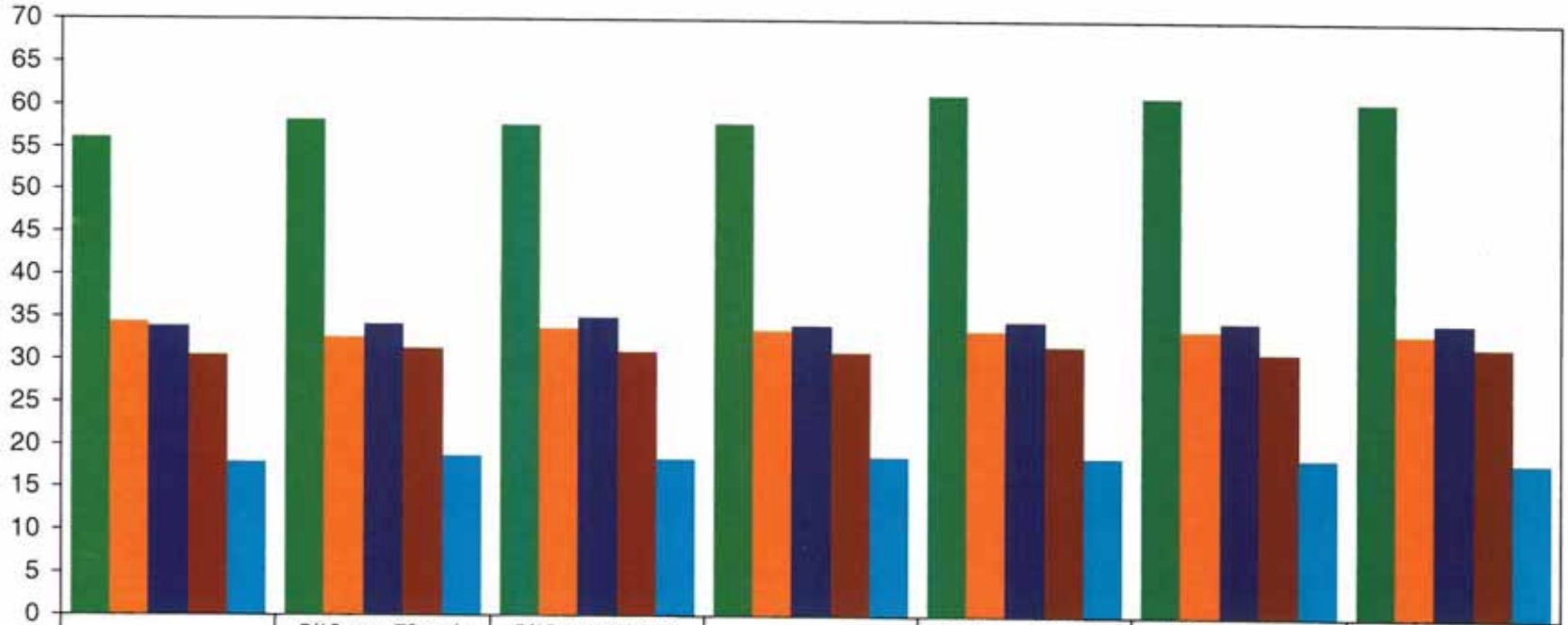


	Base case	5/10 year 79 mph plan (1 express schedule)	5/10 year 79 mph plan (no express schedules)	25 year 79 mph plan	5/10 year 90 mph plan (1 express schedule)	5/10 year 90 mph plan (no express schedules)	25 year 90 mph plan
Passenger	84	138	138	236	137	137	236
Z1-7	31	33	33	33	33	33	33
Z8-9	20	20	20	20	20	20	20
Other lmdl	76	86	86	86	86	86	86
Other freight	193	195	195	195	195	195	195

BNSF RAILWAY

Line Capacity Planning: San Joaquin DT projects

RTC results: Average speed (mph)

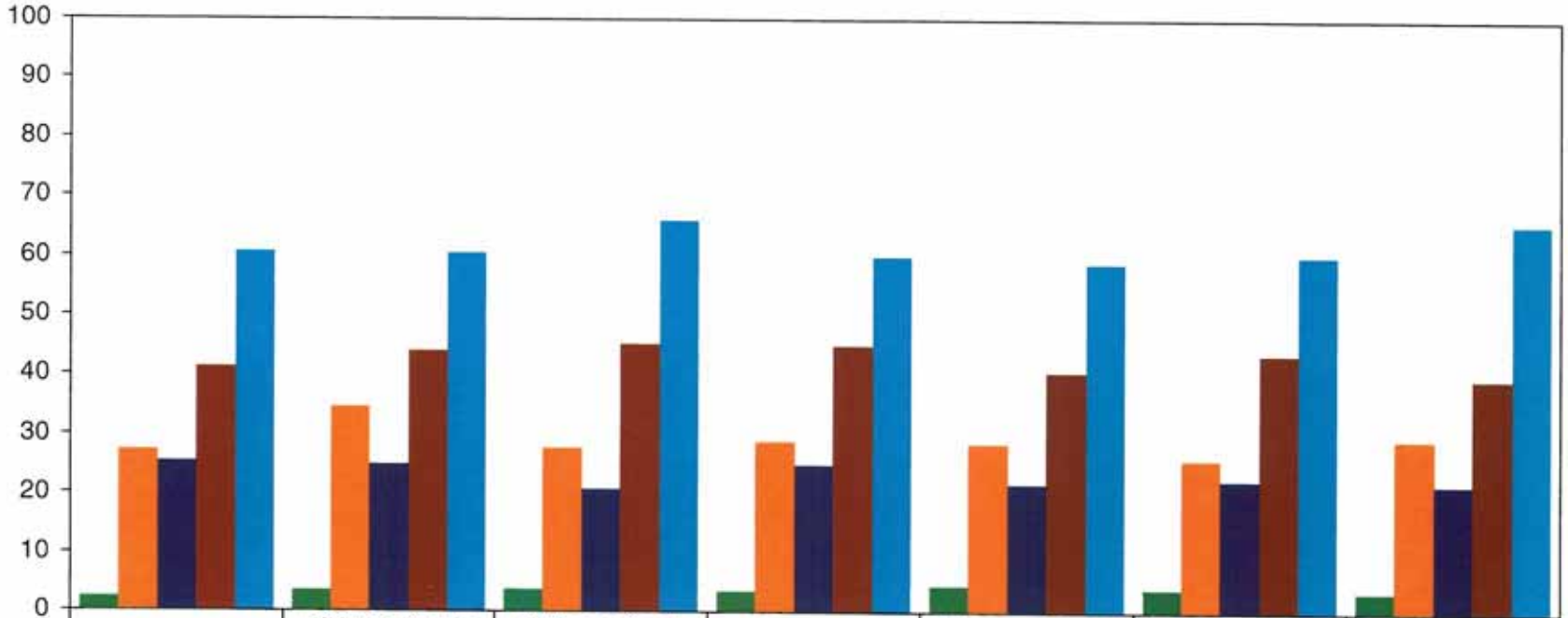


	Base case	5/10 year 79 mph plan (1 express schedule)	5/10 year 79 mph plan (no express schedules)	25 year 79 mph plan	5/10 year 90 mph plan (1 express schedule)	5/10 year 90 mph plan (no express schedules)	25 year 90 mph plan
Passenger	56.1	58.2	57.7	57.8	61.2	61.1	60.6
Z1-7	34.3	32.5	33.7	33.6	33.5	33.7	33.4
Z8-9	33.8	34.2	35.0	34.2	34.7	34.6	34.6
Other lmdl	30.4	31.2	31.0	31.0	31.7	31.1	31.9
Other freight	17.9	18.6	18.3	18.7	18.7	18.7	18.3

BNSF RAILWAY

Line Capacity Planning: San Joaquin DT projects

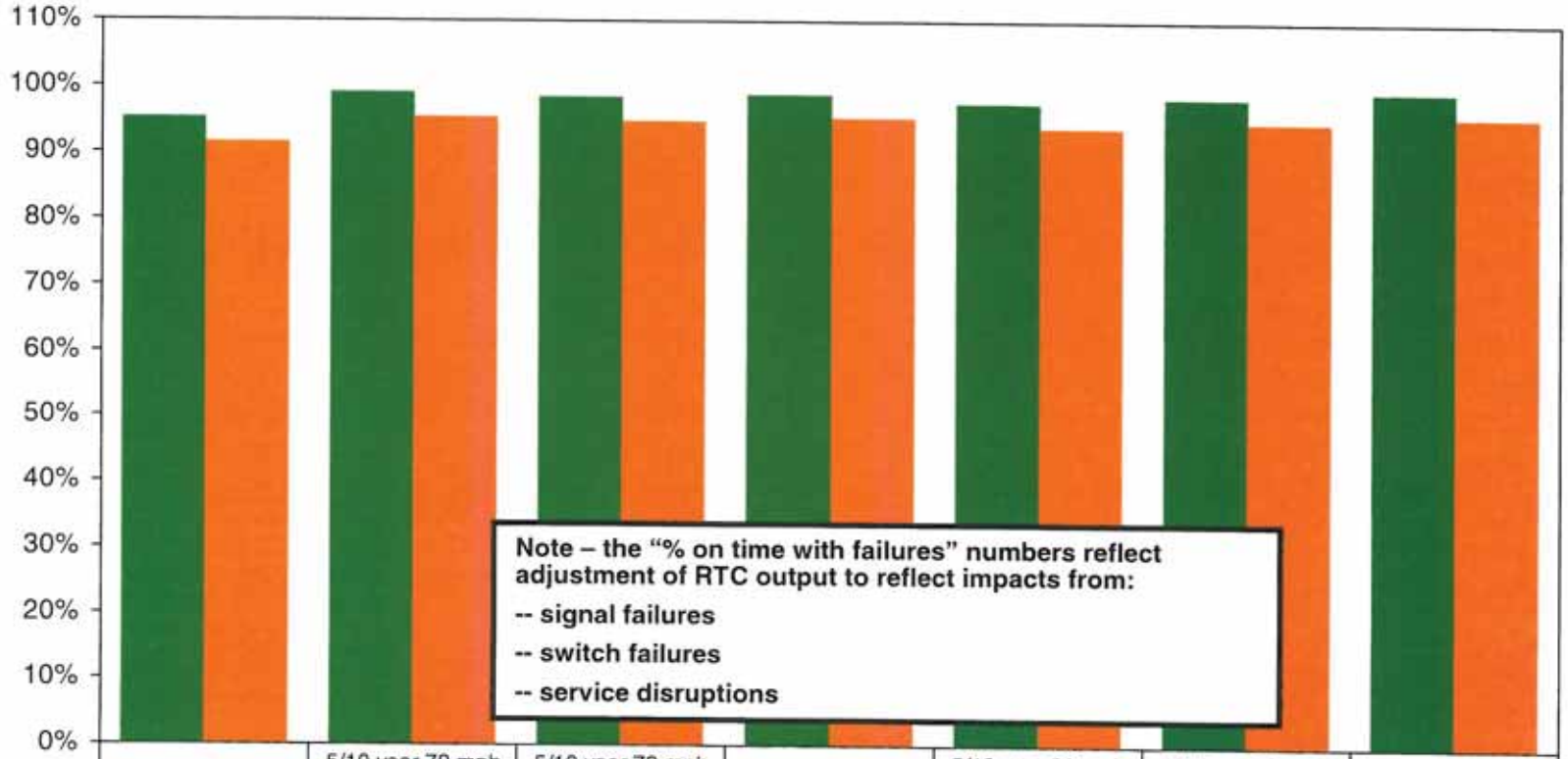
RTC results: delay per 100 train miles



	Base case	5/10 year 79 mph plan (1 express schedule)	5/10 year 79 mph plan (no express schedules)	25 year 79 mph plan	5/10 year 90 mph plan (1 express schedule)	5/10 year 90 mph plan (no express schedules)	25 year 90 mph plan
Passenger	2.23	3.51	3.77	3.57	4.29	3.82	3.50
Z1-7	27.11	34.55	27.69	28.72	28.55	25.89	29.22
Z8-9	25.28	24.79	20.81	24.81	21.72	22.36	21.74
Other lmdl	41.18	44.07	45.07	44.83	40.44	43.47	39.52
Other freight	60.50	60.38	65.94	60.00	58.66	60.08	65.51

BNSF RAILWAY

Line Capacity Planning: San Joaquin DT projects



	Base case	5/10 year 79 mph plan (1 express schedule)	5/10 year 79 mph plan (no express schedules)	25 year 79 mph plan	5/10 year 90 mph plan (1 express schedule)	5/10 year 90 mph plan (no express schedules)	25 year 90 mph plan
% on time - no failures	95.2%	99.2%	98.4%	99.0%	97.6%	98.4%	99.5%
% on time with failures	91.5%	95.5%	94.7%	95.3%	93.9%	94.7%	95.8%

BNSF RAILWAY

Line Capacity Planning: San Joaquin DT projects

"xxx" indicates those areas where freight performance metric degrades from base case

Type	Metric	5/10 year 79 mph express	5/10 year 79 mph No express	25 year 79 mph	5/10 year 90 mph express	5/10 year 90 mph no express	25 year 90 mph
Z1-7	Speed	xxx	xxx	xxx	xxx	xxx	xxx
Z1-7	Delay / 100	xxx	xxx	xxx	xxx		xxx
Z8-9	Speed						
Z8-9	Delay / 100						
Other Intermodal	Speed						
Other Intermodal	Delay / 100	xxx	xxx	xxx		xxx	
Other Freight	Speed						
Other Freight	Delay / 100		xxx				xxx

BNSF RAILWAY

Line Capacity Planning: San Joaquin DT projects

- **Notes for those areas where freight performance metrics degrade:**
  - **Z1-Z7** train speeds degrade under all scenarios. The base case speed is 34.3 mph. The lowest the Z1-Z7 speed gets in any of the scenarios is 32.5 mph.
  - **Z1-Z7** train delay per 100 train miles degrades under all but one of the scenarios. The base case delay per 100 train miles is 27.11 minutes. The highest the Z1-Z7 delay per 100 train mile gets is 34.55 minutes (in the 5/10 year 79 mph plan with the express schedule), for a variance of 7.44 minutes. On a 225 mile run between Mariposa and Bakersfield, that represents about 17 minutes of additional delay per train. The other scenarios with degraded metrics have variances ranging from 0.58 to 2.11 minutes per 100 train miles. On the 225 mile run, that equates to 1 to 5 minutes of additional delay per train.
  - **Other intermodal** train delay per 100 train miles degrades under all but two of the scenarios. The base case delay per 100 train miles is 41.18 minutes. The highest the other intermodal delay per 100 train mile gets is 45.07 minutes (in the 5/10 year 79 mph plan with no express schedules), for a variance of 3.89 minutes. On a 225 mile run, that represents about 9 minutes of additional delay per train. The other scenarios with degraded metrics have variances ranging from 2.29 to 3.65 minutes per 100 train miles. That equates to 5 to 8 minutes of additional delay per train.
  - **Other freight** train delay per 100 train miles degrades in only two of the scenarios. The base case delay per 100 train miles is 60.50 minutes. The highest the other intermodal delay per 100 train mile gets is 65.94 minutes (in the 5/10 year 79 mph plan with no express schedules), for a variance of 5.44 minutes. On a 235 mile run between Stockton and Bakersfield, that represents about 13 minutes of additional delay per train. The other scenario with degraded metrics has variance from base case very similar, at 5.01 minutes per 100 train miles. That equates to 12 minutes of additional delay per train.

Line Capacity Planning: San Joaquin DT projects

- **The following projects were modeled for the 5/10 year 79 mph plans:**
  - Double track Guernsey - Hanford, with crossovers in between. Retains Shirley siding (6 miles).
  - Convert Gregg siding to double track segment milepost 1008.9 to 1013.9 (5 miles).
  - Double track LeGrand to Planada with crossovers in between (9 miles).
  - Double track milepost 1107.0 to Walnut with associated crossover and power turnout work (9 miles).
  - Convert Pittsburg siding to double track and extend east to milepost 1152.7 (5 miles).
  - Conejo drill track.

Line Capacity Planning: San Joaquin DT projects

- **The following projects were modeled for the 25 year 79 mph plan:**
  - Double track Guernsey - Hanford, with crossovers in between. Retains Shirley siding (6 miles).
  - Convert Gregg siding to double track segment milepost 1008.9 to 1013.9 (5 miles).
  - Double track LeGrand to Planada with crossovers in between (9 miles).
  - Double track milepost 1107.0 to Walnut with associated crossover and power turnout work (9 miles).
  - Convert Pittsburg siding to double track and extend east to milepost 1152.7 (5 miles).
  - Conejo drill track.
  - Double track Jastro – Shafter. Retains Una siding (13 miles).
  - Double track Angiola – Corcoran. Retains Corcoran siding (12 miles).
  - Double track Figarden to milepost 1008.6 (5 miles).
  - Double track milepost 1013.9 – Madera. Retains Madera siding (6 miles).
  - Double track Planada to Merced (8 miles).
  - Double track Escalon – Duffy (9 miles).
  - Double track Pittsburg – Port Chicago (8 miles).
- **Although not initially modeled, BNSF recommends that the following be addressed from an environmental and permitting standpoint:**
  - In addition to the Jastro – Shafter double track, extend double track out to Wasco (7 miles).
  - In addition to the Gregg and Figarden double track projects, extend double track Figarden to Fresno, and double track milepost 1008.6 to 1008.9, requiring new bridge across San Joaquin river (6 miles).
  - Extend double track west from milepost 1090.8 to Riverbank (5 miles).

Line Capacity Planning: San Joaquin DT projects

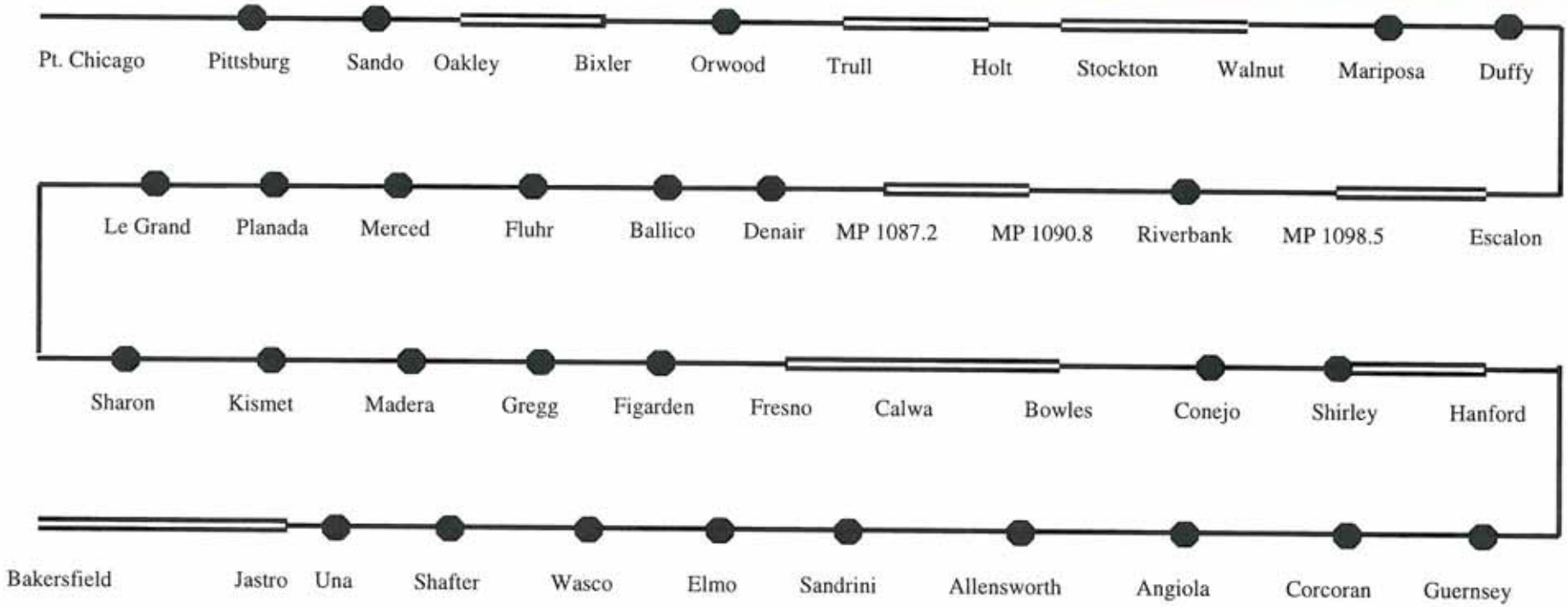
- **The following projects were modeled for the 5/10 year 90 mph plan:**
  - Double track Guernsey - Hanford, with crossovers in between. Retains Shirley siding (6 miles).
  - Convert Gregg siding to double track segment milepost 1008.9 to 1013.9 (5 miles).
  - Double track LeGrand to Planada with crossovers in between (9 miles).
  - Double track milepost 1107.0 to Walnut with associated crossover and power turnout work (9 miles).
  - Convert Pittsburg siding to double track and extend east to milepost 1152.7 (5 miles).
  - Conejo drill track.
  - Double track Jastro – Una. Retains Una siding (13 miles).
  - Double track Planada to Merced (8 miles).
  - Double track Escalon – Duffy (9 miles) .

Line Capacity Planning: San Joaquin DT projects

- **The following projects were modeled for the 25 year 90 mph plan:**
  - Double track Guernsey - Hanford, with crossovers in between. Retains Shirley siding (6 miles).
  - Convert Gregg siding to double track segment milepost 1008.9 to 1013.9 (5 miles).
  - Double track LeGrand to Planada with crossovers in between (9 miles).
  - Double track milepost 1107.0 to Walnut with associated crossover and power turnout work (9 miles).
  - Convert Pittsburg siding to double track and extend east to milepost 1152.7 (5 miles).
  - Conejo drill track.
  - Double track Jastro – Una. Retains Una siding (13 miles).
  - Double track Planada to Merced (8 miles).
  - Double track Escalon – Duffy (9 miles).
  - Double track Una – Shafter (8 miles).
  - Wasco siding extended.
  - Double track Elmo – Sandrini (8 miles).
  - Double track Allensworth - Angiola – Corcoran. Retains Corcoran siding (22 miles).
  - Double track Figarden to milepost 1008.6 (5 miles).
  - Double track milepost 1013.9 – Madera. Retains Madera siding (6 miles).
  - Double track Fluhr – Ballico (11 miles).
  - Double track Pittsburg – Port Chicago (8 miles).
- **Although not initially modeled, BNSF recommends that the following be addressed from an environmental and permitting standpoint:**
  - In addition to the Jastro – Shafter double track, extend double track out to Wasco instead of the Wasco siding (7 miles).
  - In addition to the Gregg and Figarden double track projects, extend double track Figarden to Fresno, and double track milepost 1008.6 to 1008.9, requiring new bridge across San Joaquin river (6 miles).
  - Extend double track west from milepost 1090.8 to Riverbank (5 miles).

BNSF RAILWAY

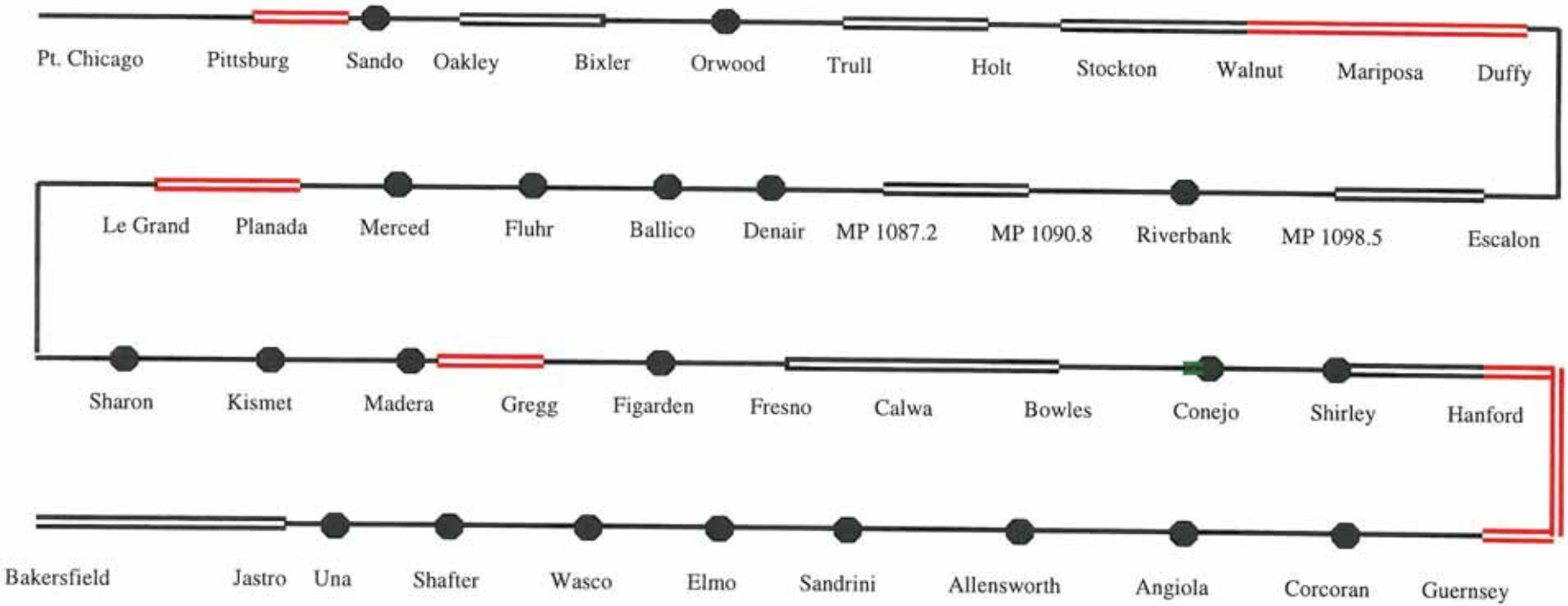
Line Capacity Planning: San Joaquin DT projects



= sidings
= double track
= single track

Current Track structure

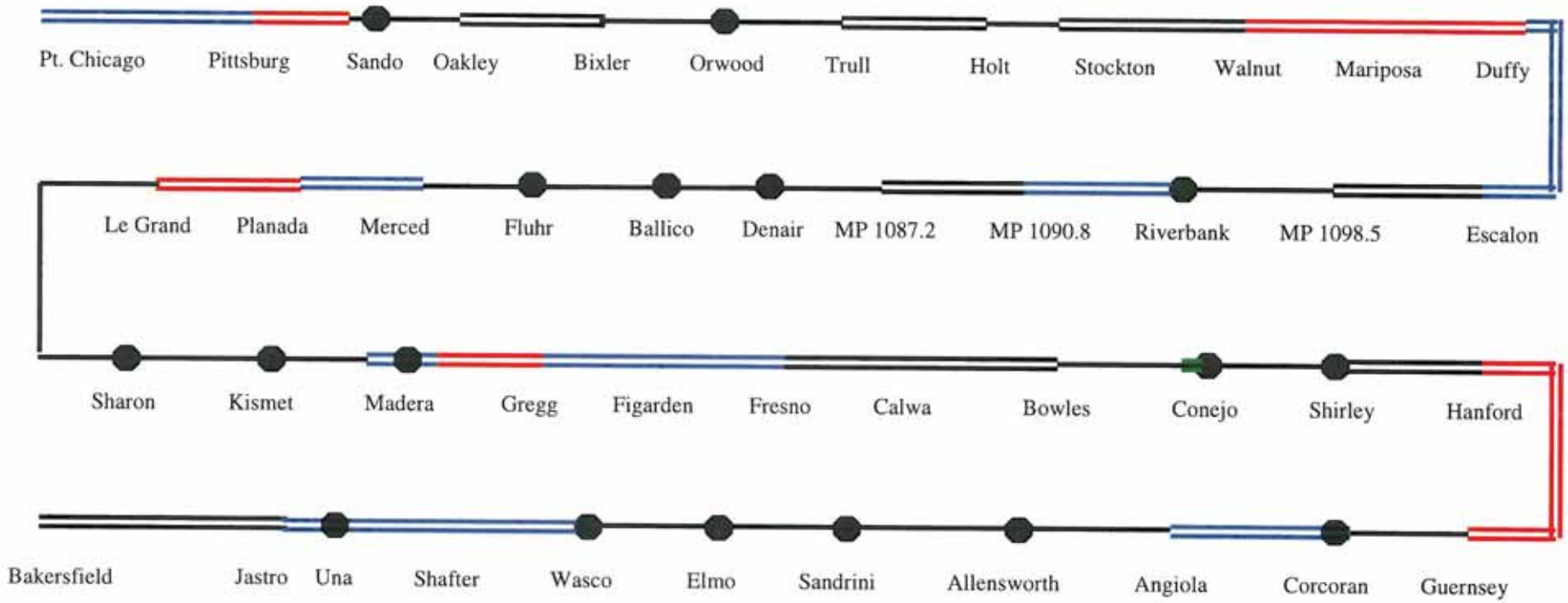
Line Capacity Planning: San Joaquin DT projects



= sidings
= double track
= single track
= put in to base case
= added double track (5/10 year @ 79 mph)

Potential track additions to support 5 / 10 year passenger case (79 mph trains)

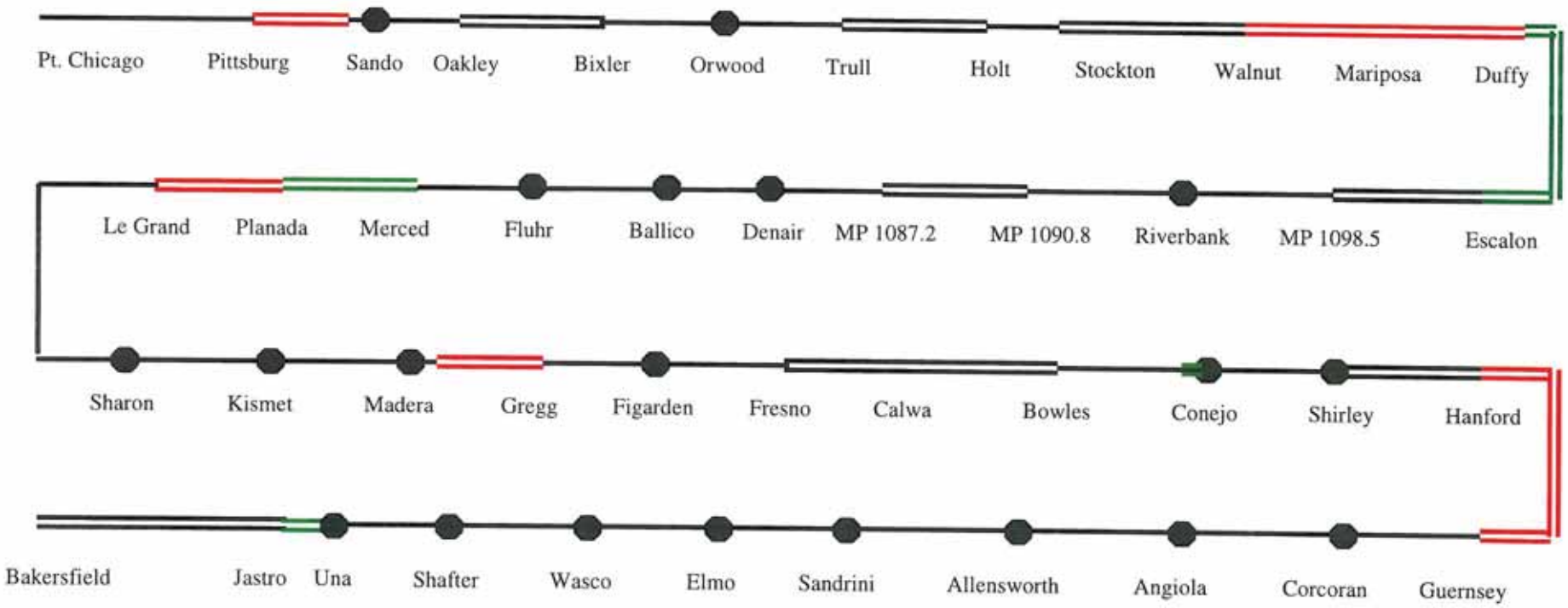
Line Capacity Planning: San Joaquin DT projects



= sidings
= double track
= single track
= put in to base case
= added double track (5/10 year @ 79 mph)
= added double track (25 year @ 79 mph)

Potential track additions to support 25 year passenger case (79 mph trains)

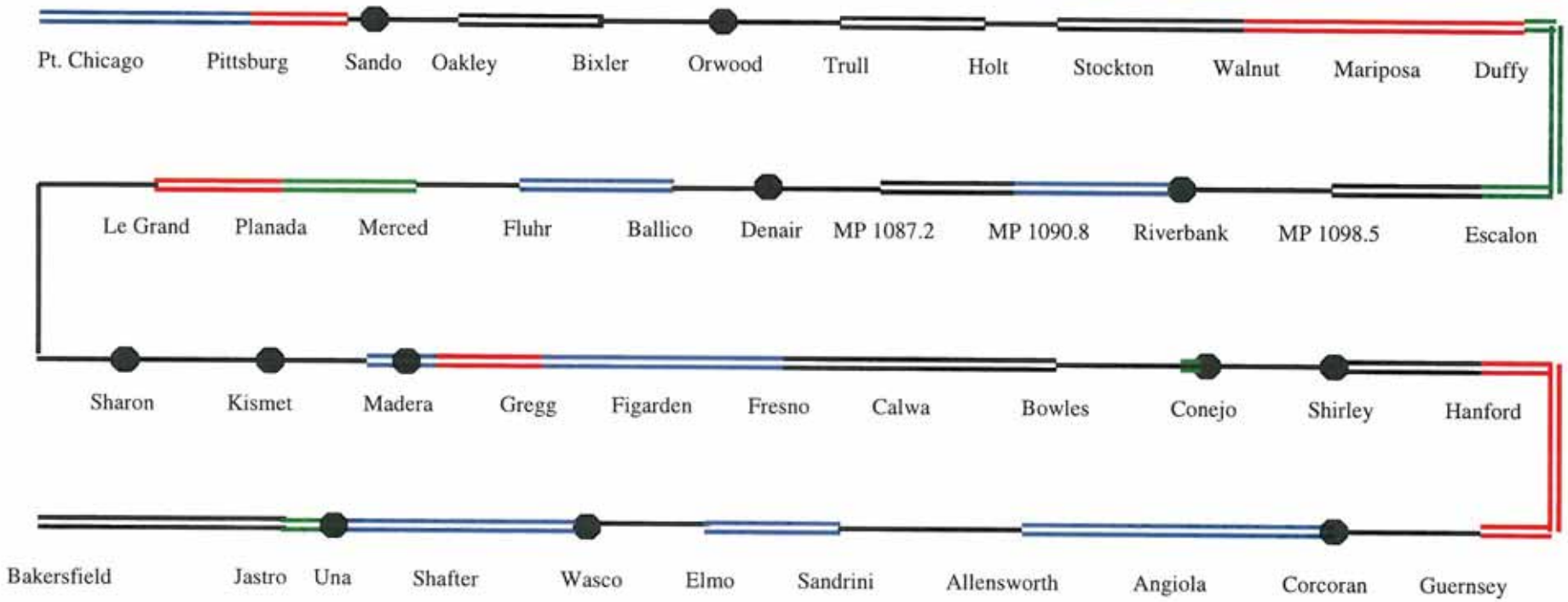
Line Capacity Planning: San Joaquin DT projects



= sidings
= double track
= single track
= put in to base case
= added double track (5/10 year @ 90 mph)

Potential track additions to support 5 / 10 year passenger case (90 mph trains)

Line Capacity Planning: San Joaquin DT projects

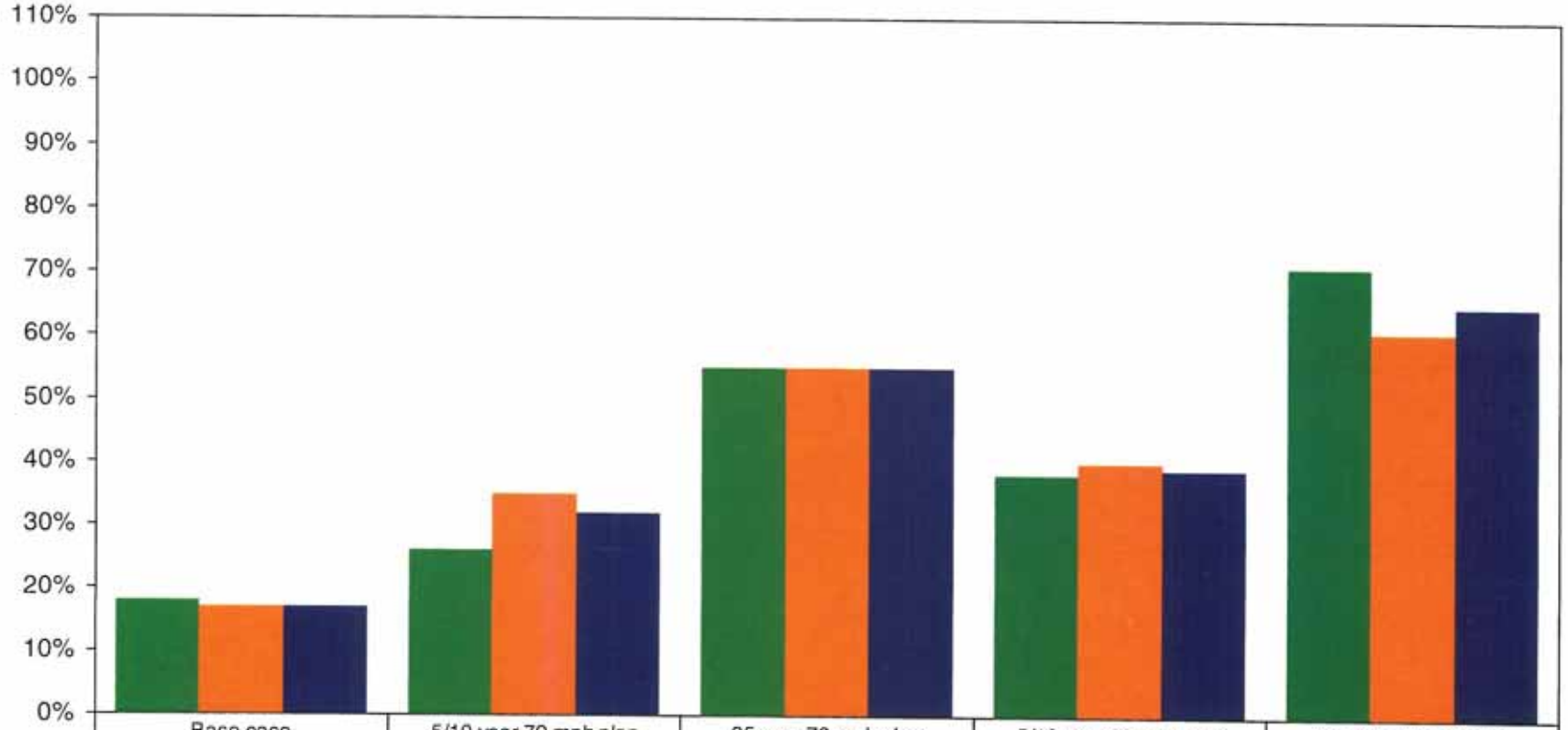


= sidings
= double track
= single track
= put in to base case
= added double track (5/10 year @ 90 mph)
= added double track (25 year @ 90 mph)

Potential track additions to support 25 year passenger case (90 mph trains)

Line Capacity Planning: San Joaquin DT projects

Percent of double track mileage Bakersfield - Port Chicago



	Base case	5/10 year 79 mph plan	25 year 79 mph plan	5/10 year 90 mph plan	25 year 90 mph plan
Bakersfield	18%	26%	55%	38%	71%
Stockton	17%	35%	55%	40%	61%
Combined	17%	32%	55%	39%	65%

BNSF RAILWAY

BNSF®
RAILWAY

APPENDIX 4

UP Letter, *San Joaquin Service Bakersfield – Oakland*

Jerry Wilmoth
General Manager Network Infrastructure

March 4, 2010

William D. Bronte
Chief - Division of Rail
State of California - Department of Transportation
1120 N Street
P. O. Box 942874-MS 74
Sacramento, California 94274-0001

Re: San Joaquin Service Bakersfield – Oakland

Dear Mr. Bronte:

Union Pacific is pleased to provide the following guidance in relation to current discussions about added San Joaquin passenger service frequency between Port Chicago and Oakland.

As you know, the Martinez Sub is one of the most constrained route segments on Union Pacific's transcontinental rail system. It handles a dense network of high performance, service-sensitive passenger trains as well as acting as a key freight link connecting the nation with vital Bay Area ports, industries and distribution facilities. While an ultimate decision on added passenger trains will require in-depth analysis, modeling and Engineering evaluation, we see a definite need for the following in any scenario which adds to the net number of passenger trains on this route:

a) Double track required between Port Chicago and Martinez
b) Full triple track required between Martinez and Oakland with universal crossovers every 6-8 miles
c) Upgraded station design allowing unimpeded flow of trains on all tracks at track speed while passenger trains load and unload at stations (including any necessary retrofit for existing station locations). This typically involves grade separated platform access and passenger barriers to restrict access to active mainlines.

In addition to the above, depending on the portion of the route in question, there may be a need to provide auxiliary running tracks or switching leads to enable fluid mainline operation while providing industry switching and yard classification services for current and prospective local businesses. Furthermore, it is recognized that rail and tie renewals for the line may be required as well in order to provide the robust track structure needed for increased service levels service levels.

Also, as a prerequisite to future discussions, Union Pacific respectfully request that the parties initiate discussions regarding Article 4 (C) of Contract 75Y200 to develop a formula to determine the appropriate reimbursement for Union Pacific's maintenance and operating expense for the Auburn-Sacramento-San Jose corridor.

We look forward to our upcoming March 10 meeting to discuss these matters further with Caltrans.

Sincerely,

Jerry S. Wilmoth
General Manager – Network Infrastructure

APPENDIX 5

GAP Train Concept

San Joaquin Overnight Train Service
to Los Angeles and San Diego via Tehachapi Pass
for GAP TAC Call - 2011-09-19

GAP TRAIN CONCEPT

The approximate pure running time (no freight interference) from Bakersfield to Los Angeles via the Tehachapi Mountains is four hours. Because of dense freight interference with two railroads coalescing their freight on a single-track mountain railroad, two to three hours of schedule padding may be needed to get over this portion of the railroad without delay on the far end of the gap. Trains that run over the Tehachapi Mountains and transfer equipment from one corridor to the other should be given generous padding to assure on-time departures from corridor start points. A more precise safe amount of padding would require a formal operations model. The padding also allows the use of existing corridor schedules. Southbound the padding allows a Los Angeles arrival at reasonable hours.

The train southbound train should stay on a consistent schedule on Metrolink territory due to the need to interact consistently each day with Metrolink and Pacific Surfliner (PS) trains, so the train will be held for time at Palmdale rather than LA. This has the added benefit for passengers of sleeping in a quieter place in the middle of the night. The train would leave Palmdale immediately before a local Metrolink train. With only two stops it would slowly catch up to the Metrolink train that left earlier, but not catch up to it before that previous local arrived at LAUS.

Northbound the train should be held for time at Bakersfield. In both cases the padding comes following the most congested part of the currently freight-only railroad, where the passenger territory begins. Running time Palmdale-LA for the GAP train should be assumed to be the same as the Metrolink express which is 88 minutes with two stops. The Gap train will probably stop in Palmdale, Santa Clarita (important Thruway stop) and Glendale (PS stop).

OVERNIGHT BUS

The existing overnight bus to points south of LA should be considered to be kept, but if so should bypass LA in order to keep from cannibalizing the overnight train ridership due to the faster running time of the bus. This can be justified since times at and north of LA in the middle of night times are not passenger friendly, so adding time to LA is an advantage for most passengers for this overnight service in order to facilitate a full night's sleep. However, the San Diego times for the bus are good, and delaying passengers three hours south of Los Angeles so as to keep them on the train may deter some riders.

In the schedule presented and modeled, the buses are proposed as re-routed

from Fullerton via Riverside and San Bernardino in order to bring in a good market and add 1-2 hours to the present schedule. This schedule makes for better arrival times southbound, and calls for a one-hour earlier departure from San Diego northbound. The times need to be confirmed with Amtrak bus operations. They are based on over-the-road times with about 30-40% running time added to Google map times, similar to other bus schedules in similar territory. Due to the very late times and lower populations at stops, the buses are assumed to run express between Bakersfield and San Bernardino.

INCORPORATION INTO THE TWO CORRIDORS

In this scenario, there is no need to alter the San Joaquin and Pacific Surfliner schedules proposed for December of 2011 (see attached schedule). It would be desirable to speed up #718 slightly so it can arrive at Bakersfield a few minutes earlier and allow for the 11:59pm departure at Bakersfield.

EQUIPMENT and EQUIPMENT ROTATION

The equipment rotation is as follows:

#718 → #564 → #573 → #580 → #591 → #711

This allows for the train to continue on to San Diego as a through train. Fortunately, the #564 → #573 → #580 → #591 rotation will be an actual equipment rotation on the Pacific Surfliner corridor, so this consist would take over and operate as a Pacific Surfliner, with the sleeper, operated next to the locomotive, closed on #573 and #580.

This rotation would take two equipment sets, with the sets maintained in Oakland every other day between 11:00am and 5:50pm. Three sleepers would be required, one for each set and one on protect at Oakland. Possibly a variance could be sought on running sleeping cars if none were available, until such time as California could acquire some, in order to start the service.

The stand-out feature of this scenario is that it requires no new equipment except sleeping cars. The reason for this is that the new mileage and proposed schedule takes place at night when the equipment sets to be used overnight would otherwise be sitting in Los Angeles and Bakersfield, respectively. Seat pitch and leg rest improvements on these sets would be necessary.

RIDERSHIP MODEL

The AECOM ridership model was used to estimate the annual ridership and revenue gain, overall, for the two corridors by running #711/#718 as through trains between the corridors. The model is an estimate only based on travel patterns and traveler behavior. Costs of running this new service are not

factored into this preliminary report.

This preliminary model run assumes a sleeping car running through to LA only; the next model run will show some increased revenue due to the sleeper running through to San Diego. A coach-only scenario will be run as well.

Forecast Results for Proposed Extension of 711/718 to Los Angeles

Route	Annual Increment Ridership	Annual Increment Ticket Revenue	Annual Increment Passenger Miles
San Joaquin***			
Coach	24,400	$1,557,000	8,580,000
Sleeper****	10,600	$1,235,000	4,350,000
TOTAL	35,000	$2,792,000	12,930,000
Pacific Surfliner	(3,900)	($83,000)	(690,000)
TOTAL	31,100	2,709,000	12,240,000

*** Includes all thru rideship/revenue on extended 711/718;
all local revenue south of LAX is still assigned to the Pacific Surfliner.
**** Analysis assumes Sleeper would not be offered south of Los Angeles

The above table shows the annual ridership and revenue gain overall in the corridors. These are not totals, but incremental increases. Each train and bus in the corridor with adjacent schedules is affected by the addition of the through train. This table represents the totals for each corridor between a base schedule (today's) and the proposed schedule.

Ridership increases by 31,000 riders overall, and revenue increases by $2.7 million. The revenue increase is $1.6 million from coach and $1.2 million from sleeper service, with $0.1 million loss to Pacific Surfliner revenue. This loss is a paper loss only, due to riders who would otherwise have changed in LA to become Pacific Surfliner riders instead having a through ticket and being counted as San Joaquin riders only south of Los Angeles.

On average, about 70 passengers are predicted to be on each train between Bakersfield and Los Angeles overnight. This is about four times the average number of riders who currently ride the overnight bus service for trains #711 and #718.

Though not broken out in the table, the overnight bus re-route and reschedule as proposed may be a wash. The model does not show significant overall increased value in running the shorter-overall-trip bus as opposed to the longer running times for passengers choosing to stay on the train.

California Intercity Passenger Rail Network
with Proposed Tehachapi Service
Redding
Coast Starlight
Chico
California Zephyr
Reno
Auburn
Sacramento
Capitol Corridor
Stockton
PACIFIC OCEAN
Emeryville
Oakland
San Francisco
San Jose
San Joaquin
Fresno
Las Vegas
Tehachapi GAP
Southwest Chief
Barstow
Coast Starlight
Bakersfield
Palmdale
San Luis Obispo
Pacific Surfliner
San Bernardino
Palm Springs
PACIFIC OCEAN
Goleta
Santa Barbara
Los Angeles
Fullerton
Sunset Limited
Oceanside
Pacific Surfliner
San Diego
LEGEND
Intercity Services
Capitol Corridor*
San Joaquin*
Pacific Surfliner*
Amtrak Thruway Bus Trunk Lines
Amtrak Interstate Rail Routes
Proposed Tehachapi GAP Route
Other Symbols
Location City
Corridor or Route Terminal City
California Department of Transportation
Division of Rail – acm.v1
September 2011
N

San Joaquin Overnight Train Service to Los Angeles via Tehachapi Pass

Includes Overnight Bus to San Diego via Riverside and Equipment Turns on Pacific Surfliner

READ DOWN **READ UP**

580 Daily	Bus Daily	718 / 564 Daily				591 / 711 Daily	Bus Daily	573 Daily
		{D}				{D}		
		5:50P	Dp.	**Oakland, CA (Jack London Square)**	**Ar.**	11:00A		
		6:00P		**Emeryville, CA**		D 10:48A		
		6:09P		**Richmond, CA**		10:28A		
		6:39P		**Martinez, CA**		10:03A		
		6:59P		**Antioch-Pittsburg, CA**		9:36A		
		6:25P	**Dp.**	***Sacramento, CA***	**Ar.**	**9:55A**		
		7:34P		**Stockton, CA (Amtrak)**		9:01A		
		8:07P		**Modesto, CA**		8:28A		
		8:20P		**Denair, CA (Turlock)**		8:09A		
		8:47P		**Merced, CA**		7:48A		
		9:20P		**Madera, CA**		7:14A		
		9:55P		**Fresno, CA**		6:50A		
		10:28P		**Hanford, CA**		6:12A		
		10:44P		**Corcoran, CA**		5:53A		
		11:15P		**Wasco, CA**		5:21A		
		11:56P	Ar.	**Bakersfield, CA**	**Dp.**	4:55A		
	12:06A	**11:59P**	**Dp.**	**Bakersfield, CA**	**Ar.**	**1:55A (b)**	**4:40A**	
		2:30A (a)	**Ar.**	**Palmdale, CA**	**Dp.**	**11:25P**		
		5:20A	**Dp.**	**Palmdale, CA**	**Ar.**	**11:20P**		
		6:07A		**Santa Clarita, CA**		**10:33P**		
		6:50A		**Glendale, CA**		**10:05P**		
{B}		**7:05A**	**Ar.**	**Los Angeles, CA**	**Dp.**	**9:50P**		**{B}**
3:05P		7:20A	Dp.	**Los Angeles, CA**	**Ar.**	9:05P		1:35P
	3:50A			***San Bernardino, CA***			12:55A	
	4:10A			***Riverside, CA***			12:35A	
3:34P	5:05A	7:49A		**Fullerton**		8:29P	11:45P	12:57P
3:43P		7:58A		**Anaheim, CA**		8:18P		12:48P
3:51P	5:20A	8:06A		**Santa Ana**		8:09P	11:25P	12:40P
4:01P	5:40A	8:21A		**Irvine, CA**		7:57P	11:05P	12:30P
4:14P	5:55A	8:36A		**San Juan Capistrano**		7:41P	10:50P	12:12P
4:48P	6:30A	9:08A		**Oceanside**		7:06P	10:15P	11:43A
5:08P	6:50A	9:26A		**Solana Beach**		6:51P	9:45P	11:26A
...		D 9:57A		**San Diego-Old Town**		R 6:21P		...
5:50P	7:15A	10:05A	Ar.	**San Diego**	**Dp.**	6:15P	9:15P	10:50A
{C}		{A}				{C}		{A}

(a) Train may arrive between 2:30A and 5:15A
(b) Train may arrive between 1:55A and 4:50A
{X} Equipment Turn Matches
Requires two train sets; servicing in Oakland between 11:00am and 5:50pm.
If Sleepers are required at one per train, three sleepers will be needed with one as protect in Oakland.

ACM
2011-09-12

Not For public distribution.

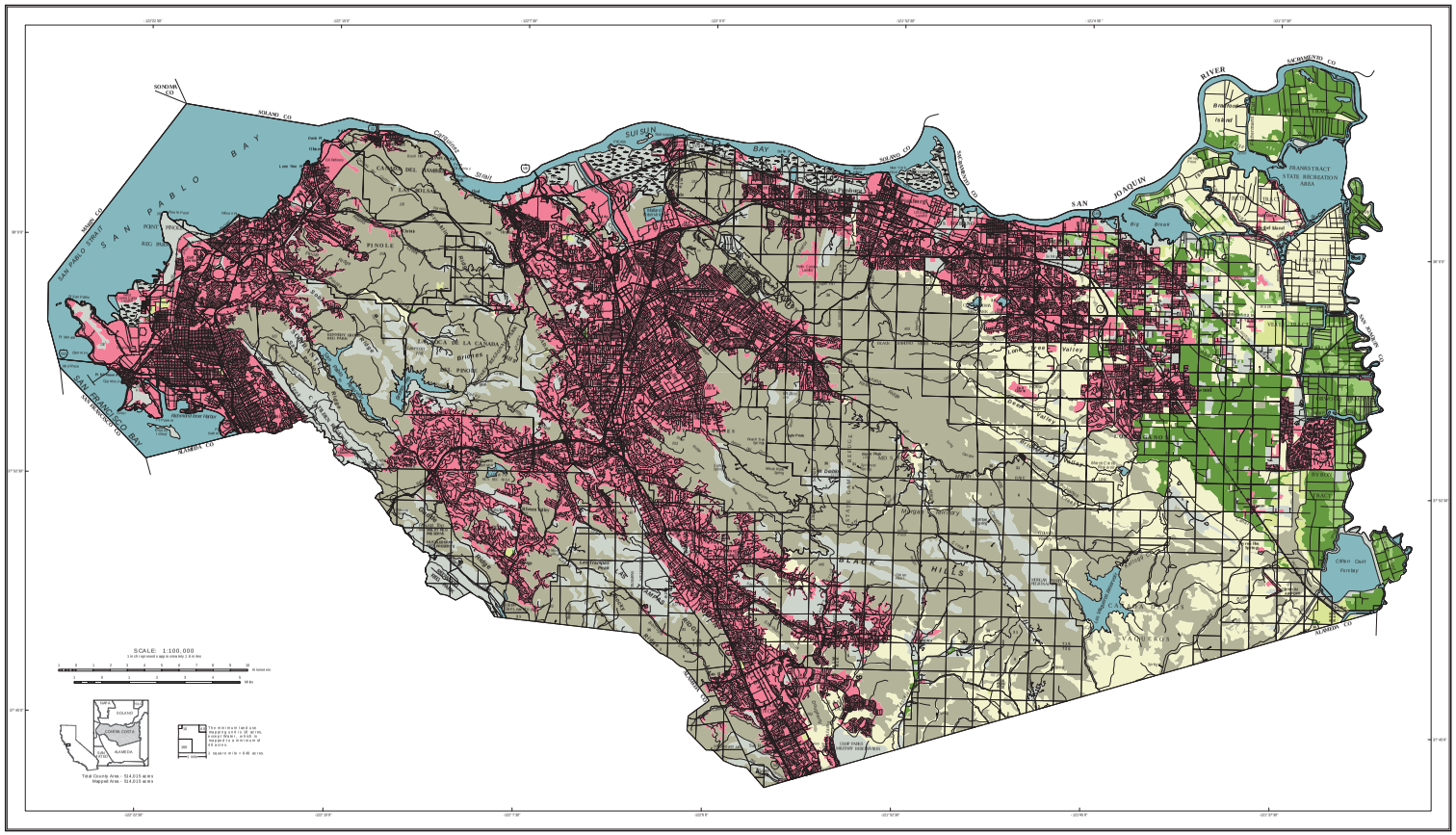
APPENDIX A

WILLIAMSON ACT MAPS
(Farmland Maps)

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*
THE NATURAL RESOURCES AGENCY
Mike Chrisman, *Secretary*
DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

CONTRA COSTA COUNTY IMPORTANT FARMLAND 2008

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM


SCALE: 1:100,000
1 inch represents approximately 1.6 miles
Miles
Total County Area - 514,015 acres
Mapped Area - 514,015 acres
SAN PABLO BAY
SUISUN BAY
SAN JOAQUIN RIVER
SOLANO CO
SONOMA CO
SACRAMENTO CO
ALAMEDA CO
MARIN CO
SAN PABLO BAY
SAN FRANCISCO BAY
BLACK HILLS
CARQUINEZ STRAIT
Bridge
Valley
Creek
Canal
Point
Island
Pinole
Martinez
Concord
Pittsburg
Antioch
Brentwood
Oakley
Knightsen
Byron
Discovery Bay
Clifton Court Forebay
Frank's Tract State Recreation Area
Big Break
Bethel Island
Jersey Island
Sherman Island
Bradford Island
Rio Vista
Ryer Island
Tracy
Mountain House
Vasco Caves Regional Park
Contra Loma Reservoir
Los Vaqueros Reservoir
Marsh Creek Reservoir
Mount Diablo State Park
Point Pinole Regional Park
Briones Regional Park
Tilden Regional Park
Sobrante Ridge
Pleasant Hill
Walnut Creek
Lafayette
Orinda
Moraga
Alamo
Danville
San Ramon
Dublin
Pleasanton
Livermore
Hercules
Rodeo
Crockett
Port Costa

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

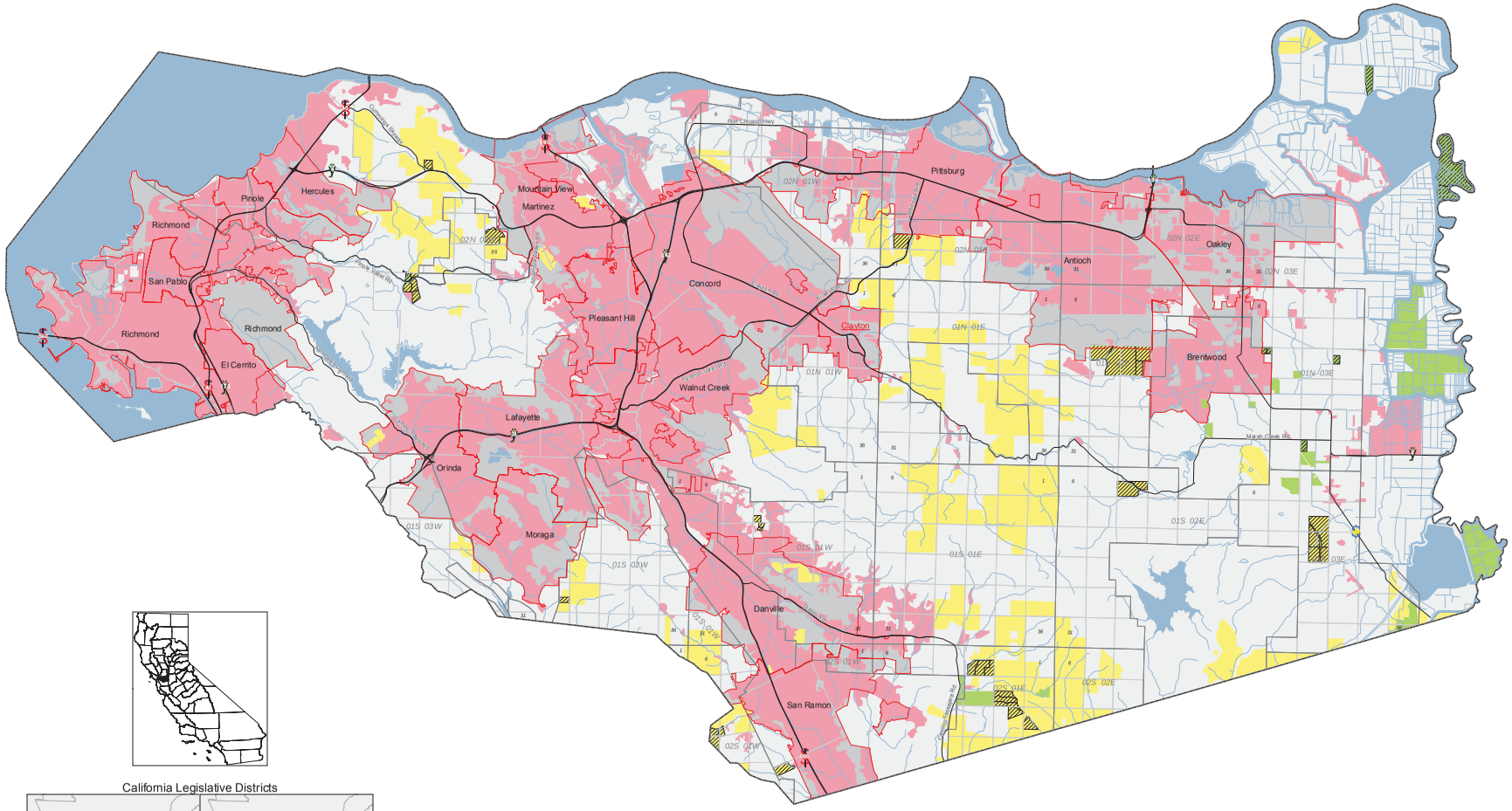
THE RESOURCES AGENCY
Mike Chrisman, *Secretary for Resources*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Contra Costa County Williamson Act Lands 2007

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2007

Department of Conservation
Division of Land Resource Protection
Williamson Act Program


Richmond
Pinole
Hercules
Mountain View
Martinez
Pittsburg
Oakley
Antioch
San Pablo
Richmond
Richmond
El Cerrito
Concord
Pleasant Hill
Clayton
Brentwood
Walnut Creek
Lafayette
Orinda
Moraga
Danville
San Ramon
Marsh Creek Rd
Bay Point Hwy
Pacheco Blvd
Kirker Pass Rd
Ygnacio Valley Rd
Oakland Blvd
Treat Blvd
Ygnacio Valley Rd
Boulevard
Boulevard
Boulevard

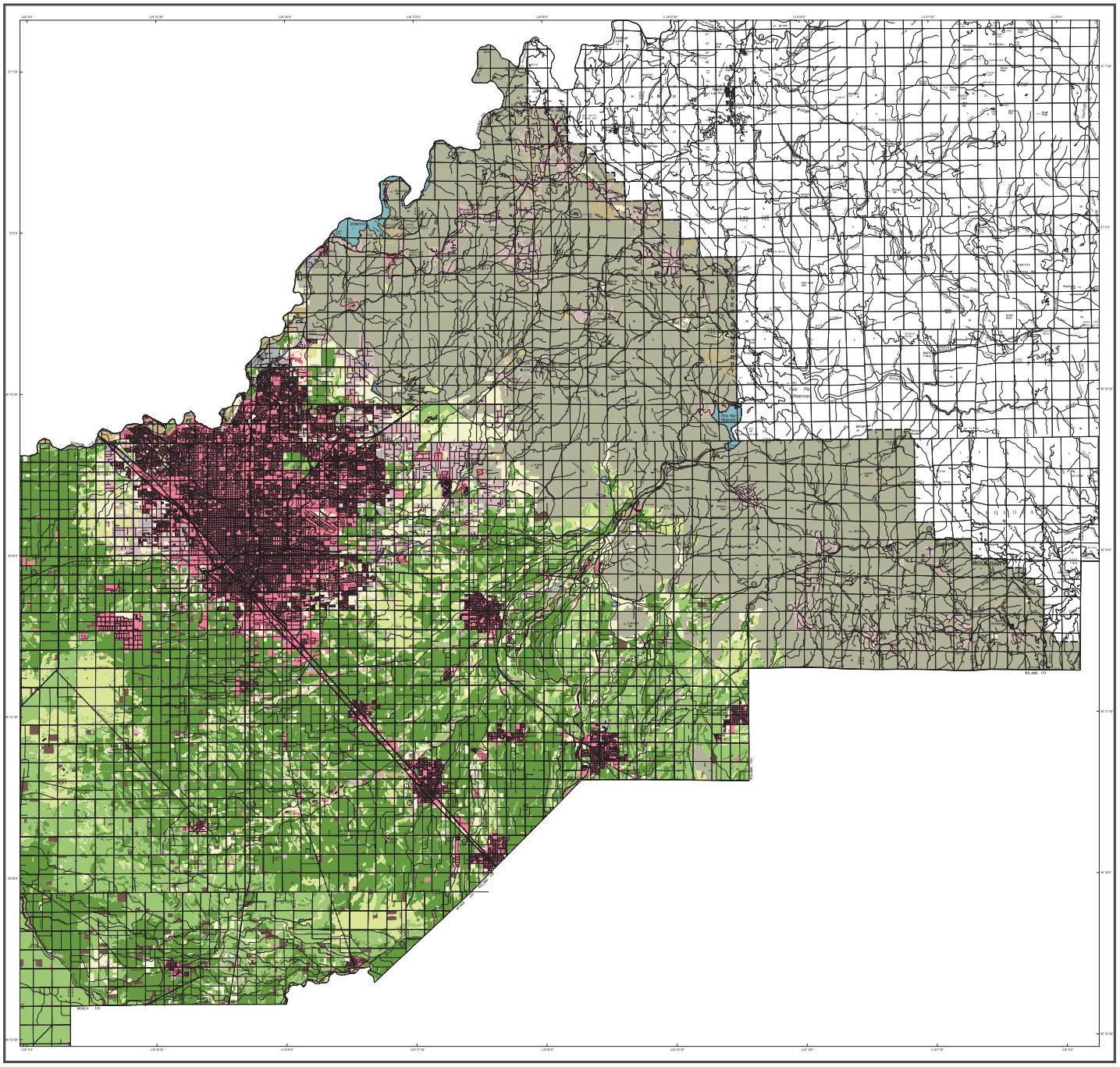
STATE OF CALIFORNIA
Arnold Schwarzenegger, Governor
THE NATURAL RESOURCES AGENCY
Lester A. Snow, Secretary
DEPARTMENT OF CONSERVATION
Bridgett Luther, Director

RURAL LAND MAPPING EDITION

FRESNO COUNTY IMPORTANT FARMLAND 2008

SHEET 2 OF 2

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM


FRESNO
CLOVIS
SELMA
KINGSBURG
REEDLEY
SANGER
Fresno Air Terminal
Kingsburg Municipal
Selma-Kingsburg-Fowler
Sierra View Medical Center
Fresno State College
Fresno Chaffee Zoo
Fresno Fairgrounds
Kearney Park
Kearney Mansion
Fresno Yosemite Int'l
Fresno Dwtn
Fresno Chandler Downtown
Fresno Pelgar
Fresno Foothills
Fresno Sunnyside
Fresno Herndon
Fresno Cedar
Fresno Shaw
Fresno Ashlan
Fresno Bullard
Fresno Clovis
Fresno Willow
Fresno Nelsen
Fresno Jensen
Fresno Kings River
Fresno Manchester
Fresno Belmont
Fresno Olive
Fresno Ivy
Fresno Dakota
Fresno Shields
Fresno Ave 18
Fresno Ave 24
Fresno Ave 40
Fresno Ave 44
Fresno Ave 52
Fresno Ave 60
Fresno Ave 66
Fresno Ave 76
Fresno Ave 84
Fresno Ave 96
Fresno Ave 100
Fresno Ave 108
Fresno Ave 120
Fresno Ave 124
Fresno Ave 128
Fresno Ave 136
Fresno Ave 140
Fresno Ave 144
Fresno Ave 152
Fresno Ave 160
Fresno Ave 168
Fresno Ave 176
Fresno Ave 184
Fresno Ave 192
Fresno Ave 200
Fresno Ave 208
Fresno Ave 216
Fresno Ave 224
Fresno Ave 232
Fresno Ave 240
Fresno Ave

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

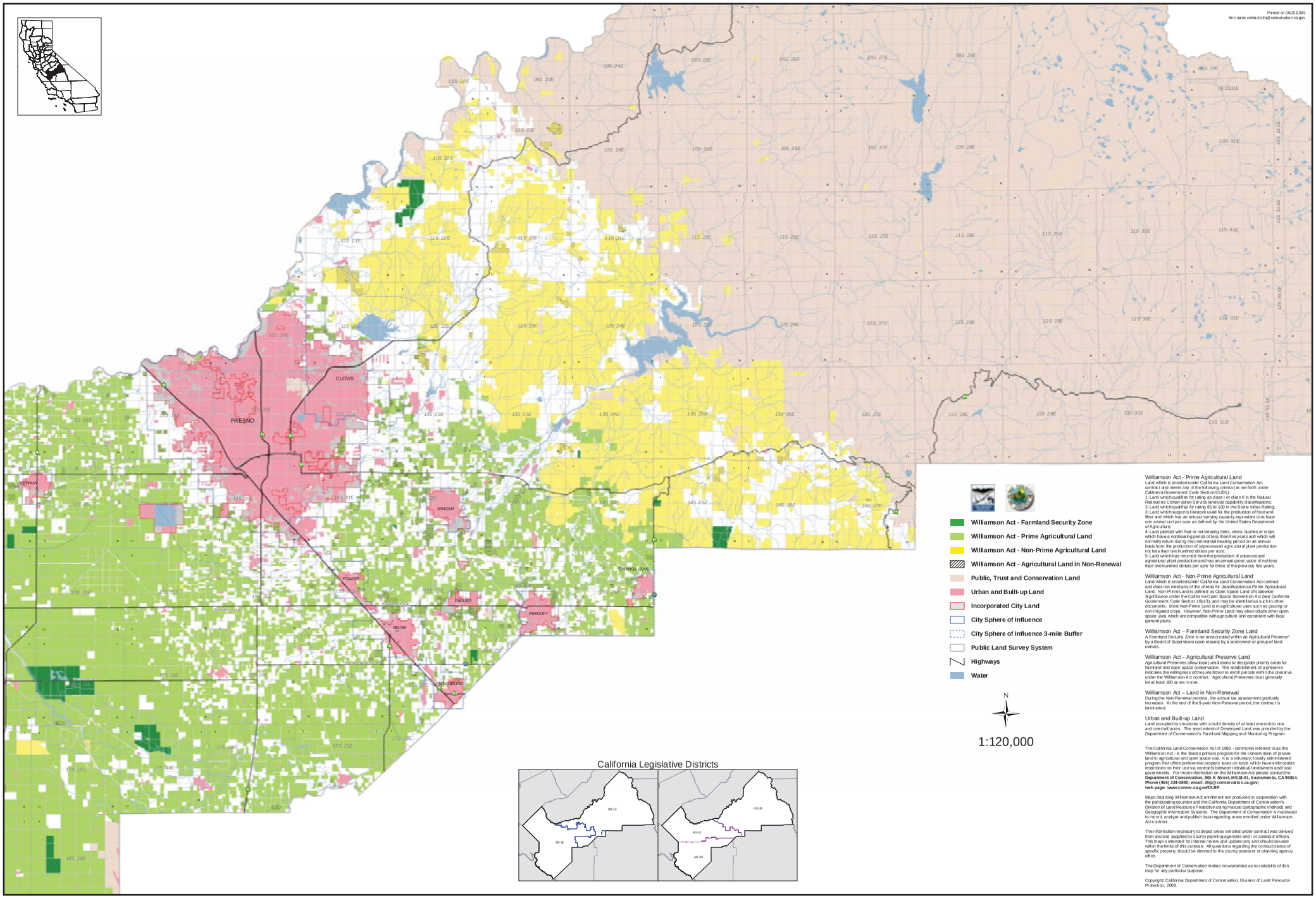
NATURAL RESOURCES AGENCY
Mike Chrisman, *Secretary*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Fresno County Williamson Act Lands 2008

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 1-1-2008

Department of Conservation
Division of Land Resource Protection
Williamson Act Program



Williamson Act - Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
1: Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2: Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3: Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4: Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5: Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act – Farmland Security Zone Land
A Farmland Security Zone is an area created within an Agricultural Preserve* by a Board of Supervisors upon request by a landowner or group of land owners.

Williamson Act – Agricultural Preserve Land
Agricultural Preserves allow local jurisdictions to designate priority areas for farmland and open space conservation. The establishment of a preserve indicates the willingness of the jurisdiction to enroll parcels within the preserve under the Williamson Act contract. Agricultural Preserves must generally be at least 100 acres in size.

Williamson Act – Land in Non-Renewal
During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Urban and Built-up Land
Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the **Department of Conservation, 801 K Street, MS 18-01, Sacramento, CA 95814. Phone (916) 324-0850; email: dlrp@conservation.ca.gov; web page: www.consrv.ca.gov/DLRP**

Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contract.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and/ or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

Copyright: California Department of Conservation, Division of Land Resource Protection, 2009.

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

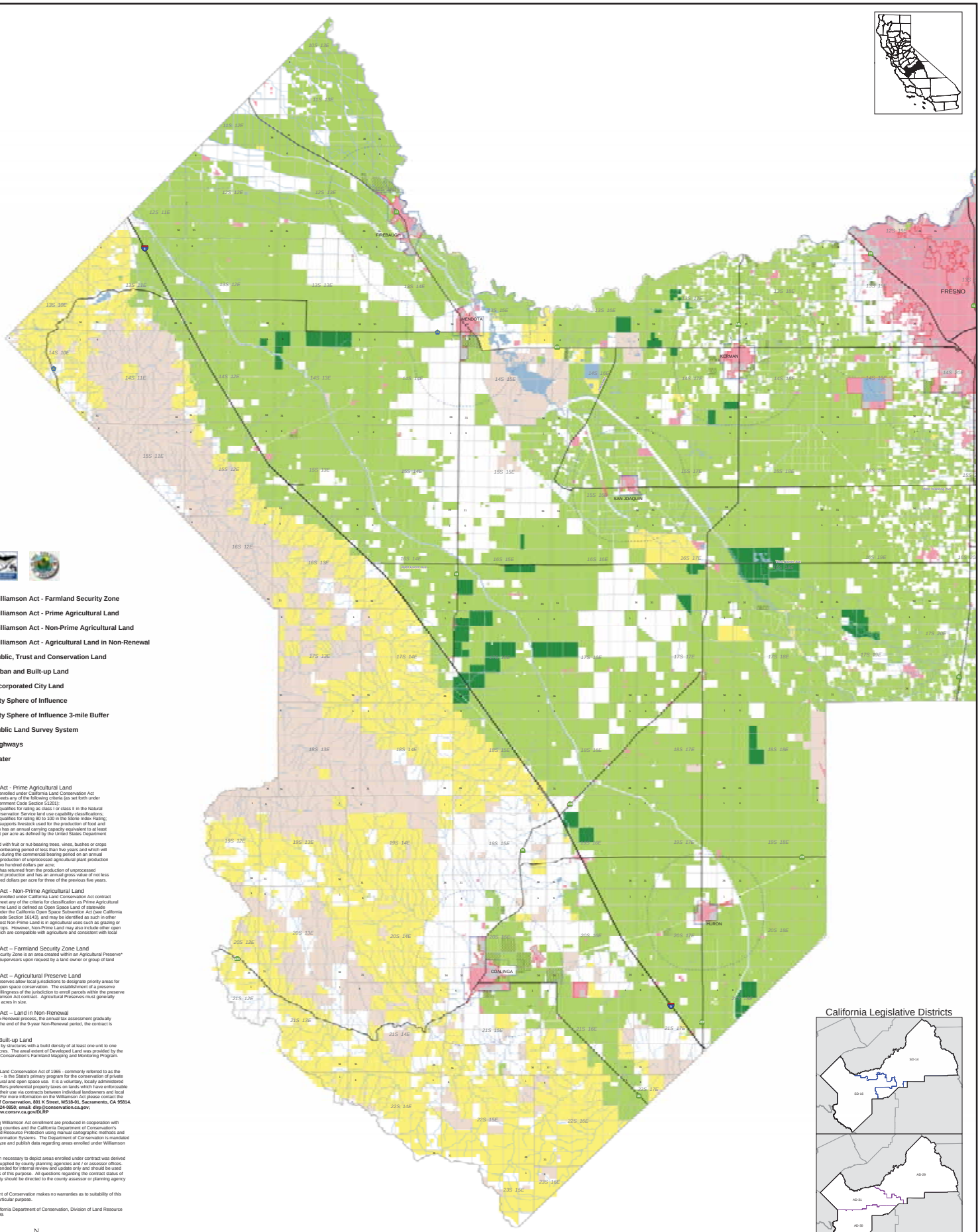
NATURAL RESOURCES AGENCY
Mike Chrisman, *Secretary*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Fresno County Williamson Act Lands 2008

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 1-1-2008

Department of Conservation
Division of Land Resource Protection
Williamson Act Program



- **Williamson Act - Farmland Security Zone**
- **Williamson Act - Prime Agricultural Land**
- **Williamson Act - Non-Prime Agricultural Land**
- **Williamson Act - Agricultural Land in Non-Renewal**
- **Public, Trust and Conservation Land**
- **Urban and Built-up Land**
- **Incorporated City Land**
- **City Sphere of Influence**
- **City Sphere of Influence 3-mile Buffer**
- **Public Land Survey System**
- **Highways**
- **Water**

Williamson Act - Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
1: Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2: Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3: Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4: Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5: Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act – Farmland Security Zone Land
A Farmland Security Zone is an area created within an Agricultural Preserve* by a Board of Supervisors upon request by a land owner or group of land owners.

Williamson Act – Agricultural Preserve Land
Agricultural Preserves allow local jurisdictions to designate priority areas for farmland and open space conservation. The establishment of a preserve indicates the willingness of the jurisdiction to enroll parcels within the preserve under the Williamson Act contract. Agricultural Preserves must generally be at least 100 acres in size.

Williamson Act – Land in Non-Renewal
During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Urban and Built-up Land
Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the **Department of Conservation, 801 K Street, MS18-01, Sacramento, CA 95814. Phone (916) 324-0850; email: dlrp@conservation.ca.gov; web page: www.consrv.ca.gov/DLRP**

Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contract.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and / or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

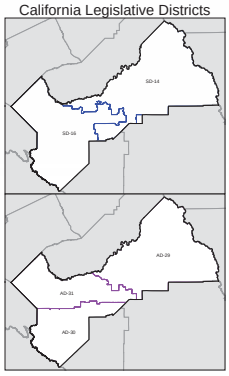
The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

Copyright: California Department of Conservation, Division of Land Resource Protection, 2009.

N

1:120,000

California Legislative Districts



Printed on 06/25/2009
for copies contact dlrp@conservation.ca.gov

STATE OF CALIFORNIA
Arnold Schwarzenegger, Governor

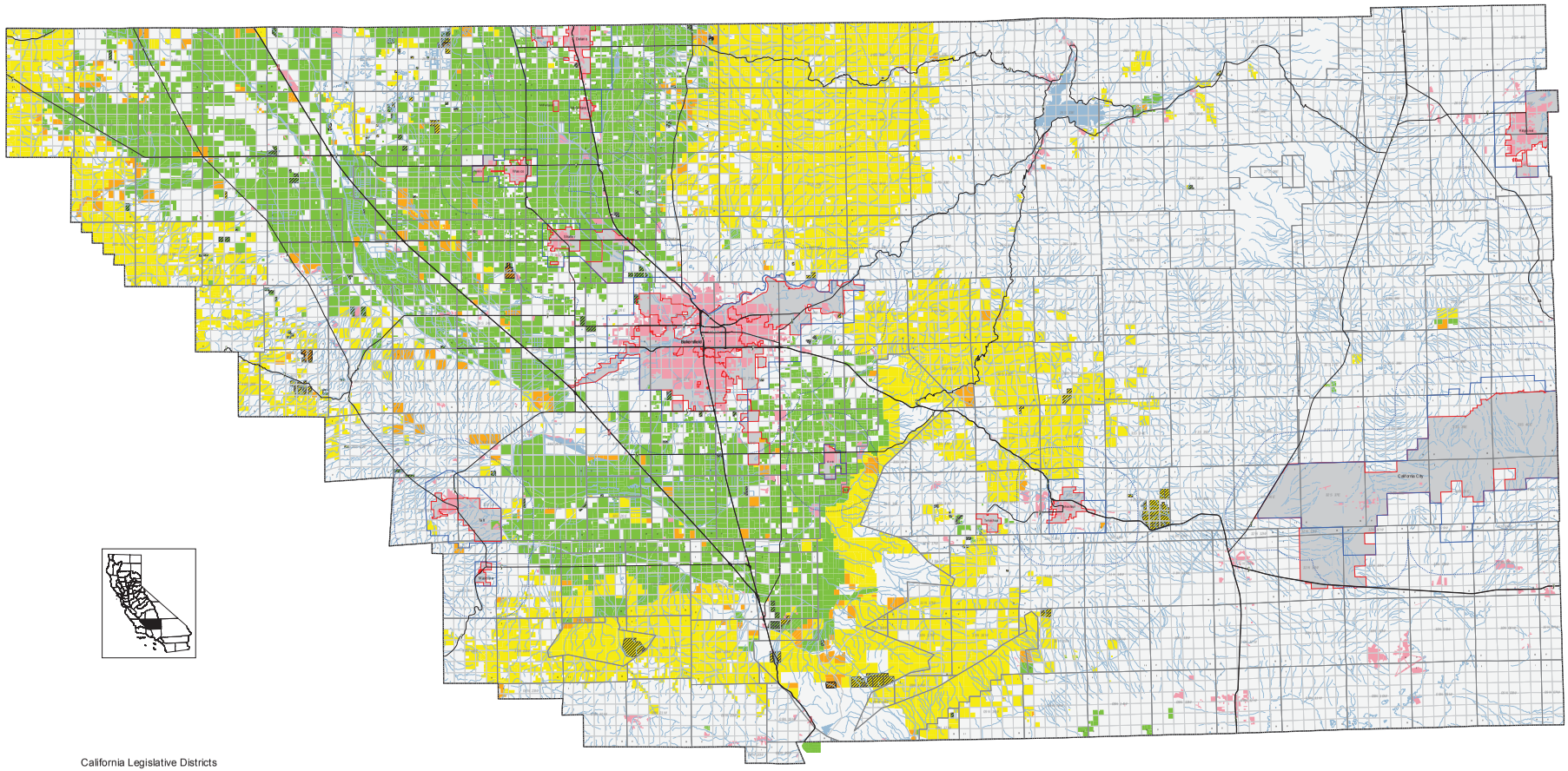
THE RESOURCES AGENCY
Mike Chrisman, Secretary for Resources

DEPARTMENT OF CONSERVATION
Bridgett Luther, Director

Kern County Williamson Act Lands 2005

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2005

Department of Conservation
Division of Land Resource Protection
Williamson Act Program



- Williamson Act - Farmland Security Zone Land
- Williamson Act - Prime Agricultural Land
- Williamson Act - Non-Prime Agricultural Land
- Williamson Act - Mixed Enrollment Agricultural Land
- Williamson Act - Agricultural Land in Non-Renewal
- Urban and Built Up Land
- Incorporated City Land
- Water
- Non-Enrolled Land
- Incorporated City Boundary
- City Sphere of Influence 3-mile buffer
- Public Land Survey System
- Highways

Prime Agricultural Land:
Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria as set forth under California Government Code Section 51201:
1. Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2. Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4. Land planted with fruit or nut bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5. Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Non-Prime Agricultural Land:
Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide or local importance under California Land Conservation Act (California Government Code Section 51140), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Farmland Security Zones:
A Farmland Security Zone is an area created within an Agricultural Preserve* by a Board of Supervisors upon request by a land owner or group of land owners.

*Agricultural Preserves allow local jurisdictions to designate priority areas for farmland and open space conservation. The establishment of a preserve allows the owner of the jurisdiction to enroll parcels within the preserve under the Williamson Act contract. Agricultural Preserves must generally be at least 100 acres in size.

Mixed Enrolled Agricultural Land:
Mixed Acreage parcels Contain Prime, Non-Prime, Open Space Easement or other contracted or enrolled land and are not yet spatially defined.

Non-Renewal
During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period the contract is terminated.

Non-Enrolled Land:
County land not enrolled with the Williamson Act Program.

Developed Land
Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private lands in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the Department of Conservation, 801 K Street, MS 1601, Sacramento, CA 95814. Phone (916) 324-0850, email: dlrp@conservation.ca.gov, web page: www.conservation.ca.gov/DLRP

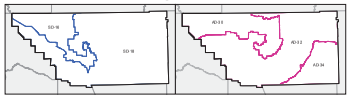
Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contracts.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and / or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

Copyright: California Department of Conservation, Division of Land Resource Protection 2006.

California Legislative Districts



1:175,000

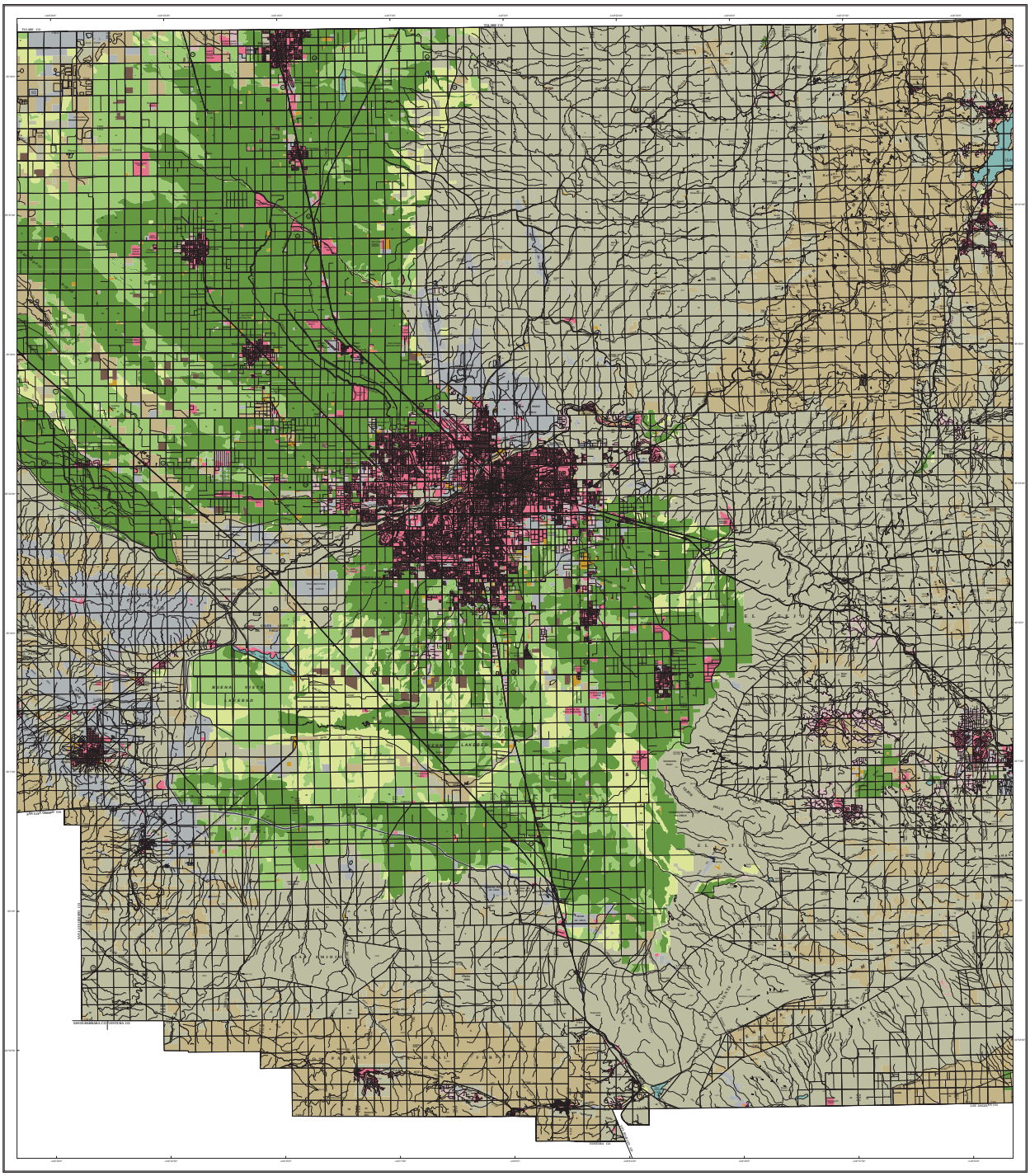
NOTE: Parcel boundary information was downloaded from County web site and considered highly accurate. Williamson Act Categories are "best-guess" as they are lifted from hand colored, County provided scans of paper maps that, in turn, have been georeferenced by DoC.

Printed on 24 x 36 paper
by DLRP staff James Hosler and R. W. Sim 2782

KERN COUNTY IMPORTANT FARMLAND 2008
RURAL LAND EDITION
SHEET 2 0F 3

STATE OF CALIFORNIA
Arnold Schwarzenegger, Governor
THE NATURAL RESOURCES AGENCY
Mike Chrisman, Secretary
DEPARTMENT OF CONSERVATION
Bridgett Luther, Director

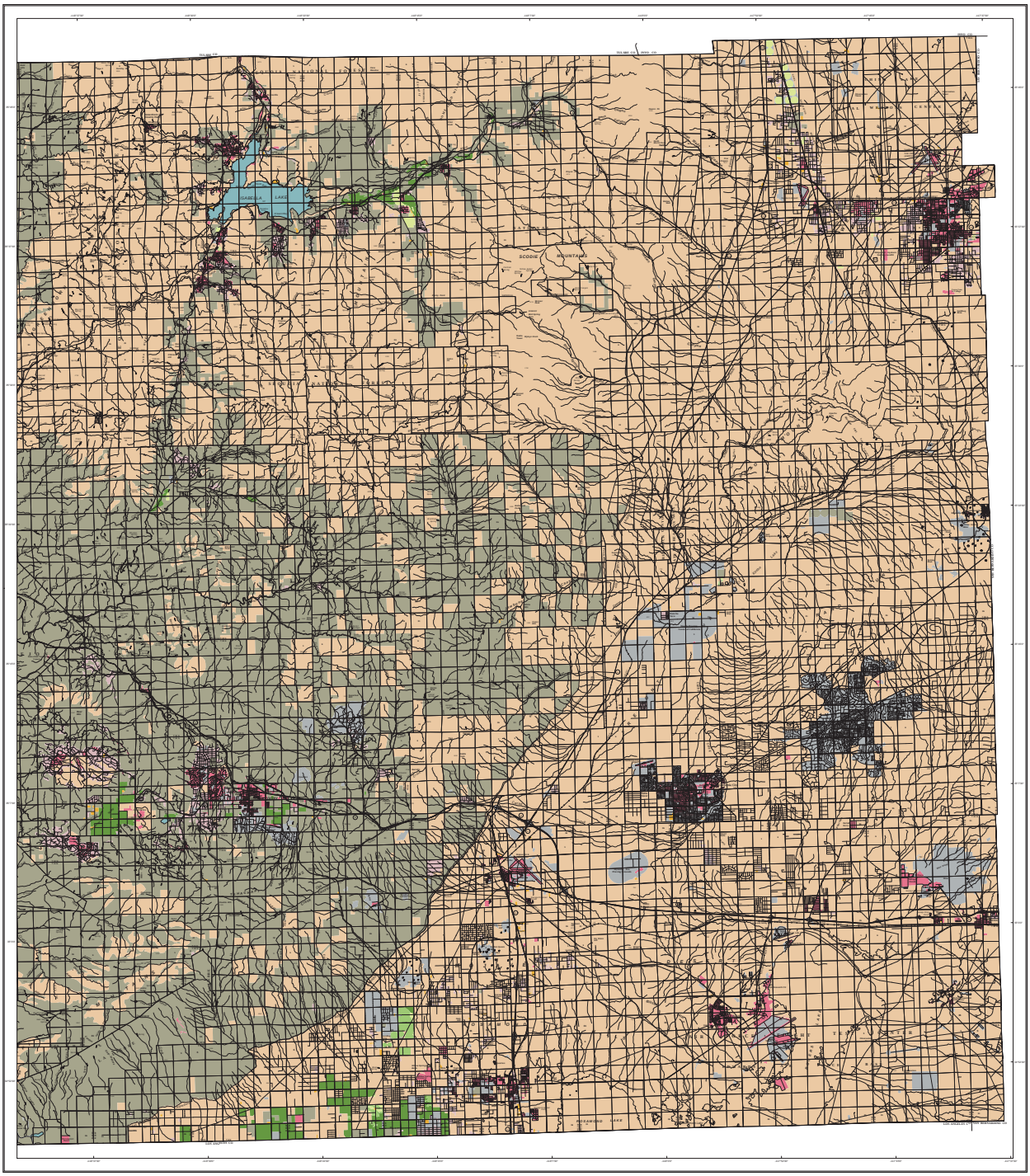
CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM


TULARE CO
SAN LUIS OBISPO CO
SANTA BARBARA CO
SAN BERNARDINO CO
INYO CO
LOS ANGELES CO
BUENA VISTA LAKEBED
LAKE
LAKEBED
SOUTH FORK
WILDLIFE AREA
SOUTH FORK
WILDLIFE AREA
CUYAMA RIVER
SANTA BARBARA CANYON
SANTA BARBARA CANYON
SANTA BARBARA CANYON

RURAL LAND MAPPING EDITION
KERN COUNTY IMPORTANT FARMLAND 2010
SHEET 3 0F 3

STATE OF CALIFORNIA
Edmund G. Brown Jr., Governor
THE NATURAL RESOURCES AGENCY
John Laird, Secretary
DEPARTMENT OF CONSERVATION
Mark Nechodom, Director

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM



PRIME FARMLAND - 608,789 acres

PRIME FARMLAND HAS THE BEST COMBINATION OF PHYSICAL AND CHEMICAL FEATURES ABLE TO SUSTAIN LONG-TERM AGRICULTURAL PRODUCTION. THIS LAND HAS THE SOIL QUALITY, GROWING SEASON, AND MOISTURE SUPPLY NEEDED TO PRODUCE SUSTAINED HIGH YIELDS. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF STATEWIDE IMPORTANCE - 213,465 acres

FARMLAND OF STATEWIDE IMPORTANCE IS SIMILAR TO PRIME FARMLAND BUT WITH MINOR SHORTCOMINGS, SUCH AS GREATER SLOPES OR LESS ABILITY TO STORE SOIL MOISTURE. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

UNIQUE FARMLAND - 91,830 acres

UNIQUE FARMLAND CONSISTS OF LESSER QUALITY SOILS USED FOR THE PRODUCTION OF THE STATE'S LEADING AGRICULTURAL CROPS. THIS LAND IS USUALLY IRRIGATED, BUT MAY INCLUDE NONIRRIGATED ORCHARD OR VINEYARD AS WELL AS VARIOUS VEGETABLE CROPS IN CALIFORNIA. LAND MUST HAVE BEEN CROPPED AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

GRAZING LAND - 1,827,391 acres

GRAZING LAND IS LAND ON WHICH THE EXISTING VEGETATION IS SUITED TO THE GRAZING OF LIVESTOCK.

CONFINED ANIMAL AGRICULTURE - 7,549 acres

CONFINED ANIMAL AGRICULTURAL LANDS INCLUDE POULTRY FACILITIES, FEEDLOTS, DAIRY FACILITIES, AND FISH FARMS. IN SOME COUNTIES, CONFINED ANIMAL AGRICULTURE IS A COMPONENT OF THE FARMLAND OF LOCAL IMPORTANCE CATEGORY.

NONAGRICULTURAL AND NATURAL VEGETATION - 2,026,045 acres

NONAGRICULTURAL AND NATURAL VEGETATION INCLUDES HEAVILY WOODED, ROCKY OR BARREN AREAS, RIPARIAN AND WETLAND AREAS, GRASSLAND AREAS WHICH DO NOT QUALIFY FOR GRAZING LAND DUE TO THEIR SIZE OR LAND MANAGEMENT RESTRICTIONS. SMALL WATER BODIES AND RECREATIONAL WATER SKI LAKES, CONSTRUCTED WETLANDS ARE ALSO INCLUDED IN THIS CATEGORY.

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND - 11,629 acres

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND INCLUDES FARMSTEADS, AGRICULTURAL STORAGE AND PACKING SHEDS, UNPAVED PARKING AREAS, COMPOSTING FACILITIES, EQUINE FACILITIES, FIREWOOD LOTS, AND CAMPGROUNDS.

VACANT OR DISTURBED LAND - 247,072 acres

VACANT OR DISTURBED LAND INCLUDES OPEN FIELD AREAS THAT DO NOT QUALIFY FOR AN AGRICULTURAL CATEGORY, MINERAL AND OIL EXTRACTION AREAS, OFF ROAD VEHICLE AREAS, ELECTRICAL SUBSTATIONS, CHANNELIZED CANALS, AND RURAL FREEWAY INTERCHANGES.

RURAL RESIDENTIAL LAND - 38,703 acres

RURAL RESIDENTIAL LAND INCLUDES RESIDENTIAL AREAS OF ONE TO FIVE STRUCTURES PER TEN ACRES.

URBAN AND BUILT-UP LAND - 141,899 acres

URBAN AND BUILT-UP LAND IS OCCUPIED BY STRUCTURES WITH A BUILDING DENSITY OF AT LEAST ONE PER TEN ACRES. THIS LAND MUST ALSO EXCEED ONE HUNDRED ACRE PARCEL. COMMON EXAMPLES INCLUDE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, INSTITUTIONAL FACILITIES, CEMETERIES, AIRPORTS, GOLF COURSES, SANITARY LANDFILLS, SEWAGE TREATMENT, AND WATER CONTROL STRUCTURES.

WATER - 9,890 acres

PERENNIAL WATER BODIES WITH AN EXTENT OF AT LEAST 40 ACRES.

Important Farmland Maps are compiled by the Farmland Mapping and Monitoring Program (FMMP) pursuant to Section 65570 of the California Government Code. To create the maps, FMMP combines current land use information with U. S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey data. Soil units that meet the criteria for Prime Farmland or Farmland of Statewide Importance are shown on NRCS. Changes to soil profiles subsequent to publication of NRCS soil surveys are not reflected on this map. This map was developed using NRCS digital soil data (SSURGO) and may contain individual soil units as small as one acre.

Land use status is determined using current and historic aerial imagery, supplemental GIS data, and field verification. Land use status is based on a minimum mapping unit of 10 acres for all categories except Urban and Built-Up Land, depending on data availability. Supplemental data on land management status is obtained from federal, state, and local governments. Map reviewers at the local level contribute valuable information with their comments and suggestions. Please refer to FMMP field analyst reports for each county to obtain specific citations.

Cultural base information for the Important Farmland Maps was derived from public domain data sets, based upon design of the U.S. Geological Survey, with updates generated by digitizing over current imagery.

This map should be used within the limits of its purpose - as a current inventory of agricultural land resources. This map does not necessarily reflect general plan or zoning designations, city limit lines, changing economic or market conditions, or other factors which may be taken into consideration when land use policies are determined. This map is not designed for parcel-specific planning purposes due to its scale and the ten-acre minimum land use mapping unit. Farmland conversion statistics are based on acreage totals based on best available data. The information has been delineated as accurately as possible at 1:24,000 scale, but on a farm to meet 1:24,000 National Map Accuracy Standards is made due to variations in the quality of source data.

The Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Additional data is available at www.conservation.ca.gov/dlrp/fmmp, including detail on the program, full size PDF maps, map categories, statistics, field summaries, and GIS data for download. Contact the:

Farmland Mapping and Monitoring Program
801 K Street, MS 18-01
Sacramento, CA 95814
Phone: (916) 324-0859
e-mail: fmmp@conservation.ca.gov

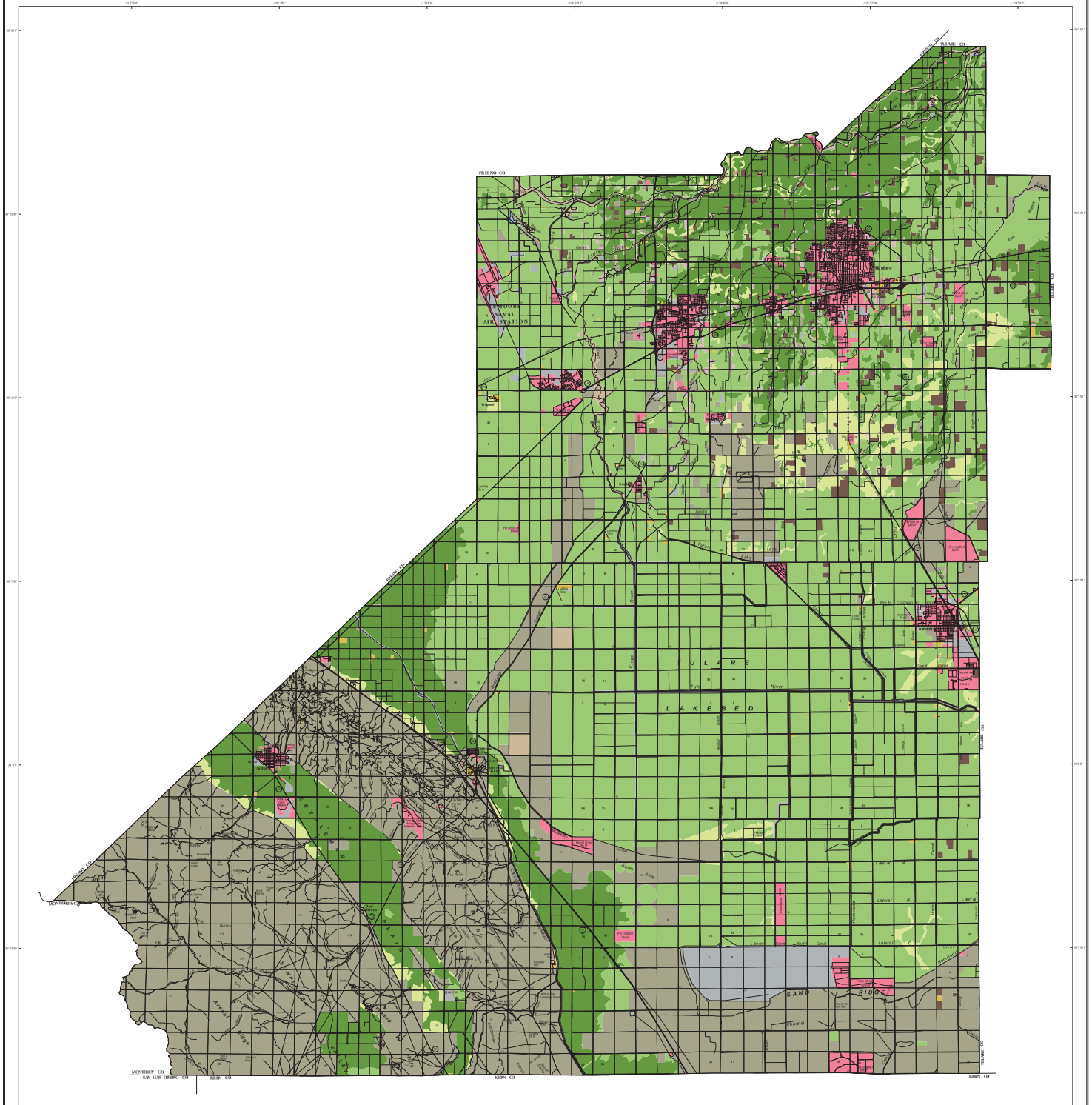
© California Department of Conservation, Division of Land Resource Protection, 2012.

Map published February 2012.

STATE OF CALIFORNIA
Arnold Schwarzenegger, Governor
THE NATURAL RESOURCES AGENCY
Lester A. Snow, Secretary
DEPARTMENT OF CONSERVATION
Bridgett Luther, Director

RURAL LAND MAPPING EDITION
KINGS COUNTY IMPORTANT FARMLAND 2008

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM



PRIME FARMLAND - 138,088 acres

PRIME FARMLAND HAS THE BEST COMBINATION OF PHYSICAL AND CHEMICAL FEATURES ABLE TO SUSTAIN LONG-TERM AGRICULTURAL PRODUCTION. THIS LAND HAS THE SOIL QUALITY, GROWING SEASON, AND MOISTURE SUPPLY NEEDED TO PRODUCE SUSTAINED HIGH YIELDS. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF STATEWIDE IMPORTANCE - 397,064 acres

FARMLAND OF STATEWIDE IMPORTANCE IS SIMILAR TO PRIME FARMLAND BUT WITH MINOR SHORTCOMINGS, SUCH AS GREATER SLOPES OR LESS ABILITY TO STORE SOIL MOISTURE. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

UNIQUE FARMLAND - 22,927 acres

UNIQUE FARMLAND CONSISTS OF LESSER QUALITY SOILS USED FOR THE PRODUCTION OF THE STATE'S LEADING AGRICULTURAL CROPS. THIS LAND IS USUALLY IRRIGATED, BUT MAY INCLUDE NONIRRIGATED ORCHARDS OR VINEYARDS AS FOUND IN SOME CLIMATIC ZONES IN CALIFORNIA. LAND MUST HAVE BEEN CROPPED AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

GRAZING LAND - 257,746 acres

GRAZING LAND IS LAND ON WHICH THE EXISTING VEGETATION IS SUITED TO THE GRAZING OF LIVESTOCK.

CONFINED ANIMAL AGRICULTURE - 10,024 acres

CONFINED ANIMAL AGRICULTURAL LANDS INCLUDE POULTRY FACILITIES, FEEDLOTS, DAIRY FACILITIES, AND FISH FARMS. IN SOME COUNTIES, CONFINED ANIMAL AGRICULTURE IS A COMPONENT OF THE FARMLAND OF LOCAL IMPORTANCE CATEGORY.

NONAGRICULTURAL AND NATURAL VEGETATION - 5,859 acres

NONAGRICULTURAL AND NATURAL VEGETATION INCLUDES HEAVILY WOODED, ROCKY OR BARREN AREAS, RIPARIAN AND WETLAND AREAS, GRASSLAND AREAS WHICH DO NOT QUALIFY FOR GRAZING LAND DUE TO THEIR SIZE OR LAND MANAGEMENT RESTRICTIONS, SMALL WATER BODIES AND RECREATIONAL WATER SKI LAKES. CONSTRUCTED WETLANDS ARE ALSO INCLUDED IN THIS CATEGORY.

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND - 2,551 acres

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND INCLUDES FARMSTEADS, AGRICULTURAL STORAGE AND PACKING SHEDS, UNPAVED PARKING AREAS, COMPOSTING FACILITIES, EQUINE FACILITIES, FIREWOOD LOTS, AND CAMPGROUNDS.

VACANT OR DISTURBED LAND - 20,382 acres

VACANT OR DISTURBED LAND INCLUDES OPEN FIELD AREAS THAT DO NOT QUALIFY FOR AN AGRICULTURAL CATEGORY, MINERAL AND OIL EXTRACTION AREAS, OFF ROAD VEHICLE AREAS, ELECTRICAL SUBSTATIONS, CHANNELIZED CANALS, AND RURAL FREEWAY INTERCHANGES.

RURAL RESIDENTIAL LAND - 3,862 acres

RURAL RESIDENTIAL LAND INCLUDES RESIDENTIAL AREAS OF ONE TO FIVE STRUCTURES PER TEN ACRES.

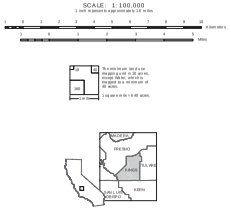
URBAN AND BUILT-UP LAND - 32,218 acres

URBAN AND BUILT-UP LAND IS OCCUPIED BY STRUCTURES WITH A BUILDING DENSITY OF AT LEAST 1 UNIT TO 1.5 ACRES, OR APPROXIMATELY 6 STRUCTURES TO A 10-ACRE PARCEL. COMMON EXAMPLES INCLUDE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, INSTITUTIONAL FACILITIES, CEMETERIES, AIRPORTS, GOLF COURSES, SANITARY LANDFILLS, SEWAGE TREATMENT, AND WATER CONTROL STRUCTURES.

WATER - 62 acres

PERENNIAL WATER BODIES WITH AN EXTENT OF AT LEAST 40 ACRES.

SCALE: 1:100,000
1 inch represents approximately 1.6 miles



Important Farmland Maps are compiled by the Farmland Mapping and Monitoring Program (FMMP) pursuant to Section 65570 of the California Government Code. To create the maps, FMMP combines current land use information with U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey data. Soil units qualifying for Prime Farmland and Farmland of Statewide Importance are determined by the NRCS. Changes to soil profiles subsequent to publication of NRCS soil surveys are not reflected on this map. This map was developed using NRCS digital soil data (SSURGO) and may contain individual soil units as small as one acre.

Land use status is determined using current and historic aerial imagery, supplemental GIS data, and field verification. Imagery sources may include public domain datasets, web-based information, and commercially purchased data, depending on data availability. Supplemental data on land management status is obtained from federal, state, and local governments. Map reviewers at the local level contribute valuable information with their comments and suggestions. Please refer to FMMP field analyst reports for each county to obtain specifications.

Cultural base information for the Important Farmland Maps was derived from public domain data sets, based upon design of the U.S. Geological Survey, with updates generated by digitizing over current imagery.

This map should be used within the limits of its purpose – as a current inventory of agricultural land resources. This map does not necessarily reflect general plan or zoning designations, city limit lines, changing economic or market conditions, or other factors which may be taken into consideration when land use policies are determined. This map is not designed for parcel-specific planning purposes due to its scale and the ten-acre minimum land use mapping unit. Classification of Important Farmland and urban areas on this map is based on best available data. The information has been delineated as accurately as possible at 1:24,000 scale, but no claim to meet 1:24,000 National Map Accuracy Standards is made due to variations in the quality of source data.

The Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Additional data is available at www.conservation.ca.gov/dlrp/fmmp, including detail on the program, full size PDF maps, map categories, statistics, field summaries, and GIS data for download. Contact the:

Farmland Mapping and Monitoring Program
801 K Street, MS 18-01
Sacramento, CA 95814
Phone: (916) 324-0859
e-mail: fmmp@conservation.ca.gov

© California Department of Conservation, Division of Land Resource Protection, 2010.

Map published July 2010.

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

NATURAL RESOURCES AGENCY
Mike Chrisman, *Secretary*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Kings County Williamson Act Lands 2009

Land Enrolled in the Williamson Act and Farmland Security Zone Contracts as of 01-01-09

Department of Conservation
Division of Land Resource Protection
Williamson Act Program

- Williamson Act - Farmland Security Zone Land
- Williamson Act - Prime Agricultural Land
- Williamson Act - Non-Prime Agricultural Land
- Williamson Act - Land in Non-Renewal
- Water
- Urban and Built-up Land
- Incorporated City
- Public Land Survey System
- Highways

Williamson Act - Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
1: Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2: Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3: Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4: Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5: Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act – Farmland Security Zone Land

A Farmland Security Zone is an area created within an Agricultural Preserve* by a Board of Supervisors upon request by a land owner or group of land owners.

Agricultural Preserve Land

Agricultural Preserves allow local jurisdictions to designate priority areas for farmland and open space conservation. The establishment of a preserve indicates the willingness of the jurisdiction to enroll parcels within the preserve under the Williamson Act contract. Agricultural Preserves must generally be at least 100 acres in size.

Williamson Act – Land in Non-Renewal

During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Urban and Built-up Land

Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the **Department of Conservation, 801 K Street, MS18-01, Sacramento, CA 95814. Phone (916) 324-0850; email: dlrp@conservation.ca.gov; web page: www.conrv.ca.gov/DLRP**

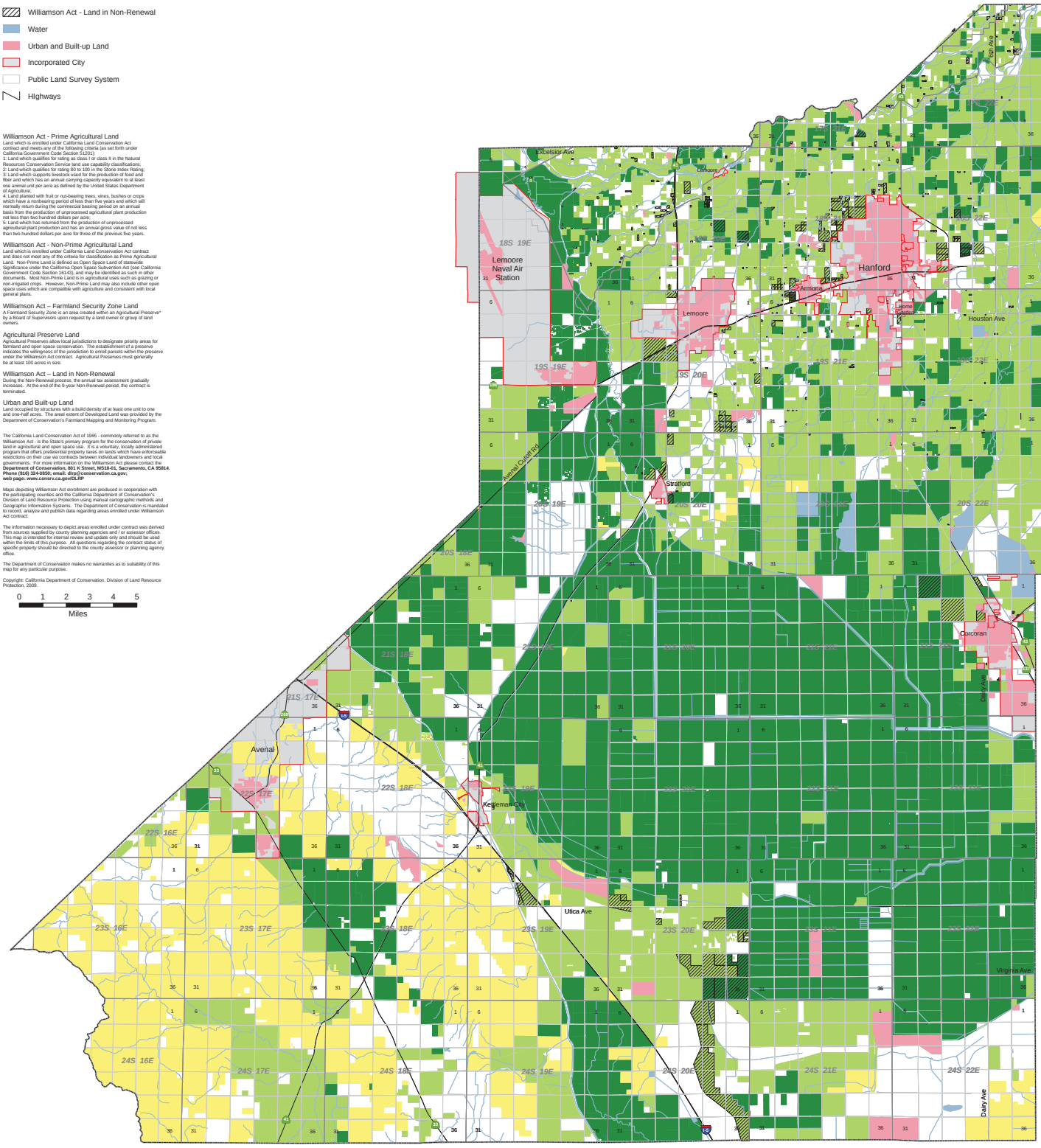
Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contract.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and / or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

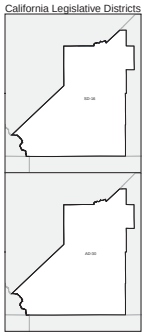
The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

Copyright: California Department of Conservation, Division of Land Resource Protection, 2009.

0 1 2 3 4 5
Miles



California Legislative Districts

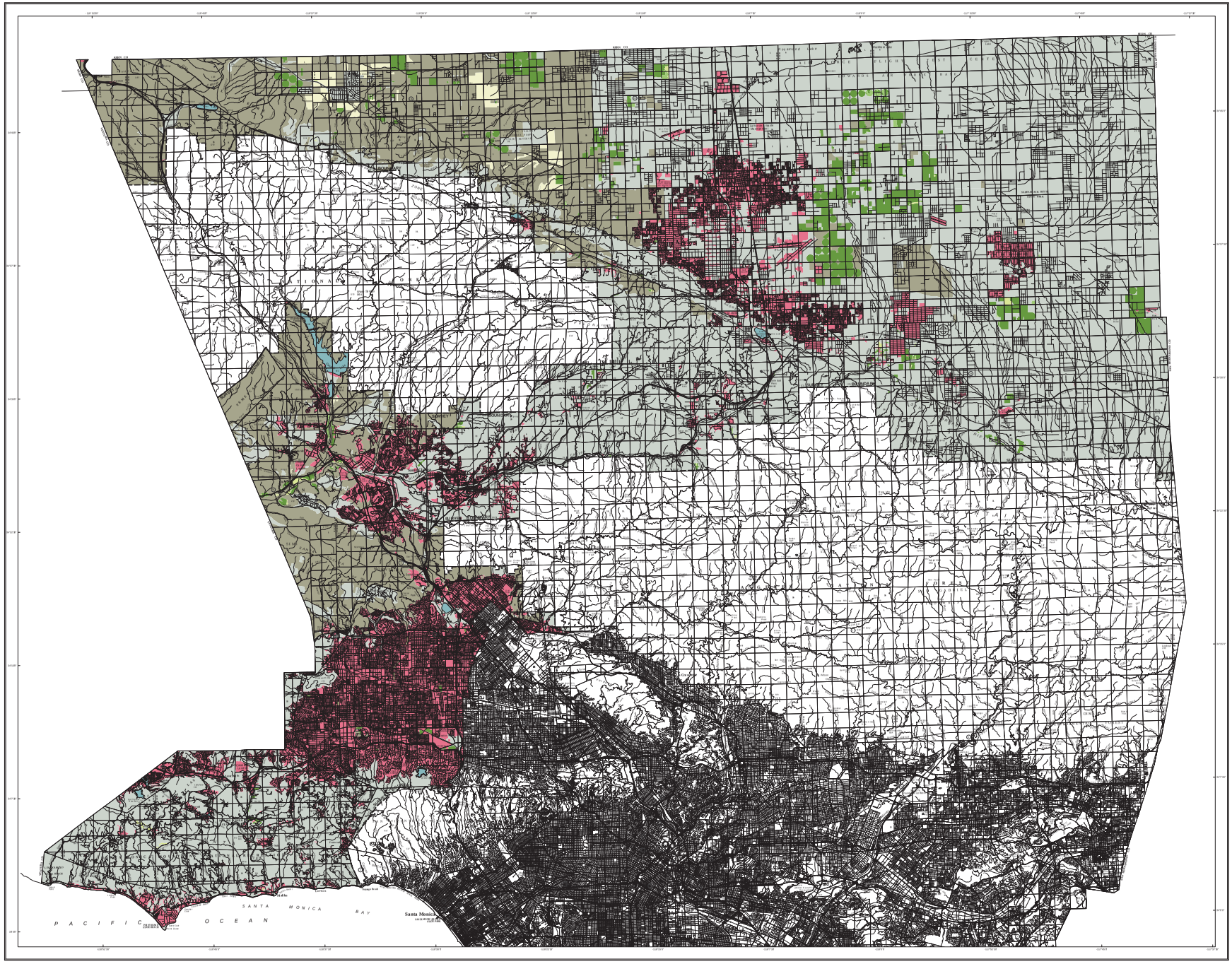


Printed on 01-21-2010, by James Nordstrom GIS Analyst
Copies available, contact dlrp@conservation.ca.gov

STATE OF CALIFORNIA
Edmund G. Brown Jr., Governor
THE NATURAL RESOURCES AGENCY
John Laird, Secretary
DEPARTMENT OF CONSERVATION
Derek Chernow, Acting Director

LOS ANGELES COUNTY IMPORTANT FARMLAND 2010

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM



PRIME FARMLAND - 30,876 acres

PRIME FARMLAND HAS THE BEST COMBINATION OF PHYSICAL AND CHEMICAL FEATURES ABLE TO SUSTAIN LONG-TERM AGRICULTURAL PRODUCTION. THIS LAND HAS THE SOIL QUALITY, GROWING SEASON, AND MOISTURE SUPPLY NEEDED TO PRODUCE SUSTAINED HIGH YIELDS. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF STATEWIDE IMPORTANCE - 952 acres

FARMLAND OF STATEWIDE IMPORTANCE IS SIMILAR TO PRIME FARMLAND BUT WITH MINOR SHORTCOMINGS, SUCH AS GREATER SLOPE OR LESS ACCESSIBILITY TO STORE SOIL MOISTURE. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

UNIQUE FARMLAND - 1,129 acres

UNIQUE FARMLAND CONSISTS OF LESSER QUALITY SOILS USED FOR THE PRODUCTION OF THE STATE'S LEADING AGRICULTURAL CROPS. THIS LAND IS USUALLY IRRIGATED, BUT MAY INCLUDE NONIRRIGATED ORCHARDS OR VINEYARDS AS FOUND IN SOME CLIMATIC ZONES IN CALIFORNIA. LAND MUST HAVE BEEN CROPPED AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF LOCAL IMPORTANCE - 6,855 acres

PRODUCTIVE LANDS THAT WOULD MEET THE STANDARD CRITERIA FOR PRIME OR STATEWIDE BUT ARE NOT IRRIGATED.

GRAZING LAND - 231,475 acres

GRAZING LAND IS LAND ON WHICH THE EXISTING VEGETATION IS SUITED TO THE GRAZING OF LIVESTOCK.

URBAN AND BUILT-UP LAND - 174,888 acres

URBAN AND BUILT-UP LAND IS OCCUPIED BY STRUCTURES WITH A BUILDING DENSITY OF AT LEAST 1 UNIT TO 1.5 ACRES, OR APPROXIMATELY 6 STRUCTURES TO A 10-ACRE PARCEL. COMMON EXAMPLES INCLUDE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, INSTITUTIONAL FACILITIES, CEMETERIES, AIRPORTS, GOLF COURSES, SANITARY LANDFILLS, SEWAGE TREATMENT, AND WATER CONTROL STRUCTURES.

OTHER LAND - 674,568 acres

OTHER LAND IS LAND NOT INCLUDED IN ANY OTHER MAPPING CATEGORY. COMMON EXAMPLES INCLUDE LOW DENSITY RURAL DEVELOPMENT, BRUSH, TIMBER, WETLAND, AND RIPARIAN AREAS NOT SUITABLE FOR LIVESTOCK GRAZING, CONFINED LIVESTOCK, POULTRY, OR AQUACULTURE FACILITIES, STRIP MINES, BORROW PITS, AND WATER BODIES SMALLER THAN 40 ACRES. VACANT AND NONAGRICULTURAL LAND SURROUNDED ON ALL SIDES BY URBAN DEVELOPMENT AND GREATER THAN 40 ACRES IS MAPPED AS OTHER LAND.

WATER - 3,318 acres

PERENNIAL WATER BODIES WITH AN EXTENT OF AT LEAST 40 ACRES.

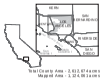
SCALE 1:120,000
1 inch equals approx. 1 miles

1 0 1 2 3 4 5 6 7 8 9 10 Miles

1 0 1 2 3 4 5 6 7 8 9 10 Kilometers

This map is based on mapping on a 10 acre minimum area for Farmland of Statewide Importance and a 10 acre minimum for all other categories.

1 dot represents 10 acres.



Total County Area - 2,612,874 acres
Mapped Area - 1,324,913 acres

Important Farmland Maps are compiled by the Farmland Mapping and Monitoring Program (FMMP) pursuant to Section 65570 of the California Government Code. To create the maps, FMMP combines current land use information with NRCS digital soil resource data. Farmland categories are based on the land's capability to sustain the long-term production of qualifying for Prime Farmland and Farmland of Statewide Importance are determined by the NRCS. Changes to soil profiles subsequent to publication of NRCS soil surveys are not reflected in this map. This map was developed using NRCS digital soil data (SSURGO) and may contain individual soil units as small as one acre.

Land use status is determined using current and historical aerial imagery, supplemental GIS data, and field verification. Imagery sources may include public domain datasets, web-based information, and commercially purchased data, depending on data availability. Supplemental data on land management status is obtained from federal, state, and local governments. Map reviewers at the local level contribute valuable information with their comments and suggestions. Please refer to FMMP field analyst reports for each county to obtain specific citations.

Cultural base information for the Important Farmland Maps was derived from public domain data sets, based upon design of the U.S. Geological Survey, with updates generated by digitizing over current imagery.

This map should be used within the limits of its purpose - as a current inventory of agricultural land resources and as a tool for local planning purposes. Farmland designations may be subject to change due to soil or land use conditions, or other factors which may be taken into consideration when land use policies are determined. This map is not designed for parcel-specific planning purposes due to its scale and the ten-acre minimum land use mapping unit. Classification of Important Farmland and urban areas on this map is based on best available data. The information has been delineated as accurately as possible at 1:24,000 scale, but no claim to meet 1:24,000 National Map Accuracy Standards is made due to variations in the quality of source data.

The Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Additional data is available at www.conservation.ca.gov/dlrp/fmmp, including detail on the program, full size PDF maps, map categories, statistics, field summaries, and GIS data for download. Contact the:

Farmland Mapping and Monitoring Program
801 K Street, MS 18-01
Sacramento, CA 95814
Phone: (916) 324-0859
e-mail: fmmp@conservation.ca.gov

© California Department of Conservation, Division of Land Resource Protection, 2011.

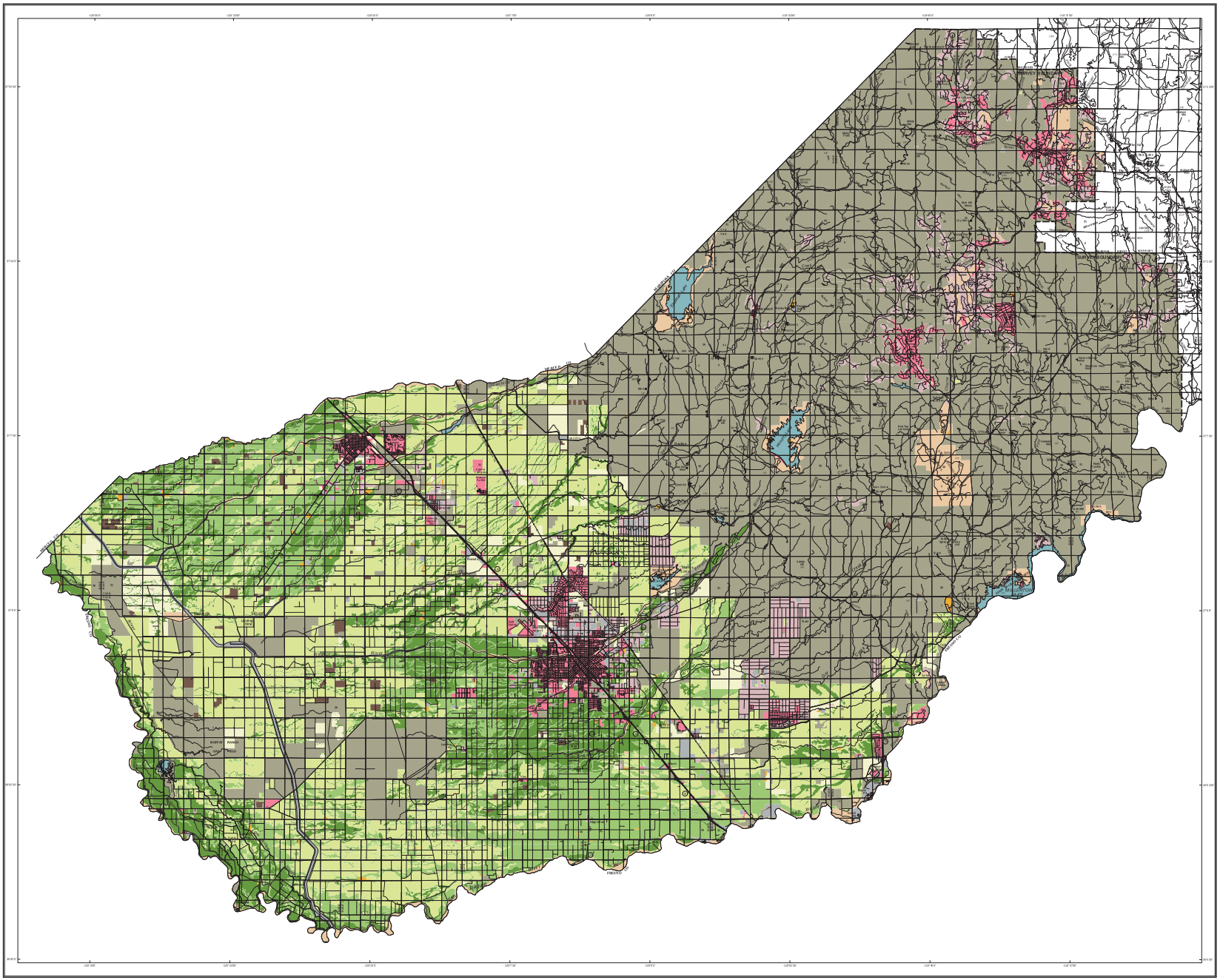
Map published September 2011.

STATE OF CALIFORNIA
Arnold Schwarzenegger, Governor
THE NATURAL RESOURCES AGENCY
Mike Chrisman, Secretary
DEPARTMENT OF CONSERVATION
Bridget Luther, Director

RURAL LAND MAPPING EDITION

MADERA COUNTY IMPORTANT FARMLAND 2008

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM



PRIME FARMLAND - 97,490 acres

PRIME FARMLAND HAS THE BEST COMBINATION OF PHYSICAL AND CHEMICAL FEATURES ABLE TO SUSTAIN LONG-TERM AGRICULTURAL PRODUCTION. THIS LAND HAS THE SOIL QUALITY, GROWING SEASON, AND MOISTURE SUPPLY NEEDED TO PRODUCE SUSTAINED HIGH YIELDS. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF STATEWIDE IMPORTANCE - 85,136 acres

FARMLAND OF STATEWIDE IMPORTANCE IS SIMILAR TO PRIME FARMLAND BUT WITH MINOR SHORTCOMINGS, SUCH AS GREATER SLOPES OR LESS ABILITY TO STORE SOIL MOISTURE. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

UNIQUE FARMLAND - 163,974 acres

UNIQUE FARMLAND CONSISTS OF LESSER QUALITY SOILS USED FOR THE PRODUCTION OF THE STATE'S LEADING AGRICULTURAL CROPS. THIS LAND IS USUALLY IRRIGATED, BUT MAY INCLUDE NONIRRIGATED ORCHARDS OR VINEYARDS AS FOUND IN SOME CLIMATIC ZONES IN CALIFORNIA. LAND MUST HAVE BEEN CROPPED AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF LOCAL IMPORTANCE - 16,142 acres

LANDS THAT ARE PRESENTLY UNDER CULTIVATION FOR SMALL GRAIN CROPS, BUT ARE NOT IRRIGATED. ALSO LANDS THAT ARE CURRENTLY IRRIGATED PASTURE, BUT HAVE THE POTENTIAL TO BE CULTIVATED FOR ROW FIELD CROP USE.

GRAZING LAND - 399,500 acres

GRAZING LAND IS LAND ON WHICH THE EXISTING VEGETATION IS SUITED TO THE GRAZING OF LIVESTOCK.

CONFINED ANIMAL AGRICULTURE - 4,073 acres

CONFINED ANIMAL AGRICULTURAL LANDS INCLUDE POULTRY FACILITIES, FEEDLOTS, DAIRY FACILITIES, AND FISH FARMS. IN SOME COUNTIES, CONFINED ANIMAL AGRICULTURE IS A COMPONENT OF THE FARMLAND OF LOCAL IMPORTANCE CATEGORY.

NONAGRICULTURAL AND NATURAL VEGETATION - 20,991 acres

NONAGRICULTURAL AND NATURAL VEGETATION INCLUDES HEAVILY WOODED, ROCKY OR BARREN AREAS, RIPARIAN AND WETLAND AREAS, GRASSLAND AREAS WHICH DO NOT QUALIFY FOR GRAZING LAND DUE TO THEIR SIZE OR LAND MANAGEMENT RESTRICTIONS, SMALL WATER BODIES AND RECREATIONAL WATER SKI LAKES. CONSTRUCTED WETLANDS ARE ALSO INCLUDED IN THIS CATEGORY.

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND - 1,821 acres

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND INCLUDES FARMSTEADS, AGRICULTURAL STORAGE AND PACKING SHEDS, UNPAVED PARKING AREAS, COMPOSTING FACILITIES, EQUINE FACILITIES, FIREWOOD LOTS, AND CAMPGROUNDS.

VACANT OR DISTURBED LAND - 10,471 acres

VACANT OR DISTURBED LAND INCLUDES OPEN FIELD AREAS THAT DO NOT QUALIFY FOR AN AGRICULTURAL CATEGORY, MINERAL AND OIL EXTRACTION AREAS, OFF ROAD VEHICLE AREAS, ELECTRICAL SUBSTATIONS, CHANNELIZED CANALS, AND RURAL FREEWAY INTERCHANGES.

RURAL RESIDENTIAL LAND - 28,381 acres

RURAL RESIDENTIAL LAND INCLUDES RESIDENTIAL AREAS OF ONE TO FIVE STRUCTURES PER TEN ACRES.

URBAN AND BUILT-UP LAND - 27,011 acres

URBAN AND BUILT-UP LAND IS OCCUPIED BY STRUCTURES WITH A BUILDING DENSITY OF AT LEAST 1 UNIT TO 1.5 ACRES, OR APPROXIMATELY 6 STRUCTURES TO A 10 ACRE PARCEL. COMMON EXAMPLES INCLUDE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, INSTITUTIONAL FACILITIES, CEMETERIES, AIRPORTS, GOLF COURSES, SANITARY LANDFILLS, SEWAGE TREATMENT, AND WATER CONTROL STRUCTURES.

WATER - 6,055 acres

PERENNIAL WATER BODIES WITH AN EXTENT OF AT LEAST 40 ACRES.

SCALE: 1:100,000
1 cm = 1 kilometer (1 inch = 1.58 miles)

Kilometers
Miles

This map is one unit (and a cut image) in a 1:10 scale, 7.5 minute quadrangle map series with a minimum mapping unit of 10 acres.

1 square inch = 640 acres.

Total County Area - 1,377,535 acres
Mapped Area - 660,245 acres

Important Farmland Maps are compiled by the Farmland Mapping and Monitoring Program (FMMP) pursuant to Section 65570 of the California Government Code. To create the maps, FMMP combines current land use information with U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS) soil survey data. Soil units qualifying for Prime Farmland and Farmland of Statewide Importance are determined by the NRCS. Changes to soil profiles subsequent to publication of NRCS soil surveys are not reflected on this map. This map was developed using NRCS digital soil data (SSURGO) and may contain individual soil units as small as one acre.

Land use status is determined using current and historic aerial imagery, supplemental GIS data, and field verification. Imagery sources may include public domain datasets, web-based information, and commercially purchased data, depending on data availability. Supplemental data on land management status is obtained from federal, state, and local governments. Map reviewers at the local level contribute valuable information with their comments and suggestions. Please refer to FMMP field analyst reports for each county to obtain specific citations.

Cultural base information for the Important Farmland Maps was derived from public domain data sets, based upon design of the U.S. Geological Survey, with updates generated by digitizing over current imagery.

This map should be used within the limits of its purpose - as a current inventory of agricultural land resources. This map does not necessarily reflect general plan or zoning designations, city/limit lines, changing economic or market conditions, or other factors which may be taken into consideration when land use policies are determined. This map is not designed for parcel-specific planning purposes due to its scale and the ten-acre minimum land use mapping unit. Information on this map is based on the best available data at the time of publication. The information has been delineated as accurately as possible at 1:24,000 scale, but makes no claim to meet 1:24,000 National Map Accuracy Standards due to variations in the quality of source data.

The Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Additional data is available at www.conservation.ca.gov/dlrp/fmmp, including detail on the program, full size PDF maps, map categories, statistics, field summaries, and GIS data for download. Contact the:

Farmland Mapping and Monitoring Program
801 K Street, MS 18-01
Sacramento, CA 95814
Phone: (916) 324-0859
e-mail: fmmp@conservation.ca.gov

© California Department of Conservation, Division of Land Resource Protection, 2009.

Map published October 2009.

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

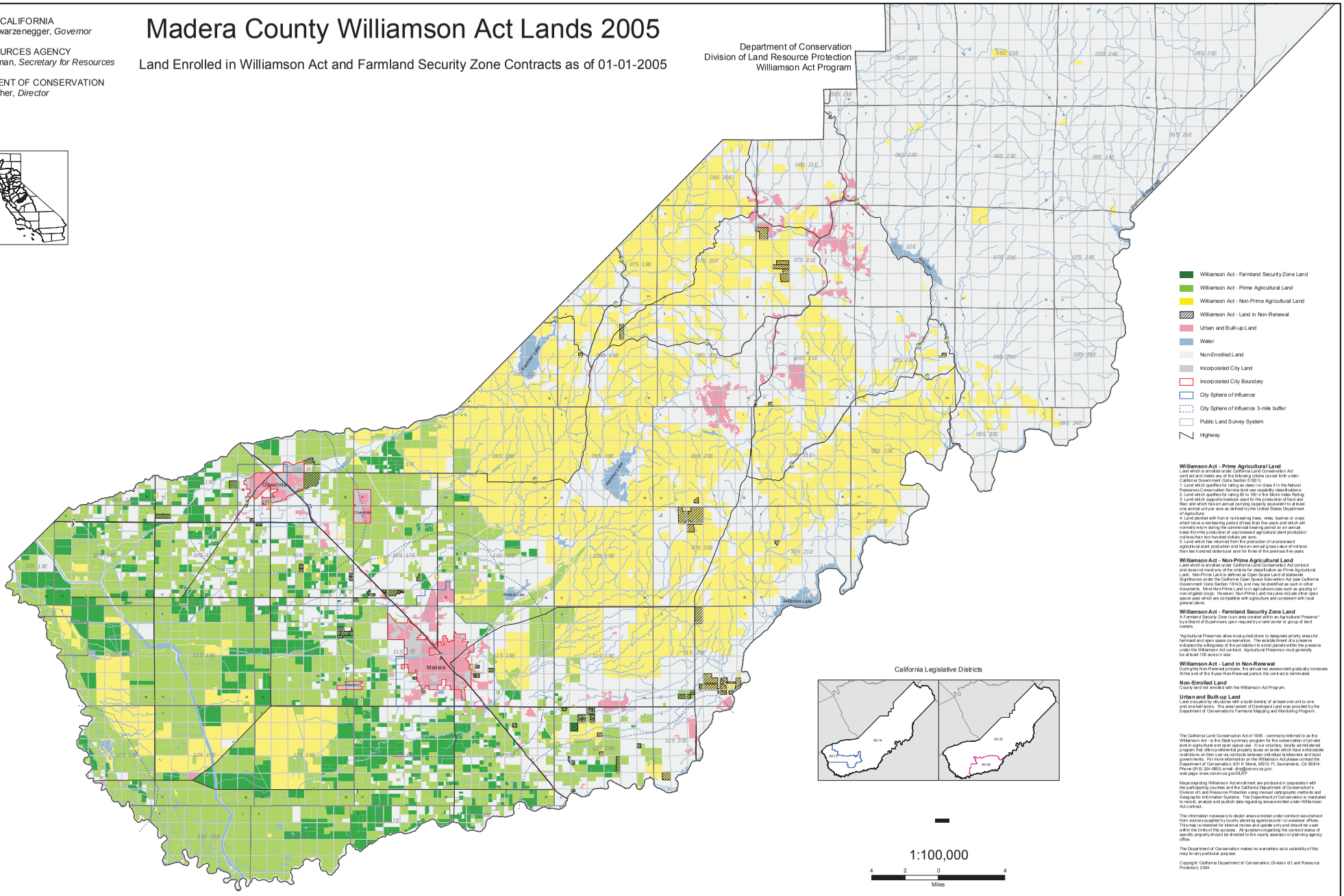
THE RESOURCES AGENCY
Mike Chrisman, *Secretary for Resources*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Madera County Williamson Act Lands 2005

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2005

Department of Conservation
Division of Land Resource Protection
Williamson Act Program



Williamson Act - Farmland Security Zone Land
Williamson Act - Prime Agricultural Land
Williamson Act - Non-Prime Agricultural Land
Williamson Act - Land in Non-Renewal
Urban and Built-up Land
Water
Non-Enrolled Land
Incorporated City Land
Incorporated City Boundary
City Sphere of Influence
City Sphere of Influence 3-mile buffer
Public Land Survey System
Highway

Williamson Act - Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
1. Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2. Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4. Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a non-bearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5. Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act - Farmland Security Zone Land
A Farmland Security Zone is an area created within an Agricultural Preserve* by a Board of Supervisors upon request by a land owner or group of land owners.

*Agricultural Preserves allow local jurisdictions to designate priority areas for farmland and open space conservation. The establishment of a preserve indicates the willingness of the jurisdiction to enroll parcels within the preserve under the Williamson Act contract. Agricultural Preserves must generally be at least 100 acres in size.

Williamson Act - Land in Non-Renewal
During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Non-Enrolled Land
County land not enrolled with the Williamson Act Program.

Urban and Built-up Land
Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the Department of Conservation, 801 K Street, MS13-71, Sacramento, CA 95814. Phone (916) 324-0850, e-mail dlrp@conservca.gov.
web page: www.consrv.ca.gov/DLRP

Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contract.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and / or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

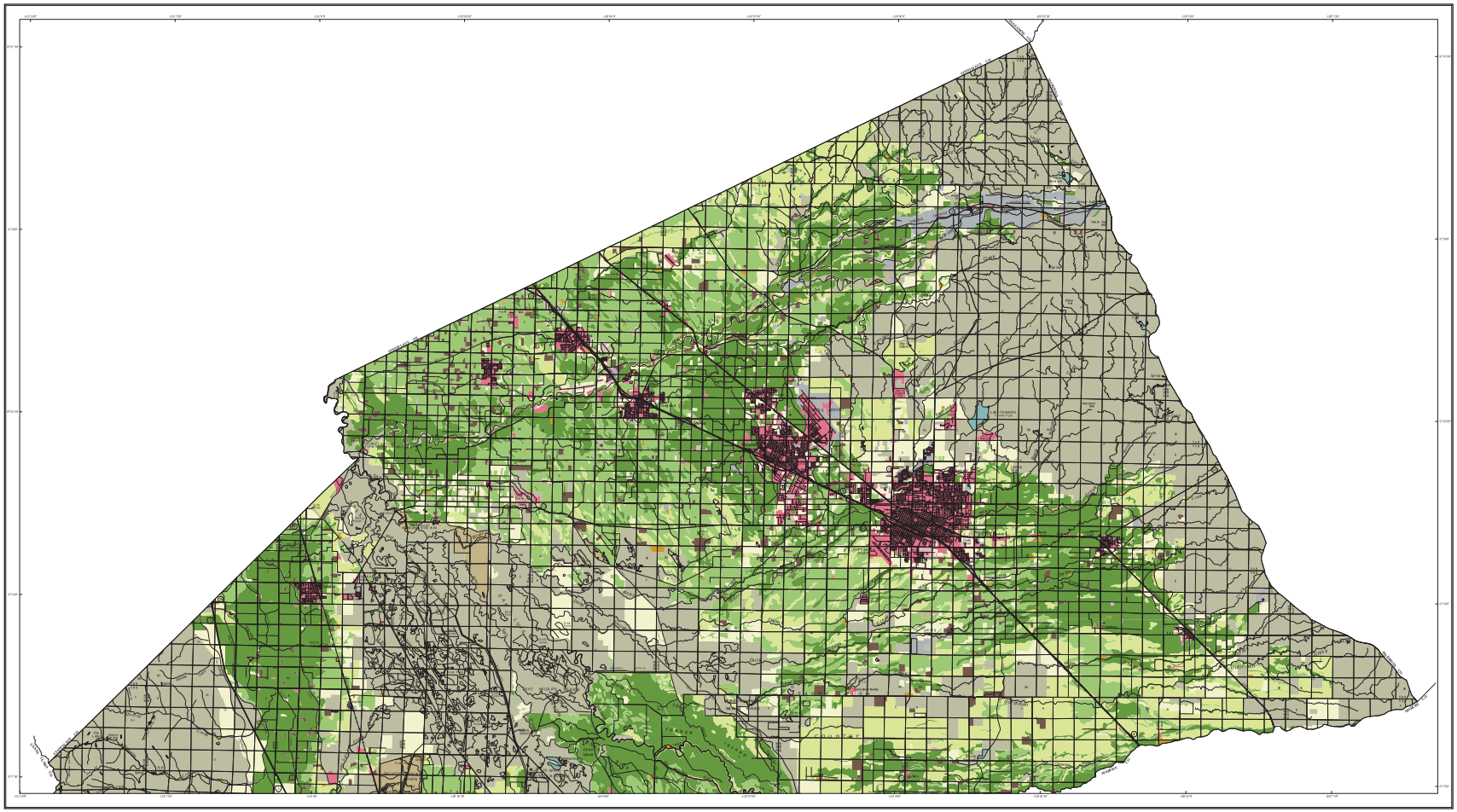
Copyright: California Department of Conservation, Division of Land Resource Protection, 2004.

Printed on 12-14-2004
copies available, contact dlrp@conservation.ca.gov

STATE OF CALIFORNIA
Arnold Schwarzenegger, Governor
THE NATURAL RESOURCES AGENCY
Mike Chrisman, Secretary
DEPARTMENT OF CONSERVATION
Bridgett Luther, Director

RURAL LAND MAPPING EDITION
MERCED COUNTY IMPORTANT FARMLAND 2008
SHEET 1 OF 2

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM


Merced
Atwater
Livingston
Delhi
Cressey
Winton
Hilmar
Ballico
Stevinson
Arboleda
Santa Fe
Cortina
Gustine
Dos Palos
Volta
Merced Falls
Lake Yosemite
Merced Irrigation District
Merced Irrigation District
Merced Irrigation District

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

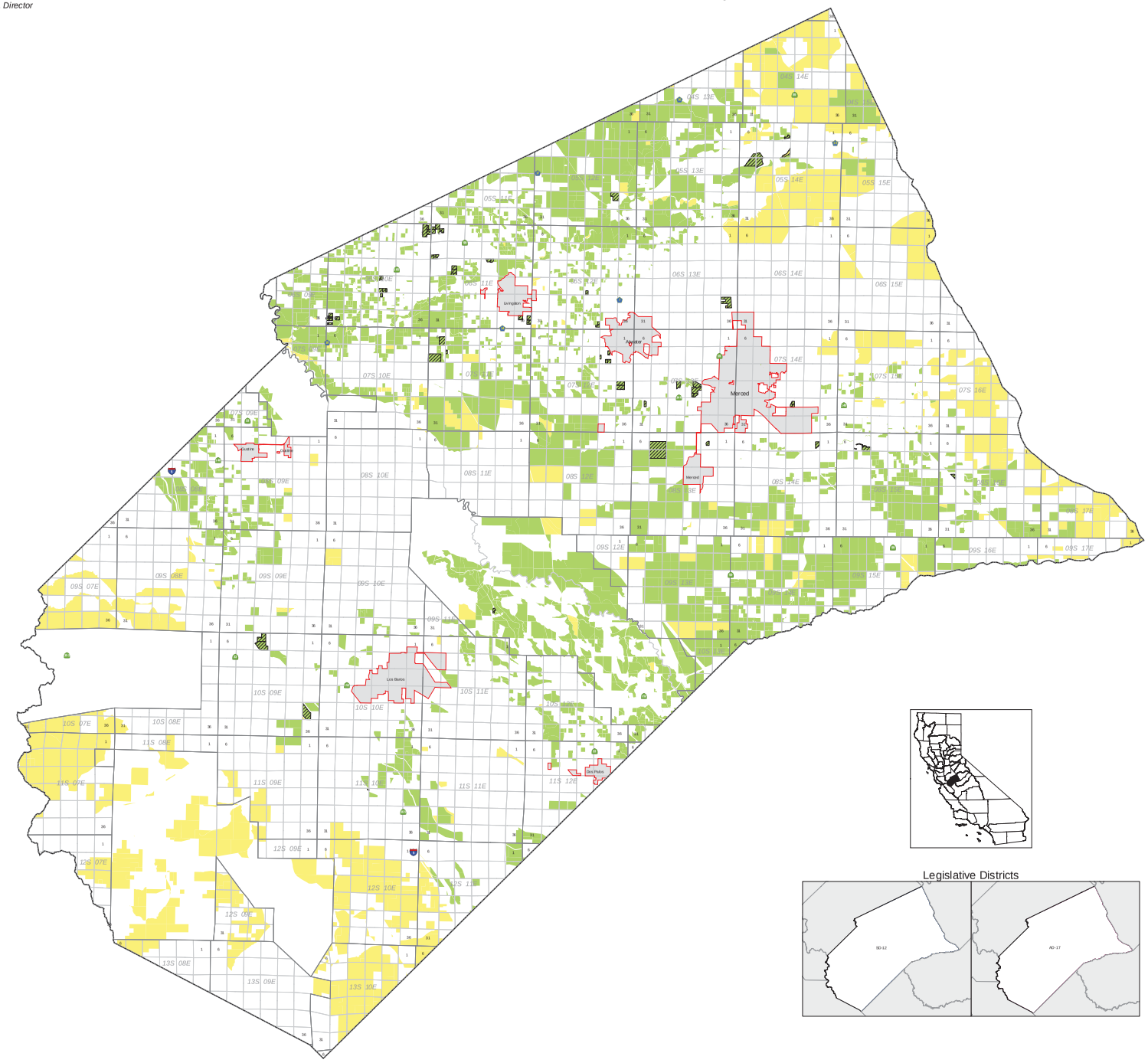
THE RESOURCES AGENCY
Lester A. Snow, *Secretary for Resources*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Merced County Williamson Act Lands 2007

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2007

Department of Conservation
Division of Land Resource Protection
Williamson Act Program



Williamson Act - Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
1. Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2. Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4. Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a non-bearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5. Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16141), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act - Land in Non-Renewal

During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Non-Enrolled Land

County land not enrolled with the Williamson Act Program.

Urban and Built-up Land

Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the **Department of Conservation, 801 K Street, MS18-01, Sacramento, CA 95814. Phone (916) 324-0850; email: dlrp@conservation.ca.gov; web page: www.consrv.ca.gov/DLRP**

Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contract.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and / or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

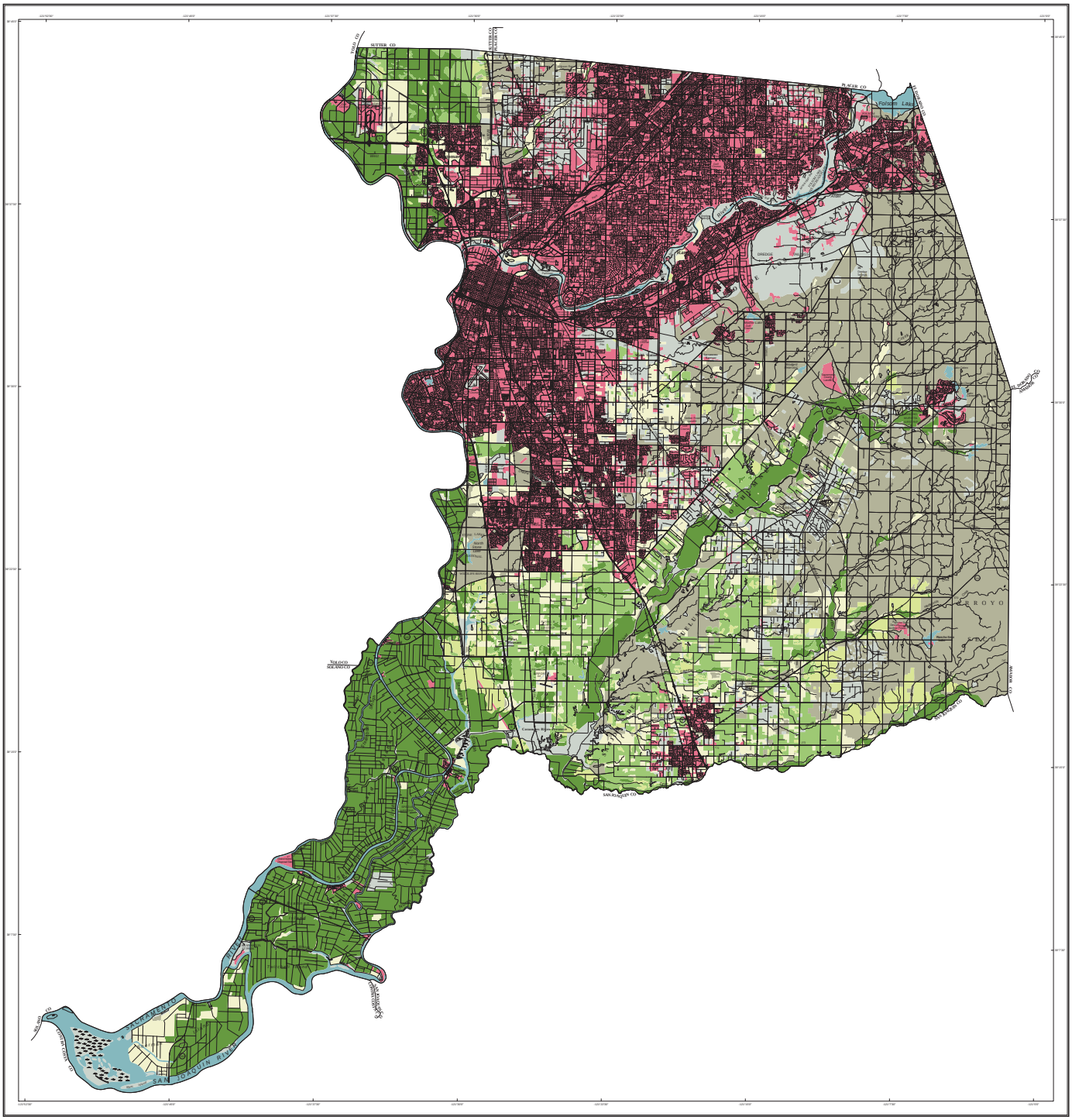
Copyright: California Department of Conservation, Division of Land Resource Protection, 2006.

Printed on 03-29-2010
Copies available, contact dlrp@conservation.ca.gov

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*
THE NATURAL RESOURCES AGENCY
Lester A. Snow, *Secretary*
DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

SACRAMENTO COUNTY IMPORTANT FARMLAND 2008

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM


SUTTER CO
YOLO CO
PLACER CO
EL DORADO CO
AMADOR CO
STANISLAUS CO
SAN JOAQUIN CO
Folsom Lake
DREDGE
Elk Grove
Galt
Isleton
Walnut Grove
Courtesy Island
Bacon Island
Bacon Island Res
Clifton Court Forebay
Tracy
Lathrop
Manteca
Ripon
Stockton
Lodi
Acampo
Woodbridge
Thornton
Terminous
Hood
Clarksburg
Freeport
Sacramento
Rancho Murieta
Elverta
Antelope
Roseville
Rio Linda
Orangevale
Fair Oaks
Carmichael
Citrus Heights
Gold River
Rancho Cordova
Elk Grove
Florin
Vineyard
Laguna
Mather
Mather Field
Sheldon
Wilton
Herald
Galvin
Plymouth
Shenandoah Valley
Pine Grove
Volcano
Pioneer
Ione
Buena Vista
Camanche Res
Camanche Reservoir
Clements
Lockeford
Elliott Res
Elliott Reservoir
Woodbridge
Hutchins Res
Hutchins Reservoir
Terminous
Tyler Island
Andrus Island
Brannan Island
Sherman Island
Twitchell Island
Jones Res
Jones Reservoir
Bethel Island
Franks Tract
Rio Vista

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

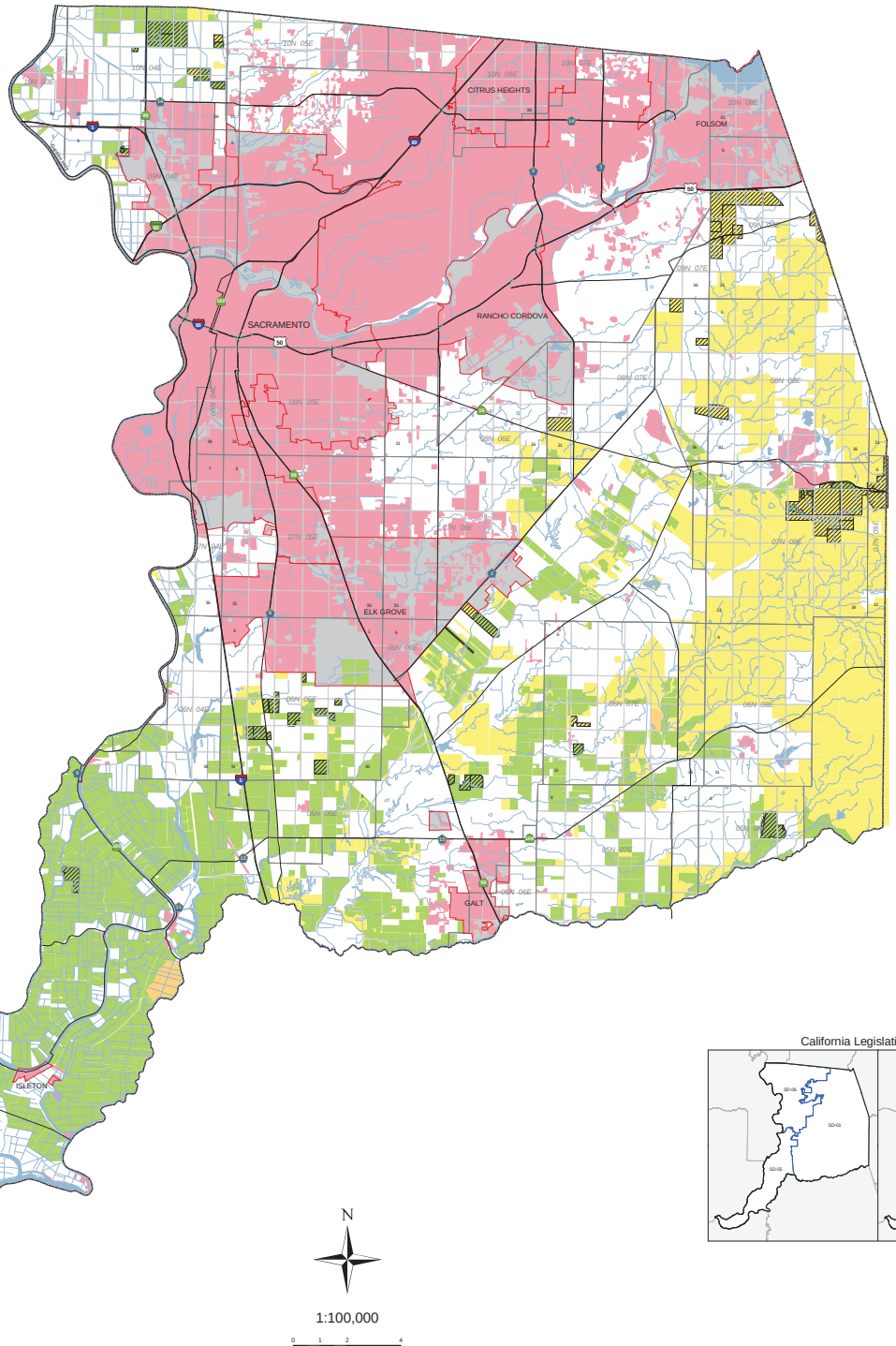
THE RESOURCES AGENCY
Mike Chrisman, *Secretary for Resources*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Sacramento County Williamson Act Lands 2009

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2009

Department of Conservation
Division of Land Resource Protection
Williamson Act Program



- **Williamson Act - Prime Agricultural Land**
- **Williamson Act - Non-Prime Agricultural Land**
- **Wiiliamson Act - Mixed Agricultural Land**
- **Williamson Act - Agricultural Land in Non-Renewal**
- **Water**
- **Built-up Land**
- **Incorporated City Boundaries**
- **Public Land Survey System Grid**
- **Highway**

Williamson Act - Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
1: Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2: Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3: Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4: Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5: Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act – Mixed Enrolled Agricultural Land

Mixed Acreage parcels contain Prime, Non-Prime, Open Space Easement or other contracted or enrolled land and are not yet spatially defined.

Williamson Act - Land in Non-Renewal

During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Non-Enrolled Land

County land not enrolled with the Williamson Act Program.

Urban and Built-up Land

Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the **Department of Conservation, 801 K Street, MS13-71, Sacramento, CA 95814. Phone (916) 324-0850; email: dlrp@conservation.ca.gov; web page: www.consrv.ca.gov/DLRP**

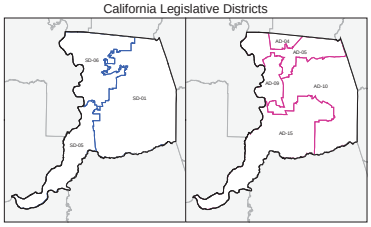
Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contract.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and / or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

Copyright: California Department of Conservation, Division of Land Resource Protection, 2006.

California Legislative Districts



Printed on 11-02-2009
copies available, contact dlrp@conservation.ca.gov

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

THE RESOURCES AGENCY
Mike Chrisman, *Secretary for Resources*

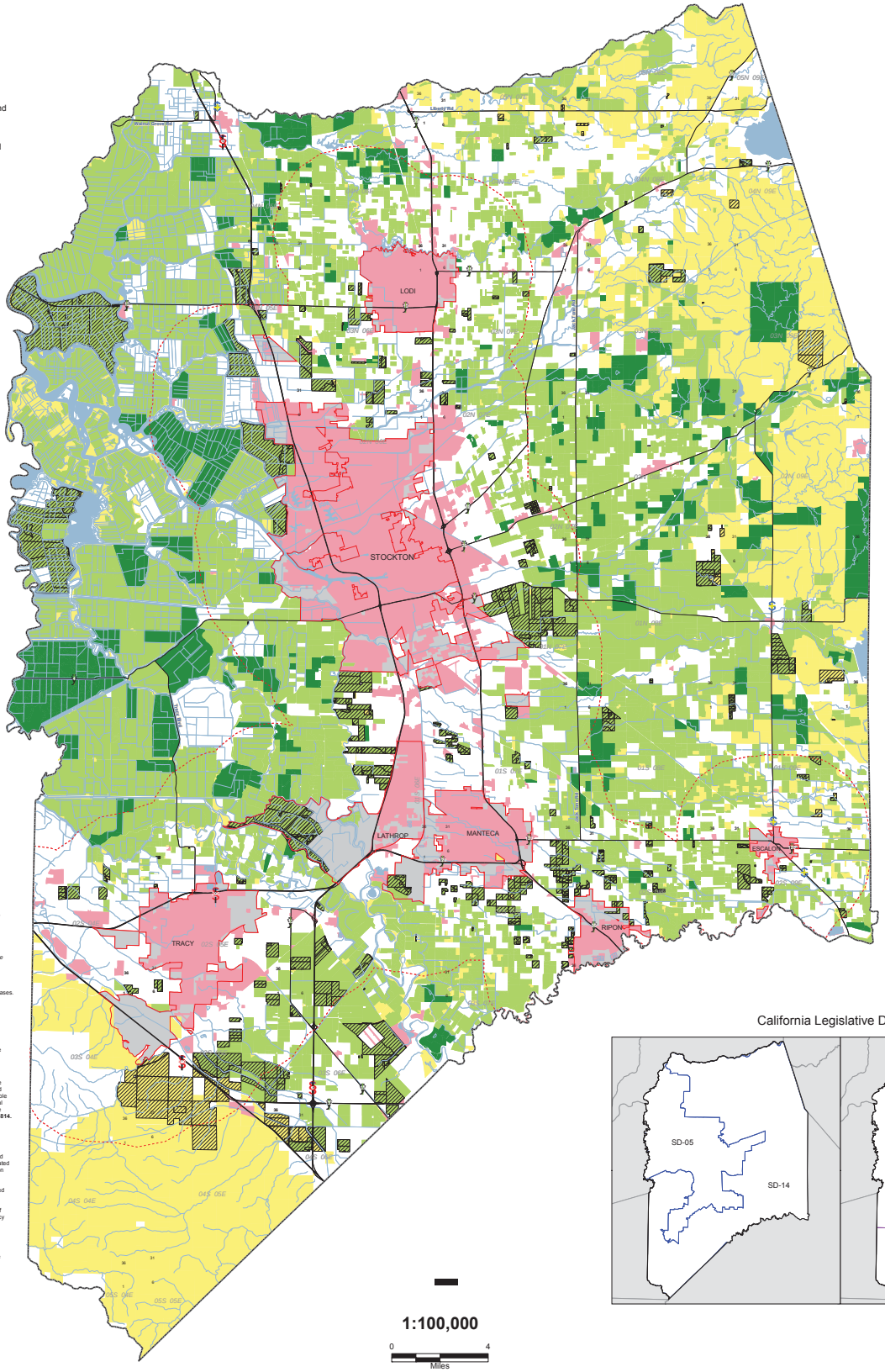
DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

San Joaquin County Williamson Act Lands 2007

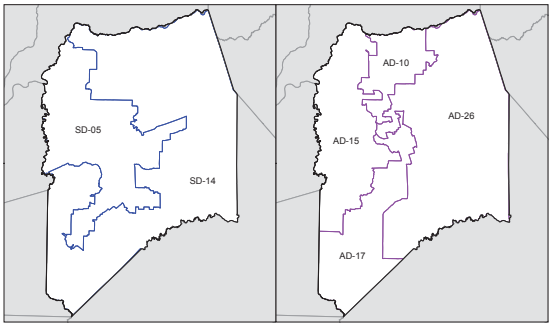
Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2007

Department of Conservation
Division of Land Resource Protection
Williamson Act Program

- Williamson Act - Farmland Security Zone Land
- Williamson Act - Prime Agricultural Land
- Williamson Act - Non-Prime Agricultural Land
- Land in Non-Renewal
- Non-Enrolled Land
- Built-up Land
- Incorporated City Land
- Water
- Incorporated City Boundary
- City Sphere of Influence 3 mile buffer
- Public Land Survey System
- Highways



California Legislative Districts



1:100,000

0 4
Miles

Williamson Act - Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
1: Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2: Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3: Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4: Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5: Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act - Farmland Security Zone Land
A Farmland Security Zone is an area created within an Agricultural Preserve* by a Board of Supervisors upon request by a land owner or group of land owners.

**Agricultural Preserves allow local jurisdictions to designate priority areas for farmland and open space conservation. The establishment of a preserve indicates the willingness of the jurisdiction to enroll parcels within the preserve under the Williamson Act contract. Agricultural Preserves must generally be at least 100 acres in size.*

Williamson Act - Land in Non-Renewal
During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Non-Enrolled Land
County land not enrolled with the Williamson Act Program.

Urban and Built-up Land
Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the **Department of Conservation, 801 K Street, MS18-01, Sacramento, CA 95814. Phone (916) 324-0850; email: dlrp@conservation.ca.gov; web page: www.consrv.ca.gov/DLRP**

Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contract.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and / or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

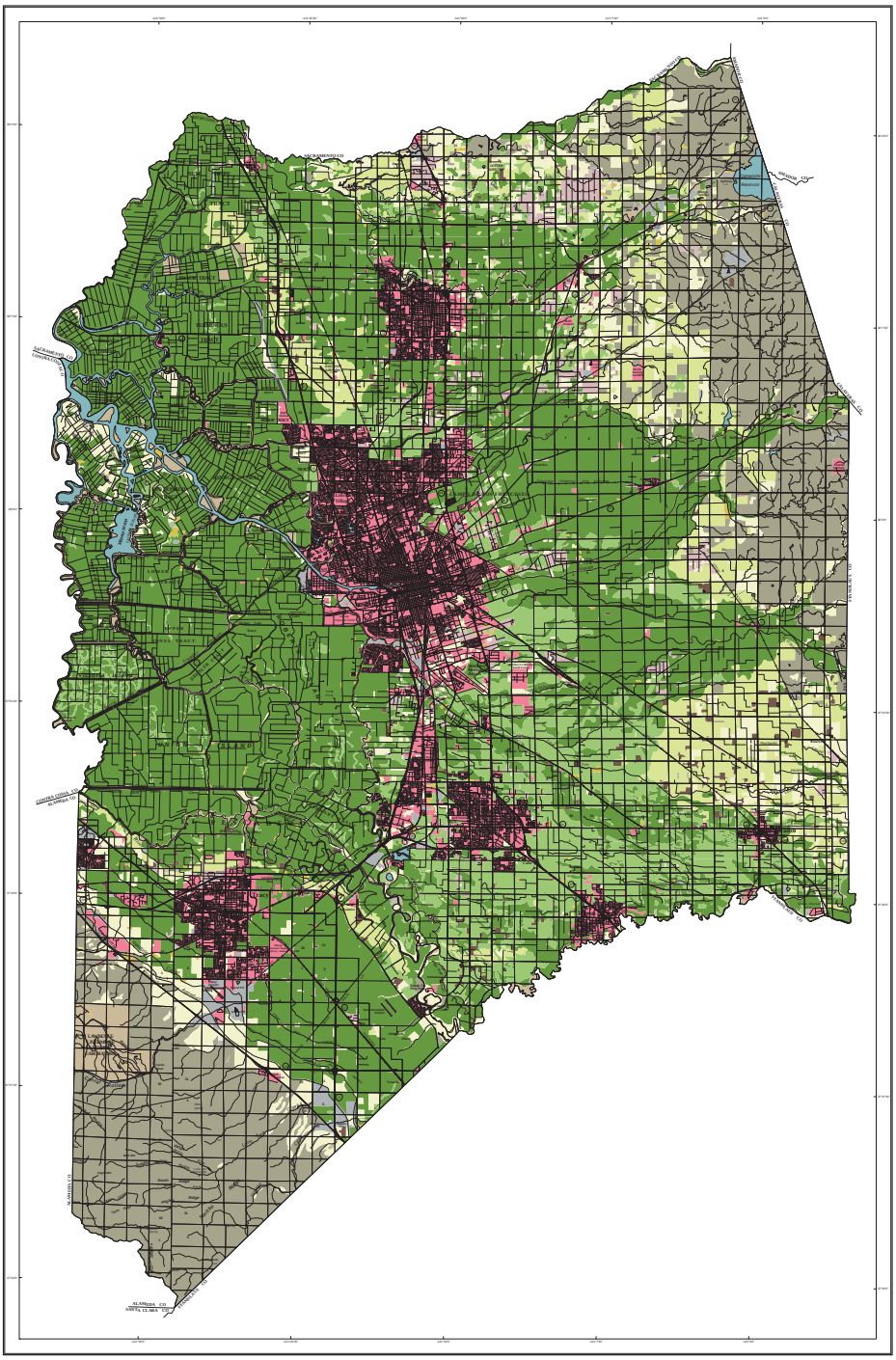
Copyright: California Department of Conservation, Division of Land Resource Protection, 2006.

Printed on 10-15-2008
Copies available, contact dlrp@conservation.ca.gov

STATE OF CALIFORNIA
Arnold Schwarzenegger, Governor
NATURAL RESOURCES AGENCY
Lester A. Snow, Secretary
DEPARTMENT OF CONSERVATION
Bridget Luther, Director

RURAL LAND MAPPING EDITION
SAN JOAQUIN COUNTY IMPORTANT FARMLAND 2008

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM


SACRAMENTO CO
YOLO CO
SOLANO CO
CONTRA COSTA CO
STANISLAUS CO
ALAMEDA CO
SANTA CLARA CO
Mokelumne River
Stockton
Lodi
Manteca
Tracy
Ripon
Escalon
Lathrop
Mountain House
Banta
Vernalis
Tracy Hills
Delta Mendota Canal
Stockton Diverting Canal
Calaveras River
Mormon Slough
Bellota
Farmington
Waterloo
Peters
Linden
Clements
Lockeford
Acampo
Woodbridge
Thornton
Walnut Grove
Hood
Courtland
Isleton
Terminous
Bacon Island
Bethel Island
Jones
Tracy Blvd
Mossdale
Lathrop Rd
Louise Ave
Eight Mile Rd
Hwy 4
Hwy 12
Hwy 88
Hwy 99
Hwy 5
Hwy 205
Hwy 580
Hwy 120
Hwy 132
Hwy 152
Hwy 33
Hwy 160
Hwy 12
Hwy 84
Hwy 220
Hwy 113
Hwy 16
Hwy 104
Hwy 26
Hwy 49
Hwy 124
Hwy 108
Hwy 12

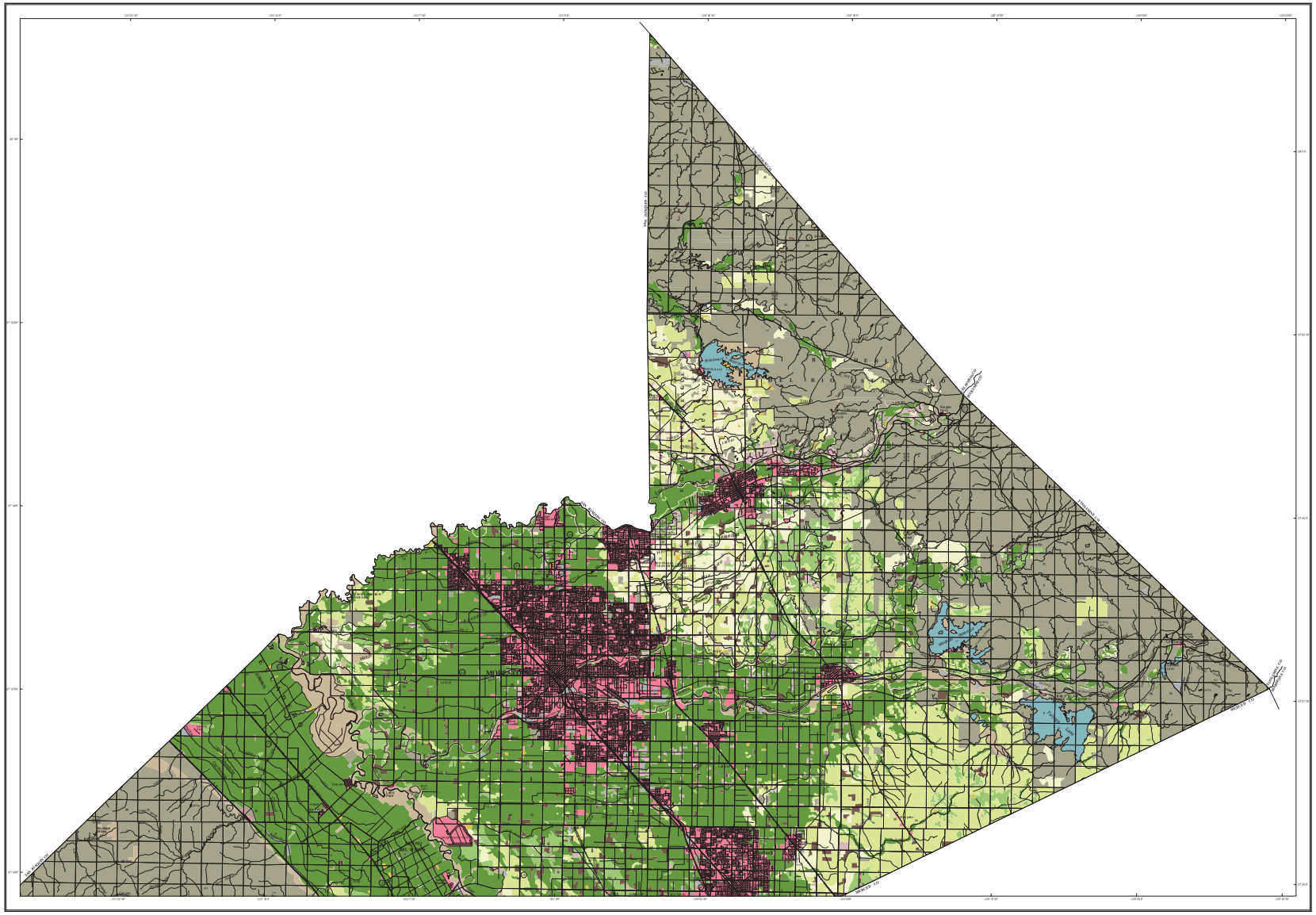
STATE OF CALIFORNIA
Arnold Schwarzenegger, Governor
THE NATURAL RESOURCES AGENCY
Lester A. Snow, Secretary
DEPARTMENT OF CONSERVATION
Bridget Luther, Director

RURAL LAND MAPPING EDITION

STANISLAUS COUNTY IMPORTANT FARMLAND 2008

SHEET 1 OF 2

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM


MODESTO
CERES
SALIDA
OAKDALE
RIVERBANK
HUGHSON
NEWMAN
GUSTINE
LOS BANOS
DENAIR
ELDERWOOD
Modesto Reservoir
Turlock Lake
Lake Yosemite
Merced Irrigation Dist.
Stanislaus Co.
Merced Co.
Tuolumne Co.
Mariposa Co.
Fresno Co.
Santa Clara Co.
Santa Cruz Co.
Alameda Co.
Contra Costa Co.
San Joaquin Co.
Sta. Nella Co.
Merced

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

THE RESOURCES AGENCY
Mike Chrisman, *Secretary for Resources*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Stanislaus County Williamson Act Lands 2006

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2006

Department of Conservation
Division of Land Resource Protection
Williamson Act Program

- **Williamson Act - Prime Agricultural Land**
- **Williamson Act - Non-Prime Agricultural Land**
- **Williamson Act - Agricultural Land in Non-Renewal**
- **Non-Enrolled Land**
- **Urban and Built-up**
- **Incorporated City Land**
- **Water**
- **Incorporated City Boundaries**
- **Public Land Survey System**
- **Highways**

Williamson Act - Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
1: Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2: Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3: Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4: Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5: Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act - Land in Non-Renewal

During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Non-Enrolled Land

County land not enrolled with the Williamson Act Program.

Urban and Built-up Land

Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

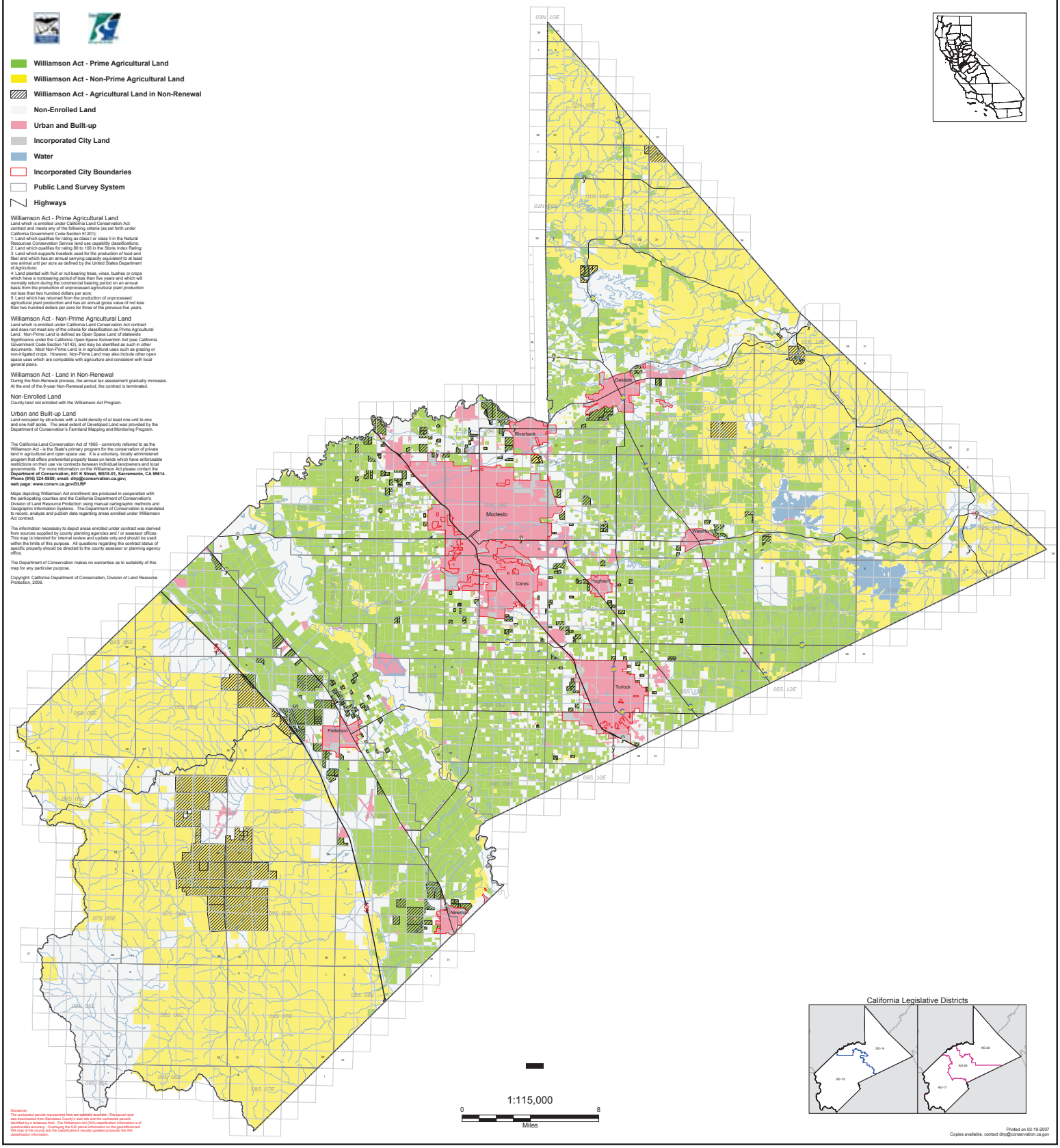
The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the **Department of Conservation, 801 K Street, MS18-01, Sacramento, CA 95814. Phone (916) 324-0850; email: dlrp@conservation.ca.gov; web page: www.consrv.ca.gov/DLRP**

Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contract.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and / or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

Copyright: California Department of Conservation, Division of Land Resource Protection, 2006.



1:115,000

0 8
Miles

California Legislative Districts

Disclaimer:
The contracted parcels represented here are spatially accurate—The parcel layer accurately represents the location of the land. The Williamson Act status is identified by a database field. The Williamson Act (WA) classification information is of questionable accuracy. Overlaying the GIS parcel information on the georeferenced WA map of the county and the classifications visually updated produced the WA classification information.

Printed on 03-19-2007
Copies available, contact dlrp@conservation.ca.gov

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*

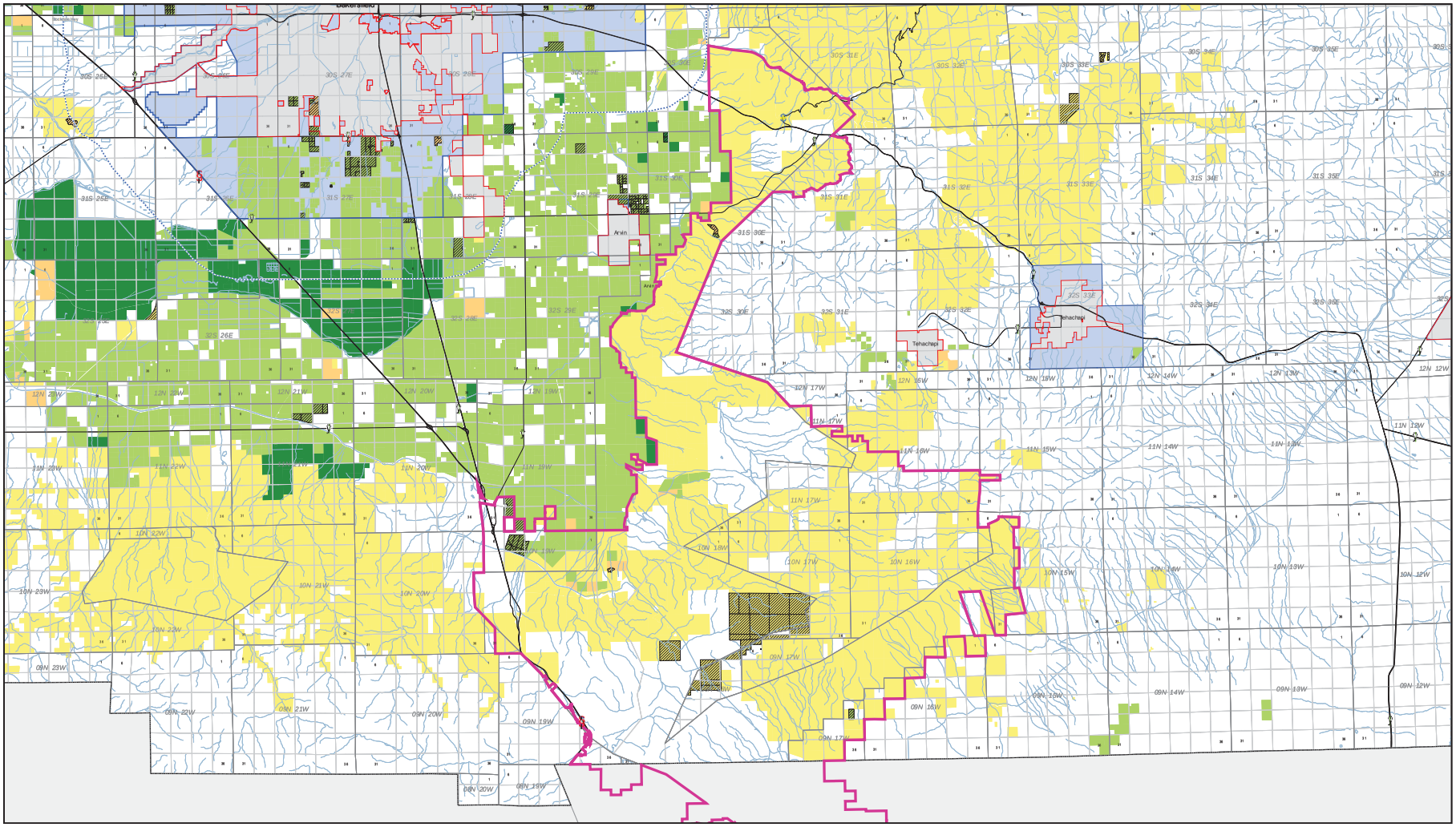
THE RESOURCES AGENCY
Mike Chrisman, *Secretary for Resources*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Kern County Williamson Act Lands 2007

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2007

Department of Conservation
Division of Land Resource Protection
Williamson Act Program



Williamson Act - Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):
1: Land which qualifies for arising as class I or class II in the Natural Resources Conservation Service land capability classifications.
2: Land which qualifies for rating 80 to 100 in the Storie Index Rating.
3: Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture.
4: Land planted with fruit or nut bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre.
5: Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land

Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of Statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other counties. Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land is also suitable other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act - Farmland Security Zone Land

A Farmland Security Zone is an area created within an Agricultural Preserve* by a Board of Supervisors upon request by a land owner or group of land owners.

*Agricultural Preserves allow local jurisdictions to designate priority areas for farmland and open space conservation. The establishment of a preserve indicates the willingness of the jurisdiction to enroll parcels within the preserve under the Williamson Act contract. Agricultural Preserves must generally be at least 100 acres in size.

Williamson Act - Mixed Enrolled Agricultural Land

Mixed Acreage parcels contain Prime, Non-Prime, Open Space Easement or other contracted or enrolled land and are not yet specifically defined.

Williamson Act - Land in Non-Renewal

During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Non-Enrolled Land

County land not enrolled with the Williamson Act Program.

Urban and Built-up Land

Land occupied by structures with a built density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private lands in agricultural and open space use. It is a voluntary land preservation program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the **Department of Conservation, 801 K Street, MS 18-01, Sacramento, CA 95814. Phone (916) 324-0850; email: dlrp@conservation.ca.gov; web page: www.conservation.ca.gov/DLRP**

Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contracts.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and (or) assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

Copyright California Department of Conservation, Division of Land Resource Protection 2007

Printed on 05-05-2008
copies available, contact dlrp@conservation.ca.gov

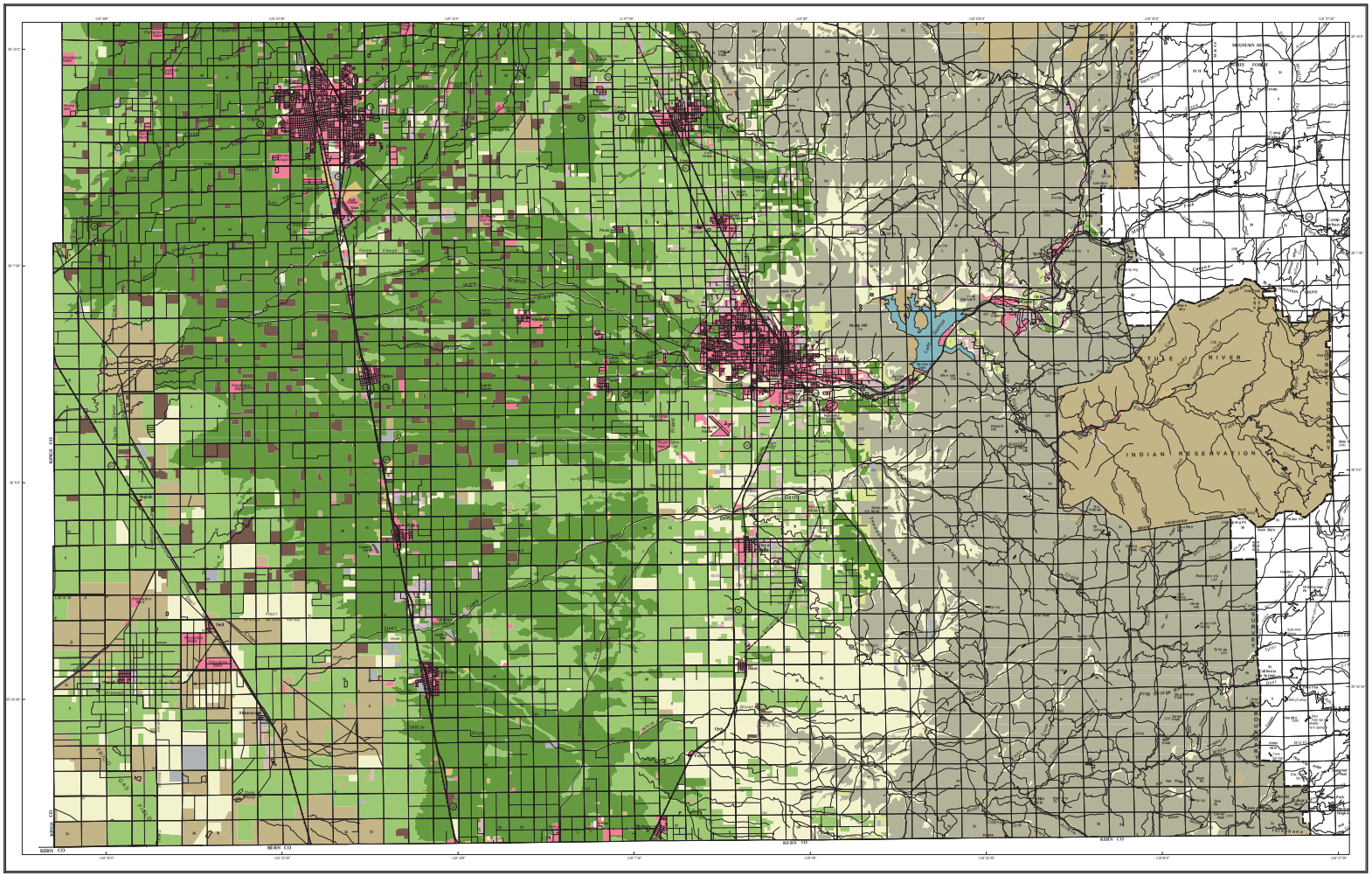
STATE OF CALIFORNIA
Arnold Schwarzenegger, *Governor*
THE NATURAL RESOURCES AGENCY
Mike Chrisman, *Secretary*
DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

RURAL LAND MAPPING EDITION

TULARE COUNTY IMPORTANT FARMLAND 2008

SHEET 2 OF 2

CALIFORNIA DEPARTMENT OF CONSERVATION
DIVISION OF LAND RESOURCE PROTECTION
FARMLAND MAPPING AND MONITORING PROGRAM



PRIME FARMLAND - 375,119 acres

PRIME FARMLAND HAS THE BEST COMBINATION OF PHYSICAL AND CHEMICAL FEATURES ABLE TO SUSTAIN LONG-TERM AGRICULTURAL PRODUCTION. THIS LAND HAS THE SOIL QUALITY, GROWING SEASON, AND MOISTURE SUPPLY NEEDED TO PRODUCE SUSTAINED HIGH YIELDS. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF STATEWIDE IMPORTANCE - 327,204 acres

FARMLAND OF STATEWIDE IMPORTANCE IS SIMILAR TO PRIME FARMLAND BUT WITH MINOR SHORTCOMINGS, SUCH AS GREATER SLOPES OR LESS ABILITY TO STORE SOIL MOISTURE. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

UNIQUE FARMLAND - 11,920 acres

UNIQUE FARMLAND CONSISTS OF LESSER QUALITY SOILS USED FOR THE PRODUCTION OF THE STATE'S LEADING AGRICULTURAL CROPS. THIS LAND IS USUALLY IRRIGATED, BUT MAY INCLUDE NONIRRIGATED ORCHARDS OR VINEYARDS AS FOUND IN SOME CLIMATIC ZONES IN CALIFORNIA. LAND MUST HAVE BEEN CROPPED AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF LOCAL IMPORTANCE - 126,977 acres

LANDS THAT PRODUCE DRY LAND GRAINS (BARLEY AND WHEAT); LANDS THAT HAVE PHYSICAL CHARACTERISTICS THAT WOULD QUALIFY FOR "PRIME" OR "STATEWIDE IMPORTANT" FARMLANDS EXCEPT FOR THE LACK OF IRRIGATION WATER; AND LANDS THAT CURRENTLY SUPPORT CONFINED LIVESTOCK, POULTRY, AND/OR AQUACULTURE OPERATIONS.

GRAZING LAND - 439,851 acres

GRAZING LAND IS LAND ON WHICH THE EXISTING VEGETATION IS SUITED TO THE GRAZING OF LIVESTOCK.

CONFINED ANIMAL AGRICULTURE - 23,218 acres

CONFINED ANIMAL AGRICULTURAL LANDS INCLUDE POULTRY FACILITIES, FEEDLOTS, DAIRY FACILITIES, AND FISH FARMS. IN SOME COUNTIES, CONFINED ANIMAL AGRICULTURE IS A COMPONENT OF THE FARMLAND OF LOCAL IMPORTANCE CATEGORY.

NONAGRICULTURAL AND NATURAL VEGETATION - 184,162 acres

NONAGRICULTURAL AND NATURAL VEGETATION INCLUDES HEAVILY WOODED, ROCKY OR BARREN AREAS, RIPARIAN AND WETLAND AREAS, GRASSLAND AREAS WHICH DO NOT QUALIFY FOR GRAZING LAND DUE TO THEIR SIZE OR LAND MANAGEMENT RESTRICTIONS, SMALL WATER BODIES AND RECREATIONAL WATER SKI LAKES. CONSTRUCTED WETLANDS ARE ALSO INCLUDED IN THIS CATEGORY.

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND - 5,602 acres

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND INCLUDES FARMSTEADS, AGRICULTURAL STORAGE AND PACKING SHEDS, UNPAVED PARKING AREAS, COMPOSTING FACILITIES, EQUINE FACILITIES, FIREWOOD LOTS, AND CAMPGROUNDS.

VACANT OR DISTURBED LAND - 9,537 acres

VACANT OR DISTURBED LAND INCLUDES OPEN FIELD AREAS THAT DO NOT QUALIFY FOR AN AGRICULTURAL CATEGORY. MINERAL AND OIL EXTRACTION AREAS, OFF ROAD VEHICLE AREAS, ELECTRICAL SUBSTATIONS, CHANNELIZED CANALS, AND RURAL FREEWAY INTERCHANGES.

RURAL RESIDENTIAL LAND - 19,674 acres

RURAL RESIDENTIAL LAND INCLUDES RESIDENTIAL AREAS OF ONE TO FIVE STRUCTURES PER TEN ACRES.

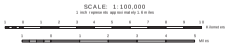
URBAN AND BUILT-UP LAND - 57,948 acres

URBAN AND BUILT-UP LAND IS OCCUPIED BY STRUCTURES WITH A BUILDING DENSITY OF AT LEAST 1 UNIT TO 1.5 ACRES, OR APPROXIMATELY 6 STRUCTURES TO A 10-ACRE PARCEL. COMMON EXAMPLES INCLUDE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, INSTITUTIONAL FACILITIES, CEMETERIES, AIRPORTS, GOLF COURSES, SANITARY LANDFILLS, SEWAGE TREATMENT, AND WATER CONTROL STRUCTURES.

WATER - 4,656 acres

PERENNIAL WATER BODIES WITH AN EXTENT OF AT LEAST 40 ACRES.

SCALE 1:100,000
1 inch represents approximately 1.58 miles



Total County Area - 1,696,276 acres
Mapped Area - 1,695,867 acres

Important Farmland Maps are compiled by the Farmland Mapping and Monitoring Program (FMMP) pursuant to Section 65570 of the California Government Code. To create the maps, FMMP combines current land use information with U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS) soil survey data. Soil units qualifying for Prime Farmland and Farmland of Statewide Importance are determined by the NRCS. Changes to soil profiles subsequent to publication of NRCS soil surveys are not reflected on this map. This map was developed using NRCS digital soil data (SSURGO) and may contain individual soil units as small as one acre.

Land use status is determined using current and historic aerial imagery, supplemental GIS data, and field verification. Imagery sources may include public domain datasets, web-based information, and commercially purchased data, depending on data availability. Supplemental data on land management status is obtained from federal, state, and local governments. Map reviewers at the local level contribute valuable information with their comments and suggestions. Please refer to FMMP field analyst reports for each county to obtain specific citations.

Cultural base information for the Important Farmland Maps was derived from public domain data sets, based upon design of the U.S. Geological Survey, with updates generated by digitizing over current imagery.

This map should be used within the limits of its purpose – as a current inventory of agricultural land resources. This map does not necessarily reflect general plan or zoning designations, city limit lines, changing economic or market conditions, or other factors which may be taken into consideration when land use policies are determined. This map is not designed for parcel-specific planning purposes due to its scale and the ten-acre minimum land use mapping unit. Classification of important farmland and urban areas on this map is based on best available data. The information has been delineated as accurately as possible at 1:24,000-scale, but no claim to meet 1:24,000 National Map Accuracy Standards is made due to variations in the quality of source data.

The Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Additional data is available at www.conservation.ca.gov/dlrp/fmmp, including detail on the program, full size PDF maps, map categories, statistics, field summaries, and GIS data for download. Contact the:

Farmland Mapping and Monitoring Program
801 K Street, MS 18-01
Sacramento, CA 95814
Phone: (916) 324-0859
e-mail: fmmp@conservation.ca.gov

© California Department of Conservation, Division of Land Resource Protection, 2009.

Map published November 2009.

STATE OF CALIFORNIA
Arnold Schwarzenegger, *Govemor*

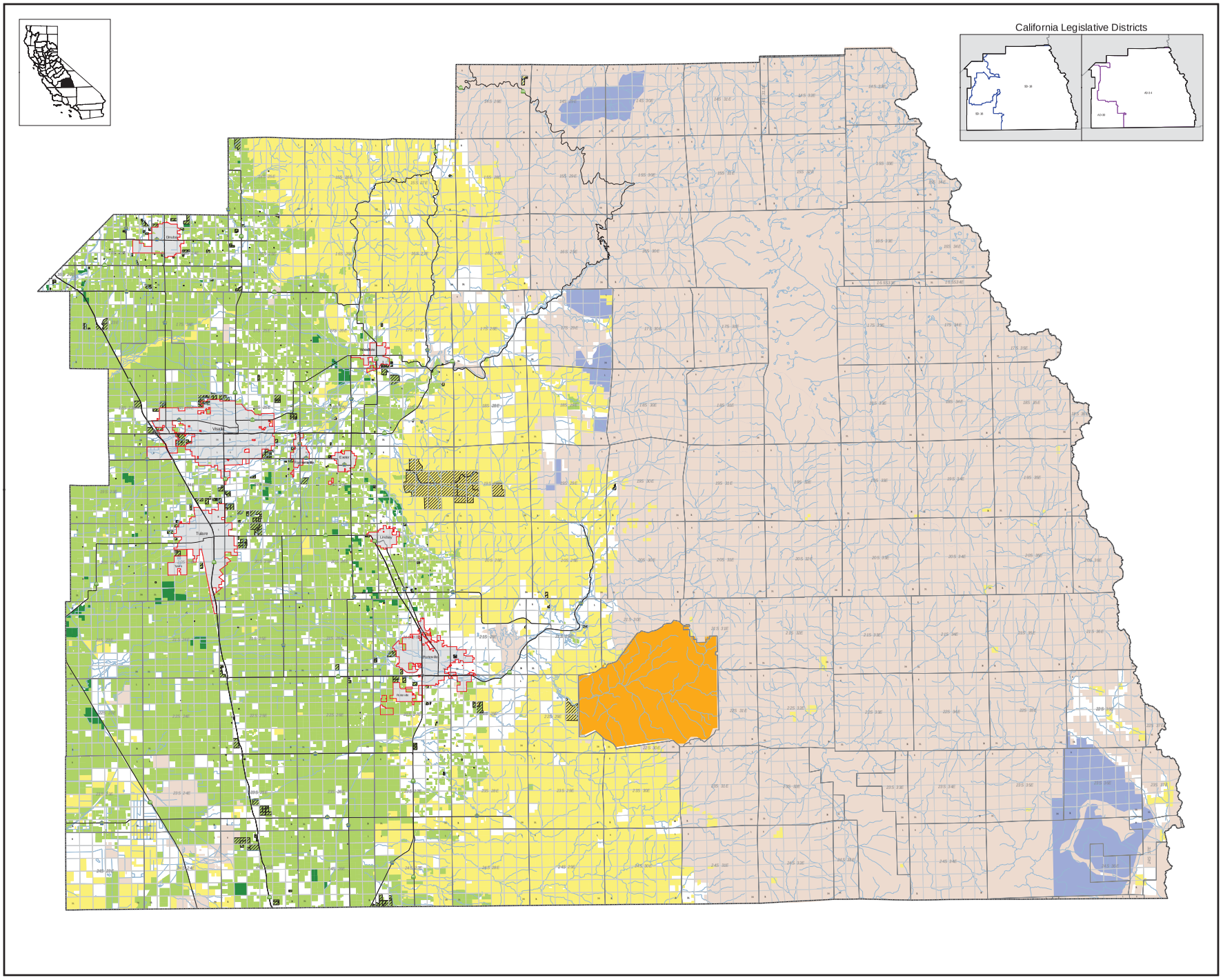
THE RESOURCES AGENCY
Lester A. Snow, *Secretary for Resources*

DEPARTMENT OF CONSERVATION
Bridgett Luther, *Director*

Tulare County Williamson Act Lands 2009

Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2009

Department of Conservation
Division of Land Resource Protection
Williamson Act Program



Williamson Act - Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51.201):
1: Land which qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
2: Land which qualifies for rating 80 to 100 in the Storie Index Rating;
3: Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture;
4: Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
5: Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

Williamson Act - Non-Prime Agricultural Land
Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16.143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Williamson Act - Farmland Security Zone Land
A Farmland Security Zone is an area created within an Agricultural Preserve* by a Board of Supervisors upon request by a land owner or group of land owners.

**Agricultural Preserves allow local jurisdictions to designate priority areas for farmland and open space conservation. The establishment of a preserve indicates the willingness of the jurisdiction to enroll parcels within the preserve under the Williamson Act contract. Agricultural Preserves must generally be at least 100 acres in size.*

Williamson Act - Land in Non-Renewal
During the Non-Renewal process, the annual tax assessment gradually increases. At the end of the 9-year Non-Renewal period, the contract is terminated.

Non-Enrolled Land
County land not enrolled with the Williamson Act Program.

Urban and Built-up Land
Land occupied by structures with a build density of at least one unit to one and one-half acres. The areal extent of Developed Land was provided by the Department of Conservation's Farmland Mapping and Monitoring Program.

The California Land Conservation Act of 1965 - commonly referred to as the Williamson Act - is the State's primary program for the conservation of private land in agricultural and open space use. It is a voluntary, locally administered program that offers preferential property taxes on lands which have enforceable restrictions on their use via contracts between individual landowners and local governments. For more information on the Williamson Act please contact the **Department of Conservation, 801 K Street, MS13-71, Sacramento, CA 95814. Phone (916) 324-0850; email: dlrp@conservation.ca.gov; web page: www.consrv.ca.gov/DLRP**

Maps depicting Williamson Act enrollment are produced in cooperation with the participating counties and the California Department of Conservation's Division of Land Resource Protection using manual cartographic methods and Geographic Information Systems. The Department of Conservation is mandated to record, analyze and publish data regarding areas enrolled under Williamson Act contract.

The information necessary to depict areas enrolled under contract was derived from sources supplied by county planning agencies and / or assessor offices. This map is intended for internal review and update only and should be used within the limits of this purpose. All questions regarding the contract status of specific property should be directed to the county assessor or planning agency office.

The Department of Conservation makes no warranties as to suitability of this map for any particular purpose.

Copyright: California Department of Conservation, Division of Land Resource Protection, 2006.

Printed on 03/11/2010
copies available, contact DLRP@conservation.ca.gov

APPENDIX B

HAZARDOUS CONTAMINANTS LIST

APPENDIX B
HAZARDOUS CONTAMINANTS LIST

The following list is derived from the State of California's Department of Toxic Substances EnviroStor Database, which includes Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, School Cleanup Sites and Hazardous Waste Permit Sites. In summary, there are numerous hazardous cleanup sites, including superfund sites, along the project alignment. The following list provides the site location, type of hazardous site and information regarding regulatory oversight. Some sites have been certified while others are under continuing review. Additional information is provided when sites are on property currently or historically owned by the railroads. Sites on the Geotracker Leaking Underground Fuel Tank (LUFT) and (SLIC) are included if the cases are open and adjacent to the project alignment, or they are on property currently or historically owned by the railroads, or the case is on or adjacent to a site identified in the project description for proposed project facilities. Data compiled in March 2012.

<u>Sacramento Maintenance Facility</u>

Harbor Sand and Gravel
200 28th Street
Sacramento, CA 95814
Cleanup Program Site - Geotracker SLIC
Cleanup Status: Open - Inactive as of 1994. No spill data provided.

Blair Leasing Company
206 24th Street
Sacramento, CA 95816
LUST Cleanup Site
Cleanup Status: Completed - Case Closed as of 12/27/2002 after excavation and disposal of affected soil under regulatory oversight.

<u>UPRR from Sacramento to Stockton - western alignment</u>

Ken's Buff and Plating (70000051)
1816 21st Street
Sacramento, CA 95814
Sacramento County
Site Type: State Response
Status: Backlog

Sacramento Cable (34480005)
2175 Perkins Way
Sacramento, CA 95818
Sacramento County
Site Type: State Response or NPL
Status: Certified / Operation & Maintenance with Land Use Restrictions

U.S. Cold Storage (34890001)
2338 9th Avenue
Sacramento, CA 95818
Sacramento County
Site Type: Voluntary Cleanup
Status: Inactive - Action Required

Union Pacific Railroad, Curtis Park (34400003)
3675 Western Pacific Avenue
Sacramento, CA 95818
Sacramento County
Site Type: State Response or NPL
Status: Active
Groundwater (other than drinking water) and soil have been impacted by historic railroad car maintenance activities. The Site is divided into active (24 acres) and inactive (about 70 acres) portions of the Rail Yard. The active portion is currently operating as a switching yard by Union Pacific Rail Road Company. Land use restrictions apply. DTSC - Site Cleanup Program - Lead

Hewitt Property
4200 24th St
Sacramento, CA 95822
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Fruitridge Vista Water Company
Wells 1, 2, 11, &12 37th and 47th Streets
Sacramento, CA 95824
Cleanup Program Site
Cleanup Status: Open - Inactive

Franklin Auxiliary Field #6 (J09ca0809) (80000567)
Bruceville Road
Elk Grove, CA 95757
Sacramento County
Site Type: Fuds
DTSC - Site Cleanup Program

PG&E Thornton Dehydrator Station
CR J8 and Barber Rd (4mi N of Thornton)
Thornton, CA
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Universal Forest Products (39240017)
26200 Nowell Road
Thornton, CA 95686
San Joaquin County
Site Type: Voluntary Cleanup
No Further Action as of 4/13/2005

PG&E Las Vinas Dehydrator Station
Woodbridge Rd
Lodi, CA
Cleanup Program Site
Cleanup Status: Open - Assessment & Interim Remedial Action

SJRRC Maintenance Facility (39240003) (American Moulding and Millwork)
West Lane and Alpine Avenue
Stockton, CA 95204
Site Type: Voluntary Cleanup
Status: Certified O&M - Land Use Restrictions Only

Stockton Developmental Center
1252 Stanislaus St
Stockton, CA 95202
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

PG&E North Union Street (60001427)
425 North Union Street
Stockton, CA 95205
Site Type: Voluntary Cleanup
Status: Active

Aurora Auto Body Works
446 North Aurora Street
Stockton, CA 95205
Cleanup Program Site
Cleanup Status: Open - Inactive

Merlo Property (Former SP RR)
936 Weber Ave E
Stockton, CA 95202
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Capitol Venture Enterprises
400 Aurora St S
Stockton, CA 95201
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Beaulieu Chemical Company
400 S Aurora St
Stockton, CA 95203
Voluntary Cleanup Site
No Further Action as of 6/28/1995

Santa Fe Railway
1033 Scotts Ave E
Stockton, CA 95205
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Santa Fe Railway
748 Union St S
Stockton, CA 95202
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

<u>Stockton to Sacramento UPRR - eastern alignment</u>

Suburban Roofing
5613 Elvas Ave
Sacramento, CA 95819
LUST Cleanup Site
Cleanup Status: Open - Remediation

Procter & Gamble Mfg. Co. (34280055)
Power Inn & Fruitridge Roads
Sacramento, CA 95813
Site Type: Evaluation
Case Closed

Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813
Federal Superfund Site
Land Use Restrictions
DTSC - Site Cleanup Program
US EPA - Lead

Sacramento Army Depot - Area II
8350 Fruitridge Road
Sacramento, CA 95813
State Response Site
Certified as of 6/30/1998
Pine Mountain Corporation (34240035)
6001 Power Inn Road
Sacramento, CA 95824

Site Type: Evaluation
Open - Inactive
Lifetime Doors
8280 Elder Creek Road
Sacramento, CA 95828
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Andrew Corp. (71003424)
8430 Rovana Circle
Sacramento, CA 95828
Site Type: Tiered Permit
Status: Inactive - Needs Evaluation

Sjostededt Property
8344 Florin Rd
Sacramento, CA 95828
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Georgia-Pacific Chemicals (60001558)
10399 E. Stockton Blvd.
Elk Grove, CA 95624
Site Type: Voluntary Cleanup
Status: Active

Ace Oil Company (34510001)
323 a Street
Galt, CA 95632
Site Type: State Response
Status: Certified

City of Lodi Groundwater Plumes - City of Lodi Groundwater Plumes
110 East Turner Road
Lodi, CA 95240
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Italian Swiss Colony Wines (39200020)
1 West Turner Road
Lodi, CA 95241
Site Type: Evaluation
Status: Refer: Other Agency

Lustre-CAL Nameplate Corp
110 E. Turner Road
Lodi, CA 95240
State Response Site
The City of Lodi will be the lead for the groundwater cleanup task. DTSC referred this site to the RWQCB in May 2005.

Lodi Chrome (71004110)
316 N. Main Street
Lodi, CA 95240
Site Type: Tiered Permit
Status: Inactive - Needs Evaluation

Manufactured Gas Plant Lodi - 2 (39490013)
Main & Locust Streets
Lodi, CA 95240
Site Type: Evaluation
Status: Inactive - Needs Evaluation

Busy Bee Laundry (39720024)
40 North Main Street
Lodi, CA 95240
Site Type: State Response
Status: Refer: RWQCB

PG&E Lodi-1 (Former Manufactured Gas Plant)
712 South Sacramento Street
Lodi, CA
Site Type: Voluntary Cleanup
Cleanup Status: Open - Assessment & Interim Remedial Action

Holz Rubber Co., Inc. (71002658)
1129 S. Sacramento Street
Lodi, CA 95240
Site Type: Tiered Permit
Status: Inactive - Needs Evaluation

American Moulding and Millwork
2801 North West Lane
Stockton, CA 95204
State Response Site
DTSC - Site Cleanup Program - Lead
Cleanup Status: Open - Inactive

SJRRC Maintenance Facility (39240003) (American Moulding and Millwork)
West Lane and Alpine Avenue
Stockton, CA 95204
Site Type: Voluntary Cleanup
Status: Certified O&M - Land Use Restrictions Only

Stockton Developmental Center
1252 Stanislaus St
Stockton, CA 95202
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

PG&E North Union Street (60001427)
425 North Union Street
Stockton, CA 95205
Site Type: Voluntary Cleanup
Status: Active

Aurora Auto Body Works
446 North Aurora Street
Stockton, CA 95205
Cleanup Program Site
Cleanup Status: Open - Inactive

Merlo Property (Former SP RR)
936 Weber Ave E
Stockton, CA 95202
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Capitol Venture Enterprises
400 Aurora St S
Stockton, CA 95201
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Beaulieu Chemical Company
400 S Aurora St
Stockton, CA 95203
Voluntary Cleanup Site
No Further Action as of 6/28/1995

Santa Fe Railway
1033 Scotts Ave E
Stockton, CA 95205
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Santa Fe Railway
748 Union St S
Stockton, CA 95202
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Bakersfield to Oakland alignment

Sunland Refining Corporation
2152 Coffee Road
Bakersfield, CA 93308-5746
Cleanup Program Site
Cleanup Status: Open - Remediation

Kern Water Bank Authority
I-5 and Hwy 43
Bakersfield, CA 93380
Voluntary Cleanup Site
Certified as of 1/27/2000

Brown and Bryant - Shafter Facility
135 Commercial Drive
Shafter, CA 93263
State Response Site
Kern County RWQCB 5F - Central Valley
DTSC - Site Cleanup Program - Lead
US EPA
The Brown and Bryant-Shafter facility began operations in 1955. The site is approximately 15 acres and was used for blending/repackaging liquid fertilizers, insecticides, herbicides, fumigants and defoliants. DTSC requested Santa Fe (landowner of 1/3 of the site) to extend the west site fenceline further west to prevent public exposure of off-site soil contamination. EPA subsequently issued a 106 Order to Santa Fe requiring them to assess the site and develop plans to stabilize and winterize the site to further prevent public exposure potential.

Lone Star Gas Liquids Processing, Inc. (71003216)
19430 Beech Avenue/7th Standard
Shafter, CA 93263
Site Type: Tiered Permit
Status: Inactive - Needs Evaluation

Santa Fe Railway Property - Wasco
7th and H Streets
Wasco, CA 93280
State Response Site - Land Use Restrictions
Certified / Operation & Maintenance as of 6/30/1997
DTSC issued a certification on June 30, 1997 of completion of removal actions in accordance to the approval Removal Action Workplan.

Caltrans - Wasco Station
201 J St
Wasco, CA 93280
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Rio Grande Market
800 Whitley Ave
Corcoran, CA 93212
LUST Cleanup Site
Cleanup Status: Open - Remediation

Hang 'Em High
761 Yoder Blvd
Corcoran, CA 93212
State Response Site
Certified as of 6/19/1987

Puregro-Corcoran
6991 Nevada Avenue
Corcoran, CA 93212
State Response Site
DTSC - Site Cleanup Program - Lead

Sanchez Property (Former Houston Ave Landfill)
11300 Houston Ave
Hanford, CA 93230-9510
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Old Hanford City Dump (16490003)
North Houston Ave between 10 1/2 & 11th Sts
Hanford, CA 93230
Site Type: Evaluation
Status: Refer: RWQCB

SFPP/LP Fresno Terminal (71003519)
4149 S. Maple Avenue
Fresno, CA 93725
Site Type: Tiered Permit
Status: Inactive - Needs Evaluation

Wilbur & Ellis (60001049)
2903 S. Cedar Street
Fresno, CA 93725
Site Type: Evaluation
Status: Inactive - Action Required

Cal Trans Fresno
2796 Railroad St S
Fresno, CA 93725
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Truck City
2768 Railroad S
Fresno, CA 93725
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Weir Floway Inc.
2494 South Railroad Avenue, P.O. Box 164
Fresno, CA 93707
State Response Site
DTSC - Site Cleanup Program - Lead

Valley Foundry and Machine Works
2510 South East Avenue
Fresno, CA 93717
State Response Site
DTSC- Site Cleanup Program - Lead

FMC Corporation - Fresno
2501 South Sunland Avenue
Fresno, CA 93725
State Response Site
DTSC- Site Cleanup Program - Lead
US EPA

Former Burlington Northern Santa Fe Ice House
3090 E Church Ave
Fresno, CA 93721
State Response Site
Active
DTSC - Site Cleanup Program - Lead
Potential Contaminants of Concern Include Chromium Vi and Halogenated Organic Compounds and Trichloroethylene (TCE). In 2002 DTSC issued an Imminent and Substantial Endangerment and Remedial Action Order to the Burlington Northern and Santa Fe Railroad Company.

South Fresno Regional Groundwater Plume (10400005)
North of Church Avenue at South East Ave
Fresno, CA 93721
Site Type: State Response
Status: Active

Former Ice House
702 P St
Fresno, CA 93721
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Santa Fe Railway Motor Car Shd
2650 Tulare Ave E
Fresno, CA 93721
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

BNSF/Amtrak Depot
2650 Tulare St
Fresno, CA 93721
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Macgillis and Gibbs
11272 Road 32
Madera, CA 93639
State Response Site
DTSC- Site Cleanup Program - Lead
The site is comprised of six parcels owned the Burlington Northern Santa Fe (BNSF) Railroad, the MacGillis and Gibbs Company. Removal actions conducted by BNSF have resulted in the removal of the all structures, equipment and features associated with the operations. A remedial action conducted by BNSF involved the consolidation of all contaminated soil to on-site asphalt capped, and double lined

consolidation unit. The consolidation unit is fenced, its asphalt surface inspected and maintained and its leak detection unit monitored annually. Subsurface investigation indicates that a perched water zone present beneath is contaminated with PCP. Monitoring of the deeper regional aquifer indicates that contamination of the PCP is confined to the perched water zones. A pilot study is underway to determine the effectiveness of enhanced bioremediation using Hydrogen Release Compounds (HRC) and Oxygen Release Compounds (ORC) for remediating the perched water zones. A Remedial Action Plan to address the perched water groundwater zone is expected to be approved in March 2007.

Crop Production Services, Merced
265 N. Arboleda Drive
Merced, CA 95340
Cleanup Program Site
Cleanup Status: Open - Remediation

former Streeter, Patterson, and J&M Flying Service
3240 S. Arboleda Rd
Merced, CA 95431
Cleanup Program Site
Cleanup Status: Open - Inactive

Bac-Pritchard Inc (24240006)
3058 North Beachwood Drive
Merced, CA 95340
Site Type: Evaluation
Status: Refer: RWQCB

Castle Air Force Base
2,777 Acres; 5 Mi NW of Merced, CA
Atwater, CA 95342
Federal Superfund Site
Land Use Restrictions
Certified / Operation & Maintenance as of 9/26/2007
DTSC - Site Cleanup Program - Lead

Oxychem - Hughson (50280021)
4012 Santa Fe Avenue
Hughson, CA 95326
Site Type: Evaluation
Status: Refer: Other Agency

Hughson Chemical Co (50070012)
6800 E Whitmore
Hughson, CA 95326
Site Type: Evaluation
Status: Refer: Other Agency

Riverbank Dump Site (50490001)
Terminal Ave
Riverbank, CA 95367
Site Type: Evaluation
Status: Inactive - Action Required

Riverbank Army Ammunition Depot (50340001)
5300 Claus Road
Riverbank, CA 95367
Site Type: Federal Superfund
Status: Active

Elmwood Estates (A&A AUTO)
5536 Roselle Avenue
Riverbank, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

Ripon-Pacific, Inc (39200003)
5050 East Carpenter Road
Stockton, CA 95205
Site Type: Evaluation
Status: Refer: RWQCB

Santa Fe Railway
801 Diamond St
Stockton, CA 95205
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Rotor Blades, Inc
1514 East Scotts Avenue
Stockton, CA 95205
Voluntary Cleanup Site
Inactive - Action Required as of 3/18/2009
DTSC- Site Cleanup Program - Lead

Ocampo Property
821 Wilson Way S
Stockton, CA 95210
LUST Cleanup Site
Cleanup Status: Open - Remediation

Santa Fe Railway
748 Union St S
Stockton, CA 95202
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Siebold Construction Co
820 American St S
Stockton, CA 95206
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

PG&E (39490015)
530 South Center Street
Stockton, CA 95203
Site Type: Voluntary Cleanup
Status: Certified / Operation & Maintenance
Land Use Restrictions

R V Circuits
916 South Center Street
Stockton, CA 95206
State Response Site
No Further Action as of 5/14/2002
DTSC - Site Cleanup Program - Lead

Great Western Chemical Company
826 South Center Street
Stockton, CA 95206
State Response Site
Certified as of 10/21/1994

ACME-STOCKTON Galvanizing Works (39340018)
540 West Scotts Avenue
Stockton, CA 95203
Site Type: State Response
Land Use Restrictions
Certified / Operation & Maintenance as of 1/30/1991
DTSC - Site Cleanup Program - Lead

Lika Corporation - Navy Drive
2041 Navy Drive
Stockton, CA 95206
State Response Site
Certified as of 6/29/1990
DTSC - Site Cleanup Program - Lead

Learner Company, the
2711 Navy Drive
Stockton, CA 95203
Voluntary Cleanup Site
Active as of 12/3/2008
DTSC - Site Cleanup Program - Lead

Southern Pacific Pipeline Spill (39460001)
W Side of Cook Rd, 2000 Ft N of Holt Rd
Holt, CA 95234
Site Type: Voluntary Cleanup
Status: Inactive - Action Required

KMEP Orwood Block Valve Release
Orwood
Brentwood, CA 94513
Cleanup Program Site
Cleanup Status: Open - Assessment & Interim Remedial Action

PG&E Dutch Slough Dehydrator Station
1126 Fetzer Lane
Oakley, CA 94561-6004
Cleanup Program Site
Cleanup Status: Open - Remediation

Contra Costa Auto Salvage
1731 Main Street
Oakley, CA 94561
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead
Status: Certified

PG&E Antioch Natural Gas Terminal
5900 Bridgehead Road
Oakley, CA
Cleanup Program Site
Cleanup Status: Open - Assessment & Interim Remedial Action

Industrial Lot with Railroad Siding (07990014)
2600 Wilbur Avenue
Antioch, CA 94509
Site Type: Voluntary Cleanup
Status: Certified

Vineyard Tract
E. 18th Street
Antioch, CA 94509
Voluntary Cleanup Site
Certified as of 12/19/2005
Contra Costa County
RWQCB 5s - Central Valley
DTSC - Site Cleanup Program - Lead

East Mill
2603 Wilbur Avenue
Antioch, ca 94509
Voluntary Cleanup Site
RWQCB 5s - Central Valley
DTSC - Site Cleanup Program - Lead

West Mill (07260002)
2301 Wilbur Avenue
Antioch, CA 94509
Site Type: Voluntary Cleanup
Status: Certified

Industrial Lot with Tank (07990013)
Wilbur Avenue
Antioch, CA 94509
Site Type: Voluntary Cleanup
Status: Certified

Gaylord Tracts (07790001)
1030 Apollo Court
Antioch, CA 94509
Site Type: Voluntary Cleanup
Status: Certified / Operation & Maintenance
Land Use Restrictions

GWF Power Plant - Antioch
1900 Wilbur Avenue
Antioch, CA
Cleanup Program Site
Cleanup Status: Open - Verification Monitoring

Almond Orchard
2101 E. 18th Street
Antioch, CA 94509
Voluntary Cleanup Site
Certified as of 6/13/2005
DTSC - Site Cleanup Program - Lead

Recreational Tract
1030 Apollo Court
Antioch, CA 94509
Voluntary Cleanup Site
Land Use Restrictions
Certified / Operation & Maintenance as of 6/30/2005
DTSC - Site Cleanup Program - Lead

Industrial Lot with Tank
Wilbur Avenue
Antioch, CA 94509
Voluntary Cleanup Site
Certified as of 1/30/2006
Contra Costa County
RWQCB 5s - Central Valley
DTSC - Site Cleanup Program - Lead

Hickmott Cannery
6th and A Streets
Antioch, CA 94509
State Response Site
RWQCB 5s - Central Valley - Lead
DTSC - Site Cleanup Program

Fulton Shipyard
307 Fulton Shipyard Road
Antioch, CA 94509
State Response Site
DTSC - Site Cleanup Program - Lead

A Street Extension
Antioch, CA 94531
LUST Cleanup Site
Cleanup Status: Open - Verification Monitoring

Prospects
820 2nd St
Antioch, CA 94509
LUST Cleanup Site
Cleanup Status: Open - Assessment & Interim Remedial Action

Antioch Radiator Exchange (07750009)
908 West Second St.
Antioch, CA 94509
Site Type: Evaluation
Status: Refer: Other Agency

US Steel Posco Industries
900 Loveridge Rd
Pittsburg, CA 94565
Case Closed
Land Use Restrictions

The Dow Chemical Company
901 Loveridge Rd
Pittsburg, CA 94565
Haz Waste - Operating Permit

Kemwater Pittsburg Plant (07280165)
1401 Loveridge Road
Pittsburg, CA 94565
Site Type: Evaluation
Status: Refer: RWQCB

Continental Can Company-Plant 80 (70000149)
1300 Loveridge Road
Pittsburg, CA 94590
Site Type: Evaluation
Status: Refer: RWQCB

USS Industrial Park Site #2
1101 Loveridge Rd
Pittsburg, CA 94565
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Burlington Northern Santa Fe Railway Company
Adjoining USS Posco Steel Facility
Pittsburg, CA 94565
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead
The Site is currently owned and operated as a railroad right-of-way by BNSF. The Site consists of only a portion of the BNSF right-of-way in Pittsburg, California. The Site encompasses a rectangular area of approximately 150-feet by 550-feet and contains 11 rail lines trending in an east-west direction. The rail lines are currently used to stage rail cars that are awaiting classification and transport. No prior ownership information was available; however, the Site has reportedly been used as a rail car staging area since at least the early 1940's. The Site is paralleled to the north by a Union Pacific Rail Road (UPRR) right-of-way. Immediately north of the BNSF and UPRR right-of-ways is the USS-POSCO Industries (UPI) facility. The Site is bordered to the south by a residential development, and to the east and west by adjacent portions of the BNSF right-of-way.

Delta Auto Wrecker
6 Industry Road
Pittsburg, CA 94565
State Response Site
DTSC - Hazardous Waste Management Program - Lead

Johns Manville
East 3rd Street
Pittsburg, CA 94565
Voluntary Cleanup Site
Land Use Restrictions
Status: Certified / Operation & Maintenance

Pittsburg St Redevlopment #1
1095 Railroad Ave
Pittsburg, CA 94565
LUST Cleanup Site
Cleanup Status: Open - Assessment & Interim Remedial Action

Acme Steel Co. (71002838)
855 N. Parkside Drive
Pittsburg, CA 94565
Site Type: Tiered Permit
Status: Refer: Other Agency

Trans Bay Cable Converter Station
570 to 620 and 650 W. 10th Street
Pittsburg, CA 94565
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead

PG&E Pittsburg Power Plant (07490048)
595 West 10th Street
Pittsburg, CA 94565
Site Type: Evaluation
Status: Refer: RCRA

Greif Brothers Corporation
701 Willow Pass Road
Pittsburg, CA 94565
Voluntary Cleanup Site
Land Use Restrictions
Certified / Operation & Maintenance as of 3/13/2009
DTSC- Site Cleanup Program - Lead

Narco
1555 Parkside N
Pittsburg, CA 94565
Cleanup Program Site
Cleanup Status: Open - Inactive

Molino Enterprises, Inc.
1215 Willow Pass Road
Pittsburg, CA 94565
Cleanup Program Site
Cleanup Status: Open - Inactive

Triangle PWC
1666 Willow Pass Road
Pittsburg, CA 94565
State Response Site
Certified as of 7/9/1993
DTSC - Site Cleanup Program - Lead

Shell Chemical Company (07280025)
2840 Willow Pass Road
Pittsburg, CA 94565
Site Type: Evaluation
Status: Refer: RCRA

Port Chicago Highway Site (07330029)
805 Port Chicago Highway
West Pittsburg, CA 94565
Site Type: Evaluation
Status: Inactive - Needs Evaluation

Western States Chemical Company (07280073)
East of Nichols Road on Port Chicago Hwy
Pittsburg, CA 94565
Site Type: Evaluation
Status: No Action Required

Union Collier (07280070)
Nichols Rd. & Port Chicago Hwy
Pittsburg, CA 94565
Site Type: Evaluation
Status: Refer: RWQCB

Chemical and Pigment Company
600 Nichols Road
Pittsburg, CA 94565
State Response Site
DTSC- Site Cleanup Program - Lead

Allied Signal Bay Point (07280164)
501 Nichols Road
Pittsburg, CA 94565
Site Type: Voluntary Cleanup
Status: Active

Military Ocean Terminal Concord (07970004)
Port Chicago Highway
Concord, CA 94520
Site Type: Federal Superfund
Status: Active

Tosco Avon Refinery
1 Solano Way
Martinez, CA 94553
Cleanup Program Site
Cleanup Status: Open - Remediation

Exxon Bulls Head
Dna No Street
Martinez, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

Texaco Trading
Mocco Rd @ Waterfront Rd
Martinez, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

Amorco Terminal
200 Waterfront Road
Martinez, CA 94553
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Tosco Pipeline - Wickland
Waterfront Rd at Waterbird Way
Martinez, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

Shell Refinery Martinez
1801 Marina Vista
Martinez, CA 94553
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Rhodia Inc Basic Chemicals
100 Mococo Road
Martinez, CA 94553-1340
Cleanup Program Site
Cleanup Status: Open - Verification Monitoring

Rhone-Poulenc Basic Chemicals Co.
100 Mococo Road
Martinez, CA 94553
State Response Site
DTSC

Caltrans Benicia-Martinez Toll Bridge
Martinez, CA 94553
Voluntary Cleanup Site
No Further Action as of 7/1/1999
DTSC - Site Cleanup Program - Lead

Martinez Refining Co., Div. Of Equilon Ent. (71002268)
Marina Vista & Shell Avenue
Martinez, CA 94553
Site Type: Tiered Permit
Status: Refer: Other Agency

Southern Pacific Property - Martinez
Marina Vista at Ferry St
Martinez, CA
Cleanup Program Site
Cleanup Status: Completed - Case Closed

Al Auto Detail
209 Berrellesa
Martinez, CA 94533
Cleanup Program Site
Cleanup Status: Open - Inactive

Alhambra Site Bank of Oakland
3500 Alhambra Ave
Martinez, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

Caltrans Carquinez Toll Bridge
Crocket, CA 94591
Voluntary Cleanup Site
Inactive - Action Required as of 7/8/2009
DTSC - Site Cleanup Program - Lead

Selby Slag
Shoreline and marsh adjacent to Carquinez Strait
Selby, CA 94802
State Response Site
RWQCB 2 - San Francisco Bay
DTSC - Site Cleanup Program - Lead

Kinder Morgan - Rodeo/Crockett Terminal - Selby Pond Release
north of San Pablo Ave
Rodeo, CA 94572
Cleanup Program Site
Cleanup Status: Open - Verification Monitoring

San Francisco Refinery, Rodeo
1380 San Pablo Ave
Rodeo, CA 94572
Cleanup Program Site
Cleanup Status: Open - Remediation

Rodeo Marina UST
13 Pacific Ave.
Rodeo, CA 94572
LUST Cleanup Site
Cleanup Status: Open - Remediation

Bio-rad Laboratories
2000 Alfred Nobel Drive
Hercules, CA 94547
State Response Site
Certified as of 3/12/1984
DTSC - Site Cleanup Program - Lead

Hercules Properties, Ltd.
560 Railroad Avenue
Hercules, CA 94547
State Response Site
Land Use Restrictions
Certified / Operation & Maintenance as of 6/9/1997
DTSC - Site Cleanup Program

Hercules Middle School
Sycamore Avenue/Willet Street
Hercules, CA 94547
School Cleanup Site
DTSC - Site Cleanup Program - Lead

Point Pinole Properties
5000 Giant Road
Richmond, CA 94806
State Response Site
Land Use Restrictions
Certified / Operation & Maintenance as of 7/30/1987
RWQCB 2 - San Francisco Bay - Lead
DTSC - Site Cleanup Program

Pinole Point Steel/MSC Facility
None
Richmond, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

Reaction Products
840 Morton Avenue
Richmond, CA 94806
State Response Site
DTSC - Site Cleanup Program - Lead

Parkway Transit Village
North End of Goodrick Avenue
Richmond, CA 94806
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead

Dennison Eastman Corp.
3451 Collins St
Richmond, CA 94801
State Response Site
No Further Action as of 5/23/2007
DTSC - Site Cleanup Program - Lead

American Standard Products: OU-III/IJR
3002 Giant Road
San Pablo, CA 94806
State Response Site
Land Use Restrictions
Certified / Operation & Maintenance as of 12/6/1996
DTSC - Site Cleanup Program

Cooper Chemical
2801 Giant Road
Richmond, CA 94806
State Response Site
Land Use Restrictions
Certified / Operation & Maintenance as of 3/7/1997
DTSC - Site Cleanup Program - Lead

Hildreth Holdings
2812 Giant Road
San Pablo, CA 94804
State Response Site
Contra Costa County - Lead

FMC Corporation - Richmond
855 Parr Blvd
Richmond, CA 94801
State Response Site
Land Use Restrictions
Certified / Operation & Maintenance as of 5/29/1992
DTSC - Site Cleanup Program - Lead

Former BNSF Property
Rumrill Blvd at Chelsey Avenue
San Pablo, CA 94806
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead
This vacant site was formerly used as a maintenance support facility by Atchison, Topeka & Santa Fe Railway Company (AT&SF), the former property owner. The site included an above and below ground tank farm. The facility ceased operation in the early 1980s, and was subsequently used for various businesses, including mattress manufacturing, fork lift repair, pallet construction, silver recovery and a vegetable oil business. By 1988, the site was abandoned, with debris, drums of hazardous waste, waste water filled sumps and areas of stained soil on-site. Debris and waste materials were removed by AT&SF from 1988 to 1994. Portions of the site were subsequently used by a wood chipping operation and for storage. In 1996, AT&SF merged with Burlington Northern Railway to form BNSF. Property ownership transferred to the Redevelopment Agency of San Pablo in 2003. The site currently contains weedy vegetation and debris piles, wood chips, bricks and refuse that have accumulated since the completion of remedial activities in the 1990s.

North America Packaging Corporation
801 Chesley Avenue
Richmond, CA 94801
Voluntary Cleanup Site
No Further Action as of 1/8/1996
Contra Costa County - Lead
DTSC - Site Cleanup Program - Lead

Certainteed, Richmond (07290021)
1014 Chesley Avenue
Richmond, CA 94804
Site Type: Evaluation
Status: Refer: RWQCB

Atchison Topeka and Santa Fe Railway
Unknown Rumrill Blvd
Richmond, CA 94804
Cleanup Program Site
Cleanup Status: Completed - Case Closed

World Oil
1014 Chesley
Richmond, CA 94801
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Richmond Townhouse Apartments
2887 and 2989 Pullman Avenue
Richmond, CA 94804
State Response Site
Land Use Restrictions
Certified / Operation & Maintenance as of 6/19/2002
Contra Costa County
DTSC - Site Cleanup Program - Lead
US EPA

Carlson Property
APN 513-10-020
Richmond, CA 94804
State Response Site
Certified / Operation & Maintenance as of 10/21/2001
DTSC - Site Cleanup Program - Lead

University of California - Richmond Field Station
1301 South 46th St
Richmond, CA
Cleanup Program Site
Cleanup Status: Open - Remediation

Zeneca Richmond Ag Products (07280002)
1415 South 47th Street
Richmond, CA 94804
Site Type: State Response
Status: Active
Land Use Restrictions

Harborfront Tract
Meade South 49th East Montgomery
Richmond, CA 94804
State Response Site
DTSC - Site Cleanup Program - Lead

Liquid Gold Oil Corp
Hoffman Blvd and S 47th St
Richmond, CA 94804
Federal Superfund Site
Land Use Restrictions
DTSC - Site Cleanup Program - Lead
US EPA

The site was owned by the Southern Pacific Transportation Company and is now owned by Union Pacific Railroad. From 1974 to 1982, the site was leased by Liquid Gold Oil Corporation to store, re-refine and recycle oil and other substances. The hazardous substances stored in over 20 storage tanks and drums included waste motor oil, organic solvents, bunker oil, diesel fuel, oil-water emulsions and mixtures and tank bottom waste. As a result of site operations, hazardous substances leaked or spilled onto the ground and were discharged into ponds, sumps and ditches and drained into wetland areas. Subsequently, site remedial investigations were perfomed, remedial actions completed, and the site was de-listed by the U.S. Environmental Protection Agency from the National Priorities List in 1995.

Blair Southern Pacific Landfill
At the Foot of South 51st Street
Richmond, CA 94804
State Response Site
DTSC - Site Cleanup Program - Lead

Curoco Steel Systems (Toxic)
536 Cleveland
Albany, CA 94710
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Western Forge & Flange (01350092)
540 Cleveland Avenue
Albany, CA 94706
Site Type: Evaluation
Status: Certified

Ge Imatron / Caral Manufacturing
578 Cleveland
Albany, CA 94710
Cleanup Program Site
Cleanup Status: Completed - Case Closed

Fleming Point Property
1100 Eastshore Hwy
Albany, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

Harrison Street Playing Fields
Fourth and Harrison Streets
Berkeley, CA 94710
Voluntary Cleanup Site
RWQCB2 - San Francisco Bay

Dover Sales
707 Park Way
Berkeley, CA 94710
State Response Site
Certified as of 1/1/1984
Berkeley, City of - Lead

Berkeley Redevelopment Agency Site
1631 Fifth Street
Berkeley, CA 94710
Voluntary Cleanup Site
Certified as of 6/10/2004
Berkeley, City of
DTSC - Site Cleanup Program - Lead

Aquatic Park Science Center
2222 3rd Street
Berkeley, CA 94710
Voluntary Cleanup Site
No Further Action as of 7/18/2008
Berkeley, City of
DTSC - Site Cleanup Program - Lead

Peerless Electric
2220 4th Street
Berkeley, CA 94710
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead

Berkeley Industrial Court
729 Heinz Avenue
Berkeley, CA 94710
State Response Site
Berkeley, City of
RWQCB 2 - San Francisco Bay - Lead

Triangle Coatings (60000938)
2222 Third Street
Berkeley, CA 94710
Site Type: Voluntary Cleanup
Status: Refer: Local Agency

Wareham Properties
700 Heinz Avenue
Berkeley, CA 94710
State Response Site
Certified as of 11/19/2003
DTSC - Site Cleanup Program - Lead

Transo/lacoste Site
1600 64th Street/6401 Bay Street
Emeryville, CA 94608
State Response Site
No Further Action as of 2/21/1995
DTSC - Site Cleanup Program - Lead

63rd Street Trunk Sewer Project
63rd Street
Emeryville, CA 94608
Voluntary Cleanup Site
No Further Action as of 9/28/2000
DTSC - Site Cleanup Program - Lead

Bay Street Extension
64th and Powell Streets
Emeryville, CA 94608
Voluntary Cleanup Site
Land Use Restrictions
Certified / Operation & Maintenance as of 7/9/1997
Alameda County
DTSC - Site Cleanup Program - Lead

Emeryville Marketplace
between 64th and Powell St on N and S, by Hwy 80
Emeryville, CA 94608
State Response Site
Land Use Restrictions
Certified / Operation & Maintenance as of 11/7/1995
Alameda County
DTSC - Site Cleanup Program - Lead

Emeryville Mound Parcel
5899 Peladeau Street
Emeryville, CA 94608
Voluntary Cleanup Site
RWQCB 2 - San Francisco Bay
DTSC - Site Cleanup Program - Lead
US EPA - Lead

Michel and Pelton
5743 Landregan St
Emeryville, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

South Bay Front Site B
1525-1535 Powell St and 5760-5770 Shellmound St
Emeryville, CA 94608
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead

Horton Landing Park (60001477)
Stanford Avenue & Horton Street
Emeryville, CA 94608
Site Type: Voluntary Cleanup
Status: Refer: Other Agency

Southern Pacific Right-of-Way Emeryville
West of 4525 Hollis Street
Emeryville, CA 94608
State Response Site
DTSC - Site Cleanup Program - Lead
The Site is located immediately adjacent to Pacific Gas and Electric Company's (PG&E) Materials Distribution Center. The Materials Distribution Center has served as a warehouse, repair shop, and storage yard since the early 1920's for equipment used by PG&E's substations and electrical distribution network. In the past, fluids in transformers and capacitors contained polychlorinated biphenyls (PCBs). The Site is currently owned by Chiron Corporation and Wareham Development. Chiron operates a research and development facility and the area where residual PCB-contaminated soil may be present is paved. Wareham Development has a parking lot on its property that it leases to Chiron. DTSC is

currently evaluating whether land use restrictions on the area where residual contamination may be present are required.

South Bayfront Project
4650, 5500, and 5600 Shellmound Street
Emeryville, CA 94608
Voluntary Cleanup Site
Land Use Restrictions
Certified / Operation & Maintenance as of 8/22/2000
DTSC - Site Cleanup Program - Lead

Shellmound Venture Project
Shellmound Street
Emeryville, CA 94608
Voluntary Cleanup Site
Land Use Restrictions
Certified / Operation & Maintenance as of 4/17/1998
DTSC - Site Cleanup Program - Lead

Sherwin Williams
1450 Sherwin Avenue
Emeryville, CA 94608
State Response Site
Alameda County
RWQCB 2 - San Francisco Bay
DTSC - Site Cleanup Program - Lead

UPRR Parcel D
North of Sherwin Avenue and Halleck Street
Emeryville, CA 94608
Voluntary Cleanup Site
DTSC - Site Cleanup Program
Site is a vacant parcel located to the north of the intersection of Sherwin Avenue and Halleck Street in Emeryville, California. The Site is bounded by the Sherwin-Williams Site on the east and north, Union Pacific Railroad tracks on the west, and the southern edge of Sherwin Avenue on the South. It incorporates the Technichem facility's Solid Waste Management Unit #6 on the southwest corner of the Site adjacent to the building that formerly housed Technichem. The City of Emeryville is preparing the Site for redevelopment. Under the MOA between the City of Emeryville, DTSC and the Water Board, the City provided oversight for the Redevelopment Agency's site characterzation activities and development of a Final Cleanup Plan for the Site.

Technichem, Inc.
4245 Halleck Street
Emeryville, CA 94608
State Response Site
DTSC - Site Cleanup Program - Lead

Ikea (Former Barbary Coast)
4300 Eastshore Highway
Emeryville, CA 94608
State Response Site
Land Use Restrictions
Certified / Operation & Maintenance as of 9/19/2000
DTSC- Site Cleanup Program - Lead

Cypress Freeway/bikeway Project
Maritime to Shellmound Street
Emeryville, CA 94608
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead

Thomas A. Short Company
3430 Wood Street
Oakland, CA 94607
Voluntary Cleanup Site
Certified as of 1/9/2004
DTSC - Site Cleanup Program - Lead

Sutta Recycling
3401 Wood Street
Oakland, CA 94607
Voluntary Cleanup Site
Certified as of 6/18/2007
DTSC - Site Cleanup Program - Lead

General Transportation
3211 Wood Street
Oakland, CA 94607
Voluntary Cleanup Site
No Further Action as of 4/16/1997
DTSC - Site Cleanup Program - Lead

AT and SF Railroad Property
Along Wood and 32nd Street
Oakland, CA 94607
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead
This property is part of Cypress Reconstruction Project in Oakland. The property is located west of Wood Street between 26th and 34th streets. The property was owned and operated by AT&SF Railroad since the late 1800's. The land use has been a railroad yard used to store rail cars in route to or returning from the Port of Oakland from the AT&SF Richmond railyard. The property may have been contaminated from spills and leaks from railcars and general maintenance activities.

Former Hall Property
2601 Wood Street
Oakland, CA 94607
Voluntary Cleanup Site
DTSC - Site Cleanup Program - Lead

BNSF Wood Street Yard
Wood Street and West Grand Avenue
Oakland, CA 94607
State Response Site
Land Use Restrictions
Certified / Operation & Maintenance as of 6/28/2006
DTSC - Site Cleanup Program - Lead

Southern Pacific Oakland
1707 Wood Street
Oakland, CA 94607
State Response Site

RWQCB 2 - San Francisco Bay - Lead
Historical land uses have included a foundry, vehicle repair activities, rail terminal, door manufacturing operation, training maintenance area. Known or suspected contaminates include: lead, petroleum hydrocarbons, PAH's and volatile organic hydrocarbons.

Visalia to Hanford Route

So Cal Gas/Hanford MGP (16490005)
325 East 5th Street
Hanford, CA 93230
Site Type: Voluntary Cleanup
Status: Active
Land Use Restrictions

Silva's Oil Company
175 10th Ave S
Hanford, CA 93230
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Hitchcock Trans Co.
9150 E. Lacey Boulevard
Hanford, CA 93230
Cleanup Program Site
Cleanup Status: Completed - Case Closed

Souza's Enterprises, Inc.
8148 E Lacey Blvd
Hanford, CA 93230-4872
Cleanup Program Site
Cleanup Status: Completed - Case Closed

Holiday RV Park
6610 Betty Drive
Goshen, CA 93227
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Union Pacific Railroad - Goshen Junction
Effie
Goshen, CA 93227
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Former Cargill Property
31189 Road 68
Goshen, CA 93227
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Valley Warehouse
31071 Road 68
Goshen, CA 93227
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Exide Corporation
8127 Goshen Avenue
Visalia, CA 93291
Cleanup Program Site
Cleanup Status: Completed - Case Closed

Goshen Avenue and Shirk Road Site (54270005)
6941 and 6707 West Goshen Avenue
Visalia, CA 93291
Site Type: State Response
Status: Active

Kaweah Crop Duster-green Acres Airport (54070060)
2530 West Goshen
Visalia, CA 93219
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

Visalia Custom Chrome (71003379)
1414 W Switzer Ave
Visalia, CA 93291
Site Type: Tiered Permit
Status: Inactive - Needs Evaluation

One Hour Martinizing (60000236)
717 West Main Street
Visalia, CA 93291
Site Type: State Response
Status: Active

Millers Dry Cleaners (60000242)
110 North Willis
Visalia, CA 93291
Site Type: State Response
Status: Active

Paragon Dry Cleaners (60000240)
119 South Willis Street
Visalia, CA 93291
Site Type: State Response
Status: Active

Van Duesens Dry Cleaners (60000244)
220 North Encina Street
Visalia, CA 93291
Site Type: Evaluation
Status: Active

Pressure Vessel Services, Inc. (71003308)
7625 W. Sunnyvale Avenue
Visalia, CA 93291
Site Type: Tiered Permit
Status: Inactive - Needs Evaluation

Visalia Dry Cleaner Investigation (60000403)
Central City Area
Visalia, CA 93277
Site Type: State Response
Status: Active

So Cal Gas/Visalia MGP (54490015)
300 North Tipton Street
Visalia, CA 93277
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

Visalia Civic Center Brownfields Development (60000965)
NW Burke Street and Oak Avenue, Visalia, CA 93291
Visalia, CA 93291
Site Type: Voluntary Cleanup
Status: Certified

Pole Storage Area (Visalia Pole Yard) (54490020)
432 N Ben Maddox Way
Visalia, CA 93292
Site Type: State Response
Status: Certified

Former Lamoure's Cleaners and Laundry, Noble (60001055)
1415 E. Noble Avenue
Visalia, CA 93291
Site Type: State Response
Status: Active

Parisian Dry Cleaners (60000243)
1014 East Mineral King Avenue
Visalia, CA 93292
Site Type: Evaluation
Status: No Action Required

Sierra Beverage Co.
1001 S. Ben Maddox Way
Visalia, CA 93292-3656
Cleanup Program Site
Cleanup Status: Open - Inactive

City of Kingsburg - Old Municipal Landfill (54990001)
Avenue 392 and Road 20
Kingsburg, CA 93631
Site Type: Voluntary Cleanup
Status: Inactive - Action Required

Heublein, Inc.
965 Sierra St
Kingsburg, CA 93631-1512
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Selma Treating Company (10240051)
1735 Dockery Ave & Adjoining
Selma, CA 93662
Site Type: Federal Superfund
Status: Active
Land Use Restrictions

Selma Ag Supply
1053 Golden St. Blvd.
Selma, CA 93662-9793
Cleanup Program Site
Cleanup Status: Open - Inactive

Selma Electroplating (10340011)
2336 Chandler Street
Selma, CA 93662
Site Type: State Response
Status: Certified

PG&E Manufactured Gas Plant Sq-fk-fow (10490099)
W.fresno near S. 8th Street
Fowler, CA 93625
Site Type: Evaluation
Status: Inactive - Needs Evaluation

Simonian Farms (60000854)
228, 230, 304 and 308 N 8th Street
Fowler, CA 93625
Site Type: Voluntary Cleanup
Status: No Further Action

D. Turner Chrome Plating (10340135)
4388 S. Willow Avenue
Fresno, CA 93725
Site Type: Evaluation
Status: Inactive - Needs Evaluation

Golden State Market
3269 Golden State Blvd.
Fresno, CA 93725
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Santa Fe Intermodal Yard
2989 Golden State Blvd S
Calwa, CA 93725
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

<u>Port Chicago to Richmond on BNSF</u>

Chemical and Pigment Company (07280017)
600 Nichols Road
Bay Point, CA 94565
Site Type: State Response
Status: Active

Monsanto Chemical Facility
1778 Monsanto Way
Martinez, CA 94553
Cleanup Program Site
Cleanup Status: Open - Remediation

Scaife Property
921 Arnold Dr
Martinez, CA 94553
LUST Cleanup Site
Cleanup Status: Open - Remediation

Landscape Care Company
4026 Pacheco Blvd
Martinez, CA 94533
Cleanup Program Site
Cleanup Status: Open - Inactive

Santa Fe Railway
Unknown Franklin Canyon Rd
Hercules, CA 94547
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Centex Homes of California (07650001)
Between I-80 and San Pablo Avenue
HERCULES, CA 94547
Site Type: State Response
Status: Certified

Hercules Inc (07280156)
Corner of San Pablo & Sycamore Avenue
Hercules, CA 94547

Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

Square Deal Garage
2500 San Pablo Ave
Pinole, CA 94564
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Chevron
550 San Pablo Ave
Pinole, CA 94564
LUST Cleanup Site
Cleanup Status: Open - Remediation

Point Pinole Properties (07340065)
5000 Giant Road
Richmond, CA 94806
Site Type: State Response
Status: Certified O&M - Land Use Restrictions Only
Land Use Restrictions

Pinole Point Steel/MSC Facility
None
Richmond, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

Lazy J Ranch/chevron Pipeline Site
3001 Giant Rd
Richmond/san Pablo, CA
Cleanup Program Site
Cleanup Status: Open - Inactive

American Standard Products: OU-II/FMF (07320037)
3002 Giant Road
San Pablo, CA 94806
Site Type: State Response
Status: Certified O&M - Land Use Restrictions Only
Land Use Restrictions

Broadway Project American Standard
3002 Giant Rd
Richmond, CA 94801
Cleanup Program Site
Cleanup Status: Open - Inactive

Cooper Chemical (07280154)
2801 Giant Road
Richmond, CA 94806
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

Hildreth Holdings (07410002)
2812 Giant Road
San Pablo, CA 94804
Site Type: State Response
Status: Refer: Other Agency

FMC Corporation - Richmond (07280011)
855 Parr Blvd
Richmond, CA 94801
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

Shell Pipeline at Brooksite Drive
Brookside Drive
Richmond, CA 94801
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Matlack Inc
850 Brookside Dr
Richmond, CA 94801
LUST Cleanup Site
Cleanup Status: Open - Verification Monitoring

Former BNSF Property, Rumrill Blvd. (70000080)
Rumrill Blvd at Chelsey Avenue
San Pablo, CA 94806
Site Type: Voluntary Cleanup

Atchison Topeka and Santa Fe Railway
Unknown Rumrill Blvd
Richmond, CA 94804
Cleanup Program Site
Cleanup Status: Completed - Case Closed

<u>Stockton Station Alternative #5, Amtrak Rehabilitation Site</u>
Issues on nearby parcels:

PG&E, Stockton (39490015)
530 South Center Street
Stockton, CA 95203
Site Type: Voluntary Cleanup
Status: Certified / Operation & Maintenance
Land Use Restrictions

Stockton Plating (60000493)
632 South El Dorado Street
Stockton, CA 95203
Site Type: Evaluation
Status: Inactive - Needs Evaluation

Fabricare
711 San Joaquin St S
Stockton, CA 95203
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

<u>Stockton Station Alternative #4, Interlock Site, Preferred Alternative</u>

Santa Fe Railway
748 Union St S
Stockton, CA 95202
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Santa Fe Railway
1033 Scotts Ave E
Stockton, CA 95205
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Stockton Warehouse Bldg
935 Scotts Ave E
Stockton, CA 95203
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Merced Layover Facility

former Streeter, Patterson, and J&M Flying Service
3240 S. ARBOLEDA RD
Merced, CA 95431
Cleanup Program Site
Cleanup Status: Open - Inactive

Fresno Layover Facility

California Products Company
3000 Butler Ave E
Fresno, CA 93721
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Great Western Chemical Co.
200 Santa Fe Ave
Fresno, CA 93714
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Former Ice House
702 P St
Fresno, CA 93721

LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Santa Fe Railway Motor Car Shd
2650 Tulare Ave E
Fresno, CA 93721
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

BNSF/Amtrak Depot
2650 Tulare St
Fresno, CA 93721
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Bakersfield to Los Angles Alignment (Figure 1-5)

J R Simplot, Edison
430 Pepper Drive
Edison, CA 93220
Site Type: State Response
Status: Active
Land Use Restrictions

J. R. Simplot - Bena (Aka: Bena Fertilizer)
Edison, CA 93220
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Stonybrook Corporation
29700 Woodford-Tehachapi Rd (Old Hwy 58)
Keene, CA 93531
LUST Cleanup Site
Cleanup Status: Open - Remediation

Tehachapi Shell
106 Tehachapi Blvd
Tehachapi, CA 93561
LUST Cleanup Site
Cleanup Status: Open - Remediation

Chevron USA Bulk Fuel Plant (Former)
401 East H Street
Tehachapi, CA 93561-1410
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Products Research & Chemical Corp
11601 United Street
Mojave, CA 93501
Site Type: State Response
Status: Backlog

Purdy Company
12901 United Road
Mojave, CA 93501
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

United Metal Recovery
12433 United Street
Mojave, CA 93501
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

Silver Queen Junkyard
Back Lot at 11847 United Street
Mojave, CA 93501
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

Commodity Refining Exchange
11847 United Street
Mojave, CA 93501
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

Mobile Smelting
United Street & Reed Road
Mojave, CA 93501
Site Type: State Response
Status: Active

Courtaulds Aerospace
United Street and Reed Avenue
Mojave, CA 93501
Site Type: Voluntary Cleanup
Status: Active

Rosamond Minerals
1616 W. Rosamond Blvd
Rosamond, CA 93560
Site Type: Voluntary Cleanup
Status: No Further Action

B-52 Market
3000 N Sierra Hwy
Rosamond, CA 93560
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Bridges and Son Trucking
1200 Orange Avenue
Rosamond, CA 93560
Site Type: State Response
Status: Active

Osage Industries, 15th Street
2001 15th Street, West
Rosamond, CA 93560
Site Type: State Response
Status: Active

S R Kilby Property
2021 West 15th Street
Rosamond, CA 93560
Site Type: State Response
Status: Active

Grossi/Calandri Property
Intersection of Marie Ave & W 15th St
Rosamond, CA 93560
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

John Alexander Research Inc
1753 Sierra Highway
Rosamond, CA 93560
Site Type: State Response
Status: Certified / Operation & Maintenance

Mission Linen Supply
44926 North Yucca Avenue
Lancaster, CA 93535
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Caltrans Maintenance Station
44023 Sierra Highway
Lancaster, CA 93534
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Sierra Hwy & Ave S
37205 Sierra Hwy
Palmdale, CA 93550
LUST Cleanup Site
Cleanup Status: Open - Verification Monitoring

Lubrication Company of America
12500 Lang Station Road
Canyon Country, CA 91350
Site Type: State Response
Status: Active

Golden Valley Road Golden Valley Road
Golden Valley Road
Santa Clarita, CA
Cleanup Program Site
Cleanup Status: Open - Site Assessment

National Technical Systems
20988 Golden Triangle Road
Santa Clarita, CA 91350
Site Type: Voluntary Cleanup
Status: No Further Action

Whittaker Bermite/Rail Station - Site a (19281203)
22116 West Soledad Canyon Road
Santa Clarita, CA 91350
Site Type: State Response
Status: Active

Saugus Swap Meet Property (60000428)
22500 Soledad Canyon Road
Santa Clarita, CA 91350
Site Type: Voluntary Cleanup
Status: Inactive - Action Required

Keysor-Century Corp. (71002295)
26000 Springbrook Avenue
Saugus, CA 91350
Site Type: Tiered Permit
Status: Refer: Other Agency

Whittaker Offsite Groundwater/CLWA (Castaic Lake Water Agency) (60000168)
Area West & North of 22116 Soledad Canyon Road
Santa Clarita, CA 91350
Site Type: Voluntary Cleanup
Status: Active

Thatcher Glass Manufacturing Company (19320186)
25655 Springbrook Avenue
Saugus, CA 91350
Site Type: Voluntary Cleanup
Status: No Further Action

ARCO #1904
1753 Truman St
San Fernando, CA 91340
LUST Cleanup Site
Cleanup Status: Open - Remediation

Gem Fuel
1601 Truman St
San Fernando, CA 91340
LUST Cleanup Site
Cleanup Status: Open - Assessment & Interim Remedial Action

San Fernando Electric (19360532)
1501 First Street
San Fernando, CA 91340
Site Type: Voluntary Cleanup
Status: No Further Action

Holchem Inc.
13546 Desmond St.
Pacoima, CA 91331
Cleanup Program Site
Cleanup Status: Open - Site Assessment

D & M Steel, Inc. (60000652)
11035 Sutter Avenue
Pacoima, CA 91331
Site Type: State Response
Status: No Further Action

Valley Generating Station Gravel Pit (19490246)
11801 Sheldon Street
Sun Valley, CA 91352
Site Type: Voluntary Cleanup
Status: Active

Timm Fuel & Tire Service Inc.
8579 San Fernando Road
Sun Valley, CA 91352
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

World Oil Station No. 19
8181 Sunland Boulevard
Sun Valley, CA
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Vinten Equipment, Inc.
8115 Clyborn Ave.
Sun Valley, CA 91352
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Photo Chem Etch
7710 San Fernando Rd.
Sun Valley, CA 91352
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Cal-air Processing
3014 N. Hollywood Way.
Burbank, CA 91504
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Steve's Plating Corp.
3111 N. San Fernando Blvd.
Burbank, CA 91504
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Chesystems
2150 N. Lincoln St.
Burbank, CA 91504
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Lockheed Plant B1
1705 Victory Pl.
Burbank, CA 91505
Cleanup Program Site
Cleanup Status: Open - Remediation

Mastercraft Metal
1010 Victory Pl.
Burbank, CA 91502
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Oroamerica
443 N. Varney St.
Burbank, CA 91502
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Gilderfluke & Co.
205 S. Flower St.
Burbank, CA 91502
Cleanup Program Site
Cleanup Status: Open - Site Assessment

City of Burbank Environmental
500 S. Flower St.
Burbank, CA 91502
Cleanup Program Site
Cleanup Status: Open - Site Assessment

RSD
715 S. Flower St.
Burbank, CA 91502
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Home Depot - Itt Aerospace Controls-div.
1200 Flower
Burbank, CA 91502
Cleanup Program Site
Cleanup Status: Open - Remediation

Trojan Rivet
1837 Dana St.
Glendale, CA 91201
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Automation Plating
902 E. Thompson Ave.
Glendale, CA 91201
Cleanup Program Site
Cleanup Status: Open - Site Assessment

John & Theresa Ippolito Trust/ J & M Cabinet Shop
1706 Standard Avenue
Glendale, CA
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Walt Disney Company
833 N. Sonora Ave.
Glendale, CA 91201
Cleanup Program Site
Cleanup Status: Open - Site Assessment

San Fernando Valley (Area 2) (19990012)
Crystal Springs Wellfield Area
Glendale, CA 91209
Site Type: Federal Superfund
Status: Active

San Fernando Valley (Area 4) (19990009)
Pollock Wellfield
Los Angeles, CA 90086
Site Type: Federal Superfund
Status: Certified / Operation & Maintenance

Franciscan Ceramics, Inc. (19320112)
2901 Los Feliz Boulevard
Los Angeles, CA 90039
Site Type: State Response
Status: Certified / Operation & Maintenance
Land Use Restrictions

Zehrung Corp.
3273 Casitas
Los Angeles, CA 90039
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Nelson Nameplate Co.
3191 Casitas
Los Angeles, CA 90039
Cleanup Program Site
Cleanup Status: Open - Site Assessment

S. P. Tran (Taylor Yard)
2850 Kerr St.
Los Angeles, CA
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Southern Pacific - Taylor Yard/active (19470006)
2800 Kerr Street
Los Angeles, CA 90039
Site Type: State Response
Status: Active

Weiand Automotive Industries (19340781)
2316-2324 North San Fernando Road
Los Angeles, CA 90065
Site Type: Voluntary Cleanup
Status: Active

Taylor Yard - Parcel C (60001553)
Northwest of Granada St and San Fernando Road
Los Angeles, CA 90039
Site Type: Voluntary Cleanup
Status: Active

Union Pacific Railroad - Cornfield Yard
1245 North Spring St
Los Angeles, CA 90012
Cleanup Program Site
Cleanup Status: Open - Verification Monitoring

Union Pacific/Railroad Company
1322 Broadway N
Los Angeles, CA 90012
LUST Cleanup Site
Cleanup Status: Completed - Case Closed

Vacant
1245 Spring St N
Los Angeles, CA 90012
LUST Cleanup Site
Cleanup Status: Open - Site Assessment

Pacific Pipeline 2000
S. Alameda St.
Los Angeles, CA 90001
Cleanup Program Site
Cleanup Status: Open - Site Assessment

LA to Pasadena Metro Blue Line Construction Author
Los Angeles, CA
Cleanup Program Site
Cleanup Status: Open - Site Assessment

Metro Rail
Union Station
Los Angeles, CA 90023
Cleanup Program Site
Cleanup Status: Open

APPENDIX 8.2

Notice of Preparation of a Draft Program Environmental Impact Report for the San Joaquin Rail Corridor 2035 Vision Project

Date

November 9, 2012

Lead Agency

The California Department of Transportation (Caltrans) will be the Lead Agency for compliance with the California Environmental Quality Act (CEQA) and will prepare a Program Environmental Impact Report (PEIR) for the "San Joaquin Rail Corridor 2035 Vision Project (Project)."

Purpose of this Notice of Preparation

Caltrans needs to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed Project, or as an interested party, your concerns regarding the environmental effects of implementing the Project. Due to time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 (thirty) days after receipt of this notice.

Point of Contact

All responses to this Notice of Preparation must be submitted to Ms. Dawn Kukla, Senior Environmental Planner, at Caltrans District 7. Comments submitted by mail shall be addressed to:

Caltrans District 7
Ms. Dawn Kukla, Senior Environmental Planner
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Comments may also be e-mailed to the following address: **betty_l_miller@dot.ca.gov**

Project Location

The San Joaquin Rail Corridor (defined by the State Rail Plan as the railroad infrastructure connecting Bay Area/Sacramento – Fresno – Bakersfield – Los Angeles) is a major transportation resource between Southern and Northern California. Caltrans, in cooperation with multiple local agencies located within 11 California counties, proposes to fund expansion of the existing rail system within the BNSF Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along three segments of passenger rail corridor in the San Joaquin Valley and portions of the San Francisco Bay area. If federal funding becomes available in the future, a separate document for compliance with the National Environmental Policy Act (NEPA) will be prepared at that time. The map in Figure 1-1 shows Amtrak's existing San Joaquin Corridor intercity rail passenger route. Some of the proposed Project alternatives would utilize rights-of-way along the San Joaquin Valley Railroad (SJVR) and the Southern California Regional Rail

Authority (SCRRA), also known as Metrolink. The expansion of this system would serve to accommodate existing and future passenger rail demand and projected increases in ridership through 2035.

The proposed Project infrastructure would generally be installed within the existing Corridor track rights-of-way. The land use setting for the Project area includes a variety of rural and urban uses and the existing BNSF, UPRR, SJVR and/or Metrolink rail transportation corridors. The track and siding upgrades would generally occur within the rail corridor rights-of-way, with limited rights-of-way acquisition if any, and would not change the existing land use of the rail corridor or the surrounding parcels.

The proposed Project traverses approximately 357 miles of existing track that is located mainly throughout California's San Joaquin Valley, reaching into portions of the San Francisco Bay area, and includes three main rail line segments:

- Bakersfield to Port Chicago (BNSF) – Milepost 887.7 to Milepost 1164.0 (276.6 track miles);

- Port Chicago to Oakland (UPRR) – Milepost 41.3 to Milepost 3.2 (38.1 track miles); and

- Stockton to Sacramento (UPRR) –Two separate line segment alternatives are proposed that would extend from Stockton to Sacramento. The first proposed alternative (UPRR's Fresno Subdivision track) for this segment would extend generally to the east of Highway 99 from Stockton to Sacramento from MP 82.96 to MP 39.35 (43.61 miles). The second proposed alternative (UPRR's Sacramento Subdivision track) would generally extend just east of Interstate 5 from Stockton to Sacramento from MP 95.1 to MP 136.85 (41.75 miles). Only one alternative alignment for this segment would be selected as part of the final preferred Project.

Some of the Project alternatives include secondary passenger train segments that extend beyond the existing areas presently served by the three main San Joaquin Corridor track segments. These secondary passenger train segments include:

- Fresno to Porterville (SJVR);
- Bakersfield to Lancaster (UPRR tracks) and Lancaster to Los Angeles (SCRRA/Metrolink – Antelope Valley Line); and
- Port Chicago to Richmond on the existing BNSF main line.

Figures 1-2a through 1-2d show the proposed locations of second and third track installation and alignments that encompass the three main San Joaquin Corridor segments (Bakersfield to Stockton, Stockton to Sacramento and Stockton to Oakland). Figures 1-4 through 1-6 show secondary segments.

In addition to the proposed rail infrastructure, several specific projects in support of the San Joaquin Rail Corridor Project are proposed at this time.

The proposed **Sacramento Maintenance Facility** would be located between the American River Parkway corridor to the north and the existing UPRR to the south. Land to the east and west is either vacant or contains industrial development. The proposed site is currently occupied by disturbed fields, a parking lot and retention basin. Existing residential development

south of the UPRR tracks would continue to have access to the American River Parkway at an existing point of entry west of the proposed facility.

At both locations under consideration for the new **Stockton Amtrak Station**, the sites are designated "industrial" in the Stockton General Plan as is land along both sides of the rail corridor in both locations. There is land designated commercial, residential and a park in the near vicinity of both locations.

The **Fresno Layover Facility** Alternative would include the development of a layover facility located in the City of Fresno that would extend along existing train tracks northeast of State Route (SR) 41 to Tulare Street in the north, adjacent to the existing Fresno Amtrak station, and along abandoned railroad tracks south of SR 41 to Walker Avenue in the south. Implementation of a facility at this site might require acquisition of property. Existing land use for much of the area including and adjacent to the expansion area southeast of SR 41 is described as heavy industrial; however, site review found that a homeless encampment of perhaps up to 100 individuals is located along the abandoned tracks within the proposed layover facility site. The existing adjacent land use on both sides of the tracks northwest of SR 41 is parking lots.

The **Merced Layover Facility** Alternative would include the development of a layover facility located in the City of Merced that would extend along the existing train tracks from K Street in the north to 6th Avenue in the south. Land uses surrounding the proposed Merced Layover Facility are almost exclusively residential with a small area of general commercial and neighborhood commercial designated land located at G Street. Other nearby land uses include several schools, including John Muir Elementary School and Preschool, that are located about 250 feet north of the existing rail yard. Hoover Middle School is located north of and across E Santa Fe Avenue from the existing rail road tracks. The proposed expansion would locate the westernmost portion of the facility south of the rail and one block west of the middle school. The expanded facilities on the north side of the tracks would be located about 1,100 feet west of the middle school. Most of the proposed layover facility would be within an existing rail yard to the north of the tracks that is separated from existing low density residential development by a surface street or would be located within the existing Amtrak Station that is separated from low to medium density residential development by W 24th Street. The proposed layover facility is zoned High Density Residential, High Medium Density Residential, Low Density Residential and General Commercial.

Project Description

This Draft Program Environmental Impact Report (PEIR) evaluates the potential environmental impacts of the proposed operational modifications and supporting infrastructure improvements required to support intercity passenger train operations within the San Joaquin Corridor over the 25-year planning period. The program is designed to meet the forecasted increase in intercity passenger demand over the 25-year period, the expanded number of passenger train operations required to meet the demand, and the specific infrastructure improvements required to support future operations. Conceptual and site specific impact evaluations are presented, depending upon projected operations and the rail infrastructure improvements required to support those operations. Under this approach, proposed near-term capital improvements are evaluated with more detailed, site specific information, while long-term capital improvements are evaluated at a more general programmatic level.

The proposed Project would include the following improvements:

- Install a second or third main track along:
  - 88.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  - 22.11 miles of the Port Chicago to Oakland segment of UPRR track; and
  - 40.62 miles of the Stockton to Sacramento segment (Fresno Subdivision) or 35.2 miles (Sacramento Subdivision) of UPRR track;

- Install new sidings, or passing track, in order to facilitate train flow on both tracks;

- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations;

- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures;

- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems;

- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas;

- Increase the maximum operating speed of passenger trains in all existing segments of the existing San Joaquin Corridor from 79 miles per hour (mph) to 90 mph;

- Obtain additional operating equipment (rolling stock) to meet the forecasted customer demand for passenger trains; and

- Install new passenger train infrastructure, such as additional layover or maintenance facilities, to support expansion of future train operations.

Figures 1-2a through 1-2d depict where the installation of second or third track is proposed. Figure 1-3a reflects the current BNSF track structure. Figures 1-3b through 1-3h depict the proposed track structure for BNSF and UPRR in order to improve the efficiency of train movements and ensure that passenger train service can operate on a reliable schedule.

Purpose and Need

The San Joaquin Rail Corridor boasts the fifth highest ridership of any Amtrak service in the country and serves a vital function in providing intercity passenger rail service within and between cities in California's San Joaquin Valley.[1] As California's population continues to increase, the travel demand will also increase, with passenger rail ridership growth anticipated to outpace the number of trains available to serve the population.

The California State Rail Plan (2007-08 to 2017-18) (Plan) proposes implementation of 10-year intercity passenger rail service expansion to address projected increases in passenger rail ridership. There are currently 6 train round trips occurring on this route. Caltrans anticipates

[1] San Joaquin Corridor Strategic Plan, California Department of Transportation, January 2008. p.1-2.

that within the next 10 years, there will be sufficient demand to support 8 train round trips on the San Joaquin Corridor, with 2 additional round trips operating between Oakland and Stockton.[2]

The purpose of the proposed rail improvements within the San Joaquin Corridor is to accommodate existing and future passenger rail demand and projected increases in ridership through 2035. The proposed Project would increase the number of daily round trips from 8 to 11 trains operating per day (16 and 22 trains operations per day). The proposed Project also includes increasing the maximum passenger train speed to 90 mph along the corridor. Further, the proposed Project would serve to improve rail safety and operation and provide increased availability of public transportation; which would in turn help reduce vehicular emissions and achieve the air quality goals of state and local plans.

The need for increased rail capacity and the proposed improvements to the San Joaquin Corridor is demonstrated by ridership increases that have resulted in both sold out trains and an increased number of standees on board the corridor trains. Travel demand is projected to grow threefold over the course of the planning period, well exceeding current capacity.

Potential Environmental Impacts

A program-level, first tier, environmental document is considered appropriate for a corridor-wide project as envisioned by Caltrans. The lead agency has made the determination that the Project has the potential to result in significant environmental impacts and/or have a significant impact on the quality of the human environment, making preparation of a PEIR appropriate. An Initial Study has been prepared for the Project. Based on comments received, it has been determined that there is the potential for significant impacts and a PEIR will be prepared. The Lead Agency has identified the following environmental considerations as potential effects of the Project. These issues will be addressed further in the PEIR:

- Air Quality,
- Biological Resources,
- Cultural Resources,
- Greenhouse Gases,
- Hydrology/Water Quality,
- Land Use/Planning,
- Noise,
- Traffic and Transportation, and
- Utilities and Service Systems.

Scoping Meetings

Caltrans District 7 and Caltrans Division of Rail will hold six scoping meetings along the San Joaquin Rail Corridor alignment. The scoping meeting times, dates and locations are listed below. Individuals, agencies and interested parties are encouraged to attend a meeting in their local area.

- ***November 19, 2012 from 6:00 – 7:00 p.m.*** in the Tahoe Room at the Hyatt Regency Sacramento, 1209 L Street, Sacramento, CA 95814

[2] California State Rail Plan (2007-08 to 2017-18), California Department of Transportation, March 2008. p. 114.

- ***November 20, 2012 from 6:30 – 7:30 p.m.*** in the Arnold Rue Community Center at the City of Stockton, 5758 Lorraine Avenue, Stockton, CA 95210

- ***November 26, 2012 from 6:00 – 7:00 p.m.*** in the Bermuda Room at the Richmond Convention Center, 403 Civic Center Drive, Richmond, CA 94804

- ***November 27, 2012 from 6:00 – 7:00 p.m.*** in the Sarah McCardle Room at the Fresno County Public Library, 2420 Mariposa Street, Fresno, CA 93721

- ***November 29, 2012 from 6:30 – 7:30 p.m.*** in the Board Room at Kern Council of Governments, 1401 19th Street, Suite 300, Bakersfield, CA 93301

- ***December 4, 2012 from 5:00 – 6:00 p.m.*** in the First Floor Conference Room at Caltrans District 7, Division of Environmental Planning, 100 South Main Street, Los Angeles, CA 90012

LIST OF COMMENT LETTERS

1. Energy-Climate Committee of Sierra Club, Arthur Unger
2. Dr. Matania and Alice Ginosar
3. California State Lands Commission
4. Central Valley Flood Protection Board
5. California High-Speed Rail Authority
6. CCHSRA (Citizens for California High Speed Rail Accountability)
7. Kern County Development Services Agency
8. Department of Conservation, Division of Land Resource Protection
9. California Department of Fish and Game
10. JK Drummond, a copy of the printed NOP & CD mailed
11. JK Drummond, Director, Southern California Transit Advocates
12. Karen Stout, CCHSRA
13. Francis Montgomery II, Montgomery Management Co, a copy of the printed NOP & CD mailed
14. California Public Utilities Commission
15. Ross Browning
16. Sacramento Area Council of Governments
17. Sacramento Regional Transit District
18. Regional Governance Working Group for the San Joaquin Rail Service
19. San Diego Association of Governments
20. San Joaquin Regional Rail Commission
21. Sacramento Regional Transit District
22. David Schonbrunn, Transportation Solutions Defense and Education Fund (12-18-12)
23. Matthew Dubiel, County of Los Angeles, Department of Public Works
24. Tan Hoang, SAIC Energy, Environmental & Infrastructure, LLC
25. Chevron Environmental Management Company
26. Mindy Gentry, City of Antioch
27. David Schonbrunn, TRANSDEF (12-19-12)
28. Public Scoping Meetings

COMMENT LETTER #1

TO: Ms. Dawn Kukla Caltrans District 7 via betty_l_miller@dot.ca.gov

FROM: Arthur Unger, member of the Energy-Climate Committee of Sierra Club California
2815 La Cresta Drive
Bakersfield, CA 93305-1719
(661) 323 5569
artunger@att.net preferred

RE: NOP for San Joaquin EIS - PEIR on Amtrak development from 2012 to 2035

The Sierra Club has approximately 800,000 volunteer members worldwide; approximately 160,000 of these are also members of Sierra Club California. As a legislative advocacy organization, Sierra Club California lobbies the State Legislature, the Administration, and state government agencies to protect California's natural resources and to improve the health and safety of Californians.

GREENHOUSE GASES and CLIMATE DISRUPTION

In order for planet earth to continue to host humanity, California and all other political entities must reduce and then eliminate the anthropogenic causes of global warming. The Sierra Club thinks of global warming as climate disruption. This DEIS - PEIR must
1-1 discuss what Amtrak can do in the next 25 years to reduce the use of coal, oil and natural gas, the main causes of climate disruption. We must at least meet the trajectory of Executive Order S-3-05, which is to reach 2000 levels by 2010, 1990 levels by 2020, and 80% below 1990 levels by 2050. (This Executive Order is posted on Caltrans' website: (http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm). Sierra Club's goal for distributed renewable power in California is 15GW by 2020; we encourage Amtrak to explore distributed generation possibilities, along with other clean, renewable power alternatives, for its infrastructure and equipment.

This DEIS - PEIR should therefore explore what Amtrak can do by 2035 to help all of California's transportation modes move people with minimum release of Green House Gas (GHG).

As there is a high likelihood that California will have high speed rail (HSR) within 25 years, Amtrak should plan now to coordinate with high speed rail in the San Joaquin Valley and connections to other parts of the state. Buses could serve a center city
1-2 Amtrak station and Amtrak, or light rail, could serve a high speed rail station just beyond suburban development. Local government would have to prevent building sprawl around the HSR station, which entails coordinated planning between transportation agencies and local governments. The buses and light rail would further the development of mass transit in San Joaquin Valley towns.

1-2 cont. There should be an evaluation of whether, to what degree, and over what time periods Amtrak and high speed rail need to run through the same transportation route segments of the San Joaquin Valley and connecting routes to other parts of California. Should Amtrak, HSR and other transit modes share stations?

1-3 While upgrading the 90 mph trains seems like an improvement relative to existing routes, an assessment of need for 90 mph train should be made in the context of future multimodal transportation planning, including HSR. This evaluation should consider how to minimize the use of our most environmentally destructive people movers which are airplanes and autos. Is connecting the Valley towns Amtrak now stops in with Visalia, Porterville, Shafter, Tulare, Exeter, Lindsay and perhaps others, the only future for any train that goes less than 91 mph? Would such connections allow HSR to make more widely spaced Valley stops?

The DEIS should discuss and provide quantitative estimates of carbon dioxide production per passenger mile with Amtrak at 90 mph verses autos and airplanes, as this is an important GHG metric. Please consider both the energy efficiency of a faster train, as well as the effect of faster service on ridership and percentage of riders relative to capacity. The amount of land used by trains, autos and airplanes should be noted.

1-4 The California Public Utilities Commission (CPUC) says that in 2008, transportation emitted 38% of statewide GHGs. What was Amtrak's share, in tons per year, and as a percentage share of the entire state? How do these emissions from Amtrak change over the next 25 years?

1-5 It is fine for the proposed Sacramento Maintenance Facility to achieve the LEED (Leadership in Energy and Environmental Design) Gold standard. What will this facility contribute when diesel engines are replaced with electric trains?

1-6 Replacing 90 mph trains with light rail & HSR requires acquiring land. This poses major problems. The DEIS - PEIR should discuss this topic, including challenges as well as proposed alternatives that address these challenges.

ELECTRICITY PRODUCTION

1-7 Amtrak has significant amounts of land in its rights of way, as well as buildings on its properties. What opportunities exist to develop distributed renewable electricity generation along Amtrak's routes and on structures?

1-8 Can train car roofs tolerate photovoltaic panels now, considering wind and vibration? Do sleeping and dining cars use more electricity than chair cars? Can all the electricity used by trains that are not electrified come from the engine's waste heat rather than from photovoltaic panels on the roof?

1-9 All Maintenance Facilities, shops and storage buildings must have white roofs, to reduce heat island effect as well as reduce summer air conditioning needs. Buildings

1-9 cont. that have suitable structure and access to sunlight should be covered with photovoltaic panels. Deciduous shading trees should be planted around buildings that have air conditioning, to the extent that this does not conflict with solar energy production. Does shading roofs with trees etc. ever save more electricity than solar would supply?

LIGHTING

1-10 Light pollution reduces the visibility of the night sky, trespasses on people's property, and also has significant biological effects on the growth, fertility and health of living organisms. Lighting systems can be designed that pollute less and use less electricity than currently used in Amtrak stations and rights of way. These include lower levels of illumination, and full cutoff fixtures, as mentioned in the NOP, that do not produce unwanted glare which can actually impair night vision and in some cases reduce visibility of potential hazards. These comments apply to lighting associated and not associated with rail safety. Are there lights that use less electricity than low pressure sodium lights use and do not produce unwanted glare? In order to turn off lights when not in use, consider motion sensitive light switches and employee training.

LANDSCAPE

1-11 We are pleased that landscaping shall prioritize the use of native species or drought tolerant non-invasive species to reduce water usage. Under what circumstances does Amtrak believe that it will it be necessary to plant non-native species?

AIR QUALITY

1-12 As it will take time to attain the goal of full electrification, the DEIS - PEIR must compare the amount of air pollution from Amtrak's current fuel to the pollution that would be generated during that delay by other fuels Amtrak could use, including biodiesel and biomethane. Strategies should be developed to reduce toxic air pollutants, especially dangerous particulates emitted by Amtrak's highly polluting diesel engines. The DEIS - PEIR should estimate the impact of pollutants, with and without filters, and using current versus cleaner fuels, on passengers and the general population. Particulates from combustion of the diesel fuel Amtrak now uses is without question a "known carcinogen," causes cardio vascular disease, and contributes to asthma. The First Attachment is a newspaper article that refers to one of many studies of harm from diesel fumes. The DEIS - PEIR should estimate the expense, as well as the emissions and health benefits of using cleaner fuels and filters.

If the DEIS can not state that Amtrak locomotives pollute less than alternative available locomotive technology, the DEIS - PEIR should explain why. How does pollution per passenger mile compare among HSR, light rail and Amtrak? Since a significant number of Californians may think airplanes and autos pollute less per passenger mile than Amtrak does, the DEIS - PEIR should discuss that issue.

1-12 cont. The DEIS - PEIR should discuss the impact of Amtrak's diesel engines on the southern San Joaquin Valley's efforts to attain the new U.S. Environmental Protection Agency (EPA) standard for harmful fine particle pollution (PM2.5). The new annual national health standard is 12 micrograms per cubic meter.

1-13 Should an air quality monitor be placed at Courtyard Private School which is now located across the existing railroad tracks to the south of the proposed Sacramento Maintenance Facility? The NOP (page 29, 30) wisely details several other schools with similar problems.

LAND USE AND FLOODING

1-14 Since a significant number of Californians may think that airfields and highways destroy less wetland and farmland per passenger mile than Amtrak does, the DEIS should discuss those issues.

1-15 The climate disruption that will occur in the next 25 years is projected by climate scientists to increase the likelihood of severe storm events and/or other extreme weather that might flood the tracks for days or cause other service problems. Should tracks be elevated at least a couple feet and have culverts under them so water can pass from one side of the tracks to the other? What are possible effects of increased severe weather on Amtrak structures and operations, and what mitigations are needed to address these challenges?

BIOLOGY

1-16 Biological Resources item IVd will discuss wildlife migration. Routine precautions for construction in the San Joaquin Valley, such as searching for and avoiding dens and plugging pipes, should be detailed in the DEIS – PEIR. Would Kit Fox use culverts under the track?

NOISE

1-17 The DEIS - PEIR should compare the amount of disturbing noise that neighboring populations will be subject to by current and future Amtrak trains, and by a system of buses that serve a center city light rail station that serves a high speed rail station sited just beyond suburban development. Also, consideration should be given to alternative methods to communicate warnings other than primary reliance on loud noise, to address the needs of the deaf and people who put headphones on or are inattentive to the sounds.

BICYCLES

1-18 Bicycles are becoming more popular and gasoline prices and awareness of climate disruption will probably increase bicycle use. Class I bike paths should connect with train stations. Train stations should provide secure bike parking. In Oceanside at least

1-18 cont. four riders, on two occasions, were refused service because there was said to be no room for their bikes. The DEIS – PEIR should discuss accommodating bikes.

ENGINEERING

1-19 Amtrak now uses freight train tracks which limit speed to 79 mph and make trains stop to let freight trains pass. Track adjacent to current track is planned, at a cost the DEIS - PEIR should estimate, so passenger trains can go 90 mph and not wait for freight trains. On ideal track, current rolling stock can do 110 mph. The DEIS – PEIR should confirm or correct these speeds and state the type of ride freight and ideal tracks will allow for passenger trains. How this will affect passenger comfort and activities? The DEIS – PEIR should evaluate how travel times between destinations will be affected by the higher speeds, and quantify how increased speed will affect ridership.

1-20 Since loaded freight railroad cars are often much heavier than passenger railroad cars, the DEIS should discuss how freight cars wear the road bed more than passenger cars, and how this affects passenger rail. What share of the cost of track bed maintenance is borne by Amtrak and how much by the freight railroad?

1-21 If Amtrak is to function as it does now and population increases as predicted in the NOP, California will need ten more four car Amtrak passenger trains within 25 years. Do the Department of Finance and other state agencies agree with the NOP's estimate of California's future population? How many of the recent and future migrants to California will be able to afford using Amtrak or HSR? If we switch to electric railroads, how long would these ten trains run and what would they cost?

1-22 Currently some Amtrak trains are pulled and some are pushed by a locomotive in the rear of the train. Is this cheaper and more efficient, for trips of various distances, than building turn tables for trains or locomotives or building track for u-turns?

ATTACHMENT ONE

http://www.latimes.com/news/science/sciencenow/la-sci-sn-diesel-pollution-20121022,0,7643604.story?track=rss

Diesel fumes more polluting than gas, new California study finds

A new study compares pollution from diesel and gas emissions. (Al Seib / Los Angeles Times)

By Monte Morin

October 23, 2012, 7:00 a.m.

A chemical analysis of air samples taken from California's San Joaquin Valley and an Oakland traffic tunnel show that diesel fuel emissions are more polluting than previously thought, according to researchers.

The study, which appeared Monday in the journal PNAS, focuses on a specific form of pollutant known as secondary organic aerosol, or **SOA**. The pollutant is a major element of smog and can contribute to heart and respiratory problems.

The study authors examined air samples taken in Bakersfield and Oakland's Caldecott Tunnel during a 2010 air quality field study conducted by the National Oceanic and Atmospheric Administration and the California Air Resources Board. Researchers concluded that diesel exhaust is responsible for 65% to 90% of a region's vehicle-related SOA emissions, depending on the mix of traffic.

"We can now say that, while both motor vehicle sources are important for these 'secondary' particles, diesel is responsible for a larger proportion, especially in regions such as the San Joaquin Valley with a lot of diesel use," said senior author Allen Goldstein, an environmental scientist at UC Berkeley.

The analysis contradicts an earlier study published in March, which found that gasoline emissions were a greater contributor to secondary organic aerosol. The topic promises to remain one of heated debate as it carries serious implications for government policies on air quality and public health.

Aerosols are tiny particles that are suspended in the atmosphere. A secondary organic aerosol is one that has been altered chemically by exposure to other elements.

In the UC Berkeley study, authors wrote that diesel exhaust is seven times "more efficient" at forming aerosol than gasoline exhaust. In the United States, diesel fuel accounts for 21% of on-road fuel use, according to study authors. In California, the diesel share of on-road use ranges from approximately 10% in coastal cities to more than 30% in agricultural regions

ATTACHMENT TWO

http://www.nytimes.com/2012/06/13/health/diesel-fumes-cause-lung-cancer-who-says.html

Diesel fumes cause lung cancer, the World Health Organization declared Tuesday [June 12, 2012], and experts said they were more carcinogenic than secondhand cigarette smoke.

The W.H.O. decision, the first to elevate diesel to the "known carcinogen" level, may eventually affect some American workers who are heavily exposed to exhaust. It is particularly relevant to poor countries, where trucks, generators, and farm and factory

machinery routinely belch clouds of sooty smoke and fill the air with sulfurous particulates.

The United States and other wealthy nations have less of a problem because they require modern diesel engines to burn much cleaner than they did even a decade ago. Most industries, like mining, already have limits on the amount of diesel fumes to which workers may be exposed.

The W.H.O. decision was announced Tuesday in Lyon, France, after a weeklong scientific meeting. It also said diesel exhaust was a possible cause of bladder cancer. Diesel exhaust now shares the W.H.O.'s Group 1 carcinogen status with smoking, asbestos, ultraviolet radiation, alcohol and other elements that pose cancer risks.

The Diesel Technology Forum, which represents car and truck companies and others that make diesel engines, reacted cautiously to the W.H.O. ruling, noting that modern diesel engines used in the United States and other wealthy countries burn low sulfur fuel, so new trucks and buses emit 98 percent less particulates than old ones did and 99 percent less nitrogen oxide, which adds to ozone buildup.

Allen Schaeffer, the forum's executive director, said the studies considered by the W.H.O. "gave more weight to studies of exposure from technology from the 1950s, when there was no regulation."

End of Attachments

Thank you for the opportunity to comment,
Signed by
Arthur Unger, for the Energy-Climate Committee of Sierra Club California
2815 La Cresta Drive
Bakersfield, CA 93305-1719
(661) 323 5569
artunger@att.net preferred

Comment Letter #1 from the Energy-Climate Committee of Sierra Club California, February 18, 2010

Comment 1: Addresses future emissions of greenhouse gases (GHG). It questions what Amtrak can do to reduce such future emissions, at a minimum in accordance with Executive Order S-3-05 (Executive Order signed by Governor Schwarzenegger in 2005 that set GHG emissions reduction targets for California). Requests consideration of what actions Amtrak can implement to help all of California transportation modes move people with a minimum release of GHG.

Response: The issue of greenhouse gas emissions generated by future Amtrak operations and methods of achieving reductions of such emissions are addressed in Chapter 4 of this document. Please refer to Subchapter 4.5 of this DRAFT PEIR.

Comment 2: Requests that coordination be initiated with California High Speed Train System (CHSTS) operations in the San Joaquin Valley and more broadly connections to other parts of the State. Comments further discuss the efficacy of coordinated planning between transportation agencies and local governments.

Response: The CHSTS coordination efforts are described in Chapter 3, the Project Description, and in more detail within Chapter 5, Alternatives. One of the alternatives evaluated in Chapter 5 consists of the operation of a blended rail system beginning in approximately 2018. The opportunities for further coordination are discussed in Chapters 3 and 5, as well.

Comment 3: Requests an evaluation of 90 mph trains when compared to CHSTS and other people movers, such as airplanes and autos. Questions are raised regarding connecting other Valley towns to justify operation of Amtrak California trains in the future.

Response: Information regarding comparative GHG emissions from different modes of transportation is provided in the DRAFT PEIR GHG analysis in Subchapter 4.5. The purpose of the 90 mile per hour upgrade for San Joaquin Amtrak California Service trains is to reduce the travel time on the Corridor, therefore improving the schedule for passengers and attract additional riders. There is no correlation between this proposed increase in train speed and extension of service to any other cities in the Valley, nor to allow CHSTS to have fewer or more spread out stops. The Blended System envisioned by CHSTS is designed to allow CHSTS to be fully integrated with the San Joaquin train service in the Valley. CHSTS has not provided any specific information regarding future train stations along the initial proposed segment from near Madera to near Bakersfield.

Comment 4: What is Amtrak California's share of Statewide GHG transportation emissions. How will these emissions change over the next 25 years?

Response: Information regarding Amtrak California's share of Statewide GHG transportation emissions is estimated in the DRAFT PEIR, Subchapter 4.2. As new

Tier 4 locomotives and cleaner buses replace existing locomotives and buses, overall GHG emissions from trains and buses are estimated to be reduced. The amount of reduction is also provided in the DRAFT PEIR, Subchapter 4.2. New equipment will be integrated into the existing fleet by 2018. Most of the old diesel engines are expected to be replaced over the next 17 years.

Comment 5: The comment raises questions regarding the future role of the Sacramento Maintenance Facility.

Response: This project component is no longer being considered in the DRAFT PEIR. It is now being evaluated as a separate project under CEQA. Upon completion of the separate project environmental review, it will be provided for review and comment.

Comment 6: Replacement of Amtrak California trains with light rail and CHSTS requires additional land.

Response: The proposed project does not envision replacement of San Joaquin Corridor Amtrak California Service with light rail or CHSTS. A separate environmental document was prepared for the CHSTS operations, and the land impacts of near-term CHSTS activities are summarized in the Chapter 5 discussion of the Blended System Alternative.

Comment 7: What renewable energy generation is being considered on Amtrak California-owned property?

Response: The San Joaquin Corridor Amtrak California Service occurs on tracks owned by Union Pacific Railroad (UPRR) and BNSF Railway Company (BNSF). Amtrak pays for access on these tracks and has no authority to develop renewable energy along the tracks. At other Amtrak facilities, such as stations, most of the land is devoted to parking areas for train passengers. There are no specific plans to develop renewable energy resources at this time, but if funding were to become available it would be possible to install covered parking with solar electric panels on the roof of the covers. The potential energy generation would have to be calculated for each station with parking area to determine if a net energy balance could be achieved. The issue is not evaluated in this document because there are no proposals to implement renewable energy at this time.

Comment 8: Are there opportunities to mount renewable energy systems on trains or to use waste heat from the engines to generate electricity?

Response: Trains are mobile platforms that utilize the entire clearance profile allowed by the host railroads. There are no proposals to mount renewable energy systems on trains, and there is no room on the locomotives for a waste heat recovery unit. Train electricity is provided by the diesel electric generation system and there are no proposals to change or modify this system over the life of this project at this time.

Comment 9: Suggests other design measures to generate renewable electricity or reduce the structural heating loads.

Response: *This issue is addressed in Chapter 4, Subchapter 4.5. Mitigation is identified to integrate low impact design elements into future San Joaquin Corridor Amtrak California Service structures to reduce the overall energy footprint of such facilities.*

Comment 10: Suggests using lighting that does not create glare and that minimizes energy use.

Response: *Mitigation is already included in the Initial Study to address potential glare or offsite light impacts. Regarding energy use, mitigation is identified to integrate low energy design elements for lighting of future structures that require such lighting.*

Comment 11: Under what circumstances would non-native species be considered for landscaping?

Response: *Non-invasive, non-native species would only be considered under two circumstances: first, when there are no native species that could meet a specific design requirement; and second, where dense plant cover is required to control erosion and no native species are available to succeed in this role. Context is also a consideration, such as completely urbanized locations.*

Comment 12: Compare current locomotive emissions with future emissions and discuss the availability of alternative fuels. Estimate public health effects from future train emissions.

Response: *Discussions with Amtrak indicate that currently there are no locomotives in operation that can utilize cleaner fuels, such as biodiesel and biomethane. To consider such engines at this time was concluded to be speculative. Caltrans is committed to utilizing the cleanest locomotives available, however, we currently operate a fleet with some of the lowest emitting Tier 2 locomotives in the State. As new locomotives are acquired, Caltrans will begin a shift to Tier 4 locomotives with procurement of Passenger Rail Investment and Improvement Act (PRIIA/NGEC) locomotives. The procurement project is in the contract development stage, and procurement is estimated to be complete by 2018. The term "Tier" for locomotives refers to the degree of emission control. Tier 4 represents the most current level of emissions control for locomotives. Appendix 8.3 contains the current emission requirements for Tier 4 locomotives. The emission reductions are substantial, and these data are utilized in the air emission forecast along with an assessment of public health risk associated with Amtrak train operations. This information includes a comparison of pollution per passenger mile from various modes of passenger transportation.*

Comment 13: Addresses the need for pre-project air quality monitoring at the Courtyard Private School located adjacent to the Sacramento Maintenance Facility.

Response: *As noted above, this project component is no longer being considered in the DRAFT PEIR.*

Comment 14: Requests a comparison of effects on wetlands from different modes of transportation.

Response: *The project is mainly on existing railroad right of way that has already been impacted. As there is no comparative data base regarding wetland effects from different modes of transportation, it will not be possible to compile such a comparison. The effects of the proposed action on wetlands is defined and evaluated in Chapter 4, Subchapter 4.3 of the DRAFT PEIR.*

Comment 15: Requests that the potential for more severe storms be considered in future design of track infrastructure.

Response: *As a PEIR, this document does not examine the specific design of existing or future bridges within areas exposed to flood hazards. However, the issue of increased severity of future runoff from severe storms is considered in Chapter 4, Subchapter 4.6, Hydrology and Water Quality. Mitigation is included in this section to ensure that future site specific engineering evaluations of flood hazards take into account estimates of future increased severity of flood hazards. To the extent feasible, given future uncertainties regarding the effects of climate change, future bridge design can take estimated increases in runoff into account and will be required to.*

Comment 16: Addresses biology issues, including wildlife migration routes and site specific surveys for sensitive species that may use dens or culverts along the track alignment.

Response: *An evaluation of wildlife migration routes and identification of areas with sensitive wildlife species is provided in Chapter 4, Subchapter 4.3. Mitigation is included for all areas, but particularly in areas with suitable habitat, to conduct the site specific surveys for sensitive species within the area of potential impact of future rail system infrastructure improvements.*

Comment 17: Addresses noise issues related to future San Joaquin Corridor Amtrak California Service operations.

Response: *A detailed noise evaluation is provided in Chapter 4, Subchapter 4.7. It includes a discussion of noise from existing train and future bus service to San Joaquin Corridor Amtrak California Service stations. With regard to train horn alternatives, Federal Railroad Administration (FRA) regulations require this type of warning. The only current options to eliminate the horn requirement are to create a grade separated crossing or to install "quiet zone" at-grade crossings. Quiet zones are regulated by the FRA, and implementation is the responsibility of local jurisdictions and handled on a case-by-case basis. These facilities are not evaluated in the DRAFT PEIR.*

Comment 18: Requests consideration of bicycles at train stations.

Response: *Bicycle parking and use on trains are discussed in Chapter 4, Subchapter 4.8. Amtrak accommodates bicycle use to the extent feasible at this time and will continue to do so. The planning and installation of bicycle lanes on the local*

circulation system roadways that provide access to stations is the responsibility of local jurisdictions and is beyond the scope of this DRAFT PEIR.

Comment 19: Suggests consideration of 110 mph operations and better coordination of all train operations to minimize passenger train delays.

Response: *A 110 mph operational scenario was given consideration but was rejected from further consideration because San Joaquin Corridor Amtrak California Service intercity operations currently operate on Class I railroad right-of-way. Any operations in excess of 90 mph would require a separate right-of-way, with all the associated capital costs and environmental impacts of building a new dedicated railroad. The proposed San Joaquin Corridor Amtrak California Service infrastructure improvements are designed to provide adequate track capacity for both freight and passenger trains.*

Comment 20: Requests information regarding track wear and cost sharing agreements for maintenance.

Response: *Amtrak presently provides a fixed cost per train mile to the railroads for maintenance in accordance with their operating agreements. The railroads also receive an incentive payment for meeting the on-time performance requirements.*

Comment 21: Requests additional information regarding the population of future train passengers that justify the demand for additional trains and continuing affordability of Amtrak trains. Also, a question is raised regarding the effect of switching to electric railroads.

Response: *The San Joaquin Corridor Amtrak California Service ridership forecast was generated by modeling existing ridership and future population growth within the Corridor, based upon future population estimates modeled by the California Department of Finance.. A copy of the modeling results is provided as Appendix 8.4 of this document. As previously noted, San Joaquin Corridor Amtrak California Service operates over privately owned railroad infrastructure, and the Class I railroads will not allow mixed use operations (freight/electric) trains on these tracks. Therefore, no estimate of future train speeds and schedules will be provided for an electric train option in the DRAFT PEIR.*

Comment 22: Asks whether push/pull Amtrak trains are efficient and whether they should be replaced by turn tables or round-about tracks?

Response: *The industry standard is to operate intercity corridor trains using push-pull equipment. Push-pull shortens the time needed to turn train sets for the next scheduled run. This results in less engine emissions, lower crew costs, and more efficient use of scarce equipment. The use of wye's and turntables would require the construction of dedicated facilities and would add an additional hour to equipment layover, as well as increase fuel use, emissions, and crew costs.*

COMMENT LETTER #2

Alice Ginosar
<aliceginosar@yahoo.com>
11/19/2012 10:40 PM
Please respond to
Alice Ginosar
<aliceginosar@yahoo.com>

To "dawn.kukla@dot.ca.gov" <dawn.kukla@dot.ca.gov>
cc Matania Ginosar <mginosar@sbcglobal.net>
bcc
Subject San Joaquin rail

Dear Ms. Kukla,

I have just spent about 2 hours reviewing on the Internet* the San Joaquin Rail Corridor plans, since I was unable to attend the public meeting tonight Nov 19 in Sacramento. From what I can determine, there is very little change in the rail service between Sacramento and Southern California, specifically Los Angeles projected in the next 20 years. I find this situation very disappointing, since Sacramento is the capitol of one of the largest governments in the world.

2-1 Both my husband and I prefer to ride the train especially within California and we frequently over the past 30 years have taken Amtrak between Sacramento and Los Angeles. We had hoped that projected improvements would include a direct train between Sacramento and Bakersfield, but it seems as though there will still be a Amtrak bus between these cities.

Please correct me if I am not understanding these plans. Also please include this feedback (if it is correct) in the public comments that are due by Dec 13, 2012.

Sincerely,
Dr. Matania and Alice Ginosar
Carmichael CA

*www.dot.ca.gov/dist07/resources/envdocs

Comment Letter #2 from Dr. Matania and Alice Ginosar, November 19, 2012

Comment 1: The authors state that their understanding of the proposed project is that it would result in "very little change in the rail service between Sacramento and Southern California, specifically Los Angeles…" and express disappointment that projected improvements would not include a direct train between Sacramento and Bakersfield, and that it would still require an Amtrak bus between these cities.

Response: *The proposed project would increase the frequency of trains between Sacramento and Bakersfield. Four trains currently travel between Sacramento and Bakersfield, and additional Amtrak California travel options are available with Amtrak California bus service between Sacramento and Stockton and between Bakersfield and Los Angeles. With the proposed project, the number of daily train trips between Stockton and Bakersfield would increase to 12, and there would be additional Amtrak California travel using Amtrak California bus service between Sacramento and Stockton for all non-direct trains. The proposed project would result in an average 18 minute (6%) decrease in travel time between Sacramento and Bakersfield.*

The proposed San Joaquin Corridor Amtrak California Service would continue to be an intercity rail service and direct trains (with no stops) are not proposed between Sacramento and Bakersfield. The authors' comment that an Amtrak California bus is required between Sacramento and Bakersfield is inaccurate. The authors may have intended to comment that travel between Sacramento and Los Angeles currently requires transferring between an Amtrak California train and an Amtrak California bus, which is accurate. The proposed project includes the evaluation of an alternative in Section 1.3.4 of the NOP project description that would convey passengers between Bakersfield and Los Angeles via train rather than bus. This alternative will be evaluated in the DRAFT PEIR for the proposed project.

COMMENT LETTER #3

STATE OF CALIFORNIA EDMUND G. BROWN JR., *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

JENNIFER LUCCHESI, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone **1-800-735-2929**
from Voice Phone **1-800-735-2922**

Contact Phone: **(916) 574-1900**
Contact FAX: **(916) 574-1885**

December 12, 2012

File Ref: SCH # 2012111039

Caltrans District 7
Ms. Dawn Kukla, Senior Environmental Planner
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Subject: Notice of Preparation (NOP) for a Programmatic Environmental Impact Report (PEIR) for the San Joaquin Rail Corridor 2035 Vision Project, Multiple Counties

Dear Ms. Kukla,

3-1 The California State Lands Commission (CSLC) staff has reviewed the subject NOP for a PEIR for the San Joaquin Rail Corridor 2035 Vision Project (Project), which is being prepared by the California Department of Transportation (Caltrans). Caltrans, as a public agency proposing to partially fund the Project, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The CSLC is a trustee agency because of its trust responsibility for projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters. Additionally, if the Project involves work on sovereign or school lands, the CSLC will act as a responsible agency.

CSLC Jurisdiction and Public Trust Lands

3-2 The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6301, 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion

or where the boundary has been fixed by agreement or a court. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, except where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

3-2 cont. In 1853, the United States Congress granted to California nearly 5.5 million acres of land for the specific purpose of supporting public schools. In 1984, the State Legislature passed the School Land Bank Act (Act), which established the School Land Bank Fund (SLBF) and appointed the CSLC as its trustee (Pub. Resources Code, § 8700 et seq.). The Act directed the CSLC to develop school lands into a permanent and productive resource base for revenue generating purposes. The CSLC manages approximately 469,000 acres of school lands still held in fee ownership by the State and the reserved mineral interests on an additional 790,000± acres where the surfaces estates have been sold. Revenue from school lands is deposited in the State Treasury for the benefit of the Teachers' Retirement Fund (Pub. Resources Code, § 6217.5).

3-3 The proposed Project location may involve sovereign or school land under the jurisdiction of the CSLC. Based on the information submitted in the NOP and Initial Study, CSLC staff is currently unable to determine the extent or location of sovereign ownership interests of the State in the project area; however, it does appear that the existing Metrolink corridor between Lancaster and Los Angeles may traverse State-owned school land in

- Section 28, Township 5 North, Range 12 West; and
- Section 16, Township 4 North, Range 14 West.

3-4 Staff requests that, as the Project proceeds, the Project proponent contact our office to determine whether the Project or any of its components requires a lease or permit. We additionally request to be placed on any future distribution mailing list for the project. For questions concerning the CSLC's leasing jurisdiction, please contact Ninette Lee, Public Land Manager, at the contact information contained at the end of this letter.

Project Description

Caltrans proposes to co-fund the Project to meet various agencies' objectives and needs to expand rail infrastructure in the San Joaquin Valley corridor to accommodate existing and future passenger rail demand and projected increases in ridership through 2035.

3-5 From the Project Description, CSLC staff understands that the Project would include the following components:

- Install a second or third main track along:
  - 88.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  - 22.11 miles of the Port Chicago to Oakland segment of the Union Pacific Railroad (UPRR) track; and

- 40.62 miles of the Stockton to Sacramento segment (Fresno Subdivision) or 35.2 miles (Sacramento Subdivision) of UPRR track;

- Install new sidings, or passing track, in order to facilitate train flow on both tracks;
- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations;
- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures;
- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems;
- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas;
- Increase the maximum operating speed of passenger trains in all existing segments of the existing San Joaquin Corridor from 79 miles per hour (mph) to 90 mph;
- Obtain additional operating equipment (rolling stock) to meet the forecasted customer demand for passenger trains; and
- Install new passenger train infrastructure, such as additional layover or maintenance facilities, to support expansion of future train operations.

3-5 cont.

Environmental Review

CSLC staff requests that the following potential impacts be analyzed in the PEIR.

General Comments

1. Project Description: A thorough and complete Project Description should be included in the PEIR in order to facilitate meaningful environmental review of potential impacts, mitigation measures, and alternatives. The Project Description should be as precise as possible in describing the details of all allowable activities (e.g., types of equipment or methods that may be used, maximum area of impact or volume of sediment removed or disturbed, seasonal work windows, locations for material disposal, etc.), as well as the details of the timing and length of activities. Thorough descriptions will facilitate CSLC staff's determination of the extent and locations of its leasing jurisdiction, make for a more robust analysis of the work that may be performed, and minimize the potential for subsequent environmental analysis to be required.

3-6

2. Programmatic Document: Because the Project is being proposed as a "Programmatic" rather than a "Project-level" EIR, the CSLC expects the Project will be presented as a series of distinct but related sequential activities (e.g., construction of the layover facilities, expansion and extension of track

3-7

3-7 cont.

infrastructure). The State CEQA Guidelines[1], section 15168, subdivision (c)(5) states that a program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. In order to avoid the improper deferral of mitigation, a common flaw in program-level environmental documents, mitigation measures should either be presented as specific, feasible, enforceable obligations, or should be presented as formulas containing "performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way" (State CEQA Guidelines, § 15126.4, subd. (b)). As such, the PEIR should make an effort to distinguish what activities and their mitigation measures are being analyzed in sufficient detail to be covered under the PEIR without additional project specific environmental review, and what activities will trigger the need for additional environmental analysis (See State CEQA Guidelines, § 15168, subd.(c)).

Biological Resources

3-8

3. Sensitive Species: Caltrans should conduct queries of the California Department of Fish and Game's (DFG) California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service's (USFWS) Special Status Species Database to identify any special-status plant or wildlife species that may occur in the Project area. The PEIR should analyze the potential for such species to occur in the Project area and, if impacts to special-status species are found to be significant, consult with the above agencies to identify feasible mitigation measures.

3-9

4. Invasive Species: One of the major stressors in California waterways is introduced species. Therefore, for any part of the Project involving in-water construction or water-borne transportation of construction equipment, the PEIR should consider the Project's potential to encourage the establishment or proliferation of aquatic invasive species (AIS) such as the quagga mussel, or other nonindigenous, invasive species including aquatic and terrestrial plants. For example, construction boats and barges brought in from long stays at distant projects may transport new species to the Project area via hull biofouling, wherein marine and aquatic organism attach to and accumulate on the hull and other submerged parts of a vessel. If the analysis in the PEIR finds potentially significant AIS impacts, possible mitigation could include contracting vessels and barges from nearby, or requiring a certain degree of hull-cleaning from contractors. The DFG's Invasive Species Program could assist with this analysis as well as with the development of appropriate mitigation (information at http://www.dfg.ca.gov/invasives/).

In addition, in light of the recent decline of native pelagic organisms and in order to protect at-risk fish species, the PEIR should examine if any elements of the Project (e.g., changes in bankside vegetative cover) would favor non-native

[1] The State "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

3-9 cont. fisheries within any waterways, such as the San Joaquin River, crossed by the track system.

3-10 5. Construction Noise: The PEIR should also evaluate noise and vibration impacts on fish and birds from construction activities in the water, on levees, and for land-side supporting structures. Mitigation measures could include species-specific work windows as defined by DFG, USFWS, and the National Oceanic and Atmospheric Administration's Fisheries Service (NOAA Fisheries). Again, staff recommends early consultation with these agencies to minimize the impacts of the Project on sensitive species.

Climate Change

3-11 6. Greenhouse Gases: A greenhouse gas (GHG) emissions analysis consistent with the California Global Warming Solutions Act (AB 32) and required by the State CEQA Guidelines should be included in the PEIR. This analysis should identify a threshold for significance for GHG emissions, calculate the level of GHGs that will be emitted as a result of construction and ultimate build-out of the Project, determine the significance of the impacts of those emissions, and, if impacts are significant, identify mitigation measures that would reduce them to less than significant.

Cultural Resources

3-12 7. Submerged Resources: The PEIR should evaluate potential impacts to cultural resources in the Project area. The CSLC maintains a shipwrecks database that can assist with this analysis. CSLC staff requests that Caltrans contact Senior Staff Counsel Pam Griggs at the contact information noted at the end of this letter to obtain shipwrecks data from the database and CSLC records for the Project site. The database includes known and potential vessels located on the State's tide and submerged lands; however, the locations of many shipwrecks remain unknown. Please note that any submerged archaeological site or submerged historic resource that has remained in State waters for more than 50 years is presumed to be significant.

3-13 8. Title to Resources: The PEIR should also mention that the title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands and school lands of California is vested in the State and under the jurisdiction of the CSLC. CSLC staff requests that Caltrans consult with Senior Staff Counsel Pam Griggs at the contact information noted at the end of this letter, should any cultural resources on state sovereign or school lands be discovered during construction of the proposed Project.

3-14 Thank you for the opportunity to comment on the NOP for the Project. As a potentially responsible agency, the CSLC may need to rely on the Final PEIR and/or a subsequent tiered document for the issuance of a lease as specified above and, therefore, we request that you consider our comments prior to certification of the PEIR. Please send

3-14 cont.

copies of future Project-related documents, including electronic copies of the Final PEIR, Mitigation Monitoring and Reporting Program (MMRP), Notice of Determination (NOD), CEQA Findings and, if applicable, Statement of Overriding Considerations when they become available, and refer questions concerning environmental review to Sarah Sugar, Environmental Scientist, at (916) 574-2274 or via e-mail at Sarah.Sugar@slc.ca.gov. For questions concerning archaeological or historic resources under CSLC jurisdiction, please contact Senior Staff Counsel Pam Griggs at (916) 574-1854 or via email at Pamela.Griggs@slc.ca.gov. For questions concerning CSLC leasing jurisdiction, please contact Ninette Lee, Public Land Manager at (916) 574-1869, or via email at Ninette.Lee@slc.ca.gov.

Sincerely,

Cy R. Oggins, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
Ninette Lee, LMD, CSLC
Jim Porter, LMD, CSLC
Sarah Sugar, DEPM, CSLC
Warren Crunk, Legal, CSLC

Comment Letter #3 from California State Lands Commission, December 12, 2012

Comment 1: The California State Lands Commission (CSLC) states that it is a trustee agency because of its trust responsibility for projects that could directly or indirectly affect sovereign lands, school lands and the public easement in navigable waters.

Response: This letter and your comments have been noted and filed for the record.

Comment 2: CSLC provides further detail regarding its jurisdiction over tidelands, submerged lands, beds of navigable lakes and waterways, and school lands.

Response: This letter and your comments have been noted and filed for the record.

Comment 3: CSLC observes that the proposed project may impact lands under its jurisdiction, particularly along the existing Metrolink corridor between Lancaster and Los Angeles. CSLC requests that the project proponent contact the identified CSLC Public Land Manager to determine if any project components would require a lease or permit from CSLC.

Response: To date, the project team has not identified any land under the jurisdiction of CSLC. As the project proceeds, Caltrans will conduct further coordination with CSLC to identify any project components that may impact land under CSLC jurisdiction. If any such land would be impacted, Caltrans will procure required permits and/or leases.

Comment 4: CSLC requests to be placed on the future distribution mailing list for the proposed project, directed to the attention of the identified CSLC Public Land Manager.

Response: CSLC will be included in future mailings related to the proposed project, directed to the attention of the identified Project Land Manager.

Comment 5: CSLC summarizes the proposed project description.

Response: Your summary is accurate as provided in the NOP project description.

Comment 6: CSLC requests a thorough and complete project description be included in the DRAFT PEIR for the proposed project.

Response: The DRAFT PEIR for the proposed project includes a thorough and complete project description consistent with the programmatic nature of the EIR in Chapter 3. As a program document, project-specific details may not be available for evaluation in the DRAFT PEIR. As specific facilities are proposed in the future, the associated environmental impacts will be evaluated in a subsequent project-specific CEQA evaluation to allow a final determination on future project's specific impacts. Such review is appropriate and consistent with utilization of a program environmental document in accordance with Sections 15162 and 15168 of the CEQA Guidelines.

Comment 7: CSLC identifies its expectations regarding the presentation of the proposed project as a programmatic document, and identifies specific sections of CEQA Guidelines, particularly expressing concern that the project should identify mitigation measures that are specific, feasible and enforceable obligations or should be presented as formulas containing performance standards. The project should distinguish specific activities that are being analyzed in sufficient detail in the PEIR such that they require no further environmental analysis and what activities would require subsequent review.

Response: *The DRAFT PEIR for the project will be completed in accordance with CEQA Guidelines for programmatic documents, including identifying mitigation measures that are specific, feasible, and enforceable obligations or presented as formulas containing performance standards. Clarification will be provided as to what specific activities are being analyzed in sufficient detail in the DRAFT PEIR such that those activities that require no further environmental analysis and those activities that would require subsequent review are clearly defined.*

Comment 8: CSLC requests that sensitive species evaluation include review of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service's (USFWS) Special Status Species Database and that the DRAFT PEIR analyze the potential for sensitive species to occur in the project area and identify mitigation if impacts would be significant.

Response: *The sensitive species evaluation will include review of the CDFW CNDDB and USFWS Special Status Species Database, and the DRAFT PEIR analyzes the potential for sensitive species to occur in the project area in Chapter 4, Subchapter 4.3, and this analysis identifies mitigation for impacts that would be significant.*

Comment 9: CSLC identifies invasive species as a major concern adversely impacting California aquatic systems. CSLC requests that the DRAFT PEIR analyze the potential for construction or operational activities to introduce or favor aquatic or terrestrial invasive species and mitigate potential impacts. CSLC suggests possible mitigation.

Response: *The biological resources evaluation includes an analysis of the potential for construction or operational activities to introduce or favor aquatic or terrestrial invasive species in Chapter 4, Subchapter 4.3. Where required, mitigation is provided that is capable of reducing potentially significant impacts to below a level of significance.*

Comment 10: CSLC requests that the DRAFT PEIR evaluate the proposed project-related construction noise and vibration impacts on fish and birds and suggests possible mitigation.

Response: *The DRAFT PEIR evaluates the proposed project-related construction noise and vibration impacts on adjacent land, fish and birds in Chapter 4, Subchapter 4.7.*

Comment 11: CSLC requests that the DRAFT PEIR include an analysis of greenhouse gas emissions consistent with CA Global Warming Solutions Act (AB 32).

Response: *The DRAFT PEIR includes an analysis of greenhouse gas emissions consistent with CA Global Warming Solutions Act (AB 32) in Chapter 4, Subchapter 4.5.*

Comment 12: CSLC states that the DRAFT PEIR should evaluate the potential to impact cultural resources, including submerged resources. CSLC maintains a shipwrecks database that includes known and potential vessels located on the State's tide and submerged lands, but notes that many shipwrecks are unknown. CSLC notes that any submerged archaeological site or submerged historic resource that has remained in State waters for more than 50 years is presumed to be significant.

Response: *The DRAFT PEIR analyzes the potential for the proposed project to impact cultural resources, including submerged resources in Chapter 4, Subchapter 4.5. The analysis will include a review of CSLC's shipwrecks database and an understanding that many shipwrecks are unknown.*

Comment 13: CSLC requests that the DRAFT PEIR note that title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on land under jurisdiction of CSLC is vested in the State and under the jurisdiction of CSLC. CSLC requests that the proposed project consult with the identified CSLC staff should any cultural resources be discovered during construction of the proposed Project.

Response: *The DRAFT PEIR includes information that title to all abandoned shipwrecks, archaeological sites and historic or cultural resources on land under jurisdiction of CSLC is vested in the State and under the jurisdiction of CSLC. This information is provided in Chapter 4, Subchapter 4.4. The proposed project proponent will consult with the identified CSLC staff should any cultural resources be discovered during construction of the proposed Project.*

Comment 14: CSLC requests copies of future project-related documents, including electronic copies, as they become available and identifies staff members to whom specific questions should be directed.

Response: *Copies of future project-related documents, including electronic copies, will be provided to CSLC as they become available.*

COMMENT LETTER #4

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-2380 FAX: (916) 574-0682

December 5, 2012

Ms. Dawn Kukla
California Department of Transportation, District 7
100 South Main Street, St. 100, MS-16A
Los Angeles, California 90012

Subject: San Joaquin Rail Corridor 2035 Vision Project
SCH Number: 2012111039
Document Type: Notice of Preparation

Dear Ms. Kukla:

Staff of the Central Valley Flood Protection Board (Board) has reviewed the subject document and provides the following comments:

4-1 The proposed project is located within counties that include rivers and streams under the jurisdiction of the Central Valley Flood Protection Board. The Board is required to enforce standards for the construction, maintenance and protection of adopted flood control plans that will protect public lands from floods. The jurisdiction of the Board includes the Central Valley, including all tributaries and distributaries of the Sacramento River, the San Joaquin River, and designated floodways (Title 23 California Code of Regulations (CCR), Section 2).

A Board permit is required prior to starting the work within the Board's jurisdiction for the following:

- The placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (CCR Section 6);

4-2
- Existing structures that predate permitting or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (CCR Section 6);

- Vegetation plantings will require the submission of detailed design drawings; identification of vegetation type; plant and tree names (i.e. common name and scientific name); total number of each type of plant and tree; planting spacing and irrigation method that will be utilized within the project area; a complete vegetative management plan for maintenance to prevent the interference with flood control, levee maintenance, inspection, and flood fight procedures (CCR Section 131).

Vegetation requirements in accordance with Title 23, Section 131 (c) states "Vegetation must not interfere with the integrity of the adopted plan of flood control, or interfere with maintenance, inspection, and flood fight procedures."

4-3 The accumulation and establishment of woody vegetation that is not managed has a negative impact on channel capacity and increases the potential for levee over-topping. When a channel develops vegetation that then becomes habitat for wildlife, maintenance to initial baseline conditions becomes more difficult as the removal of vegetative growth is subject to federal and State agency requirements for on-site mitigation within the floodway.

4-4 Hydraulic Impacts - Hydraulic impacts due to encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. Off-site mitigation outside of the State Plan of Flood Control should be used when mitigating for vegetation removed within the project location.

The permit application and Title 23 CCR can be found on the Central Valley Flood Protection Board's website at http://www.cvfpb.ca.gov/. Contact your local, federal and State agencies, as other permits may apply.

4-5 The Board's jurisdiction, including all tributaries and distributaries of the Sacramento River and the San Joaquin River, and designated floodways can be viewed on the Central Valley Flood Protection Board's website at http://gis.bam.water.ca.gov/bam/.

If you have any questions, please contact me by phone at (916) 574-0651, or via email at jherota@water.ca.gov.

Sincerely,

James Herota
Staff Environmental Scientist
Projects and Environmental Branch

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

Comment Letter #4 from the Central Valley Flood Protection Board (Board), December 5, 2012

Comment 1: The Board states that it has reviewed the NOP and found that the proposed project is located within counties that include rivers and streams under jurisdiction of the Board. The Board enforces standards for construction, maintenance and protection of adopted flood control plans that protect public lands from floods in the Central Valley. The comment more specifically identifies areas that are included under the Board's jurisdiction.

Response: This letter and your comments have been noted and filed for the record.

Comment 2: The Board identifies when a permit is required prior to starting work within its jurisdiction, including impacts to levees and impacts to existing structures. The Board states that any vegetation plantings require a detailed planting plan including a complete vegetative management plan for maintenance to prevent interference with flood control, levee maintenance, inspection, and flood flight procedures.

Response: The proposed project will procure permits from the Board as required and will submit a detailed vegetation plan as required when project-related activities require re-vegetation. The planting plan will include the required information, including a complete vegetative management plan for maintenance.

Comment 3: The Board reiterates that "Vegetation must not interfere with the integrity of the adopted plan of flood control, or interfere with maintenance, inspection, and flood flight procedures." [Title 23, Section 131(c)] The comment further specifies that accumulation and establishment of woody vegetation that is not managed would negatively impact channel capacity and increase the potential for levee over-topping. If unmanaged woody vegetation then provides habitat for wildlife, removal is subject to federal and state requirements, including on-site mitigation.

Response: This letter and your comments have been noted and filed for the record. Specific measures to prevent interference with the integrity of flood control facilities will be included in Chapter 4, Subchapter 4.3.

Comment 4: The Board states that hydraulic impacts due to encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation, and that the project should include mitigation to prevent and/or reduce such impacts. It further states that mitigation for vegetation removed within the project area should be located outside of the State Plan of Flood Control.

Response: This letter and your comments have been noted and filed for the record. The proposed project will include mitigation to prevent/reduce hydraulic impacts to acceptable levels in Chapter 4, Subchapter 4.6.

Comment 5: The Board identifies where permit applications can be procured and where to view areas under the Board's jurisdiction, and it provided contact information for Board staff.

Response: Thank you for the information. The proposed project will procure permits from the Board for activities within the Board's jurisdiction, as required.

CALIFORNIA
High-Speed Rail Authority

COMMENT LETTER #5

December 7, 2012

Ms. Dawn Kukla, Senior Environmental Planner
Caltrans District 7
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Board Members:

Dan Richard
Chairperson

Lynn Schenk
Vice-Chairperson

Thomas Richards
Vice-Chairperson

Jim Hartnett

Michael Rossi

Thomas J. Umberg

Jeff Morales
Chief Executive Officer

JERRY BROWN
GOVERNOR

RE: SCOPING COMMENTS FOR THE PREPARATION OF THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE SAN JOAQUIN RAIL CORRIDOR 2035 VISION PROJECT

Dear Ms. Kukla:

Thank you for providing the California High-Speed Rail Authority (Authority) with the opportunity to submit scoping comments for the preparation of the Draft Program Environmental Impact Report (PEIR) for the San Joaquin Rail Corridor 2035 Vision Project. The Authority received a copy of the Notice of Completion, Notice of Preparation, and Initial Study on November 19, 2012.

5-1 The Authority requests that the 2035 Vision Project and Draft PEIR take into consideration the adopted planning and environmental documents for the California High-Speed Train System, including but not limited to the Revised 2012 Business Plan (adopted by the Board of Directors on April 12, 2012), Statewide Final Program Environmental Impact Report/Environmental Impact Statement (adopted by the Board of Directors on November 2, 2005, Record of Decision received from Federal Railroad Administration on November 18, 2005), Bay Area to Central Valley Partially Revised Final Program EIR (certified by the Board of Directors on April 19, 2012, Record of Decision received from the Federal Railroad Administration on December 2, 2008), Merced to Fresno Final Environmental Impact Report/Environmental Impact Statement (adopted by the Board of Directors on May 3, 2012, Record of Decision received from Federal Railroad Administration on September 18, 2012), and Fresno to Bakersfield Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (released to the public on July 20, 2012). The Authority has also adopted alternatives analysis documents for other project sections throughout the state, including the Merced to Sacramento section. These documents are available on the Authority's website: www.cahighspeedrail.ca.gov.

5-2 Please also take into consideration the planning for the Altamont Corridor Rail Project, which the Authority is supporting through a partnership with the San Joaquin Regional Rail Commission. The Authority and SJRRC are proposing to develop a dedicated regional rail corridor through the Altamont Pass and the Tri Valley area capable of supporting intercity and commuter rail passenger services. The materials for this project are available on the Authority's website here: http://www.cahighspeedrail.ca.gov/lib_Altamont_Corridor.aspx

5-3 The Authority has also approved a Memorandum of Understanding (MOU) with Southern California transportation agencies to implement high-speed rail in a "Blended" strategy and to create a program for early investment projects.

5-3 cont.

In light of these materials, and the Legislature's direction that the high-speed train system link with regional and local transit systems to form an integrated transportation system throughout the state (Pub. Utils. Code, § 185037, subd. (b)), the 2035 Vision Project and Draft PEIR should more thoroughly discuss the physical interface, connectivity, and operational relationship between the San Joaquin Corridor and the California High-Speed Train System. The description provided in Section 1.3.6 of the Detailed Project Description does not accurately account for the adopted and funded portions of the California High-Speed Train System or the full scope of the Authority's planning efforts to date. Due to the complexity of the Authority's efforts, we are happy to meet with Caltrans Division of Rail to discuss the 2035 Vision Project and Draft PEIR in more detail, and assist Caltrans in assessing the relevant Authority documentation applicable to their effort.

Sincerely,

Mark A. McLoughlin
Deputy Director, Environmental Planning

CC: Jeff Morales, Chief Executive Officer
Dennis Trujillo, Chief Deputy Director
Melissa White, Chief of External Affairs
Frank Vacca, Chief Program Manager
Brent Felker, PMT Program Director
Rebecca Kohlstrand, PMT Environmental Manager
Stacey Mortensen, San Joaquin Regional Rail Commission

Comment Letter #5 from the California High-Speed Rail Authority (Authority), December 7, 2012

Comment 1: The Authority requests that the DRAFT PEIR take into consideration the adopted planning and environmental document for the California High-Speed Train System. Several planning, environmental and business plans and document are referenced.

Response: *The NOP identified one alternative for evaluation that focuses on the "Blended" or "Integrated" passenger rail system for the San Joaquin Valley. The objective would be to include a certain number of Amtrak passenger trains that would travel from Stockton on the current BNSF track alignment and in the vicinity of Madera would shift over to the proposed California High-Speed Train System (CHSTS). Once on the CHSTS, these trains would stay on the CHSTS until a point just west of Bakersfield where the trains would enter the BNSF tracks to the existing Amtrak depot in Bakersfield. Caltrans will continue to work with the Authority to review the findings of the various documents referenced by the Authority and to define a mutually acceptable operating scenario, both in terms of the number of trains to be operated under the Blended System concept and other technical factors, such as the type of locomotives and cars required to utilize this system. This information will be included in Chapter 3, Project Description, and Chapter 5, the discussion of alternatives.*

Comment 2: The Authority seeks to have the Altamont Corridor Rail Project taken into consideration as it expands operations to support intercity and commuter rail passenger services in the future.

Response: *The modeling for this report was conducted by Willard Keeney and Associates in coordination with Caltrans and BNSF for the existing Corridor. The only facilities where the Altamont Commuter Express (ACE) and the San Joaquin Corridor Amtrak California Service interconnect are the current and the proposed new passenger rail station in the City of Stockton. The location of this station and its ability to serve both Amtrak California's San Joaquin and Altamont's train operations is currently being studied as part of the CHSTS Blended System plan and is given detailed consideration in this DRAFT PEIR.*

Comment 3: The Authority cites legislative direction to link the CHSTS with other transit systems as the basis for more thoroughly discussing the physical interface, connectivity, and operational relationship between the San Joaquin Corridor Amtrak California Service and the CHSTS. This should include an accurate account of the adopted and funded portion of the CHSTS to date and the Authority's planning efforts to date.

Response: *Caltrans concurs with this recommendation and has substantially expanded the discussion of integrating the San Joaquin Corridor Amtrak California Service operations with the CHSTS. This information is included in Chapter 3, the Project Description, and Chapter 5, the Alternatives. The referenced material will be reviewed and a meeting held with the Authority to provide input to the DRAFT PEIR. We will also confer with other pertinent groups to ensure that a full discussion of links to other transit systems will be given thorough evaluation in the DRAFT PEIR.*

COMMENT LETTER #6

CCHSRA

CITIZENS FOR CALIFORNIA HIGH SPEED RAIL ACCOUNTABILITY

December 17, 2012

Ms. Dawn Kukla, Senior Environmental Planner
Caltrans District 7
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Subject: Comments on the Notice of Preparation for the Draft Program Environmental Impact Report for the San Joaquin Rail Corridor 2035 Vision Project

Dear Ms. Kukla,

6-1 The Citizens for California High Speed Rail Accountability appreciate the opportunity to comment on the Notice of Preparation for the Draft Program Environmental impact Report for the San Joaquin Rail Corridor 2035 Vision Project (Program EIR). As one may not expect, our group of concerned citizens are highly supportive of the Amtrak service, and are gravely concerned that the implementation of the California High Speed Rail Project (HSR Project) will negatively impact, which including the great potential for elimination San Joaquin Rail Service. Below are issues that have come to our attention and may require further investigation prior to the development of the

Issue No. 1: Ridership & California High Speed Rail

6-2 The ridership forecasting done for this EIR, seems to be limited and flawed. Current aggressive activities on behalf of the HSR Project seek to implement a high-speed rail system on the east side of the Central Valley. In their implementation of this project they have identified the utilization of the Amtrak Service on their initial rail line and the need to rely upon the current 1 million riders that use the Amtrak service in their high-speed rail service. The analysis seems to rely upon the existing track alignments and positioning of stations, however under the current implementation of the HSR Project, alignments and stations will be significantly altered. This alteration of stations and alignment could impact the availability of riders to access the San Joaquin service. For example the current HSR Project alignments through Kings County bypass the small communities of Hanford, Corcoran and Wasco. If the Amtrak service is moved to this alignment these stations will be eliminated, therefore reducing the ridership that comes from these communities. For the small community of Hanford, this is approximately 180,000 riders per year.

6-3 Given that the California High Speed Rail Authority has been in existence for several years, has a Business Plan, and has a Programmatic EIR/EIS developed, this Program EIR should have an elaborate discussion of the potential aspects of high-speed rail and its interface with the current

rail system and future plans. Given the objectives and potential outcomes of the HSR Project, the features and proposed work outlined here in this Program EIR may be redundant and/or unwarranted.

6-3 cont.

Lastly, during recent developments of Assembly Bill 1779 and the creation of the Joint Powers Authority to run the San Joaquin service, members of the Altamont Corridor Express (Stacy Mortensen and Dan Leavitt) injected language that ties the future operation of Amtrak Service to the HSR Project. In the legislations the language indicates that the JPA shall run Amtrak consistent with Section 14036 and the January 2014 Business Plan developed by the High Speed Rail Authority pursuant to Section 185033 of the Public Utilities Code. The NOP and the future Program EIR seems to ignore this important fact. If this Program EIR is to guide the development and progress of the Amtrak system, then it is completely contingent upon the plans set forth by the California High Speed Rail Authority. The Program EIR should reconcile these conflicts in order to provide a clear, consistent and realistic path forward that can be secured with a definite future.

Issue No. 2: NEPA Analysis

6-4

The NOP indicates that future funding may be forthcoming from the federal government and that the program may pursue compliance from the National Environmental Policy Act (NEPA) at a later date. If this program has the potential for federal funding it seems reasonable to prepare and analyze this project through NEPA to ensure that full compliance is met. Once the environmental review under CEQA has been completed this project may have momentum that will yield the NEPA analysis as ineffective.

Issue No. 3: Failure to Address Agricultural Impacts

6-5

The initial analysis has removed the agricultural impacts associated with this project. We request that the PEIR look into the agricultural impacts such as:

- Traffic impacts to agricultural equipment including increased vehicle safety concerns and decreased level of service at intersections near rail crossings and at rail crossings.
- Wind impacts along the alignment. With increased speed and the increased frequency of trains the Program EIR should analyze the increased potential of drift of pesticides and the impacts to agriculture.

Issue No. 4: Union Pacific Railroad Confilct

6-6

A reconciliation of the stance that the Union Pacific Railroad (UP) Company toward the increase in passenger rail traffic within their right-of-way requires attention within the Program EIR. In the past UP has filed aggressive letters averse to the inclusion of a passenger rail service within, or even adjacent to their right-of-way. This was in response to the potential placement of the California High Speed Rail service adjacent to the UR system in California. This Program EIR seeks to increase the number of passenger rail service (Amtrak) within the right-of-way and include the increase in track. UP cannot pick and choose its beneficial track at the expense of the citizens of California.

6-7

CCHSRA again appreciates the opportunity to provide some initial thoughts on the NOP for the Program EIR. We hope that these comments will provide some insight into the issues facing our Central Valley communities. At a time when our budgets for critical features such as education

6-7 cont.

and safety are being cut, CCHSRA and its members question the expense being incurred by pursuing a plan that will be significantly impact by the California High-Speed Rail project. Some clarification must be presented that either solidifies the components of the Program EIR, or delves into the detail as to potential impacts of the HSR project on the Program EIR.

If you have any questions or comments, please feel free to contact me at cchsraorg@gmail.com.

Sincerely,

Aaron Fukuda
Co -Chairman

Comment Letter #6 from the Citizens for California High Speed Rail Accountability (CCHSRA), December 17, 2012

Comment 1: The CCHSRA acknowledges receipt of the NOP and expresses concerns that current Amtrak California service will be adversely affected by implementation of the CHSTS.

Response: This letter and your comments have been noted and filed for the record.

Comment 2: Expresses concern over the future ridership forecast for the San Joaquin Corridor Amtrak California Service operations. The specific concern is that the ridership forecast for future Amtrak California does not reflect CHSTS/Amtrak California Blended System operations that will rely upon stations outside of the core downtown areas of cities served by Amtrak California trains operating on the BNSF track alignment.

Response: This comment points out one of the primary differences between the San Joaquin Corridor Amtrak California Service approach to future ridership and that of the future ridership forecasts prepared for the High-Speed Rail Authority. The San Joaquin Corridor Amtrak California Service ridership forecast was based on continued operation along the existing San Joaquin Corridor, and it was generated from modeling that was based on existing ridership and future growth in population within the Corridor. Based on the rate of future growth, additional Amtrak California trains will be added to the Corridor up to 11 roundtrip trains at some point in the future. Thus, as demand increases within the San Joaquin Corridor, additional trains will be added to meet this demand. By contrast, the Authority forecasts are based on establishing a high volume of service that it assumes will induce additional ridership due to frequency and schedule. This is a different approach to creating a ridership forecast. For internal consistency with the proposed project, which is the continued use of the existing Corridor through 2035, the Amtrak California ridership forecast is appropriate, and it has been used to define future infrastructure requirements. Chapter 5, Alternatives, provides an evaluation of the Blended service envisioned between Amtrak California and the CHSTS. The number of scheduled trains proposed in the Blended service evaluation is based on assumptions provided by the Authority, and it is therefore consistent with this type of operation. The future ridership concerns expressed by the CCHSRA are addressed in this manner to allow evaluation of two different models for future rail operations.

Comment 3: The Program EIR needs to reconcile the potential conflicts between the proposed project and the requirements to operate Amtrak California in an integrated manner with CHSTS and the Business Plan published by the Authority.

Response: Several agencies submitted similar comments regarding the focus of future San Joaquin Corridor Amtrak California Service operations. In response to these comments, additional information from the Authority and from the current Draft State Rail Plan has been incorporated into the DRAFT PEIR. The "Blended Service" alternative addressed in Chapter 5 has been substantially expanded to address these comments.

Comment 4: The environmental documentation should be expanded to include an analysis under the NEPA to support future federal funding options.

Response: *In order to process a National Environmental Policy Act (NEPA) document, there must be a federal lead agency. No federal lead agency was willing to work with Caltrans on the San Joaquin Corridor Amtrak California Service project at this time. However, the documentation is being prepared to meet NEPA requirements, and if the opportunity arises in the future, it could quickly be modified for NEPA processing.*

Comment 5: Two agricultural related issues should be included in the DRAFT PEIR evaluation. The effect of additional train traffic on safe movement of agricultural equipment at rail crossing intersections; and the potential for air movement associated with faster trains to increase potential drift of pesticides and impacts to agriculture.

Response: *To the extent feasible, these issues are addressed at a programmatic level within the traffic and air quality sections of the DRAFT PEIR.*

Comment 6: The document must reconcile the stance of Union Pacific Railroad (UP) regarding the use of its tracks for passenger rail service.

Response: *UPRR was contacted at the beginning of this review process. UPRR indicated that if additional passenger rail service is to be considered, then it would require adding a new track along those segments of track (Oakland to Martinez and Stockton to Sacramento) that currently serve the San Joaquin Corridor Amtrak California Service passenger train operations. This requirement has been integrated into the Project Description provided in Chapter 3 of the DRAFT PEIR, and the impacts of constructing this infrastructure is included in the environmental impact evaluation and forecast.*

Comment 7: Summarizes the purpose of CCHSRA's response to the NOP. Concerns are expressed regarding evaluation of a plan "that will be significantly impacted by the California High-Speed Rail Project." CCHSRA seeks clarification of this issue and some detailed evaluation of effects of the CHSTS on the DRAFT PEIR.

Response: *As indicated, more detail is being included in the evaluation of the Blended System that may serve the future ridership within the San Joaquin Valley. Please note that the data base and evaluation of infrastructure improvements over much of the San Joaquin Corridor alignment will be able to support future CHSTS passenger rail operations.*

COMMENT LETTER #7

ROADS DEPARTMENT
CRAIG M. POPE, P.E., DIRECTOR
2700 "M" STREET, SUITE 400
BAKERSFIELD, CA 93301-2370
Phone: (661) 862-8850
FAX: (661) 862-8851
Toll Free: (800) 552-5376 Option 5
TTY Relay: (800) 735-2929
E-Mail: *roads@co.kern.ca.us*

DEVELOPMENT SERVICES AGENCY
Engineering, Surveying & Permit Services Department
Planning & Community Development Department
Roads Department

December 11, 2012

Ref.: 8-2.1a NOP – San Joaquin Corridor
Oakland & Sacramento to Bakersfield
And then Los Angeles Union Station

Ms. Dawn Kukla, Senior Environmental Planner
Department of Transportation, Caltrans District 7
100 South Main Street, Suite 100 (MS 16-A)
Los Angeles, CA 90012-3712

Subject: Notice of Preparation for the San Joaquin Corridor Programmatic Environmental Impact Report 2035 Vision

Dear Ms. Kukla,

This department has reviewed the November 2012 notice from the Department of Transportation District 7 for the above noted project and has the following comments:

7-1 1. With the amount of truck traffic, and number of employees described in section 1.2.2 Construction Scenario, page 10, the project will have not have a significant impact on County Roadways.

7-2 2. Enter into a secured agreement with the Kern County Roads Department to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and or Kern County.

7-3 3. Obtain all necessary Encroachment Permits for any proposed work within the County road right of way. These permits may be obtained from our Permits Engineer.

7-4 4. Obtain all necessary Transportation Permits for any oversized or overweight (heavy) loads that will utilize County maintained roads, which may require California Highway Patrol escort. These permits may be obtained from our Permits Engineer.

7-5 Thank you for the opportunity to comment on this project. We look forward to the response to our comments. Should you have any questions please contact me at (661) 862-8860.

Sincerely,

Steven Young
Engineer II

H:\Traffic Projects\CalTrans\San Joaquin Rail Corridor\NOP San Joaquin Rail Corridor 2035 doc

Comment Letter #7 from the Kern County Development Services Agency Roads Department (Department), December 11, 2012

Comment 1: The Roads Department states that it has reviewed the NOP and found that the truck traffic and number of employees described in the Section 1.2.2 Construction Scenario on page 10 of the NOP would not result in a significant impact on County roadways.

Response: Thank you for your review. This letter and your comment has been noted and filed for the record.

Comment 2: The Roads Department requests that the proposed project enter into a secured agreement with the Roads Department that ensures that the project promptly repairs any damage to County roads in accordance with the requirements of the State and/or Kern County.

Response: The project is committed to repairing any County roads damaged by project-related construction activities.

Comment 3: The Roads Department states that the project should obtain encroachment permits for any proposed work in the County road right-of-way (ROW).

Response: The project will obtain encroachment permits for any work proposed within the County road ROW.

Comment 4: The Roads Department states that the project should obtain transportation permits for any oversized or overweight loads that will utilize County maintained roads.

Response: The project will obtain transportation permits for any oversized or overweight loads that will utilize County maintained roads.

Comment 5: The Roads Department provides contact information for questions.

Response: Thank you for the information. This letter and your comments have been noted and filed for the record.

COMMENT LETTER #8

NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

DEPARTMENT OF CONSERVATION

Managing California's Working Lands

DIVISION OF LAND RESOURCE PROTECTION

801 K STREET • MS 18-01 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 324-0850 • FAX 916 / 327-3430 • TDD 916 / 324-2555 • WEB SITE conservation.ca.gov

December 7, 2012

dawn.kukla@dot.ca.gov

Ms. Dawn Kukla, Senior Environmental Planner
Department of Transportation (Caltrans)
Caltrans District 7
Division of Environmental Planning
100 South Main Street, Suite 100, MS 16-A
Los Angeles, CA 90012

Dear Ms. Kukla:

SAN JOAQUIN RAIL CORRIDOR 2035 VISION (MULTIPLE COUNTIES)

8-1 The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Initial Study for the referenced project. The Division monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. We offer the following comments with respect to the project's impacts on agricultural land and resources.

Project Description

The proposed project is the San Joaquin Rail Corridor (Corridor) Project infrastructure upgrades. The upgrades are described as being installed within the existing track rights-of-way, with limited rights-of-way acquisition. The land use setting for the project are includes a variety of rural and urban uses and the existing Burlington Northern Santa Fe Railway Company (BNSF), Union Pacific Railroad (UPRR), and under certain circumstances, Metrolink rail transportation corridors.

8-2

Agricultural Setting of the Project

Caltrans' review of the California Department of Conservation Williamson Act Lands County Map series for 2008 indicate that there are extensive areas of land under Williamson Act Contracts along the railroad alignment(s) in Fresno, Kern, Kings, Madera, Merced, San Joaquin, and Stanislaus Counties. Please refer to the Department's website for the most recent maps versions for Williamson Act lands in the San Joaquin Valley region. In Contra Costa County, there are very limited lands under Williamson Act Contracts along the

railroad alignments. In Sacramento County there are no lands under Williamson Act Contracts close to the developed portions of the City and only limited lands under contract along the UPRR Fresno Subdivision, but there are more extensive areas of lands under contract along the UPRR Sacramento Subdivision alignment. Along the Bakersfield to Los Angeles rail alignment, Williamson Act land along the rail alignment in Kern County is primarily on non-prime agricultural lands, including an area east of Tehachapi identified as in non-renewal. The most recent Statewide Map of Williamson Act Contract Land shows no designated lands in Los Angeles County, except on Catalina Island.

8-2 cont.

Although lands under Williamson Act contracts occur along many portions of the project alignment, all components of the proposed rail alignment improvements would be constructed and operated within the existing railway rights-of-way. The ancillary facilities that may or would require property acquisition, including the proposed rail operations and maintenance facility to be located in the City of Sacramento, the proposed new station in Stockton and the proposed Fresno Layover Facility are all proposed to be located on land identified as urban and built-up land by the Williamson Act Maps.

Project Impacts on Agricultural Land

The Department recommends that the following be included in the in the analysis of project impacts:

8-3

- A description of the type, amount, and location of farmland lost to project implementation.
- A discussion of any conflicts with Williamson Act contracts, including terminations needed to accommodate the project.
- A discussion of the impacts that contract termination could have on nearby properties under contract; i.e., growth-inducing impacts and an economic incentive to shift to a more intensive land use such as urban development.
- Indirect impacts on current and future agricultural operations; e.g., land-use conflicts, increases in land values and taxes, vandalism, population and traffic.

Mitigation Measures

8-4

The loss of agricultural land to residential, commercial and other urban uses represents a permanent reduction in the State's agricultural land resources and a significant impact under CEQA. The DEIR should address mitigation measures that discourage "leap-frog" development, and ensure that impacts to agricultural resources do not occur prematurely. The Department suggests that the Caltrans consider mitigating significant project impacts from the conversion of prime agricultural land and the cumulative growth inducing impacts on surrounding farmland due to the road widening project. Where applicable, prior to issuance of a grading permit, Caltrans may be required to complete one or more of the following measures at a ratio of 1:1 for prime farmland or farmland of statewide importance, as defined by the Department:

1) funding and purchase of an agricultural conservation easement;
2) purchase of credits from an established farmland mitigation bank;
3) contribution of land or funding to an organization that provides for the preservation of farmland in California;
4) establishment of a new Williamson Act or Farmland Security Zone contract;

5) participation in an agricultural land mitigation program adopted by Caltrans that provides equal or more effective mitigation than those listed above. Qualifying land can be within the local jurisdiction or outside the local jurisdiction for the same or equivalent crops.

8-4 cont.

The Department encourages the use of permanent agricultural conservation easements as mitigation for agricultural land conversion. We also recommend that the quality of mitigation farmland be equivalent to that of the land converted (e.g., prime for prime). General information about agricultural conservation easements, the Williamson Act, and provisions noted above is available on the Department's website, or by contacting the Division. The Division's website address is:

http://www.conservation.ca.gov/dlrp/index.htm

Public Acquisition Notification

8-5

The Williamson Act requires that public agencies must notify the Department of Conservation of the intention to locate a public improvement on land within an agricultural preserve (Gov. Code section 51291, subd,(a)). This notice is required to provide the Department with an opportunity to comment. (Gov. Code §51291, subd.(b).). Please refer to the Public Acquisition section of the Department's web site for detailed information on this process: http://www.conservation.ca.gov/dlrp/lca/basic contract provisions/Pages/public acquisitions.aspx. The notice should be directed to the Department at the following address:

Mark Nechodom, Director
Department of Conservation
c/o Division of Land Resource Protection
801 K Street, MS 18-01
Sacramento, CA 95814

Thank you for the opportunity to comment on this IS. If you have questions on these comments or require technical assistance or information on agricultural land conservation, please contact Jacquelyn Ramsey, Associate Environmental Planner at 801 K Street, MS 18-01, Sacramento, California 95814; or, phone (916) 323-2379.

Sincerely,

Molly A. Penberth
Division of Land Resource Protection
Conservation Program Support Unit

Enclosure

cc: State Clearinghouse

Comment Letter #8 from the Department of Conservation Division of Land Resource Protection (Conservation Department), December 7, 2012

Comment 1: The Conservation Department states that it has reviewed the NOP and states that the Conservation Department monitors farmland conversion on a statewide basis and administers agricultural land conservation programs.

Response: Thank you for the information. This letter and your comments have been noted and filed for the record.

Comment 2: The Conservation Department provides a brief summary of the location of the proposed project impacts, including a summary of agricultural lands along the project alignments and within the proposed area of impacts as provided in the NOP.

Response: The summary of the proposed project impacts and agricultural lands within and adjacent to the areas of impact is accurate.

Comment 3: The Conservation Department recommends including the following information in the project analysis: a description of the farmland that would be lost to project implementation; a discussion of any conflicts with Williamson Act contracts; a discussion of any impact contract termination could have on nearby properties; and indirect impacts on current and future agricultural operations.

Response: As indicated on Page15 of the NOP, the rail corridors of the San Joaquin Corridor Amtrak California Service project are owned and maintained by BNSF and UPRR solely for the support of rail operations. Federal rules prevent the introduction of vegetation that could pose a fire or other safety hazard to rail operations within this corridor. No agricultural operations occur within the railroad rights-of-way. No portion of the proposed rail road alignment improvements is located outside of the existing BNSF and UPRR rights-of-way; no farmland would be lost to improvements proposed along the railroad alignment.

The proposed new station in Stockton could require procurement of property that is not currently within railroad rights-of-way as could the Fresno Alternative if it is selected for the proposed Layover Facility. The Sacramento maintenance facility has been removed from the proposed project since completion of the NOP, and it will be evaluated as a separate project in the near future. Therefore, it will not be analyzed further in this document. As stated on Page 16 of the NOP, the ancillary facilities that may or would require property acquisition, including the proposed new station in Stockton, and the proposed Fresno Layover Facility are proposed to be located on land identified as urban and built-up land by the Important Farmlands Maps. The proposed property acquisition would not result in a loss of agricultural lands or any conflicts with Williamson Act contracts.

If specific facilities are proposed in the future that would require the procurement of agricultural land, including land under Williamson Act contracts, the associated environmental impacts will be evaluated in a subsequent

project-specific CEQA evaluation to allow a final determination on a future project's specific agricultural impacts. Such review is appropriate and consistent with utilization of a program environmental document in accordance with Sections 15162 and 15168 of the CEQA Guidelines.

Comment 4: The Conservation Department identifies mitigation measures for the loss of agricultural land. The comment states that the DRAFT PEIR should address mitigation measures that discourage "leap-frog" development to ensure that impacts to agricultural resources do not occur prematurely. The Conservation Department misidentifies the project as "road widening project" when requesting that the project mitigate impacts from the conversion of prime agricultural land and cumulative growth inducing impacts on surrounding farmland. The Conservation Department identifies mitigation that may be required for impacts to farmland.

Response: *As stated in the response to comment #3, no conversion of farmland is envisioned by the project at this time based upon a detailed review of the location of all proposed facilities. The project is not a road widening project. As the analysis on page 54 of the NOP states, the proposed project is designed to enable passenger rail traffic to flow more efficiently within the existing San Joaquin Corridor track alignments. The improved rail facilities would be designed to accommodate future passenger growth, but would not attract substantial population to the area either by offering expanded passenger rail service or by a substantial increase in rail-related employment. A small increase in rail-related employment would occur primarily at the location of the layover facility, and potentially at other locations where increased service would begin or end, but any increase (~50 new employees) would be negligible when compared with employment growth expected over the next 25 years in the region. The additional passenger rail service proposed by the project would be implemented as customer demand necessitates, and the additional service would not provide rail access where it is not already available. As such, it is not anticipated to induce substantial numbers of people to relocate, for example, by providing passenger rail access to a new location that would allow people to live farther from existing employment centers that they would then commute to by rail. If the Hanford to Visalia or the Bakersfield to Los Angeles passenger rail routes were to be implemented, it would increase the availability of passenger rail to new communities, but in both cases efficient Amtrak California bus to rail service is already available. The project would not directly or indirectly induce substantial population growth. By the same logic, it also would not result in "leap-frog" development.*

Comment 5: The Williamson Act requires that public agencies notify the Department of Conservation when public improvements are proposed on land within an agricultural preserve. Contact information is provided where notice should be sent.

Response: *This letter and your comments have been noted and filed for the record. If future project-related activities will result in improvements proposed on land within an agricultural preserve, notice will be provided to the Conservation Department.*

COMMENT LETTER #9

State of California - Natural Resources Agency
DEPARTMENT OF FISH AND GAME
1416 9th Street
Sacramento, CA 95814
http://www.dfg.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

December 14, 2012

Ms. Dawn Kukla
Caltrans District 7
100 South Main Street, Suite 100 (MS 16-A)
Los Angeles, CA 90012

Subject: Notice of Preparation/Initial Study for the San Joaquin Rail Corridor 2035 Vision Project Draft Program Environmental Impact Report

Dear Ms. Kukla:

The Department of Fish and Game (DFG) has reviewed the California Department of Transportation's (Caltrans) Notice of Preparation and Initial Study for the San Joaquin Rail Corridor 2035 Vision Project (Project) Draft Program Environmental Impact Report (PEIR).

9-1 As a trustee for California's fish and wildlife resources, DFG has jurisdiction over the conservation, protection, and management of fish, wildlife, and habitat necessary for biologically sustainable populations of those species (Fish and Game Code (FGC) Section 1802). DFG also administers and has regulatory authority under the California Endangered Species Act (CESA), Native Plant Protection Act, the Natural Communities Conservation Planning Act, and other provisions of FGC that afford protection to California's fish and wildlife resources.

DFG offers the following comments and recommendations for this Project as the trustee and responsible agency pursuant to the California Environmental Quality Act (CEQA, Public Resources Code Section 21000 et. seq.) and described in Title 14 California Code of Regulations Chapter 3 (CEQA Guidelines) Section 15082(b).

9-2 **Resource Assessment:** The PEIR should provide a complete assessment (including but not limited to type, quantity and locations) of the habitats, flora and fauna within and adjacent to the Project area, including endangered, threatened, and locally unique species and sensitive habitats. The assessment should include the reasonably foreseeable direct and indirect changes (temporary and permanent) that may occur with implementation of the Project.

9-3 **Listed and Candidate Species**: The Project has the potential to reduce the number or restrict the range of endangered, rare, or threatened species, as defined in the CEQA Guidelines Section 15380. For CESA listed and candidate species not covered by an existing Natural Community Conservation Plan (NCCP), CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (CEQA Sections 21001(c), 21083, CEQA Guidelines Sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant

levels unless the CEQA Lead Agency makes and supports a Statement of Overriding Consideration (SOC). The CEQA Lead Agency's SOC does not eliminate Caltrans' obligation to comply with CESA (see FGC 2080 et seq.).

9-3 cont. DFG may authorize "take" of listed and candidate species during construction, or over the life, of the Project. Issuance of an Incidental Take Permit (ITP) is subject to CEQA documentation. As a responsible agency under CEQA, DFG will consider the CEQA document for the Project; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will or has the potential to impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain an ITP. To obtain information about the ITP process, please access our website at http://www.dfg.ca.gov/habcon/cesa/.

9-4 **Non-listed Species:** Species of plants and animals do not need to be officially listed as endangered, rare, or threatened (E, R, or T) under CESA or the federal Endangered Species Act to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E, R, or T, as specified in CEQA Guidelines Section 15380, it should be fully considered in the environmental analysis for the Project.

9-5 **Fully Protected Species:** No provision of FGC or any other law authorizes the issuance of permits or licenses to "take" any fully protected species. DFG has jurisdiction over 37 fully protected species of birds, mammals, amphibians, reptiles, and fish, pursuant to FGC Sections 3511, 4700, 5050, and 5515. DFG cannot issue a permit authorizing "take" of fully protected species for the Project.

9-6 **Birds and Nests:** DFG has jurisdiction over actions, which may result in the disturbance or destruction of active nest sites or the unauthorized "take" of birds. Sections of the FGC that protect birds, their eggs and nests include Sections 3503 (regarding unlawful "take," possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the "take," possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful "take" of any migratory nongame bird).

9-7 **Lake and Streambed Alteration:** The Project proponent must notify DFG for any activity that will substantially divert or obstruct the natural flow, change or use any material from the bed, channel, or bank, or deposit or dispose of debris, waste, or other material containing crumbled, flaked or ground pavement where it may pass into any river, stream, or lake pursuant to Section 1602 of the FGC. DFG jurisdiction may include associated floodplain and riparian resources. The Project may result in multiple activities that require notifications to DFG Regional Offices. If DFG determines that the activity may substantially adversely affect an existing fish or wildlife resource, DFG will issue a Lake or Streambed Alteration (LSA) Agreement that includes measures necessary to protect the resource.

9-7 cont. Issuance of a LSA Agreement is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the Project. The CEQA document should fully identify the potential impacts to stream and riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments. To obtain information about the LSA notification and agreement process, please access our website at http://www.dfg.ca.gov/habcon/1600/ or contact the DFG regional office serving the county in which the proposed activity will take place.

9-8 Finally, due to the large scale and scope of the Project crossing into multiple DFG Regions, please be sure to stay in contact with each DFG regional office involved as the Draft PEIR progresses through the CEQA process. If activities at the Project site could result in the "take" of any CESA listed or candidate species, we encourage Caltrans to submit an application to DFG for an incidental take permit (ITP). It is likely there will be further specific comments once the Draft PEIR is ready for circulation.

Sincerely,

Helen Birss

Helen Birss, Branch Chief
Habitat Conservation Planning Branch

ec: Department of Fish and Game
Cathie Vouchilas, Tim Dillingham, Jamie Jackson, Tim Nosal, Melissa Escaron, Crystal Spurr, Ryan Mathis, Laura Peterson-Diaz, Katrina Valerio.

Comment Letter #9 from the California Department of Fish and Game (CDFG), December 14, 2012 (CDFG was renamed the California Department of Fish and Wildlife (CDFW) in 2013)

Comment 1: CDFW states that it has reviewed the NOP and iterates CDFW's jurisdiction over biological resources.

Response: This letter and your comments have been noted and filed for the record.

Comment 2: CDFW states that the DRAFT PEIR should provide a complete assessment of species and habitats within and adjacent to the project area, including sensitive species and habitats. The assessment should include reasonably foreseeable direct and indirect impacts to resources resulting from the proposed project implementation.

Response: The DRAFT PEIR provides a complete assessment of species and habitats within and adjacent to the project area, including sensitive species and habitats in Chapter 4, Subchapter 4.3. The assessment will include reasonably foreseeable direct and indirect impacts to resources resulting from the proposed project implementation.

Comment 3: CDFW states that the project has the potential to reduce the number or restrict the range of endangered, rare or threatened species, and that for listed and candidate species not covered by an existing Natural Community Conservation Plan, CEQA requires a Mandatory Finding of Significance if the project is likely to substantially impact threatened or endangered species. CDFW states that it is the Lead Agency's obligation to avoid or mitigate impacts, and to comply with the California Endangered Species Act (CESA). CDFW further states that the CEQA document must specify impacts, mitigation measures, and a mitigation and monitoring reporting program in order for CDFW to be able to rely upon it. Early consultation is recommended.

Response: This letter and your comments have been noted and filed for the record. The DRAFT PEIR identifies potential biological resource impacts to the extent feasible at this programmatic level of review in Chapter 4, Subchapter 4.3. The analysis in the referenced section includes avoidance and mitigation measures designed to reduce impacts to sensitive species and habitats. The proposed project will consult with CDFW as required and will procure CESA permits as required.

Comment 4: CDFW states that non-listed sensitive species should be fully considered in the environmental analysis.

Response: This letter and your comments have been noted and filed for the record. The DRAFT PEIR considers non-listed sensitive species in the analysis contained in Chapter 4, Subchapter 4.3 of the DRAFT PEIR.

Comment 5: CDFW states that it cannot issue a "take" permit for the 37 fully protected species identified in the Fish and Game Code.

Response: This letter and your comments have been noted and filed for the record. The DRAFT PEIR identifies and addresses any fully protected species that may be impacted by the proposed project in Chapter 4, Subchapter 4.3 of the DRAFT PEIR.

Comment 6: CDFW states its jurisdiction over impacts to active bird nest and unauthorized take of birds.

Response: This letter and your comments have been noted and filed for the record. The DRAFT PEIR identifies and addresses any potential impacts to active bird nests and any potential for unauthorized take of birds in Chapter 4, Subchapter 4.3 of the DRAFT PEIR.

Comment 7: CDFW states that the project proponent must notify CDFW regarding potential impacts to the bed and bank and associated floodplain and riparian resources, including the deposit of waste or fill material that could impact such resources. A Lake and Streambed Alteration (LSA) Agreement is required for impacts to such resources. The CEQA document must identify the potential stream and riparian resource impacts and provide adequate avoidance, mitigation, monitoring and reporting in order for the CDFW to rely on the document for the LSA agreement.

Response: This letter and your comments have been noted and filed for the record. The DRAFT PEIR identifies and addresses any potential impacts to lake or streambed resources, including providing adequate avoidance, mitigation, monitoring and reporting regarding such resources. This evaluation is provided in Chapter 4, Subchapter 4.4 of the DRAFT PEIR.

Comment 8: CDFW requests that the project maintain contact with each CDFW regional office within which project impacts will occur as the DRAFT PEIR progresses through the CEQA process.

Response: The project will maintain contact with the CDFW regional offices as the CEQA process progresses.

COMMENT LETTER #10

11.17.12

MS. KUKA:

PLEASE SEND A PRINTED COPY OF THE 'NOTICE OF PREPARATION' FOR THE SAN JOAQUIN RAIL CORRIDOR 2035 VISION PROJECT. 10-1

THANKS,

J. K. Drummond

J. K. Drummond
545 W. 6th St., Apt. 304
San Pedro, CA 90731

DIRECTOR, SOUTHERN CALIFORNIA TRANSIT ADVOCATES

17 NOV 2012
PM 1 L

3c USA

9c U.S. AIR MAIL

MS. DAWN KUKLA
CALTRANS DIST. 7
DIV. OF ENVIROMENTAL PLANNING
100 S. MAIN ST. MS 16-A
LOS ANGELES CA 90012

Comment Letter #10 from JK Drummond, Director, Southern California Transit Advocates, November 17, 2012

Comment 1: The author requested a printed copy of Notice of Preparation.

Response: A printed copy of NOP and a CD were mailed to the author at the address provided on January 2, 2013.

COMMENT LETTER #11

J K Drummond
Director, Southern California Transit Advocates
545 W. 6th St. Apt 304
San Pedro, CA 90731-3462

Monday, December 10, 2012

Caltrans District 7, Division of Environmental Planning, MS 16-A
ATTN: Dawn Kukla
100 South Main Street, Suite 100
Los Angeles, CA 90012

Project Title: San Joaquin Corridor Programmatic Environmental Impact Report 2035 Vision

Get Amtrak California bus schedules to the contractors to place on Thruway buses for passengers and prospective passengers. I have asked many drivers for schedules, but they don't have them. On a Motor Bus Society visit to your contractor's yard in Bakersfield I discovered that Caltrans does not send schedules to its Thruway bus contractors. Please start supplying the Thruway bus contractors with schedules, requesting they put them on buses.

11-1 Contract Amtrak California Thruway buses have no San Joaquin paper schedules for passengers and prospective passengers they encounter.

This is a service improvement that could be made now!

At last week's presentation, I made several suggestions for improving the rail/Thruway bus San Joaquin Corridor service verbally and in writing.

Sincerely,

J K. Drummond

J K Drummond

Comment Letter #11 from JK Drummond, Director, Southern California Transit Advocates, December 10, 2012

Comment 1: The commenter requested that Amtrak California bus schedules be provided to Thruway bus contractors. Previous comments were noted.

Response: Thank you for your suggestions regarding the Thruway Bus Service. This request has been passed on to the Division of Rail for action. This request is not related to the San Joaquin PEIR or the CEQA process, and will not be addressed in the DRAFT PEIR.

COMMENT LETTER #12

Caltrans

DEPARTMENT OF TRANSPORTATION UNITED STATES OF AMERICA

San Joaquin Environmental Impact Study

All responses to this Notice of Preparation must be submitted to Dawn Kukla, Senior Environmental Planner, at Caltrans District 7. Comments submitted by mail shall be addressed to:

Caltrans District 7
Ms. Dawn Kukla, Senior Environmental Planner
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Comments may be e-mailed to: betty_i_miller@dot.ca.gov

Name & Affiliation Karen J. Stout, CCHSRA Citizens of California for HSR Accountability

Address 2250 9th Ave, LATON, CA 93242-9620

Phone Number 559·381·6352

E-Mail karenskings@yahoo.com

Question / Comment:

12-1 As you know, the San Joaquin Valley is the "Bread Basket" of the world, why distroy agriculture and diaries? This

12-2 project of the HSR will make over a mile-wide scare on the land. The footprint will not be 100-140' wide. Commercial spray operators will not spray within a half mile of the tracks. That makes ½ mile

Please continue on back if necessary:

Caltrans
Continued:

DEPARTMENT OF TRANSPORTATION UNITED STATES OF AMERICA

on each side (≈ 1 mile) plus the width of the HSR land between it's fences. Farmers will not be able to control pests and weeds in this area. It will be a breeding ground for more pests and weeds. This is most definitly an impact to farmers who will not be able to treat their crops in the same way they are now.

12-2 cont.

Also, the farmers will loose at least 30' on each side of the HSR track fences to do their turn-arounds of equipment. This is non-tillable land that the HSR Authority does not account for in their Acres of converted acres from Ag use to non-Ag use. This project is more intrusive to California Agriculture than is reflected in the EIR/S Revised Draft 2012 from Fresno to Bakersfield. The chart following 3.14 Ag Lands Volumn 2, does not Reflect these non-usable Agricultureal acres.

12-3

In addition, bisecting an owners land, makes him burn more fossil fuels to check irrigation and service the other side of his property. Due to this fact the project is not green as planned, that alone when they cancel the number of overpass/under that they now have planned because they cost $10 - 15 million each. Farmer will go 10 to 20 miles around.

12-4

Comment Letter #12 from Karen J. Stout, Citizens for California for HSR Accountability (CCHSRA), No date

Comment 1: Addresses concerns regarding the proposed new CHSTS track through San Joaquin Valley.

Response: The proposed project is not the proposed CHSTS project through the San Joaquin Valley. The proposed project would provide improvements to the existing San Joaquin Corridor Amtrak California Service train and bus services along existing routes of travel. The proposed project rail alignment improvements would be located within existing railroad rights-of-way.

Comment 2: The author states that the CHSTS Authority underestimates total direct and indirect adverse impacts of CHSTS development and operation on adjacent farms. The author states that CHSTS track development will create an impact area more than one mile-wide because commercial spray operators will not spray within one-half mile in any direction from train tracks.

Response: Please refer to response to Comment #1. The proposed project would not expand rail alignment outside of existing railroad rights-of-way. Any comercial agricultural spraying operations already accommodate the existing railroad tracks used by the San Joaquin Amtrak California trains.

Comment 3: The author states that farmers will lose land on each side of the CHSTS track fences where they turn equipment. The author states that this land is non-tillable and therefore not included in the CHSTS accounting of agricultural land that will be converted due to CHSTS construction.

Response: Please refer to response to comment #1.

Comment 4: Bisecting a farmer's land increases fossil fuel consumption because farmers will be required to drive 10 to 20 miles around to an over/underpass to access bisected lands.

Response: Please refer to response to comment #1. The proposed project would not divide any farm holdings. The BNSF tracks were installed in the 1880's, well before agriculture on the scale currently practiced in the San Joaquin Valley was developed.

COMMENT LETTER #13

MONTGOMERY MANAGEMENT CO.
8623 SUNSET BOULEVARD
WEST HOLLYWOOD, CALIFORNIA 90069

T (310) 652-7137
F (310) 652-0350

November 16, 2012

Ms. Dawn Kukla
Caltrans District 7
Division of Environmental Planning
100 S. Main Street, MS 16-A
Los Angeles, CA 90012

Via Mail

13-1 Per your ad L.A. times, kindly send us the Notice of Preparation for the San Joaquin Rail Corridor 2035 Vision Project.

Thank you,

Francis S. Montgomery II

FSMII: ar

Comment Letter #13 from Francis S. Montgomery II, Montgomery Management Co., November 16, 2012

Comment 1: The author requested a copy of Notice of Preparation.

Response: *A printed copy of the NOP and a CD was sent to the address provided on January 2, 2013.*

COMMENT LETTER #14

STATE OF CALIFORNIA

EDMOND G. BROWN JR., *Governor*

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013

November 30, 2012

Dawn Kukla
California Department of Transportation, District 7
100 South Main Street, Suite 100, MS-16A
Los Angeles, California 90012

Dear Mr. Kukla:

Re: SCH# 2012111039; San Joaquin Rail Corridor 2035 Vision Project

14-1 The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires the Commission approval for construction or alteration of crossings and grants the Commission exclusive power on design, alteration, and/or closure of crossings in California. The Commission's Rail Crossings Engineering Section (RCES) received a copy of the *Notice of Preparation (NOP)* from the State Clearinghouse for the proposed San Joaquin Rail Corridor 2035 Vision project.

As noted in the NOP, the project infrastructure upgrades would generally be installed within the existing track right-of-way from Oakland and Sacramento to Bakersfield and then the Los Angeles Union Station. There are hundreds of active at-grade crossings along the San Joaquin Rail Corridor.

The Commission's General Order (GO) No. 88-B requires staff approval for alteration of existing public crossings. Modifications to the existing crossings along the San Joaquin Rail Corridor fall under the scope of GO 88-B. The California Department of Transportation (Caltrans) should contact RCES staff to arrange a diagnostic meeting with representatives of the Commission, appropriate roadway jurisdictions and appropriate railroad companies to evaluate the impacts of any proposed changes on each of the crossings. The diagnostic meeting is the first step in the GO 88-B process; more information can be found at: http://www.cpuc.ca.gov/PUC/transportation/crossings/Filing+Procedures/.

If you have any questions in this matter, please contact me at (213) 576-7076, yen.chiang@cpuc.ca.gov.

Sincerely,

Ken Chiang, PE
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection & Safety Division

C: State Clearinghouse
Sergio Licon
Mahendra Patel

Comment Letter #14 from the California Public Utilities Commission, November 30, 2012

Comment 1: The Commission states its jurisdiction over the safety of highway-rail crossings in California including the approval of construction and/or alternation of crossings. The Commission notes that it received the NOP, and that as stated therein, there are hundreds of active at-grade crossings along the San Joaquin Rail Corridor. Modification to existing crossings along the San Joaquin Rail Corridor will require Commission approval per General Order (GO) No. 88-B. Contact and procedural information are provided to initiate the process of evaluating the impacts of any proposed changes at each crossing.

Response: *The DRAFT PEIR analyzes potential impacts to roadways and will discuss impacts to crossings in Chapter 4, Subchapter 4.8. As stated by the Commission, the standard practice prior to requesting a modification to any highway-rail crossing is to request the Commission arrange a diagnostics with the state and local road agencies to determine the modifications needed prior to construction.*

COMMENT LETTER #15

Dawn Kukla/D07/Caltrans/CAGov
12/18/2012 01:13 PM

To
cc
bcc
Subject Fw: Comments on San Joaquin Environmental Impact Study

----- Forwarded by Betty L Miller/HQ/Caltrans/CAGov on 12/04/2012 03:00 PM -----

Ross Browning
<RCBrowning@AOL.com>
Sent by:
<rcbrowning@gmail.com>

12/04/2012 02:47 PM

To <betty_l_miller@dot.ca.gov>
cc
Subject Comments on San Joaquin Environmental Impact Study

Please forward this response to Ms Dawn Kukla

15-1 In the Central Valley we are already blessed with an AMTRAK rail system and our Governor is spending like a drunken sailor to give us an unwanted High Speed Rail system, I heard no mention of either of these systems in your presentation and am wondering how this new system will interface with either or both of the above mentioned systems? Also, why do we need another rail system, what benefits will accrue to the taxpayer with this addition?

Thank you in advance for your response to this matter.

Ross Browning
8646 Cairo Ave
Laton CA 93242

(559) 584-2992

Comment Letter #15 from Ross Browning, December 4, 2012

Comment 1: Asks how the proposed project would interface with AMTRAK and/or High Speed Rail, why another rail system is necessary, and what benefits the taxpayers would receive with this additional system.

Response: *The proposed project consists of a program to expand the existing San Joaquin Corridor Amtrak California Service operations in the San Joaquin Valley. It consists of targeted improvements to the existing San Joaquin Corridor designed to improve the Amtrak California passenger rail service by improving the efficiency of train movements, increasing the capacity of the rail system to carry more frequent passenger trains, and ensuring that passenger train service can operate on a reliable schedule. However, Caltrans received a number of comments regarding increasing coordination between future Amtrak California operations and CHSTS operations, under the concept of a "blended" or "integrated" passenger rail system. An expanded discussion of this issued is provided in Chapter 5, Alternatives.*

COMMENT LETTER #16

Sacramento Area Council of Governments

1415 L Street, Suite 300 Sacramento, CA 95814

tel: 916.321.9000
fax: 916.321.9551
tdd: 916.321.9550
www.sacog.org

SACOG

December 13, 2012

Ms. Dawn Kukla
Senior Environmental Planner
Caltrans District 7
Division of Environmental Planning
100 South Main Street, Suite 100
MS 16-A
Los Angeles, CA 90012

RE: **Comments on the Notice of Preparation of a Draft Program Environmental Impact Report for the San Joaquin Rail Corridor 2035 Vision Project**

Sent via E-Mail to betty_l_miller@dot.ca.gov and to Dawn.kukla@dot.ca.gov

Dear Ms. Kukla:

16-1 We did not receive the *Notice of Preparation of a Draft Program Environmental Impact Report for the San Joaquin Rail Corridor 2035 Vision Project*, dated November 9, 2012. We learned about this document on December 6, 2012 from the Sacramento Regional Transit District. In light of this, we would appreciate you accepting our comments through January 4, 2013, and hold additional scoping meetings in Sacramento and elsewhere in the Central Valley. You are welcome to use our offices for the Sacramento meeting.

16-2 As the RTPA and MPO for Sacramento County, we believe that we should be consulted on a rail plan that affects our current planning work and adopted plans. We have been involved for many years with other local agencies and the Caltrans Division of Rail regarding the San Joaquin corridor, but we have not been engaged by Caltrans in the project that this EIR is analyzing.

Please direct all future correspondence on this document to:

Matt Carpenter
Director of Transportation Services
SACOG
1415 L Street, Suite 300
Sacramento, CA 95814
mcarpenter@sacog.org

Thank you for considering our preliminary comments, and we look forward to submitting our complete comments and working with Caltrans on a joint vision between local governments and the State for the future of the San Joaquin corridor.

Sincerely,

Mike McKeever
Chief Executive Officer

Auburn
Citrus Heights
Colfax
Davis
El Dorado County
Elk Grove
Folsom
Galt
Isleton
Lincoln
Live Oak
Loomis
Marysville
Placer County
Placerville
Rancho Cordova
Rocklin
Roseville
Sacramento
Sacramento County
Sutter County
West Sacramento
Wheatland
Winters
Woodland
Yolo County
Yuba City
Yuba County

Comment Letter #16 from the Sacramento Area Council of Governments (SACOG), December 13, 2012

Comment 1: SACOG states that they did not receive a copy of the NOP, and therefore, requests an extension of the comment period through January 4, 2013. SACOG also requests that additional scoping meetings be held in Sacramento and other parts of the Central Valley.

Response: According to our records, the Sacramento Area COG received a copy of the NOP that was mailed on November 13, 2012. However, at SACOG's request, Caltrans accepted comments on the NOP through January 4, 2013. Since the scoping process is clearly outlined in the CEQA Statute and CEQA Guidelines, Caltrans has decided not to hold additional scoping meetings. But, Caltrans has offered to meet at SACOG offices and make a presentation, from which additional comments can be submitted by SACOG. This is a courtesy to ensure that SACOG's views are given full consideration during the preparation of the DRAFT PEIR.

Comment 2: SACOG should be consulted on a rail plan that affects SACOG current planning work and adopted plans. Contact information is provided for future correspondence.

Response: This letter and your comments have been noted and filed for the record. Please refer to response to Comment 1. Consultation has been offered and will be implemented by Caltrans at the request of SACOG.

COMMENT LETTER #17

Regional Transit

Sacramento Regional Transit District
A Public Transit Agency
and Equal Opportunity Employer

Mailing Address:
P.O. Box 2110
Sacramento, CA 95812-2110

Administrative Office:
1400 29th Street
Sacramento, CA 95816
(916) 321-2800
(29th St. Light Rail Station/
Bus 36,38,50,67,68)

Light Rail Office:
2700 Academy Way
Sacramento, CA 95815
(916) 648-8400

Public Transit Since 1973

www.sacrt.com

December 12, 2012

Ms. Dawn Kukla
Senior Environmental Planner
Caltrans District 7
Division of Environmental Planning
100 South Main Street, Suite 100
MS 16-A
Los Angeles, CA 90012

RE: **Comments on the Notice of Preparation of a Draft Program Environmental Impact Report for the San Joaquin Rail Corridor 2035 Vision Project**

Sent via E-Mail to betty_l_miller@dot.ca.gov and to Dawn.kukla@dot.ca.gov

Dear Ms. Kukla:

17-1 We are in receipt of the *Notice of Preparation of a Draft Program Environmental Impact Report for the San Joaquin Rail Corridor 2035 Vision Project*, dated November 9, 2012.

We received the document at Sacramento Regional Transit Engineering on November 19, 2012. It was routed from the Department it was sent to by Caltrans to RT Planning where it would appropriately be reviewed. It was received in RT Planning on November 26, 2012 following the Thanksgiving Holiday. Given these dates of receipt, we are officially advising you of the following:

1. The document was received at RT on the same date as the identified Scoping Meeting in Sacramento (November 19) and was received in the appropriate department one week following that date due to the Holiday. **Respectfully, Regional Transit requests that an additional Scoping meeting be held in Sacramento due to the fact that individuals in affected agencies were unaware of this project.**

17-2

2. We will respond in writing with comments on this document. However, we will not be responding within allotted time (by December 13, 2013) as we have not been given adequate time to review this document. Moreover, Mr. Jeffrey Damon of RT sent an e-mail to Ms. Miller on December 5, 2012 at 9:11 AM requesting guidance on responding to this document. Mr. Damon did not receive a response from Caltrans. **As such, Regional Transit is notifying you that we will be responding within 30 days of the December 5th request for direction date that was not responded to by your organization -- no later than January 4, 2013.**

17-3

3. We discussed this document with our transportation partners and have identified several (such as SACOG, the MPO for this region) who have no record of receiving this document or awareness that it was in preparation. **Respectfully, be apprised we are very concerned over the content of this document and the manner in which it has been poorly communicated to the public in this region.**

17-4

4. Be advised that all future correspondence on this document should be directed to:

   Mr. Jeffrey P. Damon, AICP
   Principal Planner, Long Range Planning
   Sacramento Regional Transit
   P.O. Box 2110
   Sacramento, CA 95816
   Jdamon@sacrt.com

Thank you for your review of this matter and we look forward to submitting comments on the *Draft Program Environmental Impact Report for the San Joaquin Rail Corridor 2035 Vision Project*, on or before December 19, 2012.

Sincerely,

Michael R. Wiley
General Manager and CEO

Comment Letter #17 from the Sacramento Regional Transit District (SRTD), December 12, 2012

Comment 1: SRTD states that they received a copy of the NOP on the same day that scoping meeting was held in Sacramento. SRTD requests that additional scoping meetings be held in Sacramento because affected agencies and individuals were unaware of the project.

Response: Since the scoping process is clearly outlined in CEQA Statute and CEQA Guidelines, Caltrans has decided not to hold additional scoping meetings. But, Caltrans has offered to meet at SRTD offices and make a presentation from which additional comments can be submitted by SRTD. This is a courtesy to ensure the SRTD's views are given full consideration during the preparation of the DRAFT PEIR.

Comment 2: SRTD requests an extension of the comment period through January 4, 2013.

Response: Caltrans accepted comments on the NOP through January 4, 2013 and additional comments were submitted by the SRTD. These comments are addressed under Comment Letter #21.

Comment 3: SRTD expresses concern that noticing of this document was not adequate in the Sacramento region.

Response: Copies of the NOP were sent to numerous Sacramento Area agencies, including: the Sacramento Area Council of Governments; City of Sacramento Department of Transportation, Downtown Rail Yards Project Director; Sacramento County Board of Supervisors; Sacramento County Planning Commission; Sacramento County Planning Division, and SRTD. A notice of availability of the NOP and scoping meeting was also placed in the Sacramento Bee, which is not mandated under CEQA. Regardless, Caltrans has extended to SRTD additional opportunities to submit comment and to meet and discuss their concerns with the proposed project.

Comment 4: Contact information is provided for future correspondence.

Response: This letter and your comments have been noted and filed for the record.

COMMENT LETTER #18

December 12, 2012

Bill Bronte
Chief, Division of Rail
California Department of Transportation
1120 N Street, MS-74
P.O. Box 942874
Sacramento, CA 95814-5680

REGARDING: SCOPING COMMENTS FOR THE PREPARATION OF THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE SAN JOAQUIN RAIL CORRIDOR 2035 VISION PROJECT

Dear Chief Bronte,

18-1 Thank you for the opportunity to provide scoping comments for the Draft Program Environmental Impact Report (EIR) for the San Joaquin Rail Corridor 2035 Vision Project. We are strong supporters of the San Joaquin Intercity Passenger Rail Service. We believe that the Program EIR for the San Joaquin Rail Corridor 2035 Vision Project is very important to the future improvement of the existing San Joaquin rail service and we look forward to working with Caltrans throughout this environmental process.

18-2 However, we believe that there were significant deficiencies with your agency notification for this Program EIR scoping process. Local and regional agencies throughout the San Joaquin Corridor either did not receive the NOC and CD with the NOP, or did not receive it prior to the scoping meeting held in their area. Most of the local and regional agencies throughout the San Joaquin Corridor did not know about the scoping meetings for this program environmental process.

18-3 We request you hold additional scoping meetings to provide the necessary opportunity for agency and public input. There should be an additional scoping meeting in Sacramento, Stockton, Fresno, and at least one more in the Bay Area (with the location determined with input from Bay Area Agencies). The public and agencies should be notified at least two weeks in advance (preferably more) of these meetings. We are happy to work with you to help get public facilities for these meetings (like at the RTPAs, city halls or regional rail authorities) and to make sure that local and regional agencies are aware of the meetings.

18-4 We expect that many local and regional agencies will submit scoping comments in response of the NOP for the San Joaquin Rail Corridor 2035 Vision Project. We will get our comments to you as soon as possible, but many of the agency comment letters are likely to be sent after December 13, 2013. We expect for these comments to be treated as official "scoping comments" as long as they are sent within 30 days of when the NOP was received.

18-5 Public and agency involvement must be a critical part of this environmental process. There is strong local and regional agency interest and support for the San Joaquin intercity rail passenger service throughout the corridor, and there will be great interest throughout the San Joaquin Corridor in this process. It is clear that work related to this process has been going on for some time (Initial Study, Project Description, etc.), and many "decisions" are presented in the materials you have provided. Yet we are not aware of any discussions with interested and potentially affected agencies throughout the corridor in regards to this work and to these decisions. We believe you need to spend more time

18-5 cont. developing alternatives and doing analysis before releasing a Draft Program EIR document. Your current plan to release a Draft Program EIR in the next few months makes it appear that you are not taking input from agencies and the public seriously. We ask that you please revise your schedule so that this formal, legal environmental process can incorporate our input into your analysis and the Draft Program EIR.

18-6 This "vision" environmental document and Caltrans Division of Rail's Draft State Rail Plan vision document, which are currently expected to be released about the same time, should be consistent documents. In addition, the San Joaquin Rail Corridor 2035 Vision Document must clearly explain how this work relates to the state's future HSR project. Ignoring the HSR project (as the materials that have been provided do) only confuses the public and agencies. We believe improvements to the San Joaquin rail service complement the state's HSR plans. These are not competing projects. Improvements to the San Joaquin Rail Service are important to the phased implementation of California's HSR project.

18-7 Again, we look forward to working with Caltrans throughout this environmental process.

Best regards,

Members of the Regional Governance Working Group for the San Joaquin Rail Service

Randell Iwasaki
Executive Director
Contra Costa Transportation Authority

Tony Boren
Executive Director
Fresno Council of Governments

Patricia Taylor
Executive Director
Madera County Transportation Commission

Marjorie Kirn
Interim Executive Director
Merced County Association of Governments

Michael R. Wiley
General Manager/CEO
Sacramento Regional Transit District

Andrew Chesley
Executive Director
San Joaquin Council of Governments

Stacey Mortensen
Executive Director
San Joaquin Regional Rail Commission

Carlos Yamzon
Interim Executive Director
Stanislaus Council of Governments

Ted Smalley
Executive Director
Tulare County Association of Government

cc Brian Annis, Kome Ajise, Dawn Kukla

Comment Letter #18 from the Members of the Regional Governance Working Group for the San Joaquin Rail Service (The Working Group), December 12, 2012

Comment 1: The Working Group states that they are strong supporters of the San Joaquin Intercity Passenger Rail Service and look forward to working with Caltrans throughout the environmental process.

Response: This letter and your comments have been noted and filed for the record.

Comment 2: The Working Group believes the agency notifications were deficient because local and regional agencies either did not receive the NOP or received it after the scoping meeting held in their area.

Response: Copies of the NOP were sent to more than 150 government agencies and interested parties, including numerous local and regional agencies throughout the San Joaquin Corridor. The NOP was filed with the State Clearinghouse, as well. A complete mailing list for distribution of the NOP is provided in Appendix 8.7. All newspaper advertisements were arranged to be in a local newspaper of general circulation a minimum of several days prior to the scoping meetings. In response to the assertion that the Working Group did not have sufficient time to comment, additional time was made available for the receipt of comments. Requests for public meetings with local agencies will be accommodated. Input received at meetings held in the near future will be addressed in the DRAFT PEIR.

Comment 3: The Working Group requests that Caltrans hold additional scoping meetings for the project in Sacramento, Stockton, Fresno, and one more in the Bay area. It requests a minimum of 2 (two) weeks' notice prior to the meetings and offer support in securing locations for meetings and for making local and regional agencies aware of the meetings.

Response: Please refer to Comment Letter #16, Response to Comment #1. Caltrans chose not to extend the NOP process but offered to provide briefings upon request in order to provide opportunities for oral and written comments to Caltrans. These meetings can be held jointly with other agency meetings or in separate public locations, as appropriate.

Comment 4: The Working Group requests that comments be accepted as official scoping comments as long as they are sent within 30 days of when the NOP was received.

Response: Caltrans accepted comments on the NOP through January 4, 2013 and will continue to accept comments until the DRAFT PEIR is ready to be published.

Comment 5: The Working Group states that there is strong local and regional agency interest and support for the San Joaquin intercity rail passenger service, and expresses concern that local and regional agencies were not participants in the project development prior to the NOP. The Working Group requests that Caltrans revise the schedule for the proposed project to allow for more time for local and regional agency input into the design of the project.

Response: *Based on the input in response to the NOP, we anticipate availability of the document in June 2013 for a 45-day public review. This will provide ample opportunity for agencies and interested parties to continue providing input.*

Comment 6: The Working Group states that the proposed project and Caltrans' Draft State Rail Plan Vision should be consistent. They further note that both documents are scheduled to be released at about the same time.

Response: *The San Joaquin Corridor PEIR is a planning document that is based primarily on railroad simulation modeling and preliminary engineering. That said, additional coordination has been initiated with Caltrans staff responsible for the Draft State Rail Plan, and additional information from the Draft State Rail Plan will be integrated into the DRAFT PEIR.*

Comment 7: The Working Group requests that the proposed project clearly explain how the future Amtrak California operations in the San Joaquin Corridor will integrate with the State's future CHSTS project. It clarifies its perspective that the improvements to the San Joaquin Rail Corridor are important to the phased implementation of State's CHSTS project.

Response: *Several agencies requested closer coordination between the proposed project and the CHSTS project. Caltrans has requested meetings with the CHSTS Staff in order to better define integration between future San Joaquin Corridor Amtrak California Service operations and CHSTS operations as part of a "blended" or "integrated" passenger rail system for the San Joaquin Corridor/Valley. The additional information is provided in a revised Project Description in Chapter 3 of the DRAFT PEIR and the discussion of the Blended System Alternative in Chapter 5.*

COMMENT LETTER #19

"Veeh, Daniel"
<Danny.Veeh@sandag.org>
12/13/2012 03:25 PM

To "Dawn.Kukla@dot.ca.gov" <Dawn.Kukla@dot.ca.gov>
cc "royce.gotcher@dot.ca.gov" <royce.gotcher@dot.ca.gov>, "lea_simpson@dot.ca.gov" <lea_simpson@dot.ca.gov>, "Culp, Linda" <Linda.Culp@sandag.org>
bcc
Subject San Joaquin Rail Corridor 2035 Vision Project - Comments from LOSSAN

Dawn,

Thank you for the opportunity to comment on the San Joaquin Corridor Programmatic EIR 2035 Vision Initial Study. We are supportive of all additional capital and service enhancements along the San Joaquin corridor as proposed in the study. However we do have some concerns regarding Section 1.3.4 which is the Proposed Project with a Secondary Segment from Bakersfield to Los Angeles (UP and SCRRA). We would like to see more information about potential impacts to the LOSSAN corridor with interlined San Joaquin/Surfliner service for the following issues:

19-1
- Future equipment rotations.
- Surfliner OTP especially with heavy Tehachapi freight traffic.
- Track capacity along the LOSSAN Corridor segment (Burbank Junction to Los Angeles Union Station). The LOSSAN long range service plans as described in the LOSSAN Strategic Implementation Plan does not include San Joaquin service and was not included in the LOSSAN corridor operations modeling.
- LA Union Station operational capacity.

19-2
- Page 23 of the Project Description (pdf page 110) references Appendix 5 which is not found in the document.

19-3
- We request coordination with the LOSSAN Technical Advisory Committee (TAC) for any further work with the secondary segment from Bakersfield to Los Angeles alternative.

Attached is the LOSSAN Fact Sheet with general information about LOSSAN. Please contact me to schedule a presentation/discussion at a future LOSSAN TAC meeting about the project and the Bakersfield to LA alternative. The next meeting is scheduled for January 10, 2013 in Los Angeles.

We look forward to working with you,

Danny Veeh
Associate Planner – Rail
San Diego Association of Governments
401 B Street Suite 800
San Diego, CA 92101
(619) 699-7317
dve@sandag.org

Comment Letter #19 from the San Diego Association of Governments (SANDAG), December 13, 2012

Comment 1: The San Diego Association of Governments supports all of the capital and service enhancements identified within the San Joaquin corridor Amtrak California Service project, but expresses concern and requests additional information regarding the alternative that would provide passenger rail between Bakersfield and Los Angeles, particularly how such service would potentially impact the Los Angeles–San Diego (LOSSAN) corridor with respect to:

- Future equipment rotations;
- Surfliner On Time Performance in contact with heavy Tehachapi freight traffic;
- Track capacity along the LOSSAN Corridor segment Burbank Junction to Los Angeles Union Station (LAUS)—long range LOSSAN service plans do not include San Joaquin service and it has not been included in the LOSSAN corridor operations modeling;
- LAUS operational capacity.

Response: The information requested by SANDAG was prepared by Caltrans. Appendix 5 to the Initial Study package, which was inadvertently omitted from the Initial Study package, provided a direct response to this request. In addition, a representative of the project team made a presentation to the LOSSAN Committee on February 7, 2013 at the request of SANDAG representatives.

Comment 2: Page 23 references Appendix 5, but it is not in the document.

Response: Please refer to the response to Comment 1, above.

Comment 3: The San Diego Association of Governments requests that further work towards the proposed Bakersfield to Los Angeles passenger rail alternative coordinate with the LOSSAN Technical Advisory Committee (TAC). A LOSSAN Fact Sheet and contact information was provided, including the date of an upcoming meeting of the LOSSAN TAC.

Response: Please refer to the response to Comment 1, above. LOSSAN and SANDAG now have all the current information regarding the "Gap Train Concept" prepared by Alan Miller of the Caltrans Division of Rail. This document (formerly presented as Appendix 5 of the Initial Study) explains how a single train each week day could travel from Bakersfield to LAUS and integrate with Los Angeles to San Diego Amtrak California Service train operations. The document is provided in Appendix 8.1.

SAN JOAQUIN
REGIONAL
RAIL COMMISSION

COMMENT LETTER #20

Dedicated to passengers

Responsive to change

Committed to growth

December 12, 2012

Ms. Dawn Kukla, Senior Environmental Planner
Caltrans District 7
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

REGARDING: SCOPING COMMENTS FOR THE PREPARATION OF THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE SAN JOAQUIN RAIL CORRIDOR 2035 VISION PROJECT

Dear Ms. Kukla,

Commissioners

Steve Bestolarides
San Joaquin County

Sonny Dhaliwal
City of Lathrop

John W. Harris
City of Manteca

Brent H. Ives
City of Tracy

Bob Johnson
City of Lodi

Ann Johnston
City of Stockton

Executive Director
Stacey Mortensen

20-1 Thank you for the opportunity to provide scoping comments for the Draft Program Environmental Impact Report (EIR) for the San Joaquin Rail Corridor 2035 Vision Project. We have reviewed the NOP and the Initial Study that you have sent us and this response provides detailed comments on each of these documents.

San Joaquin Regional Rail Commission is a strong supporter of the San Joaquin Intercity Passenger Rail Service. We believe that the Program EIR for the San Joaquin Rail Corridor 2035 Vision Project is very important to the future improvement of the existing San Joaquin rail service and we look forward to working with Caltrans throughout this environmental process.

20-2 Public and agency involvement must be a critical part of this environmental process. There will be great interest throughout the San Joaquin Corridor in this process. It is very unfortunate that many agencies and organizations throughout the San Joaquin Corridor were not aware of the scoping meetings for this process until after theses meetings had already occurred. It is clear that work related to this process has been going on for some time (Initial Study, Project Description, etc.), and many "decisions" are presented in the materials you have provided. Yet we are not aware of any discussions with interested and potentially affected agencies throughout the corridor in regards to this work and to these decisions. We believe you need to spend more time developing alternatives and doing analysis before releasing a Draft Program EIR document. Your current plan to release a Draft Program EIR in the next few months makes it appear that you are not taking input from agencies and the public seriously. We ask that you please revise your schedule so that this formal, legal environmental process can incorporate our input into your analysis and the Draft Program EIR.

949 East Channel Street Stockton, California 95202 1800-411-RAIL www.acerail.com

20-3 This "vision" environmental document and Caltrans Division of Rail's Draft State Rail Plan vision document, which are expected to be released about the same time, need to be consistent. In addition, this document must clearly explain how this work relates to the state's future HSR project. Ignoring the HSR project (as the materials that have been provided do) only confuses the public and agencies. We believe improvements to the San Joaquin rail service complement the state's HSR plans. These are not competing projects. Improvements to the San Joaquin Rail Service are important to the phased implementation of California's HSR project.

20-4 Please also take into consideration the planning for the Altamont Corridor Rail Project, which the CHSRA is supporting through a partnership with the San Joaquin Regional Rail Commission and other local and regional agencies. Together, we are proposing to develop a dedicated regional rail corridor through the Altamont Pass and the Tri-Valley area capable of supporting intercity and commuter rail passenger services. In addition, the CHSRA's Revised 2012 Business Plan suggests that in the future, some San Joaquin trains may be utilizing the Altamont Corridor for service to the Tri-Valley and Southern Bay Area. More information regarding the Altamont Corridor Rail Project is available on the CHSRA website.

Comments on NOP

20-5 We received the NOP, NOC (both dated November 9, 2012) and Initial Study on November 27, 2012 – a week after the scoping meetings for Sacramento and Stockton were held. Our understanding is that many other agencies in the northern San Joaquin Valley also did not receive scoping notification prior to the meetings. We believe that additional scoping meetings are needed. We request additional, appropriately noticed scoping meetings, be held in Sacramento, Stockton, Fresno and an additional meeting in Bay Area. We would be happy to work with you to help get public facilities for these meetings (like the RTPAs, city halls or regional rail authorities) and to make sure that local and regional agencies are aware of the meetings.

20-6 Page 1: The NOP states that, "Caltrans in cooperation with multiple local agencies located within 11 California counties, proposes to fund expansion of the existing rail system...". We agree that there is great support for expansion of the existing rail system by most of the local agencies within the San Joaquin Corridor; however, most of them have not been coordinated with in the development of this work.

20-7 Page 2: The NOP states, "The expansion of this system would serve to accommodate existing and future passenger rail demand and projected increases in ridership through 2035". It is not clear how this project relates to the state's proposed HSR project. According to the CHSRA's 2012 Revised Business Plan, Phase 1 of the HSR system will be completed by 2030. It is also not clear how the San Joaquin PEIR (which is a "vision document") relates to the State Rail Plan also being led by the Department as is also a vision document. The HSR project is not even mentioned in the NOP, yet the "Project Description" that is included with the "Initial Study" has Section 1.3.6 "Proposed Project Combined with High-Speed Rail (HSR)". The lead environmental consultant representing Caltrans at the Bakersfield scoping meeting said that this alternative had to be included, but was not the "preferred alternative".

20-8 Page 2: The Stockton to Sacramento (UPRR) bullet doesn't differentiate between the two UPRR alternatives presented. The Fresno Subdivision is the existing line that is served by the San Joaquin Rail Service and is UPRR's main freight line. There is no passenger service on the Sacramento Subdivision. It is not clear where the Sacramento Subdivision alternative would terminate or the issues associated with extending this line to the Sacramento Intermodal Terminus. There is a strong desire by agencies throughout the San Joaquin corridor for investigating additional stations along the Fresno Subdivision at Elk Grove and at 65th Street in Sacramento. These two potential stations need to be included in this Program EIR. There is substantial agency opposition for relocating the existing service, or providing any intercity passenger rail service on the Sacramento Subdivision. The Sacramento Subdivision alternative should be eliminated from further investigation (considered but rejected). The Draft Program EIR should not carry forward the Sacramento Subdivision (WPRR) as a viable alternative for the San Joaquin rail service between Stockton and Sacramento.

20-9 Page 3: Neither of the locations for the "new Stockton Amtrak Station" are the locally preferred site for a new Stockton Amtrak Station. Local and regional agencies are united in supporting a downtown Stockton Amtrak Station at or adjacent to the existing downtown ACE (Cabral) Station. This alternative must be carried forward. This locally preferred downtown Stockton station location is also the preferred alternative of the future HST system. It makes no sense for CHSRA and Caltrans to be planning new multimodal intercity stations for Stockton in different locations. The two sites identified in the NOP for Stockton do not support the city's, region's nor state's goals to promote sustainable development and revitalize the existing core downtown of Stockton and to provide high connectivity and accessibility with local and regional transit. The purpose of the intercity service must include promoting sustainable development, increasing connectivity and accessibility, and the ensuring the safety of its passengers.

20-10 Page 3: New stations should be evaluated in the Program EIR for 65th Street in Sacramento, Elk Grove, Hercules, North Fresno, and North/West Bakersfield. In addition, this document should also investigate use of the existing Berkeley station for the San Joaquin rail service.

20-11 Page 4: The NOP states, "California State Rail Plan (2007-08 to 2017-18) (Plan) proposes implementation of 10-year intercity passenger rail service expansion to address projected increases in passenger rail ridership". The Plan referenced is out-of-date. Caltrans DOR is to release a Draft State Rail Plan in early 2013. The Program EIR and the Draft State Rail Plan should be consistent "vision documents". This San Joaquin Program EIR is being developed based upon the previous Plan as opposed to the "new" plan. The new Plan and the San Joaquin Draft Program EIR both expected to be released in early 2013. The frequency of the San Joaquin trains for the next ten years should be a range (as we understand will be presented in the new State Rail Plan). Rather than 8 trains (round trips) within the next 10 years, it should be 8-11 trains (round trips) within the next 10 years. We believe that it is not ambitious enough to be planning for only 2 additional round trips in the next 10-years for the San Joaquin corridor.

20-12 Page 4: Under Potential Environmental Impacts: please include sections in the PEIR for Connectivity and Accessibility, and Station Area Development.

Comments on Initial Study:

20-13 Page 1, Project Information: The Initial Study states, "...with limited rights-of-way acquisition, if any, and would not change the existing land use of the rail corridor". The study does not adequately describe the two alternatives between Sacramento and Stockton. It is not clear that the Fresno Subdivision is the existing line for the San Joaquin passenger rail service between Sacramento and Stockton. Moving the San Joaquin rail service to the Sacramento Subdivision could have considerable land use impacts. This report does not provide details to where the alternative on the Sacramento Subdivision would terminate. If that line is to terminate at Sacramento Intermodal, how do you propose to accomplish this? A new station at Stockton would change existing land use. The "Project Description" that is included with the "Initial Study" has Section 1.3.6 "Proposed Project Combined with High-Speed Rail (HSR)". This alternative would certainly change the existing land use of the rail corridor. It is very confusing as to how this "Combined" alternative fits within this Program EIR process.

Page 1: see NOP comments regarding Stockton Station alternatives.

20-14 Page 1: We support the investigation of layover facilities to support having some trains depart and terminate in the San Joaquin Valley. There may be additional sites that should be evaluated. We would like to see more details in regards to potential service that would begin and terminate in the San Joaquin Valley; there is substantial agency support throughout the corridor for investigating this type of service which would result in early trains reaching their end-points much earlier in the morning.

20-15 Page 45, Land Use: We believe that all three elements under "Land Use and Planning" (a, b, &c) should be considered "Potentially Significant Impacts". The "Substantiation" characterizes the project as "improvements to the existing track system". This is not the case for the Sacramento Subdivision alternative between Sacramento and Stockton. This is also not the for the HST combined alternative. This document should be evaluating several potential new station locations which would have potential land use and planning impacts (see comments on NOP).

20-16 Page 47, Stockton Amtrak Station: Alternative 4 is described as "the preferred alternative" for the Stockton Amtrak station. There is no environmental analysis or public/agency input which supports this decision. A selection of a preferred alternative for a new station should not be based upon a single criteria ("because it could easily serve both the Oakland and Sacramento trains that use the San Joaquin Corridor").

20-17 Page 62, Transportation and Traffic: All of the areas described in "Table XVI. Transportation/Traffic" should be "Potentially Significant Impact" because of the new potential station locations. The investigation of the Sacramento Subdivision between Stockton and Sacramento would also result in potentially significant traffic impacts in each of the areas described in Table XVI.

Comments on Project Description (Attachment 1 to the Initial Study):

20-18 Page1: The "Introduction" section states, "The purpose of the proposed rail improvements to the San Joaquin Corridor is to accommodate existing and future California intercity passenger rail demand and projected increases in ridership through 2035." It is confusing how this statement is consistent with the state's efforts to implement a statewide HSR system which parallels much of the San Joaquin alignment. We believe that the two services (HSR and the San Joaquin rail service) will be complementary intercity services, but we are concerned that this has not been made clear in this document.

20-19 Page 2: The "Project Objective" section states, "Caltrans in cooperation with multiple local agencies within 11 California counties, proposes to fund expansion of the existing rail system". See previous comment on NOP regarding cooperation with local agencies.

Page 2: Please see previous NOP comments (above) regarding the Sacramento to Stockton section. The Sacramento Subdivision alternative should be eliminated from further consideration.

20-20 Page 5: Table 1-1 needs to include projected capital costs. A section of this project description should be also added on capital costs. The average travel time improvement between the 25-year plan and the 10-year plan are too small (only 3 minutes reduction projected in 15 years between Oakland and Bakersfield and only 2 minutes reduction between Sacramento and Stockton). This "vision" document needs to have a greater vision for improvement of service between 2020 and 2035. In addition, as noted above, we believe that the "10-year plan" must have a range of improvement which should be 8-11 daily round trips (which we understand would be consistent with the Draft State Rail Plan).

20-21 Page 6: Modeling assumptions should include investigating having some trains operate as more of a "local service" with additional station stops (Berkeley, Hercules, North Fresno, and North/West Bakersfield).

20-22 Page 7: We support the investigation of double-tracking Fresno Subdivision between Sacramento and Stockton. However, it is premature to "judge infeasible" a small section of double-tracking near Lodi. The CHSRA is even investigating a new double track infrastructure adjacent to the UPRR (Fresno Subdivision) right-of-way through/near Lodi with their Project EIR/EIS. We believe that it is too early to eliminate the possibility of double-tracking within the Fresno Subdivision right-of-way anywhere between Sacramento and Stockton. Please revise this section so that the document would include double-tracking the entire Fresno Subdivision. The potential stations at 65th Street in Sacramento and Elk Grove (as noted in previous comments) also need to be added.

20-23 Page 13: We do not agree with the assessment of the Stockton Station Alternatives 2 and 3. The SJRRC, SJ COG, SJ RTD, and the City of Stockton have not been consulted in the development and analysis of these alternatives. There is not enough information provided to support the conclusions. These locations are the locations which have the highest connectivity and accessibility for Stockton, support the long-term development plans of Stockton and will help revitalize downtown Stockton. While a majority of the San Joaquin train movements currently utilize the Oakland route, this will not necessarily be true in the future. As additional trains are added to provide more service to Sacramento along the

20-23 cont. Fresno Subdivision, and if some additional San Joaquin trains utilize the Altamont Corridor, it is possible that sometime in the future, the number of San Joaquin trains using the Oakland route will not necessarily be "the majority". Please also see previous comments (above) on the NOP.

20-24 Page 19: The data for the "Travel Demand" is out-of-date. The San Joaquin Corridor Strategic Plan is referenced (Jan 2008) which means the data is likely to be pre-2007. This section also relies on the 2007-2008 to 2017-2018 State Rail Plan which also is based on data that is likely to be pre-2007. As noted in the comments above on the NOP, a new Draft State Rail Plan will be released in a few months. We believe that it is not ambitious enough to be planning for only 2 additional round trips in the next 10-years for the San Joaquin corridor. Based on the more recent ridership and revenue growth of the corridor, combined with the need to serve as a feeder network for the state's HSR project, there should be a more optimistic future growth for the San Joaquin rail service in the next 10 years. We believe the 8-11 round trips discussed in the document should be for the "next 10-years".

20-25 Again, thank you for this opportunity to comment on the Draft Program Environmental Impact Report (EIR) for the San Joaquin Rail Corridor 2035 Vision Project. We look forward to working with you throughout this Program EIR process and to improving intercity rail transportation in the San Joaquin Corridor. Please feel free to contact Dan Leavitt, Manager of Regional Initiatives, at (209) 944-6266 if you have any questions in regards to our comments.

Sincerely,

Stacey Mortensen
Executive Director
San Joaquin Regional Rail Commission

Comment Letter #20 from the San Joaquin Regional Rail Commission (SJRRC), December 12, 2012

Comment 1: The SJRRC expresses strong support for the San Joaquin Intercity Passenger Rail Service. They also support the DRAFT PEIR as an important step in future improvements to the service and wish to work with Caltrans throughout the environmental review process.

Response: This letter and your comments have been noted and filed for the record.

Comment 2: Expresses concerns regarding public and agency involvement in the review process and requests that the schedule be revised to incorporate input from these parties.

Response: Caltrans began making public presentations regarding the San Joaquin Corridor Program Environmental Impact Review to Councils of Government in early 2011. Copies of the stakeholder meetings, the NOP mailing list, and Public Notices are provided in Appendix 8.7. In response to comments received, Caltrans agreed to accept comments through January 4, 2013 on the NOP and will continue to accept comments on the DRAFT PEIR until just prior to completing the document for publication. Caltrans has also agreed to provide briefings and take comment, upon request, until the time that the document is distributed for public review. Additional meetings to take public and agency comments on the DRAFT PEIR will be conducted during the 45-day public review. Based on revisions to the scope of the DRAFT PEIR, it is anticipated that publication and release for public comment will be in June 2013.

Comment 3: The DRAFT PEIR needs to be consistent with the Draft State Rail Plan and the State's CHSTS program.

Response: While these two documents serve a different purpose, Caltrans has incorporated information from the Draft State Rail Plan and the CHSTS plans into the project document to address the consistency comment. The analysis in Chapter 5 of the Blended System alternative, for example, incorporates more detailed information regarding this alternative and the potential impacts of implementing the proposed project's infrastructure improvements relative to this alternative.

Comment 4: Requests that planning for the Altamont Corridor Rail Project be given consideration in the DRAFT PEIR.

Response: Please refer to responses to Comment Letter #5 from the HSRA. Caltrans will incorporate additional information into the DRAFT PEIR regarding the Altamont Corridor Rail Project based on information available. The modeling for this report was conducted by Willard Keeney and Associates in coordination with Caltrans and BNSF, and only operations on the existing Corridor were studied. The only facilities where ACE and the San Joaquin Corridor Amtrak California Service interconnect are the current and the proposed new passenger rail station in the City of Stockton. The location of this station and its ability to serve both Amtrak California's San Joaquin and Altamont's train operations is

currently being studied as part of the CHSTS Blended System plan and is given detailed consideration in the DRAFT PEIR.

Comment 5: The SJRRC requests additional scoping meetings and indicates that it will work with Caltrans to set up such meetings.

Response: Please refer to the response to Comment #2, above. Additional presentations to the public have been arranged and will be held as the project moves forward. Public notice will be distributed to interested agencies and parties, and applicable comments will be incorporated into and addressed in the DRAFT PEIR. The NOP process elicited fairly extensive comments, and the SJRRC may want to review all of the letters and responses to comments presented in the DRAFT PEIR. Also, please refer to Appendix 8.7, which describes/reflects the wide range of noticed presentations made to the public, agencies, and stakeholders during the past two years.

Comment 6: The SJRRC expresses further concern that most of the public agencies have not received coordination from Caltrans efforts.

Response: Please refer to responses to Comments #2 and #5, above, and Appendix 8.7. As the information in Appendix 8.7 confirms, elected representatives, planning agencies, and regional transportation agencies in each county affected by the San Joaquin Corridor Amtrak California Service expansion plans have been notified and/or received presentations regarding the proposed project over the past 24 months.

Comment 7: The SJRRC indicates that the relationship between the CHSTS system and the proposed project is not clear. Also, the Blended System proposal of the CHSTS is not designated the preferred alternative based on comments in the Initial Study and information presented in the public meetings.

Response: This comment raises one of the key issues regarding the future implementation of Amtrak California passenger rail service along the San Joaquin Corridor. Please refer to the response to Comment #2 in Comment Letter #6 from the CCHSRA. Over the past two years Caltrans carefully coordinated its expansion plans with UPRR and BNSF. Models of future ridership on the BNSF alignment were generated, followed by capacity modeling, which was conducted by Willard Keeney and Associates in coordination with Caltrans and BNSF. UPRR chose not to model the route but stated their requirements for future service in a letter (see Appendix 4 of Appendix 8.1). As a result of this close coordination, the future infrastructure improvements necessary to support 22 passenger trains per day within the San Joaquin Corridor were identified. This is all part of ensuring that 22 Amtrak California trains can be operated over the host freight railroad infrastructure and that schedules can be maintained that will continue to attract new passengers. On-time operations were approximately 90% over the past year, and maintaining this on-time percentage in addition to the current ridership growth along the Corridor is part of the objective. Thus, the proposed project has an internal consistency that is carefully documented and acceptable to the host railroads. Once the DRAFT PEIR process is completed, it will provide CEQA coverage for implementation of a future 22 train Amtrak California schedule that can be implemented as

future passenger demand will support and as funding becomes available. This is in contrast to the CHSTS Blended System, which proposes to use Amtrak California trains and buses to the north and south of the proposed CHSTS, which is located approximately between Madera and Bakersfield. At this writing, the CHSTS has not identified the number of passenger trains that are envisioned to use the Blended System or whether the railroads that host the passenger trains can support a specific CHSTS schedule on their tracks. Under this circumstance, the proposed project represents a known future for Amtrak California passenger rail operations that can be evaluated in some detail. On the other hand, the Blended System is presently defined at only a very general level and the details of how the CHSTS can be integrated can only be addressed at a conceptual or programmatic level. It is based upon these above described factors that the proposed project was defined as the preferred alternative. However, in response to comments from the SJRRC and the Authority, Caltrans will proceed with the DRAFT PEIR without identifying a "preferred alternative," and the issue of determining which project will be implemented over the next 20+ years can be based on actual demand for either or both passenger rail services in the future.

Comment 8: The SJRRC requests that the alternative route from Stockton to Sacramento, the Sacramento Subdivision, be eliminated from consideration in the DRAFT PEIR. The reasons supporting this request are identified in this comment.

Response: *In conversations held between Caltrans and UPRR, the railroad has said that since the Fresno Subdivision is UPRR's main freight artery through the San Joaquin Valley, all future increased passenger service frequencies between Sacramento and Stockton would be required to operate over the Sacramento Subdivision. This required an analysis of the Sacramento Subdivision in the DRAFT PEIR in order to provide an alternative to increased bus service for any expansion of Amtrak California service between Stockton and Sacramento. In order to operate over the Sacramento Subdivision, it was envisioned that either a back-up movement or a new track alignment in downtown Sacramento would be necessary for direct entry into the new Sacramento Intermodal Terminus. After considering comments from the SJRRC and related comments from the Sacramento Regional Transit District, Caltrans concurs that the cited potential environmental and planning effects eliminate the need for further consideration of the Sacramento Subdivision in the DRAFT PEIR.*

Comment 9: The SJRRC states that neither of the Stockton Amtrak California station locations identified in the NOP is locally preferred. It further states that a downtown station at or adjacent to the ACE (Cabral) Station is preferred by local and regional agencies. The preferred site, as identified in the NOP, would not support local and regional goals of sustainable development in Stockton.

Response: *Both BNSF and UPRR have provided documentation stating the additional moves necessary to access a station in downtown Stockton would require an unacceptable increase in capacity over each railroad due to the increased train movements required, both between the two railroads and through the Stockton Diamond. The station locations identified in the NOP were selected because they eliminated the need for a reverse or backward train movement and did not add excessive time to the proposed schedules for San Joaquin Corridor Amtrak*

California Service trains heading north or south from Stockton. Please refer to communication via e-mails received from both railroads in Appendix 8.5.

A study will commence shortly to examine the various possibilities and locations to construct a single station in Stockton that will both serve the ACE and Amtrak California Service systems while meeting the needs of the two host railroads.

Comment 10: The SJRRC identifies a number of alternative station/stop locations that should be considered in the DRAFT PEIR.

Response: *The San Joaquin Corridor Amtrak California Service trains serve intercity passengers and should not be confused with a commuter rail system. The objective with intercity rail is to move passengers between stops within the corridor at speeds comparable to the primary alternative modes of transportation, buses and automobiles. At the present time, train speeds between Oakland/Sacramento and Bakersfield average a little above 50 miles per hour (mph). The distance now between stations allows intercity trains to maintain this overall average speed. An additional station stop reduces the overall average speed and result in the train being less competitive with alternative means of transport. It would also generate additional air emissions caused by the locomotive acceleration from stopped to full track speed. Further, stopping would add more train noise to the local environment near the new station. However, based on current planning for the corridor, Caltrans concurs that station/stops can be considered in the DRAFT PEIR for Hercules and Elk Grove. These locations have previously been identified, and environmental review has been completed for these two locations. Regarding Berkeley, it was previously a stop for the San Joaquin Corridor Amtrak California Service trains, but service was discontinued due to low ridership. Subsequently, upon indications that potential ridership would support a re-opening of the station at Berkeley, Caltrans sought to do so; but the capital improvement costs required by the host railroad were economically prohibitive. The station at Emeryville is approximately one mile south of the former Berkeley stop, and accessible to the rail passengers. The other locations identified in this comment do not have specific station locations identified; therefore, Caltrans concluded that it would be premature/speculative to consider them in the DRAFT PEIR for intercity service.*

Comment 11: The proposed Project evaluation should be consistent with the new Draft State Rail Plan and the DRAFT PEIR should consider a range of new trains particularly over the near term future.

Response: *Please refer to the response to Comment #7, above. The proposed project is based on model forecasts for future ridership within the San Joaquin Corridor and for capacity on the host railroad tracks in the Corridor. The basic concept is that the host railroad infrastructure will be expanded within the Corridor in conjunction with expansion in passenger growth within the Corridor. This is the balance used to expand future passenger train operations on the host railroad tracks and meet schedules to both retain existing ridership and expand future ridership. Caltrans has not received any data that contradicts the assumed rate of adding new trains over the next 22 years (through 2035). Regardless,*

new trains cannot be added to the host railroads without certain infrastructure improvements. Under this assumption, if future passenger growth occurs faster than forecast, new trains can only be added to the existing Corridor subsequent to completion of the identified infrastructure improvements. These improvements may require funding of higher maintenance activities to support the additional trains and higher speeds. Caltrans and BNSF have developed a sequential process when proposing to add new passenger trains to the corridor: modeling the service; determining capital improvement costs, design and engineering; acquiring funds for the capital, operational, and equipment needs; negotiating contracts for the improvements and slots; and installing requisite infrastructure. If the demand exists, additional trains up to the 11 roundtrips being evaluated in this DRAFT PEIR can be added as quickly as all of the above steps can be completed.

Comment 12: The SJRRC requests the addition of the following issues to the DRAFT PEIR: connectivity, accessibility, and Station Area Development.

Response: Connectivity and accessibility will be evaluated in the DRAFT PEIR for the three new station locations being considered in this document (Hercules, Elk Grove, and Stockton).

Comment 13: The SJRRC expresses concerns with certain definitions in the Initial Study or lack thereof. Of concern is the need to acquire new property to support San Joaquin Corridor Amtrak California future operations.

Response: Please refer to response to Comment #8 regarding the Sacramento Subdivision, which will not be given further consideration in the DRAFT PEIR. Regarding installation of double and triple track within the host railroad rights-of-way (ROW), our project engineers concluded that there is sufficient ROW to make the infrastructure improvements with little or no property acquisition. However, for the future stations and the layover facility, new property will/may have to be acquired and the potential effect of such an acquisition will be considered in the DRAFT PEIR.

Comment 14: The SJRRC supports evaluation of the proposed layover facility and implies that other alternative locations should be considered.

Response: The two layover locations were selected because they are located approximately one-half of the distance between Oakland and Sacramento and Bakersfield. The Merced Station has the added benefit of being the crew change location for the San Joaquin Corridor Amtrak California Service. No other locations have been suggested by any parties to date, and these are the only proposed layover facility locations that will be evaluated in the DRAFT PEIR. It will be up to Caltrans or the future manager of the operations to determine if and when demand may be sufficient to initiate service from a layover stop.

Comment 15: The SJRRC requests adding Land Use and Planning issues as a potentially significant impact due to evaluations of the Sacramento Subdivision, new stations and CHSTS integration.

Response: *A portion of the rationale for including Land Use and Planning issues is eliminated through the removal of the Sacramento Subdivision as an alternative Stockton to Sacramento alignment. Both new stations to be considered in the DRAFT PEIR (Hercules and Elk Grove) have undergone previous environmental review and the land use issues have already been addressed. The DRAFT PEIR will bring forward the findings of these previous evaluations. Regarding CHSTS land use issues, the Authority has already evaluated the potential land use impacts from installing the CHSTS in the middle of the San Joaquin Valley. As presently envisioned within the DRAFT PEIR for the Blended Service alternative, Caltrans assumes that CHSTS will provide a connection to the BNSF tracks in the Madera area and also in the Bakersfield area. All impacts between these points of connection have been reviewed and evaluated in the CHSTS EIR. The DRAFT PEIR will evaluate any additional improvements required to support the Blended Service alternative between Oakland/Sacramento, Stockton to Madera and west of Bakersfield to the downtown Bakersfield Amtrak California station. However, as previously stated, it does not appear that there will be any new land use impacts within these segments. Thus, Caltrans does not see the merit in adding Land Use and Planning issues to the DRAFT PEIR for evaluation.*

Comment 16: Restates concerns about the location of the Stockton station's preferred alternative in the NOP.

Response: *Please refer to response to Comment #8, above.*

Comment 17: The SJRRC suggests that all Transportation/Traffic issues identified in the Initial Study should be examined in the DRAFT PEIR.

Response: *Given the limited number of new stations and the elimination of the Sacramento Subdivision, these issues may be considered in the DRAFT PEIR, depending upon the content of previous environmental documents.*

Comment 18: The SJRRC raises concerns about the focus on Amtrak California intercity passenger rail operations given the recent decisions regarding CHSTS.

Response: *Please refer to responses to Comments #7 and #11. Additional emphasis is being included in the DRAFT PEIR regarding the Blended System alternative. However, the focus on the San Joaquin Corridor Amtrak California Service operations remains valid because the level of detail for this alternative is greater than that for the CHSTS and Amtrak operations have demonstrated great success, including substantial annual ridership growth over the past three years. During all of the scoping meetings, in fact, the public indicated strong support for continued Amtrak California operations within the existing rail corridor. CHSTS is a new rail operation with no history of operation or success.*

Comment 19: Reiterates concerns regarding the adequacy of agency and public participation to date as well as regarding the Sacramento Subdivision.

Response: *Please refer to responses to Comments #2, #5, #6 and #8.*

Comment 20: Requests capital cost data and greater consideration of reduced travel time along the Corridor.

Response: *Caltrans considered including capital cost estimates in its project environmental review, but concluded that this is information that belongs in the Draft State Rail Plan, not the DRAFT PEIR. Economic issues are not a consideration in EIRs unless they have measurable effect on the environment. Caltrans could not identify any environmental effects from the cost issue. Regarding the rate of adding future trains, please refer to response to Comment #11.*

Comment 21: The SJRRC suggests modeling to include local stops along the Corridor.

Response: *Caltrans has concluded that operating the San Joaquin Corridor Amtrak California Service as a local train would conflict with the intercity passenger rail role that these trains serve and with the Capitol Corridor operations.*

Comment 22: The SJRRC requests that the whole Fresno Subdivision alignment be considered in the DRAFT PEIR.

Response: *Although there were sound engineering and environmental reasons to eliminate about two miles of double track near Lodi, the DRAFT PEIR will be expanded to address the whole alignment. As noted above, the DRAFT PEIR will also consider the Elk Grove station, but Caltrans concluded that the 65th Street station alternative is too premature for consideration in this document and does not appear to meet spacing criteria for intercity passenger stations.*

Comment 23: Reiterates concerns about the Stockton station alternative locations and raises a new issue regarding future train corridors served by the San Joaquin Corridor Amtrak California Service operations.

Response: *Please refer to responses to Comments #8 and #16, above. Regarding alternative train corridors, this is a new issue that may be considered in the future, but there are no data available to support altering the existing alignments. This issue is too speculative for the DRAFT PEIR and it will not be given further consideration in the DRAFT PEIR.*

Comment 24: The SJRRC considers the travel demand data out of date and believes the demand will increase more rapidly within the Corridor.

Response: *The travel demand data was not based on the 2007 Strategic Plan. The modeling for future ridership was completed in 2010, as was the capacity modeling for the BNSF segment of the San Joaquin Corridor Amtrak California Service. As noted above, the DRAFT PEIR provides the basis for implementing up to 11 trains as demand justifies, but more importantly, as the infrastructure is constructed to support the increase in trains. Please refer to this discussion under response to Comment #11.*

Comment 25: Indicates that the SJRRC looks forward to working with Caltrans on the DRAFT PEIR.

Response: *This letter and your comments have been noted and filed for the record.*

COMMENT LETTER #21

Regional Transit

Sacramento Regional Transit District
A Public Transit Agency
and Equal Opportunity Employer

Mailing Address:
P.O. Box 2110
Sacramento, CA 95812-2110

Administrative Office:
1400 29th Street
Sacramento, CA 95816
(916) 321-2800
(29th St. Light Rail Station/
Bus 36,38,50,67,68)

Light Rail Office:
2700 Academy Way
Sacramento, CA 95815
(916) 648-8400

Public Transit Since 1973

www.sacrt.com

December 27, 2012

Ms. Dawn Kukla, Senior Environmental Planner
Caltrans District 7
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Re: Scoping Comments for the Preparation of the Draft Program Environmental Impact Report for the San Joaquin Rail Corridor 2035 Vision Project

Dear Ms. Kukla:

21-1 Thank you for this opportunity to provide scoping comments for the above-referenced document. As we noted in our December 12, 2012 letter from Sacramento Regional Transit District General Manager/CEO Michael Wiley, we did not receive the original Notice of Preparation (NOP) in a timely fashion to either attend the November 19, 2012 scoping meeting in Sacramento or to respond within the time period identified on the notice. We have reviewed the NOP and the Initial Study and this response provides our detailed comments on these documents.

21-2 Sacramento Regional Transit District (RT) is a strong supporter and advocate of the San Joaquins. In fact, as a result of the passage of AB 1779, on December 10, 2012 the RT Board approved joining the soon-to-be-formed San Joaquin Joint Powers Authority (SJJPA) for the long-term management and oversight of this very important transportation service and link.

21-3 However, clearly understand and document that RT has consistently opposed any further consideration of the "Sacramento Subdivision" for rail passenger service. This remains our position. If Caltrans insists upon referencing the Sacramento Subdivision as an alternative in the 2035 Vision document, Caltrans should acknowledge it as an alternative considered and soundly rejected for further consideration. Moreover, because of Caltrans' lack of engaging the Sacramento community in this planning process and the less-than-adequate distribution and timing of the release of the NOP and Scoping meeting date in Sacramento, Caltrans has opened itself up to the potential for significant challenges in the environmental process.

21-4 As a member of the future SJJPA, we want to work with your organization to develop and implement a collective Vision for the San Joaquins that serves the needs of all Californians while reflecting the Sacramento region's perspective.
In the following sections, RT's comments on the NOP and the Initial Study are grouped into four (4) general areas:

1. Public Comment and Input Process
2. Sacramento-Stockton Linkages
3. Sacramento-Area Station Opportunities
4. Specific EIR-Related Considerations

Public Comment and Input Process

Public comment on and input into this process and the development of the "2035 Vision" for the San Joaquins is critical to the future of the services. Unfortunately, to date the coordination and input opportunities and have been less than adequate and acceptable. Specifically, we note the following:

- The 2035 Vision NOP and Initial Study were developed with no input from RT, nor was RT provided any advanced awareness that these documents were even under development.

- 21-5 The formal NOP arrived at Regional Transit in the incorrect department the day of the identified scoping meeting in Sacramento (November 19, 2012). As a result, RT staff was unaware of this meeting and did not attend.

- Several of our transportation partners in the Sacramento region, including the Sacramento Area Council of Governments our MPO, have stated that they were not notified of the November 19, 2012 scoping meeting and also did not attend the scoping meeting.

It is unclear who in the Sacramento region was involved in the development of this work to date; yet the effects of the "2035 Vision" could have potentially significant impacts on the region. As such, we respectfully request that additional scoping meetings be held in the Sacramento region with adequate advanced notification provided to the community.

Sacramento-Stockton Linkages

21-6 RT supports an improved rail linkage and increased train service levels between Sacramento and Stockton. The NOP and the Initial Study identify two candidate linkages between Sacramento and Stockton – the 43+ mile "Fresno Subdivision" and the 41+ mile "Sacramento Subdivision". Be advised that RT is **not supportive** of further consideration of the "Sacramento Subdivision" as the "alternative alignment for this segment to be selected as part of the final preferred Project". RT's position is based on the following:

- The Sacramento Subdivision does not presently carry passenger rail services and to introduce new passenger services on this corridor, as well as increased rail frequencies as a result, is inconsistent with the stated position of Sacramento-area transportation partners and their policies for rail services serving Sacramento;

- The Sacramento Subdivision would bypass Elk Grove which has the third largest population base in the Sacramento-to-Bakersfield corridor of the San Joaquin route. The route also bypasses potential markets in Lodi and Galt;

21-6 cont.

- The associated impacts of increased train frequencies on downtown Sacramento streets and adjacent communities (construction-related, noise & vibration, traffic blockages of a significant number of streets with increased train activity, air quality, etc.) associated with the Sacramento Subdivision are significant;

- The Sacramento Subdivision alignment either requires a "back in/back out" operation to access the Sacramento Intermodal Facility or would require the construction of new northbound Sacramento Subdivision to westbound Mainline UPRR connection. The first option would require additional operational complexities, travel time, cost and environmental impacts and the latter option would have significant new-construction related impacts associated with making this direct connection; and

- The Sacramento Subdivision does not provide the Sacramento-area station opportunities consistent with RT's and the Regional Blueprint longer-term vision for the region, enhanced ridership growth, and increased mobility options -- when compared to the Fresno Subdivision.

Sacramento-Area Station Opportunities

The NOP and the Initial Study do not address two Sacramento-area key opportunities for stations. We respectfully request that the documents include these in the development of the Vision. The station sites are:

- Within the City of Elk Grove along the Fresno Subdivision and coordinated with the city and SACOG; and

21-7

- Within the City of Sacramento at 65th Street along the Fresno Subdivision and coordinated with the city, Sacramento State University, RT and SACOG.

These station opportunities are both located along the Fresno Subdivision, provide near term opportunities, improve regional connectivity and enhance ridership opportunities for the San Joaquins.

Specific EIR-related Considerations

As previously stated, RT is opposed to further consideration of the Sacramento Subdivision for the introduction of passenger rail services. We request that this option be "Considered and Rejected" at this phase of environmental review.
However, should this alternative be carried forward in this environmental/visioning process, there are several environmental factors that need to be considered further as being potentially affected. These factors are as follows:

- The environmental factors identified as "Potentially Significant Impact(s)" (Page 5) and/or "Less Than Significant with Mitigation Incorporated" (impacts) in the Initial Study must fully address the environmental tradeoffs between the Fresno Subdivision and the Sacramento Subdivision alternative alignments. While we recognize that this is a *Program-Level* document, the selection of one of these alignments has, by definition, *Project-Level* impacts that must be documented for a full understanding of the decision to be made at the *Program-Level*.

Regarding the environmental considerations that are not identified as noted above, additional analysis is required at the *Program-Level* if the Sacramento Subdivision is to be considered further to determine if, in fact, the impacts are Significant:

21-8

- Aesthetics – In the context of evaluating the Sacramento Subdivision, aesthetic considerations specifically associated with providing a direct connection to either the Sacramento Intermodal Facility or the proposed Sacramento Maintenance Facility would be significant and need to be addressed in the EIR. Specifically, direct connections would require elevated crossings of the UPRR Mainline and these crossings would have visual, illumination and other considerations that would "substantially degrade the existing visual character" of the area including, but not limited to, the American River Parkway and viewshed.

- Land Use and Planning – The impacts associated with the Sacramento Subdivision in terms of land use and planning as it relates to: 1) introducing rail passenger service in a non-passenger corridor; 2) increased rail services in a heavily urbanized area in downtown Sacramento; and 3) potential land use/noise/visual impacts associated with a new direct connection (either elevated or at-grade) between the Sacramento Subdivision and the UPRR Mainline to serve the Sacramento Intermodal Facility is "potentially significant" in terms of impacts and must be addressed.

- Population and Housing – Displacements associated with the connection between the Sacramento Subdivision and the UPRR Mainline to serve the Sacramento Intermodal Facility is "potentially significant" in terms of impacts and must be addressed.

21-8 cont.

- Transportation/Traffic – We respectfully disagree that the Sacramento Subdivision alternative will have a "Less than Significant Impact" on "f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of such facilities?" There is absolutely no acknowledgement of this consideration in the context of the Sacramento Subdivision (Page 63) and yet at a *Program-Level* this may affect the decision selection on alternatives. Thus, this environmental consideration must be evaluated further in this context.

- Summary of Mitigation Measures – Should the Sacramento Subdivision not be dropped now from further consideration, additional and specific mitigation measures are likely. These measures need to be documented so that a full assessment of the tradeoffs between the Sacramento Subdivision and the Fresno Subdivision is provided.

Thank you for this opportunity to comment on the Draft Program Environmental Impact Report for the San Joaquin Rail Corridor 2035 Vision document and project.

21-9 To reiterate, we respectfully request that additional opportunities be provided to provide comment and input given that the timing of this document was less than acceptable.

Please feel free to contact Mr. Jeffrey Damon, Principal Planner Long Range Planning, at 916-556-0506 and/or JDamon@sacrt.com if you have any questions in regards to our comments.

Sincerely,

for Michael R. Wiley
General Manager/CEO

Comment Letter #21 from the Sacramento Regional Transit District (SRTD), December 27, 2012

Comment 1: Reiterates concerns about public distribution of the NOP stated in Comment Letter #17.

Response: *This letter and your comments have been noted and filed for the record.*

Comment 2: SRTD indicates support for the San Joaquin Corridor Amtrak California Service and notes that its Board approved joining the San Joaquin Joint Powers Authority (SJJPA).

Response: *This letter and your comments have been noted and filed for the record.*

Comment 3: SRTD states its strong opposition to further consideration in the DRAFT PEIR of the "Sacramento Subdivision" alternative between Stockton and Sacramento.

Response: *Please refer to response to Comment #8 of Comment Letter 20 regarding this issue.*

Comment 4: SRTD seeks to work with Caltrans to implement a collective Vision for the San Joaquins that reflects the local perspective.

Response: *This letter and your comments have been noted and filed for the record.*

Comment 5: SRTD expressed concern with the public comment and review process and requests additional scoping meetings be held in the Sacramento region.

Response: *This issue is addressed in previous responses to comments. Please refer to responses to Comments #2 and #5 of Comment Letter #20 and Appendix 8.7. Additional presentations can be arranged with Caltrans, and comments can be submitted that will be addressed as part of the DRAFT PEIR, as indicated in the referenced comments and responses.*

Comment 6: SRTD restates its opposition to consideration of the Sacramento Subdivision and outlines the reasons for its opposition.

Response: *Please refer to response to Comment #3, above and the other referenced discussions of this issue.*

Comment 7: SRTD requests evaluation of two Sacramento-area stations for inclusion in the DRAFT PEIR; specifically, sites at Elk Grove and 65th Street.

Response: *Please refer to response to Comments #10 and #22 of Comment Letter #20. After reviewing the circumstances, the proposed new station at Elk Grove will be considered in the DRAFT PEIR, but due to lack of a selected location, a new station at 65th Street will not be evaluated because it is not sufficiently for consideration and it does not appear to meet intercity station spacing criteria.*

Comment 8: SRTD identifies additional environmental issues that it believes should be evaluated if the Sacramento Subdivision is retained for evaluation.

Response: Please refer to response to Comment #6 of this letter.

Comment 9: SRTD states it appreciates the opportunity to provide comment on the NOP and seeks additional opportunities to provide comment.

Response: This letter and your comments have been noted and filed for the record. SRTD can contact Caltrans to provide additional input into the DRAFT PEIR.

COMMENT LETTER #22

Transportation Solutions Defense and Education Fund

P.O. Box 151439 San Rafael, CA 94915 415-331-1982

"Solutions Is Our Middle Name"

December 18, 2012
By E-Mail

Dawn Kukla, Senior Environmental Planner
Division of Environmental Planning, MS 16-A
Caltrans District 7
100 South Main Street, Suite 100
Los Angeles, CA 90012

Re: Scoping Comments for San Joaquin Rail Corridor 2035 Vision Project

Dear Ms. Kukla:

22-1 Thank you for making it possible for the Transportation Solutions Defense and Education Fund (TRANSDEF) to participate in the scoping process. We are an environmental non-profit working in the transportation sector, and have been very involved in the HSR project. These comments are also being submitted on behalf of our colleague, the California Rail Foundation (CRF). Together, we want to ensure that the State's rail network is maximally improved by investments in the Vision Project. That entails stressing the connectivity between the Vision Project and HSR, and avoiding unnecessary duplication.

Project Objective

22-2 We are concerned that the Project Objective section in the Project Description, appended to the Initial Study, confuses objectives with project elements (which are enumerated in the Specific Objectives section). As we read the document, the articulated objectives are: 1) Increase capacity of the Corridor to meet future demand for passenger rail service; 2) Increase operating speeds in the Corridor to make passenger rail service more attractive; 3) Improve at-grade crossing safety; 4) Contribute to the cost of maintaining civil works in the corridor in a state of good repair.

Unaddressed among these objectives is an issue central to Amtrak service on host railroads: on-time performance problems caused by dispatch decisions that favor freight trains over passenger trains. Improving schedule reliability with minimal schedule padding must be made a major objective of this EIR.

High-Speed Rail

22-3 TRANSDEF and CRF have been active in opposing the current plans of the California High-Speed Rail Authority, and urging a more business-like way of proceeding with the project. The route choices have been so poor, because of the intrusion of politics, that

the project has not generated private investment. Clearly, potential partners doubt the liklihood of investment returns.

We have every reason to believe that the CHSRA project will crater. Even if it somehow manages to complete its Central Valley project, we see no likelihood of CHSRA ever obtaining the funds to build a statewide system. We believe the SJVC will continue to be the only reality-based long-distance passenger rail service in the Central Valley.

22-3 cont. We have long advocated that the project be put out to bid, with HSR operators free to design their own routes. With the CHSRA project out of the way, HSR operators will likely propose an HSR alignment within the I-5 right-of-way, enabling very fast trips from San Francisco to LA. We see the SJVC providing service to Central Valley cities, with SJVC trains joining the HSR right-of-way in the Bakersfield and Stockton areas for LA and Bay Area destinations.

While our ideas are far from being adopted, we want to make sure that the design of the SJVC project preserves compatibility with the idea above (See the Project Alternatives section below, #2 - #6).

Impact Analyses

22-4 1. The EIR should discuss in detail the process of predicting future passenger and freight traffic.

22-5 2. The EIR should discuss in detail the process of determining the specifics of facility expansion needed to handle the passenger component of that traffic, and provide a matrix indicating the amount of traffic, both passenger and freight, that should trigger each proposed publicly funded expansion phase.

22-6 3. Evaluate the air quality impacts of the layover facilities. Include a discussion of ARB standards for in-state locomotive operation.

22-7 4. The assumptions for Table 2-1, Future Equipment Forecast, need further explanation: 1) Describe the combined operation plan in detail (Assumption f); 2) Assumption h needs to be eliminated and a competent analysis done for the EIR.

22-8 5. Where bridges will be replaced by wider bridges, the impact of the construction of shoofly tracks needs to be studied.

22-9 6. To avoid the impacts of duplication, the EIR should formally adopt a mitigation that ties project approvals to a finding of compatibility with and non-duplication of CHSRA-funded projects.

Project Alternatives

22-10 1. Analyze alternatives for improving on-time performance, including negotiating priority commitments for passenger trains on the track sections built with public funds, and incentive payments for on-time performance, similar to those of the Capitol Corridor.

22-11 2. Investigate the feasibility of a design speed of 110 mph. Perform a critical analysis of the host railroads' concerns about speeds greater than 90 mph.

22-12 3. Investigate the benefits, cost and feasibility of employing tilt-train technology, such as the Talgo.

22-13 4. Investigate the benefits, cost and feasibility of employing dual-mode diesel-electric units that are capable of being powered by HSR catenaries, for future use on electrified HSR ROW.

22-14 5. Investigate the benefits, cost and feasibility of building limited sections of catenary in station areas to enable dual-mode trains to use the full potential of their electric motors to accelerate.

22-15 6. Investigate the benefits, cost and feasibility of employing hybrid diesel technology that stores regenerative braking energy and uses it for improving acceleration.

22-16 7. Clarify the Project Description as to at-grade crossing improvements. If the intention is not to adopt the quad-gate configuration as the standard for the Corridor, study a quad-gate alternative for its costs and benefits.

22-17 8. Examine a broader range of alternatives for layover facility locations. There is no reason such a facility needs to be co-located with a passenger station. Vacant and underutilized industrial land offers potentially less costly locations.

22-18 9. Evaluate the connectivity benefits and costs of co-locating ACE with a new SJVC station, as compared to a shuttle bus alternative.

22-19 10. Eliminate the Visalia alternative, as the traffic there is not of statewide significance.

22-20 11. The Bakersfield-LA Secondary Segment seems to be of dubious utility, given the statement that it would serve only one train, which would take twice as long as the bus. We see no compelling reason to study it.

22-21 12. A better improvement would be study an alternative in which the connecting bus from Bakersfield terminates in Santa Clarita (Saugus) rather than LA Union Station. Using Metrolink tracks from Santa Clarita to LA would presumably be faster than bus, and would add greatly to the route's reliability and on-time performance.

13. Rather than dismiss Wheeler Ridge, a bold expansion of that idea should be considered: The EIR should explore the potential for a public-private partnership with a host railroad, connecting Bakersfield to Santa Clarita. Shortening the distance for freight shipments to LA would generate significant freight traffic, taking many trucks off the road. Eliminating the bus bridge would significantly increase the convenience of passenger rail travel from the Central Valley to the LA Basin. Existing rights-of-way from Bakersfield to just west of Arvin could serve as a portion of this route.

Thank you for considering the comments of TRANSDEF and CRF.

Sincerely,

/s/ DAVID SCHONBRUNN

David Schonbrunn,
President

Comment Letter #22 from the Transportation Solutions Defense and Education Fund (TRANSDEF), December 18, 2012

Comment 1: The TRANSDEF indicates that it is submitting comments to ensure the State's rail network is maximally improved by investments identified in the NOP. It notes that meeting this objective must avoid duplication with CHSTS.

Response: This letter and your comments have been noted and filed for a record.

Comment 2: TRANSDEF indicates that the document does not identify a central issue of concern: on-time performance and schedule reliability problems.

Response: On-time performance and schedule reliability were integrated into the modeling that was conducted for the capacity analysis by Willard Keeney and Associates in coordination with Caltrans and BNSF. It is important to understand that from January 2012 through January 2013 San Joaquin Corridor Amtrak California Service trains have been operating at an 88.01% on-time performance. Caltrans considers this to be a successful, reliable schedule. This issue is also discussed in responses to Comments #7 and #11 of Comment Letter #20. Essentially, UPRR and BNSF were asked by Caltrans to identify the rail infrastructure improvements required to meet the future number of trains per day (22 trains) and to maintain a comparable on-time performance. The proposed physical facilities identified in the NOP represent the infrastructure required to achieve an approximate 90% schedule reliability.

Comment 3: TRANSDEF indicates opposition to the CHSTS project and envisions a future where the Amtrak California trains on the Corridor will serve to connect to a CHSTS system within a different corridor. They seek to ensure that the future Corridor design will preserve compatibility with this concept if it does become a reality.

Response: Caltrans is examining two primary alternatives in the DRAFT PEIR. The continued operation of the existing San Joaquin Corridor Amtrak California Service is one alternative. The other alternative, a Blended System, will examine integrating the CHSTS segment from approximately Madera to Bakersfield with the existing operations. Regardless of which alternative is adopted for implementation, the objective is to provide sufficient trains in the Corridor or modified Corridor to meet future passenger demand. Refer to response to Comment #7 of Comment Letter #20 for a more detailed discussion of this issue.

Comment 4: TRANSDEF requests that the DRAFT PEIR discuss in detail the process of predicting future passenger and freight traffic.

Response: Please refer to the response to Comment #7 of Comment Letter #20 for a discussion of this issue. Caltrans assigned the task of forecasting future passenger demand through the year 2035 and this information is summarized in Table 1-1 of the Project Description that accompanied the NOP. Based on the future passenger forecasts, Caltrans determined that 22 trains per day would be required to meet this future demand. A tentative passenger train schedule with 22 trains was developed and used by BNSF to evaluate capacity

on the San Joaquin Rail Corridor and to define the infrastructure improvements required to support the forecast passenger train schedule in 2020 (16 passenger trains per day) and 2035 (22 passenger trains per day). It was assumed that the host railroads would meet current on-time performance of approximately 90% for passenger trains. Most of the model data can be made available to TRANSDEF if requested.

Comment 5: TRANSDEF requested that the basis for infrastructure improvements be provided in the DRAFT PEIR.

Response: This information is already provided in the tables and graphics in the Project Description provided in the NOP.

Comment 6: TRANSDEF requested that the DRAFT PEIR evaluate air quality impact of layover facilities, including a discussion of Air Resources Board standards for in-state locomotive operation.

Response: This information is included in the DRAFT PEIR in Subchapter 4.2 of Chapter 4.

Comment 7: TRANSDEF requests that additional information regarding assumptions need to be included in the future equipment forecast on Table 1-2 of the Project Description in the NOP.

Response: The additional information requested regarding these assumptions is provided in Chapter 3 of the DRAFT PEIR.

Comment 8: TRANSDEF requests that where new bridges are installed, the construction effects of any required shoofly must be evaluated.

Response: As indicated in previous responses, it has been assumed that all impacts, including construction activities can all occur within the existing rail right-of-way. It is not possible to define specific locations for construction activities such as a shoofly in a program environmental document. However, under the program concept, future specific construction projects, including bridges and related shooflies, will be evaluated on a case-by-case basis, and if different construction effects will occur, these effects will be documented within a future environmental document.

Comment 9: TRANSDEF seeks to have the DRAFT PEIR incorporate a mitigation measure to avoid duplication of CHSTS-funded projects.

Response: It is doubtful whether a mitigation measure will be required to prevent duplication of projects being funded for future rail operations in the San Joaquin Corridor. Individual future projects on either the San Joaquin or Blended System must go through a detailed planning process with Caltrans, followed by capital funding being allocated through the California Transportation Commission, thus ensuring that duplicate funding for specific facilities does not occur.

Comment 10: TRANSDEF requests evaluation of an alternative that will improve on-time performance, including incentive payments for on-time performance like that of the Capitol Corridor.

Response: *Both the Capitol Corridor and the San Joaquin Corridor Amtrak California Service provide incentive payments to the railroads through the Amtrak agreement.*

Comment 11: TRANSDEF requests an investigation of an alternative design speed of 110 mph.

Response: *The original discussions with the host railroads included discussions of a 110 mph alternative. However, after investigation of the level of isolation from surrounding land uses and the level of required maintenance, a decision was made by both the railroads and Caltrans to eliminate this alternative from further consideration. For this environmental document this alternative will not be given further consideration.*

Comment 12: TRANSDEF requests investigation of an alternative using tilt-train technology.

Responses: *The San Joaquin Corridor does not have sufficient curves to justify the use of tilt-train technology. Thus, this alternative will not be considered in the DRAFT PEIR.*

Comment 13: TRANSDEF requests investigation of dual mode diesel-electric units for both types of track.

Responses: *There are no electrified segments of the corridor that would justify the use of dual mode locomotives at this time. Therefore, this issue is considered speculative.*

Comment 14: TRANSDEF requests the use of catenaries in station areas.

Response: *The host railroads do not allow electrical systems on their tracks. This is not a feasible option.*

Comment 15: TRANSDEF requests consideration of hybrid diesel technology for the Amtrak trains.

Responses: *Hybrid diesel technology is not available for implementation at this time.*

Comment 16: TRANSDEF requests clarification in the project description regarding at-grade crossings.

Responses: *The anticipated at-grade crossings will be improved at locations where new tracks are installed. However, there is no intent to install quad gates or other similar improvements. Quad gates are typically installed in conjunction with quiet zones, which must be initiated by local jurisdictions.*

Comment 17: TRANSDEF requests examination of a wider range of layover locations.

Responses: *Please refer to response to Comment #14 of Comment Letter #20. No specific locations have been suggested for consideration and the choice of Merced and Fresno meets the objective of starting a new train in the middle of the alignment in order to reach Oakland or Sacramento early in the morning. No other alternatives are being proposed for consideration at this time.*

Comment 18: TRANSDEF requests consideration of a joint station with ACE.

Response: *Caltrans will consider a joint station with ACE in Stockton in the DRAFT PEIR. This is outlined in the project description included in the NOP.*

Comment 19: TRANSDEF requests that the Visalia alternative be eliminated.

Response: *The Visalia alternative is not identified for further consideration in the DRAFT PEIR.*

Comment 20: TRANSDEF indicates that it does not see any justification for consideration of the Bakersfield to Los Angeles train as an alternative to the DRAFT PEIR. Another alternative is suggested that would utilize buses to Santa Clarita and then Metrolink into Los Angeles Union Station (LAUS).

Response: *Consideration of this alternative was a high priority of the San Joaquin Rail Committee. Given the constraints, it is a low probability alternative, but it follows up on the "Gap Analysis" prepared by Caltrans Division of Rail. It will be retained in the DRAFT PEIR. The alternative bus route proposed in this comment was assessed, and there does not appear to be any measurable time savings to justify its consideration.*

Comment 21: TRANSDEF identifies another alternative that it believes should be considered that would connect Bakersfield with Santa Clarita as an alternative to downtown LAUS.

Response: *At this time the concept identified in this comment would require several different parties to initiate several actions, including building new track along an abandoned alignment. This alternative is too speculative for consideration in the DRAFT PEIR and will not be given further consideration.*

COMMENT LETTER #23

"Dubiel, Matthew"
<MDUBIEL@dpw.lacounty.gov>
01/10/2013 05:02 PM

To "'dawn.kukla@dot.ca.gov'" <dawn.kukla@dot.ca.gov>
cc "Yanez, Jarrett" <JYANEZ@dpw.lacounty.gov>, "Cruz, Ruben" <RCRUZ@dpw.lacounty.gov>
bcc
Subject San Joaquin Rail Corridor 2035 Vision Project

January 10, 2013

Ms. Dawn Kukla, Senior Environmental Planner
Caltrans District 7
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Dear Ms. Kukla:

initial Study/Notice Of Preparation
San Joaquin Rail Corridor 2035 Vision Project

Thank you for the opportunity to review the Initial Study/Notice of Preparation for the San Joaquin Rail Corridor 2035 Vision Project. The project proposes operational modifications and supporting infrastructure improvements required to support intercity passenger train operations within the San Joaquin Corridor over the 25-year planning period. The project area is located along the San Joaquin Rail Corridor, defined by the State Rail Plan as the railroad infrastructure connecting Bay Area/Sacramento – Fresno – Bakersfield – Los Angeles.

The following comments are for your consideration and relate to the environmental document only:

23-1 **Transportation**

We do not have any specific comments at this time. However, we would like the opportunity to review the project's environmental impact report for any potential traffic impacts on County roadways and intersections. The County's methodology shall be used when evaluating County roadways and intersections. A copy of the County's Traffic Impact Analysis Report Guidelines may be obtained on the Department's website at http://dpw.lacounty.gov/traffic.

If you have any questions regarding the transportation comment, please contact Andrew Ngumba at (626) 300-4851 or angumba@dpw.lacounty.gov.

If you have any other questions or require additional information, please contact

23-1 cont. Ruben Cruz at (626) 458-4921 or rcruz@dpw.lacounty.gov.

Matthew Dubiel, P.E.
County of Los Angeles Department of Public Works
Land Development Division, Subdivision Mapping Section,
CUP/CEQA/B&T Planning Unit
☎ (626) 458-4921 🖷(626)458-4949

Please click here to take our customer service survey

Comment Letter #23 from the County of Los Angeles Department of Public Works (County), January 10, 2013

Comment 1: The County does not have any specific comments, but suggests that any traffic studies be conducted using the County's Traffic Impact Analysis Report Guidelines.

Response: This letter and your comments have been noted and filed for the record. If any traffic studies are conducted in Los Angeles County, the County's Guidelines will be followed.

COMMENT LETTER #24

Dawn Kukla/D07/Caltrans/CAGov
01/11/2013 09:46 AM

To "Hoang, Tan T." <TAN.T.HOANG@saic.com>
cc
bcc
Subject RE: San Joaquin Corridor PEIR 2035 Vision

Hi Tan,

If you wish you can still send us your comments as long as we get them in the next month or so. Or you can wait until the Draft PEIR is released. In any event I will make sure you are on our mailing list.

Thank you,

Dawn Kukla
Senior Environmental Planner
Division of Environmental Planning
(213) 897-3643
"Hoang, Tan T." <TAN.T.HOANG@saic.com>

"Hoang, Tan T." <TAN.T.HOANG@saic.com>
01/11/2013 09:46 AM

To Dawn Kukla <dawn_kukla@dot.ca.gov>
cc
Subject RE: San Joaquin Corridor PEIR 2035 Vision

Sorry Dawn. I wasn't able to send a comment letter last month. I will have to wait until the next comment period. Can you please notify me when the PEIR is available?

24-1 Thank you.

Tan Hoang, AICP
Land Use Planner | Water, Environment & Transportation
SAIC Energy, Environment & Infrastructure, LLC (SAIC)
office: 916.979.3742 | fax: 916.979.3735

Please consider the environment before printing this email.

Add to mailing list

From: Dawn Kukla [mailto:dawn_kukla@dot.ca.gov]
Sent: Thursday, December 13, 2012 10:51 AM
To: Hoang, Tan T.
Subject: RE: San Joaquin Corridor PEIR 2035 Vision

Tentatively, we are targeting for spring.

Dawn Kukla
Senior Environmental Planner
Division of Environmental Planning
(213) 897-3643
"Hoang, Tan T." <TAN.T.HOANG@saic.com>

Comment #24 from the SAIC Energy, Environment & Infrastructure, LLC, January 11, 2013

Comment 1: Tan Hoang of SAIC requests to be placed on the mailing list and notified when the DRAFT PEIR is available.

Response: This letter and your comments have been noted and filed for the record. SAIC has been added to the mailing list and will be notified when the DRAFT PEIR is made available for public review.

COMMENT LETTER #25

Mike N. Oliphant
Project Manager
Superfund and Specialty Portfolio

Chevron Environmental Management Company
P.O. Box 6012
San Ramon, CA 94583
Tel (925) 790 6431
Fax (925) 790 6772
mike.oliphant@chevron.com

January 17, 2012

Stakeholder Communication – Caltrans District 7

Ms. Dawn Kukla
Senior Environmental Planner
California Department of Transportation
Caltrans District 7, Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Subject: **Comments on the Initial Study for the San Joaquin Corridor Programmatic Environmental Impact Report 2035 Vision**
Chevron Environmental Management Company
Historical Pipeline Portfolio–Bakersfield to Richmond

Dear Ms. Kukla:

25-1 On behalf of Chevron Environmental Management Company (CEMC), SAIC Energy, Environment & Infrastructure, LLC (SAIC; CEMC's contract consultant) recently reviewed the Initial Study (IS) for the San Joaquin Corridor Programmatic Environmental Impact Report (PEIR) 2035 Vision. It may help you in subsequent planning efforts to understand something about Chevron's former pipeline operations in Contra Costa County and the San Joaquin Valley, as residual weathered crude oil, abandoned pipeline, and asbestos-containing materials (ACM) could potentially be encountered during subsurface construction activities in these former pipeline rights of way (ROWs).

25-2 Portions of the former Old Valley Pipeline (OVP) and Tidewater Associated Oil Company (TAOC) pipeline existed within the respective boundaries of Contra Costa, Fresno, Kern, Kings, and San Joaquin counties. These formerly active pipelines were constructed in the early 1900s and carried crude oil from the southern San Joaquin Valley to the San Francisco Bay Area. Pipeline operations for the OVP ceased in the 1940s, and in the 1970s for the TAOC. When pipeline operations ceased, the pipelines were taken out of commission. The degree and method of decommissioning varied; in some instances the pipelines were removed, while in others, they remained in place. Because these pipelines have been decommissioned, with the majority of pipelines having been removed, they are not readily identified as underground utilities through the Underground Service Alert North System or utility surveys. Figure 1 illustrates the location of the former OVP and TAOC ROWs with respect to the proposed track upgrades in Fresno, Kern, Kings, and Tulare counties. Figure 2 illustrates the location of the former OVP and TAOC ROWs with respect to the proposed track upgrades in Contra Costa and San Joaquin counties. The location of the pipelines shown on Figures 1 and 2 is based on historical as-built drawings and the approximated positional accuracy of the alignments is generally +/- 50 feet. The OVP and TAOC pipelines were installed at depths of up to 10 feet below ground surface. The steel pipelines were typically encased in a protective coating composed of coal tar and ACM.

25-3 Working under the direction of State regulatory agencies, CEMC conducted risk assessments at numerous locations with known historical crude-oil release points along the former OVP and TAOC pipelines. Analytical results from these risk assessments indicated that the crude-contaminated soil was non-hazardous. Accordingly, it is likely that if soil affected by the historical release of crude oil from these former pipelines is encountered during construction activities it may be reused as backfill on site. Properly abandoned crude-oil pipelines may be left in the ground. Parties conducting construction activities in the vicinity of these former pipeline ROWs may wish to use the information provided in this letter to help prepare for the possibility of encountering abandoned pipelines and pipeline-related ACM during the course of their work.

For more information regarding these historic pipelines, please visit http://www.hppinfo.com/. If you would like additional information, or would like to request more detailed maps, please contact SAIC consultants Tom Burns (thomas.a.burns@saic.com) at (916) 979-3748 or Tan Hoang (tan.t.hoang@saic.com) at (916) 979-3742.

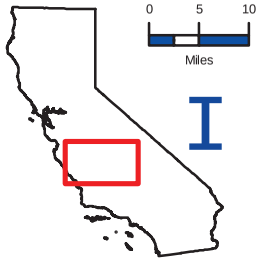
Sincerely,

Mike Oliphant

MO/klg

Enclosures:
Figure 1. Historical Pipeline Rights of Way – Proposed Track Upgrades – BNSF Bakersfield to Fresno
Figure 2. Historical Pipeline Rights of Way – Proposed Track Upgrades – UPRR Antioch to Oakland

cc: Mr. Tom Burns – SAIC
3800 Watt Avenue, Suite 210, Sacramento, California 95821
Mr. Mike Hurd – SAIC (letter only)
1000 Broadway, Suite 675, Oakland, California 94607



CALIFORNIA LOCATION MAP

Map is compiled from data sources that vary in accuracy; features may not be displayed in exact relationship to one another. Do not rely on map for legal information or underground work. Source: California Department of Transportation, "Figure 1-2a: Proposed Track Upgrades - BNSF Bakersfield to Fresno," San Joaquin Corridor Programmatic Environmental Impact Report – 2035 Vision – Initial Study, November 2012.

Historical Old Valley Pipeline (OVP)

Historical Tidewater Associated Oil Company (TAOC) Pipeline

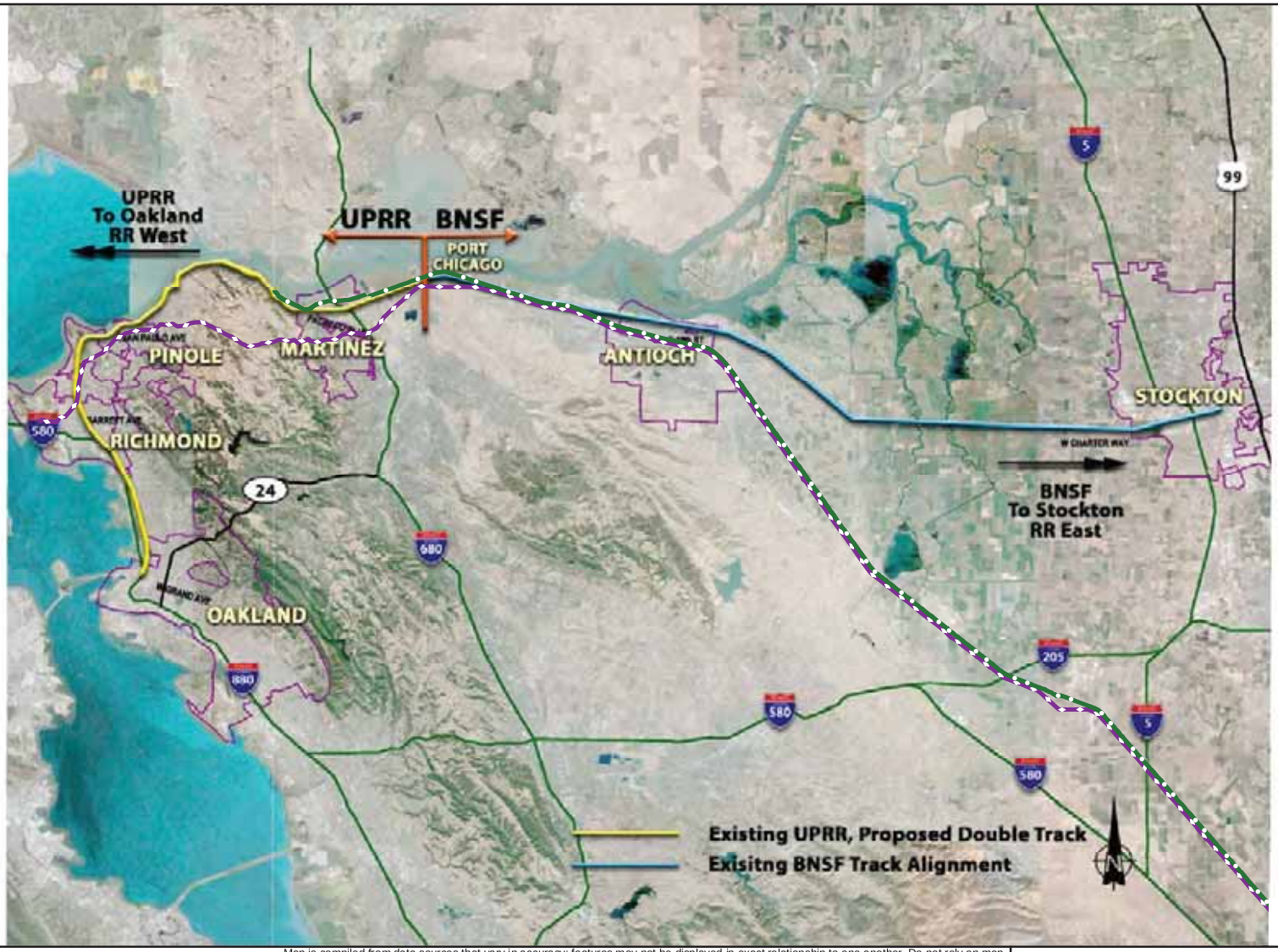
HISTORICAL PIPELINE RIGHTS OF WAY

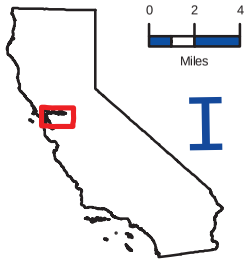
PROPOSED TRACK UPGRADES - BNSF BAKERSFIELD TO FRESNO

California

DATE: 12/13/2012	ANALYST: HOANGTA	FIGURE:
SAIC		1

FILE: \\580BU-GISDB\GISCAD\HPPBTRI\MANAGEMENT\STRATEGY\POTENTIAL PROJECTS\HPP REGIONALS\CORRIDOR2035\PROJECTS\FIGURE 1\PSEP_FIG1_SJCORRIDOR_2012_12.MXD





CALIFORNIA LOCATION MAP

Map is compiled from data sources that vary in accuracy; features may not be displayed in exact relationship to one another. Do not rely on map for legal information or underground work. Source: California Department of Transportation, "Figure 1-2c: Proposed Track Upgrades - UPRR Antioch to Oakland," San Joaquin Corridor Programmatic Environmental Impact Report – 2035 Vision – Initial Study, November 2012.

Historical Old Valley Pipeline (OVP)

Historical Tidewater Associated Oil Company (TAOC) Pipeline

HISTORICAL PIPELINE RIGHTS OF WAY

PROPOSED TRACK UPGRADES - UPRR ANTIOCH TO OAKLAND
California

DATE: 12/13/2012	ANALYST: HOANGTA	FIGURE:
SAIC		2

FILE: \\580BU-GISDB\GISCAD\HPPBTRI\MANAGEMENTSTRATEGY\POTENTIAL PROJECTS\HPP REGIONALS\CORRIDOR2035\PROJECTS\FIGURE 2\PSEP_FIG2_SJCORRIDOR_2012_12.MXD

Comment Letter #25 from Chevron Environmental Management Company (CEMC), January 17, 2013

Comment 1: Identifies potential underground abandoned facilities or contaminated areas from Chevron's former pipeline operations in Contra Costa County and the San Joaquin Valley.

Response: This letter and your comments have been noted and filed for the record. Potential impacts to Chevron's former facilities will be taken into consideration as specific rail infrastructure projects are implemented in the future.

Comment 2: Portions of two old oil pipelines existed within Contra Costa, Fresno, Kern, Kings, and San Joaquin Counties: the pipelines were abandoned in the 1940s and 1970s, and the degree and method of decommissioning varied. CEMC provides maps showing the approximate location of these previous pipeline alignments. The depth of these pipelines is up to 10 feet below ground surface.

Response: Caltrans and the railroads will use this information and the maps during planning for future San Joaquin Rail Corridor infrastructure improvement projects.

Comment 3: Indicates that risk assessments were conducted at known historical crude-oil release points along the pipelines' alignment, and analytical results indicate that the crude-contaminated soil was non-hazardous. If crude-contaminated soil is encountered, it is probable that the soil can be used as backfill and that any pipelines encountered can be left in the ground if they do not conflict with future construction. Points of contact are identified if additional data and more detailed maps are required.

Response: Your comment is noted and will be taken into consideration as specific rail infrastructure projects are implemented in the future.

COMMENT LETTER #26

"Gentry, Mindy"
<mgentry@ci.antioch.ca.us>
01/24/2013 07:59 AM

To "'dawn.kukla@dot.ca.gov'" <dawn.kukla@dot.ca.gov>
cc
bcc
Subject San Joaquin Rail Corridor 2035 Vision Project

Hello Dawn,

26-1 The City of Antioch received the NOC for the Rail Corridor Project and would like to be notified regarding this project, specifically when EIR becomes available for public review.

Thank you,

Mindy Gentry
Senior Planner
City of Antioch
200 'H' Street
Antioch, CA 94509
(925) 779-6133 tel
(925) 779-7034 fax

City offices are closed every Friday. We thank you for your understanding. The Community Development Department will have the following operating hours:

8:00am – 11:30am: Full service counter hours
12:00pm – 1:00pm: Closed for lunch
1:00pm – 5:00pm: By appointment only

Comment Letter #26 from City of Antioch, January 24, 2013

Comment 1: The City of Antioch requests to be notified when the DRAFT PEIR is made available.

Response: This letter and your comments have been noted and filed for the record, and the City will be notified when the DRAFT PEIR is distributed for public review.

COMMENT LETTER #27

David Schonbrunn
<David@schonbrunn.org>
12/19/2012 12:39 AM

To Betty L Miller <betty_l_miller@dot.ca.gov>
cc Dawn Kukla <dawn_kukla@dot.ca.gov>
bcc
Subject Addition to our Scoping Comments

Ms. Kukla,

I read something in Trains magazine tonight that demonstrates Association of American Railroads' support for the 110 mph design speed that we suggested be studied for the SJVC:

27-1 "... Thursday's House Transportation and Infrastructure Committee hearing on the Federal Railroad Administration's high speed and intercity passenger rail program called by committee Chairman John Mica, R-Fla.

During his testimony, Association of American Railroads' President and CEO Edward Hamberger reiterated his organization's contention that passenger trains traveling above 110 mph must operate on sealed rights-of-way, separated from slower moving freight trains. Additionally, he suggested that five key principles must be followed any time higher speed rail between 79 mph and 110 mph is implemented on freight corridors: putting safety first, protecting present and future capacity, compensating freight carriers fairly for use of tracks, complete liability coverage, and evaluating each project on a case-by-case basis.

... All of the witnesses' prepared testimony is available online at transportation.house.gov/hearings/hearingdetail.aspx?NewsID=1761.

David Schonbrunn, President
Transportation Solutions Defense and Education Fund (TRANSDEF)
P.O. Box 151439
San Rafael, CA 94915-1439

415-370-7250 cell & office

David@Schonbrunn.org

Comment Letter #27 from the Transportation Solutions Defense and Education Fund (TRANSDEF), December 19, 2012

Comment 1: TRANSDEF submitted an excerpt from testimony presented to the U.S. House of Representatives' Transportation and Infrastructure Committee by President and CEO Edward Hamberger, Association of American Railroads, regarding use of freight railroad tracks for passenger trains traveling between 79 mph and 110 mph for consideration by Caltrans.

Response: *As indicated in responses to Comment Letter #22, Caltrans defined the range of alternatives that it considered viable at this point in time, including an increase in the speed of San Joaquin Corridor Amtrak California Service trains from 79 mph to 90 mph.*

PUBLIC SCOPING MEETINGS

During the 30-day period that the Notice of Preparation (NOP) for the San Joaquin Corridor Program Environmental Impact Review (PEIR) was available for public review and comment, Caltrans sponsored six scoping meetings beginning in Sacramento on November 19, 2013 and ending in Los Angeles on December 4, 2013. The dates and locations of the scoping meetings were announced in the NOP, and although not required, legal advertisements announcing the scoping meetings were published in newspapers of general circulation prior to each scoping meeting. The following is a summary of comments from each meeting.

Sacramento Scoping Meeting, November 19, 2012

One member of the public attended this meeting. Four (4) Caltrans staff/consultant representatives were present. The following comments, questions, or issues were raised at this meeting by the public and staff.

1. When will this document be completed?

   The San Joaquin Corridor DRAFT PEIR will be published in the summer of 2013 and the PEIR is expected to be finalized by December 2013.

2. How many scoping meetings will be held?

   A total of six scoping meetings were conducted at locations along the San Joaquin Corridor from the San Francisco Bay Area and Sacramento to Los Angeles.

3. What will happen after completing the scoping meetings, and will there be more meetings after this review?

   Following completion of the scoping process, the applicable input from the meetings and NOP comments will be considered in the modification of the scope of the San Joaquin Corridor DRAFT PEIR. Caltrans anticipates holding meetings during the 45-day public review period in order to receive comments on the San Joaquin Corridor DRAFT PEIR.

4. This meeting is not well attended. Why are there not more attendees?

   There is no specific answer to this question. Meeting Notices were placed in a variety of local newspapers. Additionally, mailers with meeting notices and a copy of the NOP were sent out to local, regional, state, federal, and interested individuals.

5. When do you think the next meetings will be held?

   The next meetings will probably be held in the summer of 2013.

6. So this is a primary step in the process?

   Issuance of the NOP and conduct of the scoping meetings is the initial step in the CEQA process for the proposed project.

7. Does Caltrans anticipate that attorneys will participate in the process?

   No attorneys submitted comments to the NOP. Caltrans is unable to anticipate participation by any party.

8. The high speed rail proposal is controversial and legal challenges have been made against this project.

   Your comment has been noted and filed for the record.

9. Will the proposed project require acquisition of property to support future expanded operations?

   At this time it does not appear that additional property will be needed for track improvements. Some new facilities, such as future stations, may require property acquisition.

10. Passenger trains no longer stop in Dixon. Why?

    Dixon is on the Capitol Corridor route, which is managed by the Capitol Corridor Joint Powers Authority (CCJPA), not the San Joaquin Corridor Amtrak California Services (San Joaquin Corridor Amtrak California) route, which is managed by Caltrans. Caltrans does not know why passenger trains no longer stop at Dixon and would refer the commenter to the CCJPA.

Stockton Scoping Meeting, November 20, 2012

No members of the public attended this meeting. Three (3) Caltrans staff/consultant representatives were present and no oral or written comments were received at this meeting.

Richmond Scoping Meeting, November 26, 2012

One member of the public attended this meeting. Three (3) Caltrans staff/consultant representatives were present.

1. The sole attendee came to the meeting to express concern about the proposed project's status and how the project will impact Contra Costa County?

   The commenter was referred to the NOP and Initial Study for review. (As a result of comments received to the NOP from several commenting agencies, the City of Hercules in Contra Costa County will be considered for a station and stop by San Joaquin Corridor Amtrak California operations.)

2. The question was raised as to whether Division of Rail is working with the County to better serve the area with another stop in Hercules?

   As indicated in the previous response, a new stop in Hercules is being considered.

3. The commenter indicated that the proposed Hercules station environmental review has been completed, but it had some historical structure issues with the State Historic Preservation Office (SHPO).

   Your comment has been noted and filed for the record.

4. At the proposed Hercules station there were also underground utility issues where relocation of lines, such as one owned by Kinder Morgan, becomes a major concern.

   Your comment has been noted and filed for the record.

5. The Union Pacific Railroad track alignment was also constructed within areas that contain shell mounds and possible Native American burials.

   Your comment has been noted and filed for the record.

6. In instances where a line must be relocated new easements or property acquisition may be required on private property.

   Your comment has been noted and filed for the record.

7. The commenter noted that the objective in attending the meeting was to be informed about the proposed project and offer input based on the process the City just completed.

   Your comment has been noted and filed for the record.

Fresno Scoping Meeting, November 27, 2012

Seven (7) members of the public attended this meeting. Five (5) Caltrans staff/consultant representatives were present.

1. What do you mean by the term “rolling stock”?

   Rolling stock refers to the locomotives and passenger cars that comprise a passenger train.

2. Where is the money coming from and what is it being spent on?

   California (as well as other States) was awarded federal grants to purchase new rolling stock (passenger cars and locomotives). The passenger cars are being designed now and will be built in Illinois. Caltrans Division of Rail is the coordinating project manager for the rail care project. The locomotive procurement project will be led by the State of Illinois. Illinois anticipates awarding a contract in January 2014. At this time, we do not know who might bid on the locomotive contract or where the work will be done.

3. Is the rolling stock being constructed back east?

   The rail cars will be built in Rochelle, Illinois.

4. Do you know whether the new high speed rail route will go through downtown Fresno?

   Caltrans is not the sponsor of the California High Speed Train System (CHSTS). The CHSTS proposed routes are yet to be determined by the CHSRA, but are expected to be located west of downtown.

5. It seems that you are in direct competition with high speed rail. The passengers are going to have to choose between the two systems. By going through the heart of the farmland, high speed rail will be passing a lot of stations along the way.

   Your comment has been noted and filed for the record. The San Joaquin Corridor DRAFT PEIR includes an evaluation of a "Blended System" alternative that considers future operations of some San Joaquin Corridor Amtrak California trains on the proposed CHSTS Initial Construction Segment (ICS).

6. Doesn't this have to comply with the State Rail Plan?

   The State Rail Plan is being updated to address these new alternative modes of operation in the San Joaquin Corridor.

7. Based on attending high speed rail meetings, one commenter understood that the California High Speed Rail Authority (CHSRA) envisions taking over Amtrak and assumes that Amtrak riders will use the CHSTS.

   While it is not anticipated that CHSTS will take over the Amtrak California services, CHSTS ridership projections assume that CHSTS will take a share of Amtrak California intercity rail passenger riders.

8. Does Caltrans own BART? Are there any plans for BART to meet Amtrak?

   Caltrans does not own or operate BART. The San Joaquins Corridor Amtrak California and Capitol Corridor trains provide a connection to BART in the City of Richmond.

9. One commenter noted that they have owned a business for 25 years in downtown Fresno, and CHSRA seeks to acquire the property. This person loves the San Joaquin Corridor Amtrak California and visits a child in Davis at the university, which is presently possible on the same day.

   Your comment has been noted and filed for the record.

10. How does this environmental document reconcile with the JPA (Joint Powers Authority)?

    Caltrans initiated activities necessary for the preparation of the San Joaquin Corridor DRAFT PEIR in 2009. The San Joaquin Corridor DRAFT PEIR was prepared for the purposes of reviewing potential environmental impacts resulting from improvements to infrastructure required to support intercity passenger train operations over a 25-year planning period.

11. If the Blended System is implemented, the San Joaquin Corridor Amtrak California trains will not come to the downtown station but follow the CHSTS tracks south of Madera?

One of the issues being addressed by CHSRA is how many passenger trains should continue to follow the existing San Joaquin Corridor Amtrak California alignment. Initially, scheduled Amtrak passenger trains may operate over both track alignments. Once CHSTS is fully operable, the passenger trains are anticipated to operate only on the BNSF alignment, while also serving as a "feeder" service to high speed rail.

12. So this is the environmental study for rail solely on the existing San Joaquin Corridor Amtrak California alignment. Is Amtrak forging ahead without knowing what high speed rail is doing?

    Caltrans Division of Rail manages the San Joaquin Corridor Amtrak California operations. The evaluation of a Blended System alternative will examine a future combined operation between the San Joaquin Corridor Amtrak California and CHSTS services. However, the original project being considered in the San Joaquin Corridor DRAFT PEIR is the expansion of the San Joaquin Corridor Amtrak California operations on the existing alignment.

13. A concern was expressed regarding the current interactions between CHSTS, the newly formed JPA, and current San Joaquin Corridor Amtrak California operations. Could the Valley cities be left without adequate train service?

    The San Joaquin Corridor DRAFT PEIR lays the foundation for future improvements in service within the San Joaquin Corridor for the purpose of improving service in the valley.

14. Will these tracks handle both types of train operations?

    The improvements to the existing San Joaquin Corridor Amtrak California as outlined in the San Joaquin Corridor DRAFT PEIR are for Amtrak intercity passenger and freight rail only.

15. Does the San Joaquin Corridor Amtrak California ridership forecast take into account high speed rail? This forecast may not be accurate if high speed rail becomes a reality.

    The ridership forecast was independently prepared solely for continued San Joaquin Corridor Amtrak California operations along the existing corridor using diesel electric locomotives. Future ridership could be altered with the presence of the CHSTS, but that speculation is not part of the purpose of the San Joaquin Corridor DRAFT EIR.

16. The proposed alignment for the CHSTS south of Madera will disenfranchise people from small communities along the current San Joaquin Corridor Amtrak California alignment.

    Your comment has been noted and filed for the record.

17. Is there an environmental document that addresses this change?

    This change will be evaluated as part of the Blended System alternative in this DRAFT PEIR.

18. Is federal money being used for this?

    The San Joaquin Corridor DRAFT PEIR is funded by the State.

19. It appears that agricultural issues have been removed from the San Joaquin Corridor DRAFT PEIR. We are concerned about accidents between agricultural equipment and field workers and Amtrak trains.

    Accidents are random events that occur when an activity, such as trains operating on the San Joaquin Corridor alignment, encounter either illegal trespass or use of railroad crossings, both private and public. Any increase in speed and increase in the number of daily trains has a potential to increase accidents. However, Caltrans, Amtrak, and the Class I railroads participate in a number of efforts to reduce accidents

20. A comment was provided that a shift to the CHSTS will increase travel costs, and the San Joaquin Corridor Amtrak California service is favored because it is affordable to passengers in the San Joaquin Valley.

    Your comment has been noted and filed for the record.

21. Can we get a copy of this presentation and other materials?

    Yes, a copy can be provided upon request to Caltrans District 7 or Division of Rail.

22. Did the CHSTS send you here to hold this scoping meeting?

    No, this presentation was sponsored by Caltrans in support of the San Joaquin Corridor DRAFT PEIR.

Bakersfield Scoping Meeting, November 29, 2012

Twenty-five (25) members of the public attended this meeting. Five (5) Caltrans staff/consultant representatives were present. This scoping meeting was the best attended of the six meetings held along the Corridor.

1. Given that San Joaquin Corridor Amtrak California operations will be shifted to the ICS and the JPA may take over Amtrak operations in the Valley, why is Caltrans considering the improvements within the San Joaquin Valley?

   As indicated earlier, Caltrans initiated activities necessary for the preparation of the San Joaquin Corridor DRAFT PEIR in 2009. The San Joaquin Corridor DRAFT PEIR was prepared for the purpose of reviewing potential environmental impacts resulting from improvements to infrastructure required to support intercity passenger train operations over a 25-year planning period. Fundamentally, many of the track improvements will be required at both ends of the proposed ICS. Even if the JPA assumes management of the Corridor, all of the infrastructure improvements identified in the San Joaquin Corridor DRAFT PEIR will still be required if the number of trains will be increased in the future to support growth in ridership within this Corridor. Caltrans has a responsibility to continue planning to support the future projected increase in ridership regardless of what agency manages the Corridor.

2. A question was raised regarding how San Joaquin Corridor Amtrak California will tie into the CHSTS.

Based on discussion with CHSRA, a track connection will be installed between the proposed ICS and the existing BNSF Railway Company tracks near Madera to the north, and somewhere west of Bakersfield in the vicinity of Rosedale.

3. One of the commenters stated that CHSTS did not consider stops in Bakersfield or the I-5 corridor. The system we have with upgrades and speed improvements is capable of serving the community. We do not need a system which the people cannot afford. As far as we are concerned we support you and this project.

   Your comment has been noted and filed for the record.

4. This plan includes improvements to rail infrastructure that will allow more train operations, including freight operations. How is this going to affect us?

   The purpose of the San Joaquin Corridor DRAFT PEIR is to address this specific question, i.e., to define how the physical environment will change as a result of implementing these projects.

5. Are passenger trains allowed to go 70 miles per hour (mph) through towns?

   Where conditions permit, Amtrak trains are allowed to travel at speeds up to 79 mph, including within towns, unless other conditions do not permit travel at this speed.

6. Why can't I purchase a ticket in Bakersfield for the Amtrak to go to Vegas?

   Amtrak buses presently pick up passengers in Bakersfield and transport them to Las Vegas. To purchase a ticket, a rider is required to travel a portion of the trip on a train, hence, the need to board the Amtrak system in Wasco. However, there is no passenger train service to Las Vegas due to a lack of track capacity and authorization from the host railroads.

7. The early train from Bakersfield north appears to use its horn excessively. Why?

   All trains are required to sound their warning horn when passing through an at-grade crossing (this is where a road and the tracks intersect at ground level or at grade.

8. A comment was made that a shift from fossil fuel trains to electricity would be beneficial. Can this be done? Can slower trains use electricity?

   Electric trains are not compatible with freight operations. CHSTS envisions a shift to electricity, but this issue is not addressed in the San Joaquin Corridor DRAFT PEIR.

9. For short distances it would be nice to use electric buses and a separate rail system for mass transit in downtown.

   Your comment has been noted and filed for the record.

10. Can you tell us how long ago the Interstate 5 corridor was considered with a possible station at Meadow's Field (the Bakersfield Airport)?

It is Caltrans' understanding that the Interstate 5 corridor was considered for the CHSTS. However, it is not known if a station was considered for Meadow's Field.

11. As far as ride comfort, how will you limit the vibration if you increase the speed of Amtrak trains?

    If an increase in San Joaquin Corridor Amtrak California passenger trains is authorized to 90 mph, the track system will require enhanced maintenance.

12. Why can't Amtrak install its own tracks using electricity, like those in Europe, instead of being a guest on tracks owned by the freight railroads?

    Such a system is being examined by the CHSRA and will not be re-examined in the San Joaquin Corridor DRAFT PEIR.

13. If we don't build a better train system then the State will have to expand the highway system, which will require a lot of money.

    Your comment has been noted and filed for the record. The objective of the proposed project is to enhance the San Joaquin Corridor Amtrak California system in order to support the continued shift of riders from their automobiles to the buses and trains on this Corridor.

14. The San Joaquin Rail Committee recommended that a passenger train operation between Bakersfield and Los Angeles was their highest priority. What is that plan?

    The San Joaquin Corridor DRAFT PEIR includes an alternative that would have one train per day travel over Tehachapi Pass to Palmdale and from there to Los Angeles Union Station. A description of how this can be accomplished is provided as Appendix 8.7 to the NOP Initial Study. Due to the heavy freight traffic over the tracks between Bakersfield and Mojave, the freight railroads have expressed opposition to this passenger train alternative. The environmental effects of this alternative will be evaluated in the San Joaquin Corridor DRAFT PEIR.

15. Currently, Caltrans is funded by the state to operate the San Joaquin Corridor Amtrak system. If the JPA takes over, who is going to pay Kern County's share?

    This question would be better directed to the San Joaquin JPA management.

16. If Amtrak is presently operating on existing rail as a guest, when new rail is installed who pays for the new track?

    If new track is installed to meet Amtrak operational requirements, funding for the infrastructure improvements is provided primarily by the State. Federal funding has played a minimal role in intercity rail capital improvements in California to date.

17. Where would Bakersfield be today if there had been a committee like yours and we did not have the rail?

    If Bakersfield did not have rail, freight and passenger operations would likely be replaced by more passenger buses and airplanes, and more freight trucks and aircraft.

18. Considering the finances of the state, will this project and high speed rail be competing for funding?

    It is beyond our capability to address how future Amtrak operations on the San Joaquin Corridor will be funded vis-a-vis the CHSTS.

19. The NOP indicates that in 2035 ridership will be 3 million passengers and CHSTS says there will be 117 million passengers. How do you make sense of that?

    The San Joaquin Corridor Amtrak California service ridership forecast was generated by modeling existing ridership and future population growth within the corridor, which was based upon future population estimates modeled by the California Department of Finance. The projection for 3 million passengers on the San Joaquin Corridor Amtrak California by 2035 is based upon the assumption that the system will continue to operate essentially the same, as it does now, but with more trains per day and at slightly higher speeds.

20. One commenter complimented Caltrans' Amtrak operations from Los Angeles to San Diego (Surfliner). This operation has been very successful and new cars have been added as needed. However, why does Caltrans still need financial support for these train operations?

    Similar to air travel and highways, passenger rail is not totally self supporting. The balance between ridership and ticket cost is complex; and at least up to the present, the total costs of passenger train operation costs (rolling stock, train maintenance, and track system maintenance) cannot be fully covered by fares.

Los Angeles Scoping Meeting, December 4, 2012

Two (2) members of the public attended this meeting. About eight (8) Caltrans staff/consultant representatives were present.

1. How did they come up with mile markers?

   Mile markers represent the distance of track from a point of origin, which in the case of BNSF is Topeka, Kansas. Thus, Mile Post 1,079 is 1,079 miles from the track origination point.

2. Why do single track systems exist?

   The number of tracks is dependent on the amount of train traffic on a track. A single track with appropriately located sidings can handle about 50 trains per day. The more traffic, the greater number of tracks required to safely handle train operations.

3. Why don't you go through Gorman with passenger trains?

   Gorman, or the Grapevine, is too steep for surface railroad tracks. An alternative train route through Tehachapi Pass was constructed in the 19th Century.

4. What is the cost difference between rail for your trains and infrastructure and high speed rail?

   The cost of high speed rail infrastructure is not part of the San Joaquin Corridor DRAFT PEIR.

5. Why can't you travel at higher speeds?

   The allowed speed on a segment of track depends on what speeds the tracks have been designed for; the level of grade separation (above 110 mph, there can be no at-grade crossings; and the level of maintenance of the track. Track speeds are essentially limited to about 99 mph on the existing tracks, because the track is not constructed or maintained for higher speed operations.

6. Why did high speed rail go to the San Joaquin Valley and not build the first segment from San Diego to Los Angeles?

   This question would be better directed to the CHSRA.

7. Why is Caltrans making changes incrementally as opposed to making all the changes at once like high speed rail, which wants to build the whole new system at one time?

   The forecast for the San Joaquin Corridor Amtrak California operations shows continued steady growth. The State of California has supported intercity passenger rail services since 1976; and Caltrans plans and manages capital infrastructure improvements and equipment purchases (locomotives and passenger cars) as need is established and funds are made available.

8. What are the differences in the tracks?

   Standard train tracks and high speed tracks differ in the manner in which they are installed and the manner in which trains are connected to the tracks. Otherwise they are visually similar.

9. Do you need different infrastructure for different train speeds?

   As indicated in the response to comment #5 above, different infrastructure is required for different train speeds. Different speeds on the tracks require different designs ranging from the manner of installing the rails to the type of curves allowed on a track segment. Like highways, the design of tracks varies with the speed and amount of use anticipated on the tracks.

10. Why can't I take a train all the way from Los Angeles to Oakland?

    The host railroads do not allow passenger trains over the Tehachapi Pass due to the demands of their freight traffic. Therefore, a bus connection between Los Angeles and Bakersfield is used to travel on Amtrak California between these two locations. Note that a bus takes about two hours to travel from Los Angeles to Bakersfield, whereas a train traveling over the Tehachapi Pass between these locations would require four to five hours, based on current speed limits.

11. A commenter requested a hard copy of the documentation, NOP and Initial Study.

    A hard copy has been provided.

12. How did you get to this point to propose this project?

    Caltrans Division of Rail spent approximately 18 months conducting the initial research and compiling the modeling to support the proposed project, culminating in the completion of the NOP. The next milestone is the release of the San Joaquin Corridor DRAFT PEIR.

13. Commenter described a service scenario for travel from southern California to the San Francisco Bay area to catch other Amtrak trains.

    Your comment has been noted and filed for the record. This request is beyond the scope of the PEIR.

14. Why is District 7 doing this?

    The authority to certify a CEQA environmental review and approve a project as a lead agency resides with Caltrans' Districts. Division of Rail works with Districts to prepare environmental documentation in support of specific rail projects. District 7 agreed to serve as the CEQA lead agency for this project.

15. Why do San Pedro/Long Beach Amtrak thruway buses take the congested Long Beach and Santa Ana freeways rather than the 110 toll road which is faster and more direct?

    Bus routes are selected by Amtrak California based on ridership, connectivity, and operational requirements.

16. Why can't the San Joaquin's stop at Berkeley?

    The San Joaquin Corridor Amtrak California trains stop in Emeryville to collect passengers from San Francisco. Emeryville is about a mile from Berkeley and well served by local transit. A previous stop in Berkeley was discontinued in 1993, due to a lack of ridership.

17. One commenter suggested acknowledging that the California Zephyr trains are part of the larger Amtrak system.

    Your comment has been noted and filed for the record.

18. What are the strange names on the rail markers?

    These names represent original points (sometimes stops) along the original railroad tracks, most of which were installed in the late 19th Century.

19. Where are you going to build new stations?

    There are several station locations being considered for Stockton. Based on comments received in response to the NOP, new stations at Elk Grove and Hercules will also be considered.

20. Why doesn't it stop at Hanford?

    The San Joaquin Corridor Amtrak California trains stop at Hanford, which also serves as an important bus connection point.

21. Regarding Blended Systems, are you talking about running high speed rail and regular trains on the same system?

    Under a Blended System concept, the San Joaquin Corridor Amtrak California trains may jointly use the ICS for a period of time between Madera and Bakersfield.

22. What is the purpose of this meeting rather than the regular quarterly San Joaquin Rail Committee meeting?

    CEQA (Section 15082 (c)) requires that a scoping meeting be held as part of the procedure for processing the Notice of Preparation. Caltrans decided to hold six scoping meetings due to the extent of this proposed project. In order to comply with the CEQA requirement, the meetings needed to be held during the NOP review process.

23. Did Staff see the Los Angeles Times article regarding the route from Bakersfield to Los Angeles through Tehachapi?

    No this article was not available to Staff.

24. Can you define what a scoping meeting is?

    A scoping meeting is a meeting with the public or agency staff to request and receive input on the scope of issues that need to be addressed in a proposed project's Environmental Impact Review. Such a meeting is mandatory when a project is of regional or statewide interest, as is the case with the San Joaquin Corridor PEIR.

25. A second request for the NOP and support documentation was submitted.

    The documentation was provided as requested.

26. Is this the only meeting and why was it not publicized better?

    Six scoping meetings were publicized and held in order to receive input to the scope of the issues in the environmental document. Following completion of the scoping process, the applicable input from the meetings and NOP comments will be considered in the modification of the scope of the San Joaquin Corridor DRAFT PEIR. Caltrans anticipates holding meetings during the 45-day public review period in order to receive comments on the San Joaquin Corridor DRAFT PEIR.

APPENDIX 8.3

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of January 25, 2013

Title 40: Protection of Environment
PART 1033—CONTROL OF EMISSIONS FROM LOCOMOTIVES
Subpart B—Emission Standards and Related Requirements

---

§ 1033.101 Exhaust emission standards.

See §§ 1033.102 and 1033.150 to determine how the emission standards of this section apply before 2023.

(a) *Emission standards for line-haul locomotives.* Exhaust emissions from your new locomotives may not exceed the applicable emission standards in Table 1 to this section during the useful life of the locomotive. (NOTE: § 1033.901 defines locomotives to be "new" when originally manufactured and when remanufactured.) Measure emissions using the applicable test procedures described in subpart F of this part.

TABLE 1 TO § 1033.101—LINE-HAUL LOCOMOTIVE EMISSION STANDARDS

Year of original manufacture	Tier of standards	Standards (g/bhp-hr)			
		NO_X	PM	HC	CO
1973-1992 [a]	Tier 0 [b]	8.0	0.22	1.00	5.0
1993 [a]-2004	Tier 1 [b]	7.4	0.22	0.55	2.2
2005-2011	Tier 2 [b]	5.5	[e] 0.10	0.30	1.5
2012-2014	Tier 3 [c]	5.5	0.10	0.30	1.5
2015 or later	Tier 4 [d]	1.3	0.03	0.14	1.5

[a] Locomotive models that were originally manufactured in model years 1993 through 2001, but that were not originally equipped with a separate coolant system for intake air are subject to the Tier 0 rather than the Tier 1 standards.

[b] Line-haul locomotives subject to the Tier 0 through Tier 2 emission standards must also meet switch standards of the same tier.

[c] Tier 3 line-haul locomotives must also meet Tier 2 switch standards.

[d] Manufacturers may elect to meet a combined NO_X+HC standard of 1.4 g/bhp-hr instead of the otherwise applicable Tier 4 NO_X and HC standards, as described in paragraph (j) of this section.

[e] The PM standard for newly remanufactured Tier 2 line-haul locomotives is 0.20 g/bhp-hr until January 1, 2013, except as specified in § 1033.150(a).

(b) *Emission standards for switch locomotives.* Exhaust emissions from your new locomotives may not exceed the applicable emission standards in Table 2 to this section during the useful life of the locomotive. (Note: § 1033.901 defines locomotives to be "new" when originally manufactured and when remanufactured.) Measure emissions using the applicable test procedures described in subpart F of this part.

TABLE 2 TO § 1033.101—SWITCH LOCOMOTIVE EMISSION STANDARDS

Year of original manufacture	Tier of standards	Standards (g/bhp-hr)			
		NO_X	PM	HC	CO
1973-2001	Tier 0	11.8	0.26	2.10	8.0
2002-2004	Tier 1 [a]	11.0	0.26	1.20	2.5
2005-2010	Tier 2 [a]	8.1	[b] 0.13	0.60	2.4
2011-2014	Tier 3	5.0	0.10	0.60	2.4
2015 or later	Tier 4	[c] 1.3	0.03	[c] 0.14	2.4

[a] Switch locomotives subject to the Tier 1 through Tier 2 emission standards must also meet line-haul standards of the same tier.

[b] The PM standard for new Tier 2 switch locomotives is 0.24 g/bhp-hr until January 1, 2013.

[c] Manufacturers may elect to meet a combined NO_X+HC standard of 1.4 g/bhp-hr instead of the otherwise applicable Tier 4 $NO_X$and HC standards, as described in paragraph (j) of this section.

(c) *Smoke standards.* The smoke opacity standards specified in Table 3 to this section apply only for locomotives certified to one or more PM standards or FELs greater than 0.05 g/bhp-hr. Smoke emissions, when measured in accordance with the provisions of Subpart F of this part, shall not exceed these standards.

TABLE 3 TO § 1033.101—SMOKE STANDARDS FOR LOCOMOTIVES (PERCENT OPACITY)

	Steady-state	30-sec peak	3-sec peak
Tier 0	30	40	50
Tier 1	25	40	50
Tier 2 and later	20	40	50

(d) *Averaging, banking, and trading.* You may generate or use emission credits under the averaging, banking, and trading (ABT) program as described in subpart H of this part to comply with the NO_X and/or PM standards of this part. You may also use ABT to comply with the Tier 4 HC standards of this part as described in paragraph (j) of this section. Generating or using emission credits requires that you specify a family emission limit (FEL) for each pollutant you include in the ABT program for each engine family. These FELs serve as the emission standards for the engine family with respect to all required testing instead of the standards specified in paragraphs (a) and (b) of this section. FELs may not be higher than the following limits:

(1) FELs for Tier 0 and Tier 1 locomotives originally manufactured before 2002 may have any

value.

(2) FELs for Tier 1 locomotives originally manufactured 2002 through 2004 may not exceed 9.5 g/bhp-hr for NO_X emissions or 0.60 g/bhp-hr for PM emissions measured over the line-haul duty cycle. FELs for these locomotives may not exceed 14.4 g/bhp-hr for NO_X emissions or 0.72 g/bhp-hr for PM emissions measured over the switch duty cycle.

(3) FELs for Tier 2 and Tier 3 locomotives may not exceed the Tier 1 standards of this section.

(4) FELs for Tier 4 locomotives may not exceed the Tier 3 standards of this section.

(e) *Notch standards.* (1) Exhaust emissions from locomotives may not exceed the notch standards specified in paragraph (e)(2) of this section, except as allowed in paragraph (e)(3) of this section, when measured using any test procedures under any test conditions.

(2) Except as specified in paragraph (e)(5) of this section, calculate the applicable notch standards for each pollutant for each notch from the certified notch emission rate as follows:

$$\text{Notch standard} = (E_i) \times (1.1 + (1 - ELH_i / \text{std}))$$

Where:

E_i = The deteriorated brake-specific emission rate (for pollutant i) for the notch (i.e., the brake-specific emission rate calculated under subpart F of this part, adjusted by the deterioration factor in the application for certification); where i is NO_X , HC, CO or PM.

ELH_i = The deteriorated line-haul duty-cycle weighted brake-specific emission rate for pollutant i, as reported in the application for certification, except as specified in paragraph (e)(6) of this section.

std = The applicable line-haul duty-cycle standard/FEL, except as specified in paragraph (e)(6) of this section.

(3) Exhaust emissions that exceed the notch standards specified in paragraph (e)(2) of this section are allowed only if one of the following is true:

(i) The same emission controls are applied during the test conditions causing the noncompliance as were applied during certification test conditions (and to the same degree).

(ii) The exceedance result from a design feature that was described (including its effect on emissions) in the approved application for certification, and is:

(A) Necessary for safety;

(B) Addresses infrequent regeneration of an aftertreatment device; or

(C) Otherwise allowed by this part.

(4) Since you are only required to test your locomotive at the highest emitting dynamic brake point, the notch caps that you calculate for the dynamic brake point that you test also apply for other dynamic brake points.

(5) No PM notch caps apply for locomotives certified to a PM standard or FEL of 0.05 g/bhp-hr or lower.

(6) For switch locomotives that are not subject to line-haul standards, ELH^i equals the deteriorated switch duty-cycle weighted brake-specific emission rate for pollutant i and std is the applicable switch cycle standard/FEL.

(f) *Fuels.* The exhaust emission standards in this section apply for locomotives using the fuel type on which the locomotives in the engine family are designed to operate.

(1) You must meet the numerical emission standards for HC in this section based on the following types of hydrocarbon emissions for locomotives powered by the following fuels:

(i) Alcohol-fueled locomotives: THCE emissions for Tier 3 and earlier locomotives and NMHCE for Tier 4.

(ii) Gaseous-fueled locomotives: NMHC emissions.

(iii) Diesel-fueled and other locomotives: THC emissions for Tier 3 and earlier locomotives and NMHC for Tier 4. Note that manufacturers/remanufacturers may choose to not measure NMHC and assume that NMHC is equal to THC multiplied by 0.98 for diesel-fueled locomotives.

(2) You must certify your diesel-fueled locomotives to use the applicable grades of diesel fuel as follows:

(i) Certify your Tier 4 and later diesel-fueled locomotives for operation with only Ultra Low Sulfur Diesel (ULSD) fuel. Use ULSD as the test fuel for these locomotives.

(ii) Certify your Tier 3 and earlier diesel-fueled locomotives for operation with only ULSD fuel if they include sulfur-sensitive technology and you demonstrate compliance using a ULSD test fuel.

(iii) Certify your Tier 3 and earlier diesel-fueled locomotives for operation with either ULSD fuel or Low Sulfur Diesel (LSD) fuel if they do not include sulfur-sensitive technology or if you demonstrate compliance using an LSD test fuel (including commercial LSD fuel).

(iv) For Tier 1 and earlier diesel-fueled locomotives, if you demonstrate compliance using a ULSD test fuel, you must adjust the measured PM emissions upward by 0.01 g/bhp-hr to make them equivalent to tests with LSD. We will not apply this adjustment for our testing.

(g) *Useful life.* The emission standards and requirements in this subpart apply to the emissions from new locomotives for their useful life. The useful life is generally specified as MW-hrs and years, and ends when either of the values (MW-hrs or years) is exceeded or the locomotive is remanufactured.

(1) The minimum useful life in terms of MW-hrs is equal to the product of the rated horsepower multiplied by 7.50. The minimum useful life in terms of years is ten years. For locomotives originally manufactured before January 1, 2000 and not equipped with MW-hr meters, the minimum useful life is equal to 750,000 miles or ten years, whichever is reached first. See § 1033.140 for provisions related to rated power.

(2) You must specify a longer useful life if the locomotive or locomotive engine is designed to last longer than the applicable minimum useful life. Recommending a time to remanufacture that is longer than the minimum useful life is one indicator of a longer design life.

(3) Manufacturers/remanufacturers of locomotives with non-locomotive-specific engines (as

defined in § 1033.901) may ask us (before certification) to allow a shorter useful life for an engine family containing only non-locomotive-specific engines. We may approve a shorter useful life, in MW-hrs of locomotive operation but not in years, if we determine that these locomotives will rarely operate longer than the shorter useful life. If engines identical to those in the engine family have already been produced and are in use, your demonstration must include documentation from such in-use engines. In other cases, your demonstration must include an engineering analysis of information equivalent to such in-use data, such as data from research engines or similar engine models that are already in production. Your demonstration must also include any overhaul interval that you recommend, any mechanical warranty that you offer for the engine or its components, and any relevant customer design specifications. Your demonstration may include any other relevant information.

(4) Remanufacturers of locomotive or locomotive engine configurations that have been previously certified under paragraph (g)(3) of this section to a useful life that is shorter than the value specified in paragraph (g)(1) of this section may certify to that same shorter useful life value without request.

(5) In unusual circumstances, you may ask us to allow you to certify some locomotives in your engine family to a partial useful life. This allowance is limited to cases in which some or all of the locomotive's power assemblies have been operated previously such that the locomotive will need to be remanufactured prior to the end of the otherwise applicable useful life. Unless we specify otherwise, define the partial useful life based on the total MW-hrs since the last remanufacture to be consistent with other locomotives in the family. For example, this may apply for a previously uncertified locomotive that becomes "new" when it is imported, but that was remanufactured two years earlier (representing 25 percent of the normal useful life period). If such a locomotive could be brought into compliance with the applicable standards without being remanufactured, you may ask to include it in your engine family for the remaining 75 percent of its useful life period.

(h) *Applicability for testing.* The emission standards in this subpart apply to all testing, including certification testing, production-line testing, and in-use testing.

(i) *Alternate CO standards.* Manufacturers/remanufacturers may certify Tier 0, Tier 1, or Tier 2 locomotives to an alternate CO emission standard of 10.0 g/bhp-hr instead of the otherwise applicable CO standard if they also certify those locomotives to alternate PM standards less than or equal to one-half of the otherwise applicable PM standard. For example, a manufacturer certifying Tier 1 locomotives to a 0.11 g/bhp-hr PM standard may certify those locomotives to the alternate CO standard of 10.0 g/bhp-hr.

(j) *Alternate* NO_X +HC standards for Tier 4. Manufacturers/remanufacturers may use credits accumulated through the ABT program to certify Tier 4 locomotives to an alternate NO_X +HC emission standard of 1.4 g/bhp-hr (instead of the otherwise applicable NO_X and NMHC standards). You may use NO_X credits to show compliance with this standard by certifying your family to a NO_X +HC FEL. Calculate the NO_X credits needed as specified in subpart H of this part using the NO_X +HC emission standard and FEL in the calculation instead of the otherwise applicable NO_X standard and FEL. You may not generate credits relative to the alternate standard or certify to the standard without using credits.

(k) *Upgrading.* Upgraded locomotives that were originally manufactured prior to January 1, 1973 are subject to the Tier 0 standards. (See the definition of upgrade in § 1033.901.)

(l) *Other optional standard provisions.* Locomotives may be certified to a higher tier of standards than would otherwise be required. Tier 0 switch locomotives may be certified to both the line-haul and switch cycle standards. In both cases, once the locomotives become subject to the additional standards, they remain subject to those standards for the remainder of their service lives.

[73 FR 37197, June 30, 2008, as amended at 73 FR 59188, Oct. 8, 2008; 75 FR 22982, Apr. 30, 2010]

For questions or comments regarding e-CFR editorial content, features, or design, email ecfr@nara.gov.
For questions concerning e-CFR programming and delivery issues, email webteam@gpo.gov.

EPA United States Environmental Protection Agency

Emission Standards Reference Guide

Locomotives -- Exhaust Emission Standards

	Duty-Cycle[b]	Tier	Year[c]	HC[i] (g/hp-hr)	NOx (g/bhp-hr)	PM (g/bhp-hr)	CO (g/bhp-hr)	Smoke (percentage) [m]	Minimum Useful Life (hours / years / miles)[n]	Warranty Period (hours / years / miles)[n]
Federal[a]	Line-haul	Tier 0	1973-1992[d,e]	1.00	9.5 [ABT]	0.22 [ABT]	5.0	30 / 40 / 50	(7.5 x hp) / 10 / 750,000[o]	1/3 * Useful Life
		Tier 1	1993-2004[d,e]	0.55	7.4 [ABT]	0.22 [ABT]	2.2	25 / 40 / 50	(7.5 x hp) / 10 / 750,000[o]	
									(7.5 x hp) / 10 / -	
		Tier 2	2005-2011[d]	0.30	5.5 [ABT]	0.10[k] [ABT]	1.5	20 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 3	2012-2014[f]	0.30	5.5 [ABT]	0.10 [ABT]	1.5	20 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 4	2015+[g]	0.14	1.3 [ABT]	0.03 [ABT]	1.5	-	(7.5 x hp) / 10 / -	
	Switch	Tier 0	1973-2001	2.10	11.8 [ABT]	0.26 [ABT]	8.0	30 / 40 / 50	(7.5 x hp) / 10 / 750,000[o]	
		Tier 1	2002-2004[h]	1.20	11.0 [ABT]	0.26 [ABT]	2.5	25 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 2	2005-2010[h]	0.60	8.1 [ABT]	0.13[l] [ABT]	2.4	20 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 3	2011-2014	0.60	5.0 [ABT]	0.10 [ABT]	2.4	20 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 4	2015+	0.14[j]	1.3[j][ABT]	0.03 [ABT]	2.4	-	(7.5 x hp) / 10 / -	

Notes:

a These standards apply to locomotives that are propelled by engines with total rated horsepower (hp) of 750 kilowatts (kW) (1006 hp) or more, unless the owner chooses to have the equipment certified to meet the requirements of locomotives. This does not include vehicles propelled by engines with total rated horsepower of less than 750 kW (1006 hp); see the requirements in 40 Code of Federal Regulations (CFR) Parts 86, 89 and 1039. The test procedures specify chassis-based testing of locomotives. These test procedures include certification testing, production line testing, and in-use testing using the Federal Test Procedure (FTP) when the locomotive has reached between 50-70 percent of its useful life.

b Line-haul locomotives are powered by an engine with a maximum rated power (or a combination of engines having a total rated power) greater than 2300 hp. Switch locomotives are powered by an engine with a maximum rated power (or a combination of engines having a total rated power) of 2300 hp or less.

c The Tier 0 standards apply to locomotives manufactured after 1972 when they are manufactured or remanufactured. Note that interim standards may apply for Tier 0 or Tier 1 locomotives remanufactured in 2008 or 2009, or for Tier 2 locomotives manufactured or remanufactured in 2008-2012.

d Line-haul locomotives subject to the Tier 0 through Tier 2 emission standards must also meet switch standards of the same tier.

e The Tier 0 standards apply for 1993-2001 locomotives not originally manufactured with a separate loop intake air cooling system

f Tier 3 line-haul locomotives must also meet Tier 2 switch standards.

g Manufacturers using credits may elect to meet a combined nitrogen oxides (NOx) plus hydrocarbon (HC) standard of 1.4 grams per brakehorsepower-hour (g/bhp-hr) instead of the otherwise applicable Tier 4 NOx and HC standards.

h Tier 1 and Tier 2 switch locomotives must also meet line-haul standards of the same tier.

i The numerical emission standards for HC must be met based on the following types of hydrocarbon emissions for locomotives powered by the following fuels: (1) alcohol: total hydrocarbon equivalent (THCE) emissions for Tier 3 and earlier locomotives, and non-methane hydrocarbon equivalent (NMHCE) for Tier 4; (2) natural gas and liquefied petroleum gas: non-methane hydrocarbon (NMHC) emissions; and (3) diesel: total hydrocarbon (THC) emissions for Tier 3 and earlier locomotives, and NMHC for Tier 4.

j Manufacturers may elect to meet a combined NOx+HC standard of 1.4 g/bhp-hr instead of the otherwise applicable Tier 4 NOx and HC standards.

k The line-haul particulate matter (PM) standard for newly remanufactured Tier 2 locomotives is 0.20 g/bhp-hr until January 1, 2013, except as specified in 40 CFR Part 1033.150(a).

l The switch PM standard for new Tier 2 locomotives is 0.24 g/bhp-hr until January 1, 2013, except as specified in 40 CFR Part 1033.150(a).

m The smoke opacity standards apply only for locomotives certified to one or more PM standards or Family Emission Limits (FEL) greater than 0.05 g/bhp-hr. Percentages apply to smoke opacity at steady state/30-second peak/3-second peak, as measured continuously during testing.

n Useful life and warranty period are expressed in megawatt-hours (mw-hr), years, or miles, whichever comes first. Manufacturers are required to certify to longer useful lives if their locomotives are designed to last longer between overhauls than the minimum useful life value.

o For locomotives originally manufactured before January 1, 2000, and not equipped with mw-hr meters.

Code of Federal Regulations (CFR) Citations:

- 40 CFR 1033.101 = Emission Standards and Useful Life
- 40 CFR 1033.120 = Warranty Requirements

Last updated on Wednesday, November 14, 2012

http://www.epa.gov/otaq/standards/nonroad/locomotives.htm

APPENDIX 8.4

Forecast Results for Future San Joaquin Valley Service
(prepared 6/21/11)

	Baseline 2011		Baseline 2012		10 year Plan 79mph service 2020	10 year Plan 90mph service 2020	25 year Plan 90mph service 2035
Annual Forecasts							
Ridership	1,016,300	*	1,069,500	**	1,665,600	1,721,200	3,044,500
Ticket Revenue	$31,341,000	*	$34,748,000	**	$67,896,000	$70,732,000	$144,527,000
Passenger-Miles	139,410,000	*	149,140,000	**	248,330,000	258,920,000	461,890,000
Service Characteristics							
Train Frequency	Daily		Daily		Daily	Daily	Daily
Oakland - Stockton	4		4		6	6	10
Sacramento - Stockton	2		2		3	3	6
Stockton - Merced	6		6		7	7	10
Merced - Bakersfield	6		6		8	8	11
Avg. Travel Time (minutes)							
Oakland - Bakersfield	368		368		346 (-6%)	327 (-11%)	324 (-12%)
Sacramento - Bakersfield	318		318		312 (-2%)	302 (-5%)	300 (-6%)

Notes:

These forecasts are based solely upon information available to AECOM as of 6/21/11.
These forecasts are provided for the sole use of Amtrak and Caltrans.
They are not intended for disclosure in a financial offering statement.

* FY11 Estimate (prepared May 2011)
** FY12 Budget (prepared May 2011)

Market Growth
Based on California Department of Finance growth and population projections
Auto Congestion
Auto travel times increase by 2% every five years due to increased congestion
Service Changes
Changes in frequency and travel time as shown above (timetables provided by Caltrans 5/21/11 & 5/31/11)
OTP at 90% in all years
Pricing Actions
+2% per year applied to all prices (assume no ridership loss since increase matches inflation rate)

2020 Forecast Results by Train for Future San Joaquin Valley Service

(prepared 6/21/11)

Future Ten Year Plan - 79-mph service*

Train	Time at Bakersfield	North End	Ridership 2020	
new 1	2:25 AM	Oakland	41,494	Northbound
711	4:55 AM	Oakland	75,962	
701	→	Sacramento	29,836	
new 3	8:25 AM	Oakland	116,071	
713	10:25 AM	Oakland	112,518	
new 5	→	Sacramento	65,911	
715	12:55 PM	Oakland	149,126	
717exp	3:35 PM	Oakland	128,503	
703	6:25 PM	Sacramento	82,407	
new 7	8:25 PM	Merced	18,027	
new 2	8:29 AM	Merced	34,979	Southbound
702	11:59 AM	Sacramento	110,652	
712	1:59 PM	Oakland	126,854	
714	3:59 PM	Oakland	119,263	
new 4	←	Sacramento	54,894	
716exp	6:49 PM	Oakland	140,969	
new 6	9:59 PM	Oakland	101,927	
704	←	Sacramento	51,675	
718	11:59 PM	Oakland	72,591	
new 8	1:59 AM	Oakland	31,939	
TOTAL			1,665,600	

Future 10 Year Plan - 90-mph service**

Train	Time at Bakersfield	North End	Ridership 2020	
new 1	2:36 AM	Oakland	42,665	Northbound
711	5:06 AM	Oakland	79,573	
701	→	Sacramento	32,082	
new 3	8:36 AM	Oakland	122,561	
713	10:36 AM	Oakland	111,396	
new 5	→	Sacramento	67,438	
715	1:06 PM	Oakland	149,862	
717exp	3:43 PM	Oakland	132,906	
703	6:36 PM	Sacramento	89,761	
new 7	8:36 PM	Merced	18,614	
new 2	8:21 AM	Merced	36,202	Southbound
702	11:51 AM	Sacramento	115,807	
712	1:51 PM	Oakland	130,322	
714	3:51 PM	Oakland	123,648	
new 4	←	Sacramento	57,765	
716exp	6:43 PM	Oakland	147,675	
new 6	9:51 PM	Oakland	105,437	
704	←	Sacramento	55,079	
718	11:51 PM	Oakland	72,475	
new 8	1:51 AM	Oakland	29,932	
TOTAL			1,721,200	

Notes:

These forecasts are based solely upon information available to AECOM as of 6/21/11.
These forecasts are provided for the sole use of Amtrak and Caltrans.
They are not intended for disclosure in a financial offering statement.

* Proposed future San Joaquin valley service (timetables provided by Caltrans 5/21/11)
** Proposed future San Joaquin valley service (timetables provided by Caltrans 5/31/11)
*** Ridership on Sacramento split trains only includes travel to/from/within Sacramento-Stockton segment; all local ridership between Stockton and Bakersfield is included with the Oakland-Bakersfield train

2035 Forecast Results by Train for Future San Joaquin Valley Service

(prepared 6/21/11)

Future 25-Year Plan - 90-mph service**

	Train	Time at Bakersfield	North End	Ridership 2035
Northbound	1	2:36 AM	Oakland	50,498
	3	→	Sacramento	21,728
	5	4:43 AM	Oakland	85,377
	7	6:36 AM	Oakland	122,651
	9	→	Sacramento	52,016
	11	8:43 AM	Oakland	130,768
	13	10:36 AM	Oakland	152,228
	15	→	Sacramento	88,960
	17	12:36 PM	Oakland	158,742
	19	→	Sacramento	95,844
	21	2:43 PM	Oakland	164,388
	23	4:36 PM	Oakland	131,570
	25	→	Sacramento	70,615
	27	6:43 PM	Oakland	90,688
	29	8:36 PM	Oakland	41,157
	31	→	Sacramento	12,234
	33	9:36 PM	Merced	15,776
Southbound	2	7:51 AM	Merced	46,659
	4	←	Sacramento	64,571
	6	11:51 AM	Oakland	150,081
	8	1:43 PM	Oakland	119,237
	10	←	Sacramento	75,170
	12	2:51 PM	Oakland	121,257
	14	3:43 PM	Oakland	127,609
	16	←	Sacramento	76,276
	18	5:51 PM	Oakland	169,078
	20	←	Sacramento	72,971
	22	7:51 PM	Oakland	165,889
	24	9:43 PM	Oakland	108,009
	26	←	Sacramento	61,043
	28	10:51 PM	Oakland	79,309
	30	11:43 PM	Oakland	67,114
	32	←	Sacramento	19,967
	34	1:51 AM	Oakland	35,021
	TOTAL			3,044,500

Notes:

These forecasts are based solely upon information available to AECOM as of 6/21/11.
These forecasts are provided for the sole use of Amtrak and Caltrans.
They are not intended for disclosure in a financial offering statement.

** Proposed future San Joaquin valley service (timetables provided by Caltrans 5/31/11)

*** Ridership on Sacramento split trains only includes travel to/from/within Sacramento-Stockton segment; all local ridership between Stockton and Bakersfield is included with the Oakland-Bakersfield train

Proposed San Joaquin Service - Expansion Grid - CalTrans - Version 1 - Five Year Plan & Ten Year Plan

(79MPH Maximum Speed)

SOUTHWARD / EASTWARD -- READ DOWN:

	new 2	702	712	new 4	714	716exp	704	new 6	718	new 8	Stations, sidings, and double-track segments:
	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	
Dp			8:10 AM		10:05 AM	1:20 PM		4:05 PM	6:10 PM	8:10 PM	Oakland, CA
Dp			8:20 AM		10:15 AM	1:30 PM		4:15 PM	6:20 PM	8:20 PM	Emeryville, CA
Dp			8:29 AM		10:24 AM	1:39 PM		4:24 PM	6:29 PM	8:29 PM	Richmond, CA
Dp			8:59 AM		10:54 AM	2:09 PM		4:54 PM	6:59 PM	8:59 PM	Martinez, CA
			9:03 AM		10:58 AM	2:13 PM		4:58 PM	7:03 PM	9:03 PM	Mococco (EEDT)
			9:07 AM		11:02 AM	2:17 PM		5:02 PM	7:07 PM	9:07 PM	Port Chicago (UP)
			9:07 AM		11:02 AM	2:17 PM		5:02 PM	7:07 PM	9:07 PM	Port Chicago (BNSF)
			9:13 AM		11:08 AM	2:23 PM		5:08 PM	7:13 PM	9:13 PM	Pittsburg (sdg)
Dp			9:19 AM		11:14 AM	2:27 PM		5:14 PM	7:19 PM	9:19 PM	Antioch-Pittsburg, CA
			9:23 AM		11:18 AM	2:29 PM		5:18 PM	7:23 PM	9:23 PM	Sando (sdg)
			9:25 AM		11:20 AM	2:31 PM		5:20 PM	7:25 PM	9:25 PM	Oakley (WEDT)
			9:30 AM		11:25 AM	2:36 PM		5:25 PM	7:30 PM	9:30 PM	Bixler (EEDT)
			9:32 AM		11:27 AM	2:38 PM		5:27 PM	7:32 PM	9:32 PM	Orwood (sdg)
			9:35 AM		11:30 AM	2:41 PM		5:30 PM	7:35 PM	9:35 PM	Trull (WEDT)
			9:39 AM		11:34 AM	2:45 PM		5:34 PM	7:39 PM	9:39 PM	Holt (EEDT)
			9:44 AM		11:39 AM	2:50 PM		5:39 PM	7:44 PM	9:44 PM	West Stockton (WEDT)
Dp			9:46 AM		11:41 AM	2:52 PM		5:41 PM	7:46 PM	9:46 PM	Stockton, CA (SKN)
Dp		6:50 AM		10:40 AM			4:40 PM				Sacramento, CA
		6:58 AM		10:48 AM			4:48 PM				XEC - Elvas, CA
		7:03 AM		10:53 AM			4:53 PM				Polk (SEDT)
		7:12 AM		11:02 AM			5:02 PM				S. Elk Grove (SEDT)
		7:17 AM		11:07 AM			5:07 PM				S. Need (SEDT)
		7:23 AM		11:13 AM			5:13 PM				Acampo (sdg)
Dp		7:28 AM		11:18 AM			5:18 PM				Lodi, CA (S.T., at N.E. sdg)
		7:30 AM		11:20 AM			5:20 PM				S. E. Lodi (sdg)
		7:33 AM		11:23 AM			5:23 PM				Tomspur (sdg)
		7:35 AM		11:25 AM			5:25 PM				Akers (NEDT)
Dp		7:42 AM		11:32 AM			5:32 PM				Stockton, CA (SKT)
		7:48 AM		11:38 AM			5:38 PM				Church (BNSF Conn. Trk.)
		7:50 AM	9:47 AM	11:40 AM	11:42 AM	2:53 PM	5:40 PM	5:42 PM	7:47 PM	9:47 PM	Keddie Jct. (SAC trains)
Ar		7:53 AM	9:53 AM	11:43 AM	11:47 AM	2:59 PM	5:43 PM	5:47 PM	7:53 PM	9:53 PM	New BNSF Stockton
Dp		7:57 AM	9:57 AM	→	11:57 AM	3:03 PM	→	5:57 PM	7:57 PM	9:57 PM	Station (MP1120.3)
		8:00 AM	10:00 AM		12:00 PM	3:06 PM		6:00 PM	8:00 PM	10:00 PM	Wheat (EEDT)
		8:06 AM	10:06 AM		12:06 PM	3:12 PM		6:06 PM	8:06 PM	10:06 PM	Duffy (sdg)
		8:11 AM	10:11 AM		12:11 PM	3:17 PM		6:11 PM	8:11 PM	10:11 PM	W. Escalon (WEDT)
		8:14 AM	10:14 AM		12:14 PM	3:20 PM		6:14 PM	8:14 PM	10:14 PM	E. Escalon (EEDT)
		8:17 AM	10:17 AM		12:17 PM	3:23 PM		6:17 PM	8:17 PM	10:17 PM	Riverbank (sdg)
Dp		8:22 AM	10:22 AM		12:22 PM	3:28 PM		6:22 PM	8:22 PM	10:22 PM	Modesto, CA
		8:26 AM	10:26 AM		12:26 PM	3:32 PM		6:26 PM	8:26 PM	10:26 PM	Modesto-Empire Jct. (sdg)
		8:31 AM	10:31 AM		12:31 PM	3:37 PM		6:31 PM	8:31 PM	10:31 PM	W. E. Denair (sdg)
Dp		8:34 AM	10:34 AM		12:34 PM	3:38 PM		6:34 PM	8:34 PM	10:34 PM	Denair, CA (& E.E. sdg)
		8:42 AM	10:42 AM		12:42 PM	3:44 PM		6:42 PM	8:42 PM	10:42 PM	Ballico (sdg)
		8:48 AM	10:48 AM		12:48 PM	3:50 PM		6:48 PM	8:48 PM	10:48 PM	Fluhr (sdg)
Dp	5:30 AM	9:00 AM	11:00 AM		1:00 PM	4:02 PM		7:00 PM	9:00 PM	11:00 PM	Merced, CA (& W.E.sdg)
	5:33 AM	9:03 AM	11:03 AM		1:03 PM	4:05 PM		7:03 PM	9:03 PM	11:03 PM	E.E. Merced (sdg)
	5:39 AM	9:09 AM	11:09 AM		1:09 PM	4:11 PM		7:09 PM	9:09 PM	11:09 PM	Planada (sdg)
	5:43 AM	9:13 AM	11:13 AM		1:13 PM	4:15 PM		7:13 PM	9:13 PM	11:13 PM	Legrand (sdg)
	5:51 AM	9:21 AM	11:21 AM		1:21 PM	4:23 PM		7:21 PM	9:21 PM	11:21 PM	Sharon (sdg)
	5:55 AM	9:25 AM	11:25 AM		1:25 PM	4:27 PM		7:25 PM	9:25 PM	11:25 PM	Kismet (sdg)
Dp	6:01 AM	9:31 AM	11:31 AM		1:31 PM	4:30 PM		7:31 PM	9:31 PM	11:31 PM	Madera, CA (& W.E.sdg)
	6:03 AM	9:33 AM	11:33 AM		1:33 PM	4:31 PM		7:33 PM	9:33 PM	11:33 PM	E.E. Madera (sdg)
	6:09 AM	9:39 AM	11:39 AM		1:39 PM	4:37 PM		7:39 PM	9:39 PM	11:39 PM	Gregg (sdg)
	6:14 AM	9:44 AM	11:44 AM		1:44 PM	4:42 PM		7:44 PM	9:44 PM	11:44 PM	Figarden (sdg)
Ar	6:26 AM	9:56 AM	11:56 AM		1:56 PM	4:54 PM		7:56 PM	9:56 PM	11:56 PM	Fresno, CA (& WEDT)
Dp	6:30 AM	10:00 AM	12:00 PM		2:00 PM	4:58 PM		8:00 PM	10:00 PM	12:00 AM	
	6:43 AM	10:13 AM	12:13 PM		2:13 PM	5:11 PM		8:13 PM	10:13 PM	12:13 AM	Floral (EEDT)
	6:47 AM	10:17 AM	12:17 PM		2:17 PM	5:15 PM		8:17 PM	10:17 PM	12:17 AM	Conejo (sdg)
	6:55 AM	10:25 AM	12:25 PM		2:25 PM	5:23 PM		8:25 PM	10:25 PM	12:25 AM	E.E. Shirley (sdg & WEDT)
Dp	7:03 AM	10:33 AM	12:33 PM		2:33 PM	5:31 PM		8:33 PM	10:33 PM	12:33 AM	Hanford, CA
	7:06 AM	10:36 AM	12:36 PM		2:36 PM	5:34 PM		8:36 PM	10:36 PM	12:36 AM	E. Hanford (EEDT)
	7:11 AM	10:41 AM	12:41 PM		2:41 PM	5:39 PM		8:41 PM	10:41 PM	12:41 AM	Guernsey (sdg)
	7:16 AM	10:46 AM	12:46 PM		2:46 PM	5:43 PM		8:46 PM	10:46 PM	12:46 AM	W.E. Corcoran (sdg)
Dp	7:19 AM	10:49 AM	12:49 PM		2:49 PM	5:44 PM		8:49 PM	10:49 PM	12:49 AM	Corcoran, CA
	7:21 AM	10:51 AM	12:51 PM		2:51 PM	5:45 PM		8:51 PM	10:51 PM	12:51 AM	E.E. Corcoran (sdg)
	7:28 AM	10:58 AM	12:58 PM		2:58 PM	5:52 PM		8:58 PM	10:58 PM	12:58 AM	Angiola (sdg)
	7:35 AM	11:05 AM	1:05 PM		3:05 PM	5:59 PM		9:05 PM	11:05 PM	1:05 AM	Allensworth (sdg)
	7:41 AM	11:11 AM	1:11 PM		3:11 PM	6:05 PM		9:11 PM	11:11 PM	1:11 AM	Sandrini (sdg)
	7:45 AM	11:15 AM	1:15 PM		3:15 PM	6:09 PM		9:15 PM	11:15 PM	1:15 AM	Elmo (sdg)
Dp	7:51 AM	11:21 AM	1:21 PM		3:21 PM	6:13 PM		9:21 PM	11:21 PM	1:21 AM	Wasco,CA(S.T.=W.E.sdg)
	7:54 AM	11:24 AM	1:24 PM		3:24 PM	6:14 PM		9:24 PM	11:24 PM	1:24 AM	E.E. Wasco (sdg)
	7:59 AM	11:29 AM	1:29 PM		3:29 PM	6:19 PM		9:29 PM	11:29 PM	1:29 AM	W.E. Shafter (sdg)
	8:01 AM	11:31 AM	1:31 PM		3:31 PM	6:21 PM		9:31 PM	11:31 PM	1:31 AM	E.E. Shafter (sdg)
	8:05 AM	11:35 AM	1:35 PM		3:35 PM	6:25 PM		9:35 PM	11:35 PM	1:35 AM	Una (sdg)
	8:08 AM	11:38 AM	1:38 PM		3:38 PM	6:28 PM		9:38 PM	11:38 PM	1:38 AM	Lopez (WEDT)
	8:14 AM	11:44 AM	1:44 PM		3:44 PM	6:34 PM		9:44 PM	11:44 PM	1:44 AM	Bakersfield (Atk Lead begins)
Ar	8:29 AM	11:59 AM	1:59 PM		3:59 PM	6:49 PM		9:59 PM	11:59 PM	1:59 AM	Bakersfield, CA

NORTHWARD / WESTWARD -- READ UP:

	new 1	711	701	new 3	713	new 5	715	717exp	703	new 7
	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily
Ar	8:13 AM	10:49 AM		2:13 PM	4:19 PM		6:43 PM	9:04 PM		
Dp	D 8:03 AM	D 10:39 AM		D 2:03 PM	D 4:09 PM		D 6:33 PM	D 8:54 PM		
Dp	7:44 AM	10:20 AM		1:44 PM	3:50 PM		6:14 PM	8:35 PM		
Dp	7:17 AM	9:53 AM		1:17 PM	3:23 PM		5:47 PM	8:08 PM		
	7:10 AM	9:46 AM		1:10 PM	3:16 PM		5:40 PM	8:01 PM		
	7:06 AM	9:42 AM		1:06 PM	3:12 PM		5:36 PM	7:57 PM		
	7:06 AM	9:42 AM		1:06 PM	3:12 PM		5:36 PM	7:57 PM		
	7:00 AM	9:35 AM		1:00 PM	3:06 PM		5:30 PM	7:51 PM		
Dp	6:55 AM	9:31 AM		12:55 PM	3:01 PM		5:25 PM	7:48 PM		
	6:50 AM	9:26 AM		12:50 PM	2:56 PM		5:20 PM	7:45 PM		
	6:48 AM	9:24 AM		12:48 PM	2:54 PM		5:18 PM	7:43 PM		
	6:43 AM	9:19 AM		12:43 PM	2:49 PM		5:13 PM	7:38 PM		
	6:41 AM	9:17 AM		12:41 PM	2:47 PM		5:11 PM	7:36 PM		
	6:38 AM	9:14 AM		12:38 PM	2:44 PM		5:08 PM	7:33 PM		
	6:34 AM	9:10 AM		12:34 PM	2:40 PM		5:04 PM	7:29 PM		
	6:29 AM	9:05 AM		12:29 PM	2:35 PM		4:59 PM	7:24 PM		
Dp	6:27 AM	9:03 AM		12:27 PM	2:33 PM		4:57 PM	7:22 PM		
Ar			10:17 AM			3:47 PM			11:37 PM	
			9:49 AM			3:19 PM			11:09 PM	
			9:44 AM			3:14 PM			11:04 PM	
			9:35 AM			3:05 PM			10:55 PM	
			9:30 AM			3:00 PM			10:50 PM	
			9:24 AM			2:54 PM			10:44 PM	
Dp			9:21 AM			2:51 PM			10:41 PM	
			9:18 AM			2:48 PM			10:38 PM	
			9:15 AM			2:45 PM			10:35 PM	
			9:13 AM			2:43 PM			10:33 PM	
Dp			9:08 AM			2:38 PM			10:28 PM	
			9:06 AM			2:36 PM			10:26 PM	
	6:25 AM	9:01 AM	9:05 AM	12:25 PM	2:31 PM	2:35 PM	4:55 PM	7:20 PM	10:25 PM	
Dp	6:24 AM	9:00 AM	9:04 AM	12:24 PM	2:20 PM	2:34 PM	4:54 PM	7:19 PM	10:24 PM	
Ar	6:20 AM	8:50 AM	↑	12:20 PM	2:20 PM	↑	4:50 PM	7:15 PM	10:20 PM	
	6:12 AM	8:42 AM		12:12 PM	2:12 PM		4:42 PM	7:07 PM	10:12 PM	
	6:06 AM	8:36 AM		12:06 PM	2:06 PM		4:36 PM	7:01 PM	10:06 PM	
	6:01 AM	8:31 AM		12:01 PM	2:01 PM		4:31 PM	6:56 PM	10:01 PM	
	5:58 AM	8:28 AM		11:58 AM	1:58 PM		4:28 PM	6:53 PM	9:58 PM	
	5:55 AM	8:25 AM		11:55 AM	1:55 PM		4:25 PM	6:50 PM	9:55 PM	
Dp	5:52 AM	8:22 AM		11:52 AM	1:52 PM		4:22 PM	6:47 PM	9:52 PM	
	5:46 AM	8:16 AM		11:46 AM	1:52 PM		4:16 PM	6:41 PM	9:46 PM	
	5:41 AM	8:11 AM		11:41 AM	1:41 PM		4:11 PM	6:37 PM	9:41 PM	
Dp	5:39 AM	8:09 AM		11:39 AM	1:39 PM		4:09 PM	6:36 PM	9:39 PM	
	5:30 AM	8:00 AM		11:30 AM	1:30 PM		4:00 PM	6:28 PM	9:30 PM	
	5:24 AM	7:54 AM		11:24 AM	1:24 PM		3:54 PM	6:22 PM	9:24 PM	
Dp	5:18 AM	7:48 AM		11:18 AM	1:18 PM		3:48 PM	6:16 PM	9:18 PM	11:12 PM
	5:09 AM	7:39 AM		11:09 AM	1:09 PM		3:39 PM	6:07 PM	9:09 PM	11:09 PM
	5:03 AM	7:33 AM		11:03 AM	1:03 PM		3:33 PM	6:01 PM	9:03 PM	11:03 PM
	4:59 AM	7:29 AM		10:59 AM	12:59 PM		3:29 PM	5:57 PM	8:59 PM	10:59 PM
	4:51 AM	7:21 AM		10:51 AM	12:51 PM		3:21 PM	5:49 PM	8:51 PM	10:51 PM
	4:47 AM	7:17 AM		10:47 AM	12:47 PM		3:17 PM	5:45 PM	8:47 PM	10:47 PM
Dp	4:42 AM	7:12 AM		10:42 AM	12:42 PM		3:12 PM	5:42 PM	8:42 PM	10:42 PM
	4:39 AM	7:09 AM		10:39 AM	12:39 PM		3:09 PM	5:41 PM	8:39 PM	10:39 PM
	4:33 AM	7:03 AM		10:33 AM	12:33 PM		3:03 PM	5:35 PM	8:33 PM	10:33 PM
	4:28 AM	6:58 AM		10:28 AM	12:28 PM		2:58 PM	5:30 PM	8:28 PM	10:28 PM
Dp	4:21 AM	6:51 AM		10:21 AM	12:21 PM		2:51 PM	5:23 PM	8:21 PM	10:21 PM
Ar	4:17 AM	6:47 AM		10:17 AM	12:17 PM		2:47 PM	5:19 PM	8:17 PM	10:17 PM
	4:00 AM	6:30 AM		10:00 AM	12:00 PM		2:30 PM	5:02 PM	8:00 PM	10:00 PM
	3:56 AM	6:26 AM		9:56 AM	11:56 AM		2:26 PM	4:58 PM	7:56 PM	9:56 PM
	3:48 AM	6:18 AM		9:48 AM	11:48 AM		2:18 PM	4:50 PM	7:48 PM	9:48 PM
Dp	3:43 AM	6:13 AM		9:43 AM	11:43 AM		2:13 PM	4:45 PM	7:43 PM	9:43 PM
	3:37 AM	6:07 AM		9:37 AM	11:37 AM		2:07 PM	4:39 PM	7:37 PM	9:37 PM
	3:32 AM	6:02 AM		9:32 AM	11:32 AM		2:02 PM	4:34 PM	7:32 PM	9:32 PM
	3:27 AM	5:57 AM		9:27 AM	11:27 AM		1:57 PM	4:30 PM	7:27 PM	9:27 PM
Dp	3:25 AM	5:55 AM		9:25 AM	11:25 AM		1:55 PM	4:29 PM	7:25 PM	9:25 PM
	3:22 AM	5:52 AM		9:22 AM	11:22 AM		1:52 PM	4:28 PM	7:22 PM	9:22 PM
	3:15 AM	5:45 AM		9:15 AM	11:15 AM		1:45 PM	4:21 PM	7:15 PM	9:15 PM
	3:08 AM	5:38 AM		9:08 AM	11:15 AM		1:38 PM	4:14 PM	7:08 PM	9:08 PM
	3:02 AM	5:32 AM		9:02 AM	11:02 AM		1:32 PM	4:08 PM	7:02 PM	9:02 PM
	2:58 AM	5:28 AM		8:58 AM	10:58 AM		1:28 PM	4:04 PM	6:58 PM	8:58 PM
Dp	2:53 AM	5:23 AM		8:53 AM	10:53 AM		1:23 PM	4:01 PM	6:53 PM	8:53 PM
	2:53 AM	5:19 AM		8:49 AM	10:49 AM		1:19 PM	3:59 PM	6:49 PM	8:49 PM
	2:44 AM	5:14 AM		8:44 AM	10:44 AM		1:14 PM	3:54 PM	6:44 PM	8:44 PM
	2:42 AM	5:12 AM		8:42 AM	10:42 AM		1:12 PM	3:52 PM	6:42 PM	8:42 PM
	2:38 AM	5:08 AM		8:38 AM	10:38 AM		1:08 PM	3:48 PM	6:38 PM	8:38 PM
	2:35 AM	5:05 AM		8:35 AM	10:35 AM		1:05 PM	3:45 PM	6:35 PM	8:35 PM
	2:29 AM	4:59 AM		8:29 AM	10:29 AM		12:59 PM	3:39 PM	6:29 PM	8:29 PM
Dp	2:25 AM	4:55 AM		8:25 AM	10:25 AM		12:55 PM	3:35 PM	6:25 PM	8:25 PM

5/6/10

Notes:

New BNSF Stockton station assumed for all trains.

No time added for single track meed, assume 2 MT capacity to be added.

Proposed San Joaquin Service - Expansion Grid - CalTrans - Version 1 - Five Year Plan & Ten Year Plan

(90 MPH Maximum Speed)

SOUTHWARD / EASTWARD -- READ DOWN:

	new 2	702	712	new 4	714	716exp	704	new 6	718	new 8		Stations, sidings, and double-track segments:		new 1	711	701	new 3	713	new 5	715	717exp	703	new 7
	700	**702**	**712**	**---**	**714**	**716 (exp)**	**---**	**718**	**720**	**722**				**709**	**711**	**---**	**713**	**715**	**---**	**717**	**719 (Exp)**	**703**	**721**
	Daily	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**				**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**	**Daily**
			08:21 AM		**10:15 AM**	**01:32 PM**		**04:15 PM**	**06:21 PM**	**08:21 PM**	Dp	**Oakland, CA**	Ar	**08:05 AM**	**10:41 AM**		**02:05 PM**	**04:11 PM**		**06:35 PM**	**08:55 PM**		
			09:18 AM		*11:12 AM*	*02:29 PM*		*05:12 PM*	*07:18 PM*	*09:18 PM*		*Port Chicago (BNSF/UP)*		*06:58 AM*	*09:34 AM*		*12:58 PM*	*03:04 PM*		*05:28 PM*	*7:48 PM*		
		7:01 AM		**10:51 AM**			**4:51 PM**				Dp	**Sacramento, CA**	Ar			**10:06 AM**			**03:36 PM**			**11:26 PM**	
		8:01 AM		*11:51 AM*			*5:51 PM*					*Keddie Jct. (SAC trains)*				*8:54 AM*			*2:24 PM*			*10:14 PM*	
		8:04 AM	**10:04 AM**	**11:54 AM**	**11:58 AM**	**3:13 PM**	**5:54 PM**	**5:58 PM**	**8:04 PM**	**10:04 PM**	Ar	**New BNSF Stockton**	Dp	**6:13 AM**	**8:49 AM**	**8:53 AM**	**12:13 PM**	**2:19 PM**	**2:23 PM**	**4:43 PM**	**7:05 PM**	**10:13 PM**	
		08:08 AM	**10:08 AM**		**12:08 PM**	**03:17 PM**		**06:08 PM**	**08:08 PM**	**10:08 PM**	Dp	**Station (MP1120.3)**	Ar	**06:09 AM**	**08:39 AM**		**12:09 PM**	**02:09 PM**		**04:39 PM**	**7:01 PM**	**10:09 PM**	
	5:37 AM										Dp	**Merced, CA** ***(& W.E.sdg)***	Ar										**11:11 PM**
	6:26 AM	**9:56 AM**	**11:56 AM**		**1:56 PM**	**4:56 PM**		**7:56 PM**	**9:56 PM**	**11:56 PM**	Ar	**Fresno**	Dp	**4:20 AM**	**6:50 AM**		**10:20 AM**	**12:20 PM**		**2:50 PM**	**5:20 PM**	**8:20 PM**	**10:20 PM**
	6:30 AM	**10:00 AM**	**12:00 PM**		**2:00 PM**	**5:00 PM**		**8:00 PM**	**10:00 PM**	**12:00 AM**	Dp	**Fresno**	Ar	**4:16 AM**	**6:46 AM**		**10:16 AM**	**12:16 PM**		**2:46 PM**	**5:16 PM**	**8:16 PM**	**10:16 PM**
	6:42 AM	*10:12 AM*	*12:12 PM*		*2:12 PM*	*5:12 PM*		*8:12 PM*	*10:12 PM*	*12:12 AM*		*Floral*		*4:00 AM*	*6:30 AM*		*10:00 AM*	*12:00 PM*		*2:30 PM*	*5:00 PM*	*8:00 PM*	*10:00 PM*
	08:21 AM	**11:51 AM**	**01:51 PM**		**03:51 PM**	**06:43 PM**		**09:51 PM**	**11:51 PM**	**01:51 AM**	Ar	**Bakersfield, CA**	Dp	**2:36 AM**	**5:06 AM**		**8:36 AM**	**10:36 AM**		**1:06 PM**	**3:43 PM**	**6:36 PM**	**8:36 PM**

Oakland Train Transfer Times

Sacramento Train Transfer Times

Proposed San Joaquin Service - Expansion Grid - CalTrans - Version 1 - Twenty Year Plan

(80 MPH Maximum Speed)

SOUTHWARD / EASTWARD – READ DOWN:

	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
	700	702-s	702	712(exp)	714-s	714	716(exp)	718-s	718	720-s	720	722(exp)	724-s	724	726(exp)	728-s	728
	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily			Daily		Daily
Sa			06:15 AM	06:32 AM		09:15 AM	10:32 AM		12:15 PM		02:15 PM	04:32 PM		05:15 PM	06:32 PM		08:15 PM
			07:22 AM	03:29 AM		10:22 AM	11:29 AM		05:12 PM		03:12 PM	05:29 PM		06:12 PM	07:29 PM		09:12 PM
Dv		06:31 AM			09:01 AM			12:31 PM		02:31 PM			05:31 PM			08:31 PM	
		07:31 AM			03:53 AM			05:53 PM		03:53 PM			06:53 PM			09:53 PM	
Ar		7:54 AM	7:56 AM	10:13 AM	10:54 AM	10:58 AM	12:13 PM	1:54 PM	1:56 PM	3:54 PM	3:58 PM	6:13 PM	6:54 PM	6:56 PM	8:13 PM	9:54 PM	9:56 PM
Sa			05:00 AM	10:17 AM		11:00 AM	12:17 PM		02:00 PM		04:00 PM	06:17 PM		07:00 PM	08:17 PM		10:00 PM
Sa	5:07 AM																12:11 AM
	5:08 AM		9:56 AM	11:56 AM		12:56 PM	1:56 PM		3:56 PM		5:56 PM	7:56 PM		8:56 PM	9:56 PM		11:56 PM
	6:00 AM		10:00 AM	12:00 PM		1:00 PM	2:00 PM		4:00 PM		6:00 PM	8:00 PM		9:00 PM	10:00 PM		12:00 AM
	6:12 AM		10:12 AM	12:12 PM		1:12 PM	2:12 PM		4:12 PM		6:12 PM	8:12 PM		9:12 PM	10:12 PM		12:12 AM
Ar	07:51 AM		11:51 AM	01:43 PM		02:51 PM	03:43 PM		05:51 PM		07:51 PM	09:43 PM		10:51 PM	11:43 PM		01:51 AM

	Stations, sidings, and double-track segments
Oa	Oakland, CA
	Port Chicago (BNSF/UP)
Sa	Sacramento, CA
	Auburn Jct. (UP/ BNSF)
Ar	New BNSF Stockton
Sa	Station (MP1020.3)
Sa	Merced, CA (@ W.E.only)
Sa	Fresno
Sa	Fresno
	Floral
Sa	Bakersfield, CA

NORTHWARD / WESTWARD – READ UP:

	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33
	709	709-s	711(exp)	713	713-s	715(exp)	717	717-s	719	719-s	721(exp)	723	723-s	725(exp)	727	727-s	729
	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily			Daily			Daily
Oa	06:11 AM		09:55 AM	12:11 PM		01:55 PM	04:11 PM		06:11 PM		07:55 PM	10:11 PM		11:55 PM	02:11 AM		
	07:04 AM		*06:48 AM*	*03:04 PM*		*22:48 PM*	*03:04 PM*		*05:04 PM*		*06:48 PM*	*09:04 PM*		*10:48 PM*	*01:04 AM*		
Sa		7:36 AM			11:36 AM			3:36 PM		5:36 PM		9:36 PM				1:36 AM	
		6:24 AM			*05:24 AM*			*2:24 PM*		*4:24 PM*		*8:24 PM*				*12:24 AM*	
Sa	6:15 AM	6:23 AM	8:05 AM	10:19 AM	10:23 AM	12:05 PM	2:19 PM	2:23 PM	4:19 PM	4:23 PM	6:05 PM	8:19 PM	8:23 PM	10:05 PM	12:19 AM	12:23 AM	
A	06:00 AM		09:01 AM	10:59 AM		12:01 PM	02:59 PM		04:59 PM		06:01 PM	08:59 PM		10:01 PM	12:59 AM		
A																	
Sa	4:30 AM		8:20 AM	8:30 AM		10:20 AM	12:30 PM		2:30 PM		4:20 PM	6:30 PM		8:30 PM	10:30 PM		11:30 PM
A	4:16 AM		6:16 AM	8:16 AM		10:16 AM	12:16 PM		2:16 PM		4:16 PM	6:16 PM		8:16 PM	10:16 PM		11:16 PM
	4:00 AM		*6:00 AM*	*8:00 AM*		*10:00 AM*	*12:00 PM*		*2:00 PM*		*4:00 PM*	*6:00 PM*		*8:00 PM*	*10:00 PM*		*11:00 PM*
Sa	02:36 AM		04:43 AM	06:36 AM		08:43 AM	10:36 AM		12:36 PM		02:43 PM	04:36 PM		06:43 PM	08:36 PM		09:36 PM

Oakland Train Transfer Times

Sacramento Train Transfer Tims

ASSUMPTIONS

General

• The pivot point for meets is Floral-Fresno. Though the length of double-track is likely to be extended south by the 25-year scenario, the lack of specific projects guides the assumption remain the same.

• Northbound trains, as practical, arrive at Floral as a southbound leaves Fresno.

• BNSF estimates two minutes saved Fresno-Hanford at 90mph. Although slightly optimistic, I removed one minute from the running time for Frenso-Floral, about 9 miles of the 27 miles Calwa-Hanford.

• No changes on UP – assumed no 90mph running.

• Merced – Fresno :49; Fresno – Merced :51 w/2 min. pad.

• Merced is a stop on all trains; not shown for through trains as not significant time point except on trains that start/stop there.

• Express Trains miss Antioch, Denair, Madera, Cocoran and Wasco.

• Endpoint Pads: 10-minute pad into Oakland; 20-minute or 12-minute pad into Sacramento (depending on reference used); 11-minute pad into Bakersfield.

Note that some cells are filled with formulas and others are times. I used whatever was most efficient to fill the complex train patterns.

5-10 Year Only

• Assume a bus operates to the opposite end point (Sacramento or Oakland) from that at which the train terminates, on non-split trains.

• One express round trip.

25 Year Only

• Due to higher frequencies and more splits, assume no connecting buses to northern endpoints not served by a particular train.

• Changed pattern to four express each direction due to six-seven daily trains already serving each non-express stop and the fortunate spacing of trains in this scenario.

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	40,142		0	0		0	0		0	44,236		0	0		0	0		0	41,896		0	0		0	0		0
		0			40,142			0			0			44,236			0			0			41,896			0			0	
Lodi	0		0	1,532		776	0		0	0		0	1,638		813	0		0	0		0	1,506		1,389	0		0	0		0
		0			40,898			0			0			45,061			0			0			42,013			0			0	
Stockton-Downtown	0		0	8,733		930	0		0	0		0	9,020		1,621	0		0	0		0	8,273		2,679	0		0	0		0
		0			48,701			0			0			52,460			0			0			47,607			0			0	
Oakland	0		0	0		0	12,695		0	10,734		0	0		0	12,670		0	11,378		0	0		0	11,667		0	5,659		0
		0			48,701			12,695			10,734			52,460			12,670			11,378			47,607			11,667			5,659	
Emeryville	0		0	0		0	16,670		52	16,081		62	0		0	19,130		50	15,549		48	0		0	12,773		99	6,386		47
		0			48,701			29,313			26,753			52,460			31,750			26,879			47,607			24,341			11,998	
Richmond	0		0	0		0	7,977		28	6,916		27	0		0	8,467		23	8,428		23	0		0	6,488		45	3,037		23
		0			48,701			37,262			33,642			52,460			40,194			35,284			47,607			30,784			15,012	
Martinez	0		0	0		0	17,543		3,199	14,476		1,579	0		0	17,254		1,851	15,073		1,950	0		0	10,076		4,099	4,611		2,032
		0			48,701			51,606			46,539			52,460			55,597			48,407			47,607			36,761			17,591	
Antioch-Pittsburg	0		0	0		0	5,937		834	5,332		632	0		0	0		0	6,181		1,199	0		0	3,597		866	1,650		456
		0			48,701			56,709			51,239			52,460			55,597			53,389			47,607			39,492			18,785	
Stockton	0		0	15,060		500	22,889		11,329	16,103		9,900	0		0	30,704		11,502	14,611		16,097	0		0	14,377		12,733	7,018		5,930
		0			63,261			68,269			57,442			52,460			74,799			51,903			47,607			41,136			19,873	
Modesto	0		0	7,931		4,279	6,608		4,406	8,302		3,458	0		2,985	9,129		5,385	6,103		5,319	0		4,457	2,711		4,956	1,371		2,144
		0			66,913			70,471			62,286			49,475			78,543			52,687			43,150			38,891			19,100	
Denair	0		0	2,154		737	1,712		967	2,342		836	0		563	0		0	1,810		1,178	0		802	708		1,059	306		457
		0			68,330			71,216			63,792			48,912			78,543			53,319			42,348			38,540			18,949	
Merced	4,667		0	6,225		5,836	5,034		6,618	6,092		5,966	0		3,550	7,331		9,112	4,346		7,648	0		4,683	1,810		6,579	614		3,083
		4,667			68,719			69,632			63,918			45,362			76,762			50,017			37,665			33,771			16,480	
Madera	775		60	918		1,516	843		1,591	997		1,498	0		988	0		0	666		1,861	0		1,257	289		1,291	49		677
		5,382			68,121			68,884			63,417			44,374			76,762			48,822			36,408			32,769			15,852	
Fresno	20,454		1,356	19,599		20,091	20,125		21,399	21,193		18,846	0		13,290	28,725		30,123	13,054		22,222	0		16,077	6,298		14,587	896		8,081
		24,480			67,629			67,610			65,764			31,084			75,364			39,654			20,331			24,480			8,667	
Hanford	6,815		8,669	6,213		14,723	6,690		14,311	7,697		14,421	0		6,288	7,559		22,766	3,523		13,675	0		6,352	1,459		7,103	255		2,237
		22,626			59,119			59,989			59,040			24,796			60,157			29,502			13,979			18,836			6,685	
Corcoran	1,056		1,843	1,133		2,036	1,132		2,252	1,499		2,735	0		641	0		0	623		2,148	0		590	221		910	41		212
		21,839			58,216			58,869			57,804			24,155			60,157			27,977			13,389			18,147			6,514	
Wasco	1,212		538	1,012		1,268	999		1,319	1,499		1,485	0		677	0		0	582		1,047	0		518	117		597	46		108
		22,513			57,960			58,549			57,818			23,478			60,157			27,512			12,871			17,667			6,452	
Bakersfield	0		22,513	0		57,960	0		58,549	0		57,818	0		23,478	0		60,157	0		27,512	0		12,871	0		17,667	0		6,452
Max Load		**24,480**			**68,719**			**71,216**			**65,764**			**52,460**			**78,543**			**53,389**			**47,607**			**41,136**			**19,873**	
Total	**34,979**		**34,979**	**110,652**		**110,652**	**126,854**		**126,854**	**119,263**		**119,263**	**54,894**		**54,894**	**140,969**		**140,969**	**101,927**		**101,927**	**51,675**		**51,675**	**72,591**		**72,591**	**31,939**		**31,939**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	3,971		0	19,566		0	7,520		0	46,407		0	50,365		0	26,403		0	63,308		0	58,118		0	47,464		0	13,329		0
		3,971			19,566			7,520			46,407			50,365			26,403			63,308			58,118			47,464			13,329	
Wasco	198		61	795		416	313		0	1,376		931	1,039		842	669		0	1,513		1,062	0		0	1,283		1,379	250		785
		4,108			19,945			7,833			46,852			50,562			27,072			63,759			58,118			47,368			12,794	
Corcoran	464		70	1,952		411	352		0	2,367		933	1,871		1,011	668		0	2,527		1,201	0		0	2,333		1,345	708		741
		4,502			21,486			8,185			48,286			51,422			27,740			65,085			58,118			48,356			12,761	
Hanford	3,967		477	13,057		3,210	3,809		0	15,000		5,459	13,110		5,695	7,175		0	16,344		6,741	19,107		6,877	12,485		7,254	3,208		3,844
		7,992			31,333			11,994			57,827			58,837			34,915			74,688			70,348			53,587			12,125	
Fresno	9,755		2,167	16,017		12,797	8,994		0	21,993		16,497	20,223		18,146	16,928		0	26,788		21,836	27,380		26,541	11,359		20,196	512		9,659
		15,580			34,553			20,988			63,323			60,914			51,843			79,640			71,187			44,750			2,978	
Madera	892		92	1,222		483	696		0	1,642		731	1,486		832	1,253		0	2,358		1,098	0		0	900		914	20		400
		16,380			35,292			21,684			64,234			61,568			53,096			80,900			71,187			44,736			2,598	
Merced	4,994		834	5,515		3,323	2,739		0	6,997		4,436	6,044		5,514	4,396		0	9,131		6,690	8,434		7,642	2,916		4,369	0		2,598
		20,540			37,484			24,423			66,795			62,098			57,492			83,341			71,979			43,283			0	
Denair	803		338	756		1,167	447		0	1,035		1,611	801		1,864	674		0	1,470		2,463	0		0	434		1,596	0		0
		21,005			37,073			24,870			66,219			61,035			58,166			82,348			71,979			42,121			0	
Modesto	4,153		1,351	3,576		4,120	2,446		0	4,884		6,098	3,620		7,177	3,598		0	6,480		8,672	4,998		8,818	2,170		5,018	0		0
		23,807			36,529			27,316			65,005			57,478			61,764			80,156			68,159			39,273			0	
Stockton-SJ	9,911		9,668	11,389		9,832	0		0	11,137		26,304	10,038		15,362	0		0	15,202		34,238	8,955		31,686	256		8,536	0		0
		24,050			38,086			27,316			49,838			52,154			61,764			61,120			45,428			30,993			0	
Antioch-Pittsburg	700		2,392	683		3,769	0		0	644		4,708	789		4,838	0		0	1,173		6,991	0		0	0		0	0		0
		22,358			35,000			27,316			45,774			48,105			61,764			55,302			45,428			30,993			0	
Martinez	1,631		5,943	1,366		10,114	0		0	2,489		13,355	3,014		14,761	0		0	2,745		17,969	1,458		15,355	0		0	0		0
		18,046			26,252			27,316			34,908			36,358			61,764			40,078			31,531			30,993			0	
Richmond	16		4,203	18		5,988	0		0	25		6,905	31		7,243	0		0	25		9,129	19		7,137	0		0	0		0
		13,859			20,282			27,316			28,028			29,146			61,764			30,974			24,413			30,993			0	
Emeryville	39		7,496	50		11,861	0		0	75		16,268	87		16,792	0		0	62		17,785	34		14,641	0		0	0		0
		6,402			8,471			27,316			11,835			12,441			61,764			13,251			9,806			30,993			0	
Oakland	0		6,402	0		8,471	0		0	0		11,835	0		12,441	0		0	0		13,251	0		9,806	0		0	0		0
		0			0			27,316			0			0			61,764			0			0			30,993			0	
Stockton-Downtown	0		0	0		0	1,658		5,010	0		0	0		0	2,697		12,282	0		0	0		0	475		6,793	0		0
		0			0			23,964			0			0			52,179			0			0			24,675			0	
Lodi	0		0	0		0	862		790	0		0	0		0	1,450		1,916	0		0	0		0	332		1,076	0		0
		0			0			24,036			0			0			51,713			0			0			23,931			0	
Sacramento	0		0	0		0	0		24,036	0		0	0		0	0		51,713	0		0	0		0	0		23,931	0		0
Max Load		**24,050**			**38,086**			**27,316**			**66,795**			**62,098**			**61,764**			**83,341**			**71,979**			**53,587**			**13,329**	
Total	**41,494**		**41,494**	**75,962**		**75,962**	**29,836**		**29,836**	**116,071**		**116,071**	**112,518**		**112,518**	**65,911**		**65,911**	**149,126**		**149,126**	**128,503**		**128,503**	**82,407**		**82,407**	**18,027**		**18,027**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	41,712		0	0		0	0		0	45,499		0	0		0	0		0	43,801		0	0		0	0		0
		0			41,712			0			0			45,499			0			0			43,801			0			0	
Lodi	0		0	1,621		739	0		0	0		0	1,829		720	0		0	0		0	1,686		1,252	0		0	0		0
		0			42,594			0			0			46,608			0			0			44,235			0			0	
Stockton-Downtown	0		0	9,434		865	0		0	0		0	10,437		1,371	0		0	0		0	9,592		2,259	0		0	0		0
		0			51,163			0			0			55,674			0			0			51,568			0			0	
Oakland	0		0	0		0	13,013		0	11,669		0	0		0	12,850		0	11,521		0	0		0	11,060		0	4,543		0
		0			51,163			13,013			11,669			55,674			12,850			11,521			51,568			11,060			4,543	
Emeryville	0		0	0		0	17,310		0	16,109		0	0		0	19,170		0	15,799		0	0		0	12,708		0	6,005		0
		0			51,163			30,323			27,778			55,674			32,020			27,320			51,568			23,768			10,548	
Richmond	0		0	0		0	8,227		29	6,892		35	0		0	8,461		22	8,527		23	0		0	6,345		40	2,858		16
		0			51,163			38,521			34,635			55,674			40,459			35,824			51,568			30,073			13,390	
Martinez	0		0	0		0	17,766		3,269	14,722		2,815	0		0	17,552		2,194	15,331		2,112	0		0	9,897		3,713	4,464		1,147
		0			51,163			53,018			46,542			55,674			55,817			49,043			51,568			36,257			16,707	
Antioch-Pittsburg	0		0	0		0	5,973		795	5,510		603	0		0	0		0	6,258		1,180	0		0	3,545		801	1,614		401
		0			51,163			58,196			51,449			55,674			55,817			54,121			51,568			39,001			17,920	
Stockton	0		0	16,214		465	23,597		11,050	17,152		9,458	0		0	33,450		10,825	15,372		15,433	0		0	14,554		12,015	6,949		5,284
		0			66,912			70,743			59,143			55,674			78,442			54,060			51,568			41,540			19,585	
Modesto	0		0	8,711		4,257	7,008		4,228	8,948		3,327	0		2,983	10,407		5,120	6,647		4,962	0		4,370	2,874		4,541	1,317		1,957
		0			71,366			73,523			64,764			52,691			83,729			55,745			47,198			39,873			18,945	
Denair	0		0	2,375		739	1,849		938	2,551		802	0		563	0		0	2,004		1,115	0		798	770		977	298		422
		0			73,002			74,434			66,513			52,128			83,729			56,634			46,400			39,666			18,821	
Merced	5,303		0	6,500		6,006	5,306		6,652	6,426		5,889	0		3,685	7,988		9,110	4,627		7,570	0		4,879	1,938		6,294	589		2,957
		5,303			73,496			73,088			67,050			48,443			82,607			53,691			41,521			35,310			16,453	
Madera	817		68	940		1,619	864		1,664	1,035		1,540	0		1,037	0		0	706		1,947	0		1,353	305		1,320	50		681
		6,052			72,817			72,288			66,545			47,406			82,607			52,450			40,168			34,295			15,822	
Fresno	20,854		1,538	19,849		21,372	20,416		22,411	21,723		19,374	0		14,054	29,807		31,620	13,605		23,158	0		17,301	6,524		14,887	907		8,107
		25,368			71,294			70,293			68,894			33,352			80,794			42,897			22,867			25,932			8,622	
Hanford	6,944		8,663	6,294		15,291	6,812		14,594	7,858		14,545	0		6,641	7,990		23,380	3,750		14,080	0		6,933	1,567		7,223	255		2,338
		23,649			62,297			62,511			62,207			26,711			65,404			32,567			15,934			20,276			6,539	
Corcoran	1,071		1,841	1,157		2,098	1,170		2,283	1,542		2,720	0		675	0		0	676		2,232	0		653	250		937	40		230
		22,879			61,356			61,398			61,029			26,036			65,404			31,011			15,281			19,589			6,349	
Wasco	1,213		565	1,000		1,352	1,011		1,391	1,511		1,546	0		729	0		0	614		1,149	0		592	138		625	43		117
		23,527			61,004			61,018			60,994			25,307			65,404			30,476			14,689			19,102			6,275
Bakersfield	0		23,527	0		61,004	0		61,018	0		60,994	0		25,307	0		65,404	0		30,476	0		14,689	0		19,102	0		6,275
Max Load		**25,368**			**73,496**			**74,434**			**68,894**			**55,674**			**83,729**			**56,634**			**51,568**			**41,540**			**19,585**	
Total	**36,202**		**36,202**	**115,807**		**115,807**	**130,322**		**130,322**	**123,648**		**123,648**	**57,765**		**57,765**	**147,675**		**147,675**	**105,437**		**105,437**	**55,079**		**55,079**	**72,475**		**72,475**	**29,932**		**29,932**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	6,623		0	23,510		0	9,059		0	53,669		0	48,183		0	26,991		0	63,627		0	60,149		0	52,680		0	13,983		0
		6,623			23,510			9,059			53,669			48,183			26,991			63,627			60,149			52,680			13,983	
Wasco	220		83	865		479	354		0	1,452		1,011	1,091		790	721		0	1,599		1,031	0		0	1,374		1,376	253		764
		6,760			23,896			9,413			54,110			48,484			27,712			64,195			60,149			52,678			13,472	
Corcoran	485		101	1,999		476	382		0	2,388		1,053	1,907		961	711		0	2,587		1,177	0		0	2,372		1,397	701		748
		7,144			25,419			9,795			55,445			49,430			28,423			65,605			60,149			53,653			13,425	
Hanford	4,059		677	13,294		3,614	4,097		0	15,242		6,204	13,316		5,362	7,593		0	16,730		6,565	19,713		6,731	12,998		7,660	3,193		4,018
		10,526			35,099			13,892			64,483			57,384			36,016			75,770			73,131			58,991			12,600	
Fresno	9,910		2,685	16,654		13,780	9,597		0	22,573		18,259	20,744		17,426	17,789		0	27,921		21,453	29,204		26,237	12,434		21,256	465		10,115
		17,751			37,973			23,489			68,797			60,702			53,805			82,238			76,098			50,169			2,950	
Madera	899		115	1,272		536	739		0	1,695		807	1,538		808	1,322		0	2,469		1,091	0		0	992		961	19		410
		18,535			38,709			24,228			69,685			61,432			55,127			83,616			76,098			50,200			2,559	
Merced	4,545		1,019	5,397		3,801	2,825		0	6,765		5,089	6,024		5,479	4,590		0	9,034		6,841	8,813		8,086	3,073		5,037	0		2,559
		22,061			40,305			27,053			71,361			61,977			59,717			85,809			76,825			48,236			0	
Denair	720		392	715		1,332	445		0	976		1,816	776		1,897	681		0	1,418		2,575	0		0	442		1,842	0		0
		22,389			39,688			27,498			70,521			60,856			60,398			84,652			76,825			46,836			0	
Modesto	3,703		1,566	3,335		4,625	2,401		0	4,562		6,879	3,425		7,164	3,578		0	6,089		8,904	4,991		9,874	2,217		5,892	0		0
		24,526			38,398			29,899			68,204			57,117			63,976			81,837			71,942			43,161			0	
Stockton-SJ	9,078		10,089	10,493		10,636	0		0	10,406		28,220	10,866		15,050	0		0	13,858		35,051	8,540		34,321	280		9,684	0		0
		23,515			38,255			29,899			50,390			52,933			63,976			60,644			46,161			33,757			0	
Antioch-Pittsburg	667		2,334	664		3,832	0		0	614		4,860	730		4,989	0		0	1,107		6,887	0		0	0		0	0		0
		21,848			35,087			29,899			46,144			48,674			63,976			54,864			46,161			33,757			0	
Martinez	1,741		5,965	1,357		10,347	0		0	2,199		13,881	2,759		14,871	0		0	3,394		17,764	1,482		15,368	0		0	0		0
		17,624			26,097			29,899			34,462			36,562			63,976			40,494			32,275			33,757			0	
Richmond	15		4,075	18		5,926	0		0	20		6,871	37		7,502	0		0	29		9,049	14		7,209	0		0	0		0
		13,564			20,189			29,899			27,611			29,097			63,976			31,474			25,080			33,757			0	
Emeryville	0		7,316	0		11,869	0		0	0		16,221	0		16,920	0		0	0		17,877	0		15,124	0		0	0		0
		6,248			8,320			29,899			11,390			12,177			63,976			13,597			9,956			33,757			0	
Oakland	0		6,248	0		8,320	0		0	0		11,390	0		12,177	0		0	0		13,597	0		9,956	0		0	0		0
		0			0			29,899			0			0			63,976			0			0			33,757			0	
Stockton-Downtown	0		0	0		0	1,403		6,008	0		0	0		0	2,212		13,274	0		0	0		0	520		7,852	0		0
		0			0			25,294			0			0			52,914			0			0			26,425			0	
Lodi	0		0	0		0	780		928	0		0	0		0	1,250		2,006	0		0	0		0	379		1,210	0		0
		0			0			25,146			0			0			52,158			0			0			25,594			0	
Sacramento	0		0	0		0	0		25,146	0		0	0		0	0		52,158	0		0	0		0	0		25,594	0		0
Max Load		**24,526**			**40,305**			**29,899**			**71,361**			**61,977**			**63,976**			**85,809**			**76,825**			**58,991**			**13,983**	
Total	**42,665**		**42,665**	**79,573**		**79,573**	**32,082**		**32,082**	**122,561**		**122,561**	**111,396**		**111,396**	**67,438**		**67,438**	**149,862**		**149,862**	**132,906**		**132,906**	**89,761**		**89,761**	**18,614**		**18,614**

2020 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	153		0	0		0	0		0	168		0	0		0	0		0	159		0	0		0	0		0
		0			153			0			0			168			0			0			159			0			0	
Lodi	0		0	6		3	0		0	0		0	6		3	0		0	0		0	6		5	0		0	0		0
		0			155			0			0			171			0			0			160			0			0	
Stockton-Downtown	0		0	33		4	0		0	0		0	34		6	0		0	0		0	31		10	0		0	0		0
		0			185			0			0			199			0			0			181			0			0	
Oakland	0		0	0		0	48		0	41		0	0		0	48		0	43		0	0		0	44		0	22		0
		0			185			48			41			199			48			43			181			44			22	
Emeryville	0		0	0		0	63		0	61		0	0		0	73		0	59		0	0		0	49		0	24		0
		0			185			111			102			199			121			102			181			92			46	
Richmond	0		0	0		0	30		0	26		0	0		0	32		0	32		0	0		0	25		0	12		0
		0			185			142			128			199			153			134			181			117			57	
Martinez	0		0	0		0	67		12	55		6	0		0	66		7	57		7	0		0	38		16	18		8
		0			185			196			177			199			211			184			181			140			67	
Antioch-Pittsburg	0		0	0		0	23		3	20		2	0		0	0		0	23		5	0		0	14		3	6		2
		0			185			215			195			199			211			203			181			150			71	
Stockton	0		0	57		1	87		43	61		38	0		0	117		44	56		61	0		0	55		48	27		23
		0			240			259			218			199			284			197			181			156			76	
Modesto	0		0	30		16	25		17	32		13	0		11	35		20	23		20	0		17	10		19	5		8
		0			254			268			237			188			298			200			164			148			73	
Denair	0		0	8		3	7		4	9		3	0		2	0		0	7		4	0		3	3		4	1		2
		0			260			271			242			186			298			203			161			146			72	
Merced	18		0	24		22	19		25	23		23	0		13	28		35	17		29	0		18	7		25	2		12
		18			261			265			243			172			292			190			143			128			63	
Madera	3		0	3		6	3		6	4		6	0		4	0		0	3		7	0		5	1		5	0		3
		20			259			262			241			169			292			186			138			125			60	
Fresno	78		5	74		76	76		81	81		72	0		51	109		114	50		84	0		61	24		55	3		31
		93			257			257			250			118			286			151			77			93			33	
Hanford	26		33	24		56	25		54	29		55	0		24	29		87	13		52	0		24	6		27	1		9
		86			225			228			224			94			229			112			53			72			25	
Corcoran	4		7	4		8	4		9	6		10	0		2	0		0	2		8	0		2	1		3	0		1
		83			221			224			220			92			229			106			51			69			25	
Wasco	5		2	4		5	4		5	6		6	0		3	0		0	2		4	0		2	0		2	0		0
		86			220			222			220			89			229			105			49			67			25	
Bakersfield	0		86	0		220	0		222	0		220	0		89	0		229	0		105	0		49	0		67	0		25
Max Load		**93**			**261**			**271**			**250**			**199**			**298**			**203**			**181**			**156**			**76**	
Total	**133**		**133**	**420**		**420**	**482**		**482**	**453**		**453**	**209**		**209**	**536**		**536**	**387**		**387**	**196**		**196**	**276**		**276**	**121**		**121**

2020 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	15		0	74		0	29		0	176		0	191		0	100		0	241		0	221		0	180		0	51		0
		15			74			29			176			191			100			241			221			180			51	
Wasco	1		0	3		2	1		0	5		4	4		3	3		0	6		4	0		0	5		5	1		3
		16			76			30			178			192			103			242			221			180			49	
Corcoran	2		0	7		2	1		0	9		4	7		4	3		0	10		5	0		0	9		5	3		3
		17			82			31			183			195			105			247			221			184			48	
Hanford	15		2	50		12	14		0	57		21	50		22	27		0	62		26	73		26	47		28	12		15
		30			119			46			220			224			133			284			267			204			46	
Fresno	37		8	61		49	34		0	84		63	77		69	64		0	102		83	104		101	43		77	2		37
		59			131			80			241			231			197			303			271			170			11	
Madera	3		0	5		2	3		0	6		3	6		3	5		0	9		4	0		0	3		3	0		2
		62			134			82			244			234			202			307			271			170			10	
Merced	19		3	21		13	10		0	27		17	23		21	17		0	35		25	32		29	11		17	0		10
		78			142			93			254			236			218			317			274			164			0	
Denair	3		1	3		4	2		0	4		6	3		7	3		0	6		9	0		0	2		6	0		0
		80			141			95			252			232			221			313			274			160			0	
Modesto	16		5	14		16	9		0	19		23	14		27	14		0	25		33	19		34	8		19	0		0
		90			139			104			247			218			235			305			259			149			0	
Stockton-SJ	38		37	43		37	0		0	42		100	38		58	0		0	58		130	34		120	1		32	0		0
		91			145			104			189			198			235			232			173			118			0	
Antioch-Pittsburg	3		9	3		14	0		0	2		18	3		18	0		0	4		27	0		0	0		0	0		0
		85			133			104			174			183			235			210			173			118			0	
Martinez	6		23	5		38	0		0	9		51	11		56	0		0	10		68	6		58	0		0	0		0
		69			100			104			133			138			235			152			120			118			0	
Richmond	0		16	0		23	0		0	0		26	0		28	0		0	0		35	0		27	0		0	0		0
		53			77			104			107			111			235			118			93			118			0	
Emeryville	0		28	0		45	0		0	0		62	0		64	0		0	0		68	0		56	0		0	0		0
		24			32			104			45			47			235			50			37			118			0	
Oakland	0		24	0		32	0		0	0		45	0		47	0		0	0		50	0		37	0		0	0		0
		0			0			104			0			0			235			0			0			118			0	
Stockton-Downtown	0		0	0		0	6		19	0		0	0		0	10		47	0		0	0		0	2		26	0		0
		0			0			91			0			0			198			0			0			94			0	
Lodi	0		0	0		0	3		3	0		0	0		0	6		7	0		0	0		0	1		4	0		0
		0			0			91			0			0			197			0			0			91			0	
Sacramento	0		0	0		0	0		91	0		0	0		0	0		197	0		0	0		0	0		91	0		0
Max Load		**91**			**145**			**104**			**254**			**236**			**235**			**317**			**274**			**204**			**51**	
Total	**158**		**158**	**289**		**289**	**113**		**113**	**441**		**441**	**428**		**428**	**250**		**250**	**567**		**567**	**488**		**488**	**313**		**313**	**69**		**69**

2020 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	159		0	0		0	0		0	173		0	0		0	0		0	166		0	0		0	0		0
		0			159			0			0			173			0			0			166			0			0	
Lodi	0		0	6		3	0		0	0		0	7		3	0		0	0		0	6		5	0		0	0		0
		0			162			0			0			177			0			0			168			0			0	
Stockton-Downtown	0		0	36		3	0		0	0		0	40		5	0		0	0		0	36		9	0		0	0		0
		0			195			0			0			212			0			0			196			0			0	
Oakland	0		0	0		0	49		0	44		0	0		0	49		0	44		0	0		0	42		0	17		0
		0			195			49			44			212			49			44			196			42			17	
Emeryville	0		0	0		0	66		0	61		0	0		0	73		0	60		0	0		0	48		0	23		0
		0			195			115			106			212			122			104			196			90			40	
Richmond	0		0	0		0	31		0	26		0	0		0	32		0	32		0	0		0	24		0	11		0
		0			195			146			132			212			154			136			196			114			51	
Martinez	0		0	0		0	68		12	56		11	0		0	67		8	58		8	0		0	38		14	17		4
		0			195			201			177			212			212			186			196			138			63	
Antioch-Pittsburg	0		0	0		0	23		3	21		2	0		0	0		0	24		4	0		0	13		3	6		2
		0			195			221			196			212			212			206			196			148			68	
Stockton	0		0	62		2	90		42	65		36	0		0	127		41	58		59	0		0	55		46	26		20
		0			254			269			225			212			298			205			196			158			74	
Modesto	0		0	33		16	27		16	34		13	0		11	40		19	25		19	0		17	11		17	5		7
		0			271			279			246			200			318			212			179			152			72	
Denair	0		0	9		3	7		4	10		3	0		2	0		0	8		4	0		3	3		4	1		2
		0			277			283			253			198			318			215			176			151			72	
Merced	20		0	25		23	20		25	24		22	0		14	30		35	18		29	0		19	7		24	2		11
		20			279			278			255			184			314			204			158			134			63	
Madera	3		0	4		6	3		6	4		6	0		4	0		0	3		7	0		5	1		5	0		3
		23			277			275			253			180			314			199			153			130			60	
Fresno	79		6	75		81	78		85	83		74	0		53	113		120	52		88	0		66	25		57	3		31
		96			271			267			262			127			307			163			87			99			33	
Hanford	26		33	24		58	26		55	30		55	0		25	30		89	14		54	0		26	6		27	1		9
		90			237			238			236			102			249			124			61			77			25	
Corcoran	4		7	4		8	4		9	6		10	0		3	0		0	3		8	0		2	1		4	0		1
		87			233			233			232			99			249			118			58			74			24	
Wasco	5		2	4		5	4		5	6		6	0		3	0		0	2		4	0		2	1		2	0		0
		89			232			232			232			96			249			116			56			73			24	
Bakersfield	0		89	0		232	0		232	0		232	0		96	0		249	0		116	0		56	0		73	0		24
Max Load		**96**			**279**			**283**			**262**			**212**			**318**			**215**			**196**			**158**			**74**	
Total	**138**		**138**	**440**		**440**	**495**		**495**	**470**		**470**	**220**		**220**	**561**		**561**	**401**		**401**	**209**		**209**	**275**		**275**	**114**		**114**

2020 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	25		0	89		0	34		0	204		0	183		0	103		0	242		0	229		0	200		0	53		0
		25			89			34			204			183			103			242			229			200			53	
Wasco	1		0	3		2	1		0	6		4	4		3	3		0	6		4	0		0	5		5	1		3
		26			91			36			206			184			105			244			229			200			51	
Corcoran	2		0	8		2	1		0	9		4	7		4	3		0	10		4	0		0	9		5	3		3
		27			97			37			211			188			108			249			229			204			51	
Hanford	15		3	51		14	16		0	58		24	51		20	29		0	64		25	75		26	49		29	12		15
		40			133			53			245			218			137			288			278			224			48	
Fresno	38		10	63		52	36		0	86		69	79		66	68		0	106		82	111		100	47		81	2		38
		67			144			89			261			231			204			313			289			191			11	
Madera	3		0	5		2	3		0	6		3	6		3	5		0	9		4	0		0	4		4	0		2
		70			147			92			265			233			209			318			289			191			10	
Merced	17		4	21		14	11		0	26		19	23		21	17		0	34		26	33		31	12		19	0		10
		84			153			103			271			236			227			326			292			183			0	
Denair	3		1	3		5	2		0	4		7	3		7	3		0	5		10	0		0	2		7	0		0
		85			151			104			268			231			230			322			292			178			0	
Modesto	14		6	13		18	9		0	17		26	13		27	14		0	23		34	19		38	8		22	0		0
		93			146			114			259			217			243			311			273			164			0	
Stockton-SJ	34		38	40		40	0		0	40		107	41		57	0		0	53		133	32		130	1		37	0		0
		89			145			114			191			201			243			230			175			128			0	
Antioch-Pittsburg	3		9	3		15	0		0	2		18	3		19	0		0	4		26	0		0	0		0	0		0
		83			133			114			175			185			243			208			175			128			0	
Martinez	7		23	5		39	0		0	8		53	10		57	0		0	13		68	6		58	0		0	0		0
		67			99			114			131			139			243			154			123			128			0	
Richmond	0		15	0		23	0		0	0		26	0		29	0		0	0		34	0		27	0		0	0		0
		52			77			114			105			111			243			120			95			128			0	
Emeryville	0		28	0		45	0		0	0		62	0		64	0		0	0		68	0		57	0		0	0		0
		24			32			114			43			46			243			52			38			128			0	
Oakland	0		24	0		32	0		0	0		43	0		46	0		0	0		52	0		38	0		0	0		0
		0			0			114			0			0			243			0			0			128			0	
Stockton-Downtown	0		0	0		0	5		23	0		0	0		0	8		50	0		0	0		0	2		30	0		0
		0			0			96			0			0			201			0			0			100			0	
Lodi	0		0	0		0	3		4	0		0	0		0	5		8	0		0	0		0	1		5	0		0
		0			0			96			0			0			198			0			0			97			0	
Sacramento	0		0	0		0	0		96	0		0	0		0	0		198	0		0	0		0	0		97	0		0
Max Load		**93**			**153**			**114**			**271**			**236**			**243**			**326**			**292**			**224**			**53**	
Total	**162**		**162**	**302**		**302**	**122**		**122**	**466**		**466**	**423**		**423**	**256**		**256**	**569**		**569**	**505**		**505**	**341**		**341**	**71**		**71**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	40,142		0	0		0	0		0	44,236		0	0		0	0		0	41,896		0	0		0	0		0
		0			40,142			0			0			44,236			0			0			41,896			0			0	
Lodi	0		0	1,532		776	0		0	0		0	1,638		813	0		0	0		0	1,506		1,389	0		0	0		0
		0			40,898			0			0			45,061			0			0			42,013			0			0	
Stockton-Downtown	0		0	8,733		930	0		0	0		0	9,020		1,621	0		0	0		0	8,273		2,679	0		0	0		0
		0			48,701			0			0			52,460			0			0			47,607			0			0	
Oakland	0		0	0		0	12,695		0	10,734		0	0		0	12,670		0	11,378		0	0		0	11,667		0	5,659		0
		0			48,701			12,695			10,734			52,460			12,670			11,378			47,607			11,667			5,659	
Emeryville	0		0	0		0	16,670		52	16,081		62	0		0	19,130		50	15,549		48	0		0	12,773		99	6,386		47
		0			48,701			29,313			26,753			52,460			31,750			26,879			47,607			24,341			11,998	
Richmond	0		0	0		0	7,977		28	6,916		27	0		0	8,467		23	8,428		23	0		0	6,488		45	3,037		23
		0			48,701			37,262			33,642			52,460			40,194			35,284			47,607			30,784			15,012	
Martinez	0		0	0		0	17,543		3,199	14,476		1,579	0		0	17,254		1,851	15,073		1,950	0		0	10,076		4,099	4,611		2,032
		0			48,701			51,606			46,539			52,460			55,597			48,407			47,607			36,761			17,591	
Antioch-Pittsburg	0		0	0		0	5,937		834	5,332		632	0		0	0		0	6,181		1,199	0		0	3,597		866	1,650		456
		0			48,701			56,709			51,239			52,460			55,597			53,389			47,607			39,492			18,785	
Stockton	0		0	15,060		500	22,889		11,329	16,103		9,900	0		0	30,704		11,502	14,611		16,097	0		0	14,377		12,733	7,018		5,930
		0			63,261			68,269			57,442			52,460			74,799			51,903			47,607			41,136			19,873	
Modesto	0		0	7,931		4,279	6,608		4,406	8,302		3,458	0		2,985	9,129		5,385	6,103		5,319	0		4,457	2,711		4,956	1,371		2,144
		0			66,913			70,471			62,286			49,475			78,543			52,687			43,150			38,891			19,100	
Denair	0		0	2,154		737	1,712		967	2,342		836	0		563	0		0	1,810		1,178	0		802	708		1,059	306		457
		0			68,330			71,216			63,792			48,912			78,543			53,319			42,348			38,540			18,949	
Merced	4,667		0	6,225		5,836	5,034		6,618	6,092		5,966	0		3,550	7,331		9,112	4,346		7,648	0		4,683	1,810		6,579	614		3,083
		4,667			68,719			69,632			63,918			45,362			76,762			50,017			37,665			33,771			16,480	
Madera	775		60	918		1,516	843		1,591	997		1,498	0		988	0		0	666		1,861	0		1,257	289		1,291	49		677
		5,382			68,121			68,884			63,417			44,374			76,762			48,822			36,408			32,769			15,852	
Fresno	20,454		1,356	19,599		20,091	20,125		21,399	21,193		18,846	0		13,290	28,725		30,123	13,054		22,222	0		16,077	6,298		14,587	896		8,081
		24,480			67,629			67,610			65,764			31,084			75,364			39,654			20,331			24,480			8,667	
Hanford	6,815		8,669	6,213		14,723	6,690		14,311	7,697		14,421	0		6,288	7,559		22,766	3,523		13,675	0		6,352	1,459		7,103	255		2,237
		22,626			59,119			59,989			59,040			24,796			60,157			29,502			13,979			18,836			6,685	
Corcoran	1,056		1,843	1,133		2,036	1,132		2,252	1,499		2,735	0		641	0		0	623		2,148	0		590	221		910	41		212
		21,839			58,216			58,869			57,804			24,155			60,157			27,977			13,389			18,147			6,514	
Wasco	1,212		538	1,012		1,268	999		1,319	1,499		1,485	0		677	0		0	582		1,047	0		518	117		597	46		108
		22,513			57,960			58,549			57,818			23,478			60,157			27,512			12,871			17,667			6,452	
Bakersfield	0		22,513	0		57,960	0		58,549	0		57,818	0		23,478	0		60,157	0		27,512	0		12,871	0		17,667	0		6,452
Max Load		**24,480**			**68,719**			**71,216**			**65,764**			**52,460**			**78,543**			**53,389**			**47,607**			**41,136**			**19,873**	
Total	**34,979**		**34,979**	**110,652**		**110,652**	**126,854**		**126,854**	**119,263**		**119,263**	**54,894**		**54,894**	**140,969**		**140,969**	**101,927**		**101,927**	**51,675**		**51,675**	**72,591**		**72,591**	**31,939**		**31,939**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 79mph San Joaquin Schedule (based on timetable provided by Caltrans 5/21/10)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	3,971		0	19,566		0	7,520		0	46,407		0	50,365		0	26,403		0	63,308		0	58,118		0	47,464		0	13,329		0
		3,971			19,566			7,520			46,407			50,365			26,403			63,308			58,118			47,464			13,329	
Wasco	198		61	795		416	313		0	1,376		931	1,039		842	669		0	1,513		1,062	0		0	1,283		1,379	250		785
		4,108			19,945			7,833			46,852			50,562			27,072			63,759			58,118			47,368			12,794	
Corcoran	464		70	1,952		411	352		0	2,367		933	1,871		1,011	668		0	2,527		1,201	0		0	2,333		1,345	708		741
		4,502			21,486			8,185			48,286			51,422			27,740			65,085			58,118			48,356			12,761	
Hanford	3,967		477	13,057		3,210	3,809		0	15,000		5,459	13,110		5,695	7,175		0	16,344		6,741	19,107		6,877	12,485		7,254	3,208		3,844
		7,992			31,333			11,994			57,827			58,837			34,915			74,688			70,348			53,587			12,125	
Fresno	9,755		2,167	16,017		12,797	8,994		0	21,993		16,497	20,223		18,146	16,928		0	26,788		21,836	27,380		26,541	11,359		20,196	512		9,659
		15,580			34,553			20,988			63,323			60,914			51,843			79,640			71,187			44,750			2,978	
Madera	892		92	1,222		483	696		0	1,642		731	1,486		832	1,253		0	2,358		1,098	0		0	900		914	20		400
		16,380			35,292			21,684			64,234			61,568			53,096			80,900			71,187			44,736			2,598	
Merced	4,994		834	5,515		3,323	2,739		0	6,997		4,436	6,044		5,514	4,396		0	9,131		6,690	8,434		7,642	2,916		4,369	0		2,598
		20,540			37,484			24,423			66,795			62,098			57,492			83,341			71,979			43,283			0	
Denair	803		338	756		1,167	447		0	1,035		1,611	801		1,864	674		0	1,470		2,463	0		0	434		1,596	0		0
		21,005			37,073			24,870			66,219			61,035			58,166			82,348			71,979			42,121			0	
Modesto	4,153		1,351	3,576		4,120	2,446		0	4,884		6,098	3,620		7,177	3,598		0	6,480		8,672	4,998		8,818	2,170		5,018	0		0
		23,807			36,529			27,316			65,005			57,478			61,764			80,156			68,159			39,273			0	
Stockton-SJ	9,911		9,668	11,389		9,832	0		0	11,137		26,304	10,038		15,362	0		0	15,202		34,238	8,955		31,686	256		8,536	0		0
		24,050			38,086			27,316			49,838			52,154			61,764			61,120			45,428			30,993			0	
Antioch-Pittsburg	700		2,392	683		3,769	0		0	644		4,708	789		4,838	0		0	1,173		6,991	0		0	0		0	0		0
		22,358			35,000			27,316			45,774			48,105			61,764			55,302			45,428			30,993			0	
Martinez	1,631		5,943	1,366		10,114	0		0	2,489		13,355	3,014		14,761	0		0	2,745		17,969	1,458		15,355	0		0	0		0
		18,046			26,252			27,316			34,908			36,358			61,764			40,078			31,531			30,993			0	
Richmond	16		4,203	18		5,988	0		0	25		6,905	31		7,243	0		0	25		9,129	19		7,137	0		0	0		0
		13,859			20,282			27,316			28,028			29,146			61,764			30,974			24,413			30,993			0	
Emeryville	39		7,496	50		11,861	0		0	75		16,268	87		16,792	0		0	62		17,785	34		14,641	0		0	0		0
		6,402			8,471			27,316			11,835			12,441			61,764			13,251			9,806			30,993			0	
Oakland	0		6,402	0		8,471	0		0	0		11,835	0		12,441	0		0	0		13,251	0		9,806	0		0	0		0
		0			0			27,316			0			0			61,764			0			0			30,993			0	
Stockton-Downtown	0		0	0		0	1,658		5,010	0		0	0		0	2,697		12,282	0		0	0		0	475		6,793	0		0
		0			0			23,964			0			0			52,179			0			0			24,675			0	
Lodi	0		0	0		0	862		790	0		0	0		0	1,450		1,916	0		0	0		0	332		1,076	0		0
		0			0			24,036			0			0			51,713			0			0			23,931			0	
Sacramento	0		0	0		0	0		24,036	0		0	0		0	0		51,713	0		0	0		0	0		23,931	0		0
Max Load		**24,050**			**38,086**			**27,316**			**66,795**			**62,098**			**61,764**			**83,341**			**71,979**			**53,587**			**13,329**	
Total	**41,494**		**41,494**	**75,962**		**75,962**	**29,836**		**29,836**	**116,071**		**116,071**	**112,518**		**112,518**	**65,911**		**65,911**	**149,126**		**149,126**	**128,503**		**128,503**	**82,407**		**82,407**	**18,027**		**18,027**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Southbound Trains																													
Station	new 2			702			712			714			new 4			716exp			new 6			704			718			new 8		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	41,712		0	0		0	0		0	45,499		0	0		0	0		0	43,801		0	0		0	0		0
		0			41,712			0			0			45,499			0			0			43,801			0			0	
Lodi	0		0	1,621		739	0		0	0		0	1,829		720	0		0	0		0	1,686		1,252	0		0	0		0
		0			42,594			0			0			46,608			0			0			44,235			0			0	
Stockton-Downtown	0		0	9,434		865	0		0	0		0	10,437		1,371	0		0	0		0	9,592		2,259	0		0	0		0
		0			51,163			0			0			55,674			0			0			51,568			0			0	
Oakland	0		0	0		0	13,013		0	11,669		0	0		0	12,850		0	11,521		0	0		0	11,060		0	4,543		0
		0			51,163			13,013			11,669			55,674			12,850			11,521			51,568			11,060			4,543	
Emeryville	0		0	0		0	17,310		0	16,109		0	0		0	19,170		0	15,799		0	0		0	12,708		0	6,005		0
		0			51,163			30,323			27,778			55,674			32,020			27,320			51,568			23,768			10,548	
Richmond	0		0	0		0	8,227		29	6,892		35	0		0	8,461		22	8,527		23	0		0	6,345		40	2,858		16
		0			51,163			38,521			34,635			55,674			40,459			35,824			51,568			30,073			13,390	
Martinez	0		0	0		0	17,766		3,269	14,722		2,815	0		0	17,552		2,194	15,331		2,112	0		0	9,897		3,713	4,464		1,147
		0			51,163			53,018			46,542			55,674			55,817			49,043			51,568			36,257			16,707	
Antioch-Pittsburg	0		0	0		0	5,973		795	5,510		603	0		0	0		0	6,258		1,180	0		0	3,545		801	1,614		401
		0			51,163			58,196			51,449			55,674			55,817			54,121			51,568			39,001			17,920	
Stockton	0		0	16,214		465	23,597		11,050	17,152		9,458	0		0	33,450		10,825	15,372		15,433	0		0	14,554		12,015	6,949		5,284
		0			66,912			70,743			59,143			55,674			78,442			54,060			51,568			41,540			19,585	
Modesto	0		0	8,711		4,257	7,008		4,228	8,948		3,327	0		2,983	10,407		5,120	6,647		4,962	0		4,370	2,874		4,541	1,317		1,957
		0			71,366			73,523			64,764			52,691			83,729			55,745			47,198			39,873			18,945	
Denair	0		0	2,375		739	1,849		938	2,551		802	0		563	0		0	2,004		1,115	0		798	770		977	298		422
		0			73,002			74,434			66,513			52,128			83,729			56,634			46,400			39,666			18,821	
Merced	5,303		0	6,500		6,006	5,306		6,652	6,426		5,889	0		3,685	7,988		9,110	4,627		7,570	0		4,879	1,938		6,294	589		2,957
		5,303			73,496			73,088			67,050			48,443			82,607			53,691			41,521			35,310			16,453	
Madera	817		68	940		1,619	864		1,664	1,035		1,540	0		1,037	0		0	706		1,947	0		1,353	305		1,320	50		681
		6,052			72,817			72,288			66,545			47,406			82,607			52,450			40,168			34,295			15,822	
Fresno	20,854		1,538	19,849		21,372	20,416		22,411	21,723		19,374	0		14,054	29,807		31,620	13,605		23,158	0		17,301	6,524		14,887	907		8,107
		25,368			71,294			70,293			68,894			33,352			80,794			42,897			22,867			25,932			8,622	
Hanford	6,944		8,663	6,294		15,291	6,812		14,594	7,858		14,545	0		6,641	7,990		23,380	3,750		14,080	0		6,933	1,567		7,223	255		2,338
		23,649			62,297			62,511			62,207			26,711			65,404			32,567			15,934			20,276			6,539	
Corcoran	1,071		1,841	1,157		2,098	1,170		2,283	1,542		2,720	0		675	0		0	676		2,232	0		653	250		937	40		230
		22,879			61,356			61,398			61,029			26,036			65,404			31,011			15,281			19,589			6,349	
Wasco	1,213		565	1,000		1,352	1,011		1,391	1,511		1,546	0		729	0		0	614		1,149	0		592	138		625	43		117
		23,527			61,004			61,018			60,994			25,307			65,404			30,476			14,689			19,102			6,275
Bakersfield	0		23,527	0		61,004	0		61,018	0		60,994	0		25,307	0		65,404	0		30,476	0		14,689	0		19,102	0		6,275
Max Load		**25,368**			**73,496**			**74,434**			**68,894**			**55,674**			**83,729**			**56,634**			**51,568**			**41,540**			**19,585**	
Total	**36,202**		**36,202**	**115,807**		**115,807**	**130,322**		**130,322**	**123,648**		**123,648**	**57,765**		**57,765**	**147,675**		**147,675**	**105,437**		**105,437**	**55,079**		**55,079**	**72,475**		**72,475**	**29,932**		**29,932**

2020 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

	Northbound Trains																													
Station	new 1			711			701			new 3			713			new 5			715			717exp			703			new 7		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	6,623		0	23,510		0	9,059		0	53,669		0	48,183		0	26,991		0	63,627		0	60,149		0	52,680		0	13,983		0
		6,623			23,510			9,059			53,669			48,183			26,991			63,627			60,149			52,680			13,983	
Wasco	220		83	865		479	354		0	1,452		1,011	1,091		790	721		0	1,599		1,031	0		0	1,374		1,376	253		764
		6,760			23,896			9,413			54,110			48,484			27,712			64,195			60,149			52,678			13,472	
Corcoran	485		101	1,999		476	382		0	2,388		1,053	1,907		961	711		0	2,587		1,177	0		0	2,372		1,397	701		748
		7,144			25,419			9,795			55,445			49,430			28,423			65,605			60,149			53,653			13,425	
Hanford	4,059		677	13,294		3,614	4,097		0	15,242		6,204	13,316		5,362	7,593		0	16,730		6,565	19,713		6,731	12,998		7,660	3,193		4,018
		10,526			35,099			13,892			64,483			57,384			36,016			75,770			73,131			58,991			12,600	
Fresno	9,910		2,685	16,654		13,780	9,597		0	22,573		18,259	20,744		17,426	17,789		0	27,921		21,453	29,204		26,237	12,434		21,256	465		10,115
		17,751			37,973			23,489			68,797			60,702			53,805			82,238			76,098			50,169			2,950	
Madera	899		115	1,272		536	739		0	1,695		807	1,538		808	1,322		0	2,469		1,091	0		0	992		961	19		410
		18,535			38,709			24,228			69,685			61,432			55,127			83,616			76,098			50,200			2,559	
Merced	4,545		1,019	5,397		3,801	2,825		0	6,765		5,089	6,024		5,479	4,590		0	9,034		6,841	8,813		8,086	3,073		5,037	0		2,559
		22,061			40,305			27,053			71,361			61,977			59,717			85,809			76,825			48,236			0	
Denair	720		392	715		1,332	445		0	976		1,816	776		1,897	681		0	1,418		2,575	0		0	442		1,842	0		0
		22,389			39,688			27,498			70,521			60,856			60,398			84,652			76,825			46,836			0	
Modesto	3,703		1,566	3,335		4,625	2,401		0	4,562		6,879	3,425		7,164	3,578		0	6,089		8,904	4,991		9,874	2,217		5,892	0		0
		24,526			38,398			29,899			68,204			57,117			63,976			81,837			71,942			43,161			0	
Stockton-SJ	9,078		10,089	10,493		10,636	0		0	10,406		28,220	10,866		15,050	0		0	13,858		35,051	8,540		34,321	280		9,684	0		0
		23,515			38,255			29,899			50,390			52,933			63,976			60,644			46,161			33,757			0	
Antioch-Pittsburg	667		2,334	664		3,832	0		0	614		4,860	730		4,989	0		0	1,107		6,887	0		0	0		0	0		0
		21,848			35,087			29,899			46,144			48,674			63,976			54,864			46,161			33,757			0	
Martinez	1,741		5,965	1,357		10,347	0		0	2,199		13,881	2,759		14,871	0		0	3,394		17,764	1,482		15,368	0		0	0		0
		17,624			26,097			29,899			34,462			36,562			63,976			40,494			32,275			33,757			0	
Richmond	15		4,075	18		5,926	0		0	20		6,871	37		7,502	0		0	29		9,049	14		7,209	0		0	0		0
		13,564			20,189			29,899			27,611			29,097			63,976			31,474			25,080			33,757			0	
Emeryville	0		7,316	0		11,869	0		0	0		16,221	0		16,920	0		0	0		17,877	0		15,124	0		0	0		0
		6,248			8,320			29,899			11,390			12,177			63,976			13,597			9,956			33,757			0	
Oakland	0		6,248	0		8,320	0		0	0		11,390	0		12,177	0		0	0		13,597	0		9,956	0		0	0		0
		0			0			29,899			0			0			63,976			0			0			33,757			0	
Stockton-Downtown	0		0	0		0	1,403		6,008	0		0	0		0	2,212		13,274	0		0	0		0	520		7,852	0		0
		0			0			25,294			0			0			52,914			0			0			26,425			0	
Lodi	0		0	0		0	780		928	0		0	0		0	1,250		2,006	0		0	0		0	379		1,210	0		0
		0			0			25,146			0			0			52,158			0			0			25,594			0	
Sacramento	0		0	0		0	0		25,146	0		0	0		0	0		52,158	0		0	0		0	0		25,594	0		0
Max Load		**24,526**			**40,305**			**29,899**			**71,361**			**61,977**			**63,976**			**85,809**			**76,825**			**58,991**			**13,983**	
Total	**42,665**		**42,665**	**79,573**		**79,573**	**32,082**		**32,082**	**122,561**		**122,561**	**111,396**		**111,396**	**67,438**		**67,438**	**149,862**		**149,862**	**132,906**		**132,906**	**89,761**		**89,761**	**18,614**		**18,614**

2035 Annual Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

Southbound Trains

Station	2			4			6			8			10			12			14			16			18			20			22			24			26			28			30			32			34		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	50,400		0	0		0	0		0	60,846		0	0		0	0		0	61,998		0	0		0	58,125		0	0		0	0		0	50,558		0	0		0	0		0	16,206		0	0		0
		0			50,400			0			0			60,846			0			0			61,998			0			58,125			0			0			50,558			0			0			16,206			0	
Lodi	0		0	2,143		866	0		0	0		0	2,340		869	0		0	0		0	2,326		842	0		0	2,275		1,063	0		0	0		0	1,645		1,383	0		0	0		0	531		548	0		0
		0			51,677			0			0			62,317			0			0			63,482			0			59,337			0			0			50,820			0			0			16,189			0	
Stockton-Downtown	0		0	12,028		1,531	0		0	0		0	11,984		1,627	0		0	0		0	11,952		1,600	0		0	12,571		1,992	0		0	0		0	8,840		2,407	0		0	0		0	3,230		927	0		0
		0			62,174			0			0			72,674			0			0			73,834			0			69,916			0			0			57,253			0			0			18,492			0	
Oakland	0		0	0		0	13,535		0	13,549		0	0		0	12,729		0	12,268		0	0		0	15,568		0	0		0	15,098		0	13,308		0	0		0	11,151		0	12,639		0	0		0	6,508		0
		0			62,174			13,535			13,549			72,674			12,729			12,268			73,834			15,568			69,916			15,098			13,308			57,253			11,151			12,639			18,492			6,508	
Emeryville	0		0	0		0	17,238		0	16,728		0	0		0	15,478		0	17,821		0	0		0	19,931		0	0		0	19,963		0	17,458		0	0		0	13,090		0	14,265		0	0		0	7,399		0
		0			62,174			30,773			30,277			72,674			28,207			30,089			73,834			35,499			69,916			35,061			30,766			57,253			24,241			26,904			18,492			13,907	
Richmond	0		0	0		0	8,282		27	7,449		42	0		0	6,524		47	7,195		34	0		0	8,612		46	0		0	9,804		40	8,654		31	0		0	7,010		38	6,501		49	0		0	3,475		27
		0			62,174			39,028			37,684			72,674			34,684			37,250			73,834			44,065			69,916			44,825			39,389			57,253			31,213			33,356			18,492			17,355	
Martinez	0		0	0		0	16,794		3,514	16,337		4,617	0		0	12,977		4,333	17,056		2,672	0		0	17,130		4,750	0		0	19,240		4,040	16,208		3,339	0		0	11,863		3,888	10,215		4,673	0		0	5,244		2,423
		0			62,174			52,308			49,404			72,674			43,328			51,634			73,834			56,445			69,916			60,025			52,258			57,253			39,188			38,898			18,492			20,176	
Antioch-Pittsburg	0		0	0		0	6,305		952	0		0	0		0	6,909		858	0		0	0		0	6,428		742	0		0	7,349		1,036	0		0	0		0	6,509		1,457	0		0	0		0	2,184		574
		0			62,174			57,661			49,404			72,674			49,379			51,634			73,834			62,131			69,916			66,338			52,258			57,253			44,240			38,898			18,492			21,786	
Stockton	0		0	0		0	22,768		12,003	16,937		9,061	0		0	14,460		8,932	21,075		8,721	0		0	19,264		11,121	0		0	23,052		14,923	18,503		13,449	0		0	10,103		12,424	8,164		11,826	0		0	5,408		6,854
		0			62,174			68,426			57,280			72,674			54,907			63,988			73,834			70,274			69,916			74,467			57,312			57,253			41,919			35,236			18,492			20,340	
Modesto	0		0	0		3,736	12,337		4,365	9,026		3,287	0		3,758	8,515		2,856	11,546		3,547	0		4,088	11,730		4,084	0		4,780	11,498		5,448	8,467		4,937	0		5,297	4,081		4,041	3,593		3,689	0		1,850	1,792		1,946
		0			58,438			76,398			63,019			68,916			60,566			71,987			69,746			77,920			65,136			80,517			60,842			51,956			41,959			35,140			16,642			20,186	
Denair	0		0	0		673	3,406		1,017	0		0	0		677	3,476		1,036	0		0	0		751	3,544		1,029	0		862	3,365		1,276	0		0	0		940	1,689		1,353	0		0	0		322	449		483
		0			57,765			78,787			63,019			68,239			63,006			71,987			68,995			80,435			64,274			82,606			60,842			51,016			42,295			35,140			16,320			20,152	
Merced	5,897		0	0		4,614	9,087		7,736	6,594		5,891	0		4,581	6,930		5,040	7,797		6,610	0		5,249	9,735		7,659	0		5,892	9,397		9,537	5,729		8,112	0		6,086	2,668		6,597	2,435		5,937	0		2,049	795		3,096
		5,897			53,151			80,138			63,722			63,658			64,896			73,174			63,746			82,511			58,382			82,466			58,459			44,930			38,366			31,638			14,271			17,851	
Madera	944		63	0		1,238	1,326		1,929	0		0	0		1,286	1,463		1,992	0		0	0		1,458	1,582		2,059	0		1,605	1,401		2,505	0		0	0		1,558	537		2,203	0		0	0		532	84		763
		6,778			51,913			79,535			63,722			62,372			64,367			73,174			62,288			82,034			56,777			81,362			58,459			43,372			36,700			31,638			13,739			17,172	
Fresno	27,464		1,536	0		16,717	27,318		24,177	25,231		19,730	0		18,340	20,925		17,836	25,063		21,471	0		20,170	36,060		25,689	0		21,991	32,932		31,972	16,287		25,991	0		19,459	7,109		17,396	7,853		13,915	0		6,674	1,226		8,381
		32,706			35,196			82,676			69,223			44,032			67,456			76,766			42,118			92,405			34,786			82,322			48,755			23,913			26,413			25,576			7,065			10,017	
Hanford	9,535		10,831	0		7,192	8,707		17,146	7,386		14,816	0		8,279	7,442		12,271	7,788		16,362	0		9,069	13,945		21,427	0		8,885	9,752		24,790	3,395		16,096	0		7,169	2,453		8,432	1,449		7,292	0		2,127	347		2,546
		31,410			28,004			74,237			61,793			35,753			62,627			68,192			33,049			84,923			25,901			67,284			36,054			16,744			20,434			19,733			4,938			7,818	
Corcoran	1,349		2,277	0		666	1,627		2,673	0		0	0		790	1,799		2,954	0		0	0		864	2,577		3,959	0		794	1,623		3,848	0		0	0		623	578		1,828	0		0	0		163	56		301
		30,482			27,338			73,191			61,793			34,963			61,472			68,192			32,185			83,541			25,107			65,059			36,054			16,121			19,184			19,733			4,775			7,573	
Wasco	1,470		734	0		683	1,351		1,588	0		0	0		845	1,630		1,808	0		0	0		893	2,972		2,138	0		776	1,415		1,881	0		0	0		555	468		986	0		0	0		112	54		157
		31,218			26,655			72,954			61,793			34,118			61,294			68,192			31,292			84,375			24,331			64,593			36,054			15,566			18,666			19,733			4,663			7,470
Bakersfield	0		31,218	0		26,655	0		72,954	0		61,793	0		34,118	0		61,294	0		68,192	0		31,292	0		84,375	0		24,331	0		64,593	0		36,054	0		15,566	0		18,666	0		19,733	0		4,663	0		7,470
Max Load		**32,706**			**62,174**			**82,676**			**69,223**			**72,674**			**67,456**			**76,766**			**73,834**			**92,405**			**69,916**			**82,606**			**60,842**			**57,253**			**44,240**			**38,898**			**18,492**			**21,786**	
Total	**46,659**		**46,659**	**64,571**		**64,571**	**150,081**		**150,081**	**119,237**		**119,237**	**75,170**		**75,170**	**121,257**		**121,257**	**127,609**		**127,609**	**76,276**		**76,276**	**169,078**		**169,078**	**72,971**		**72,971**	**165,889**		**165,889**	**108,009**		**108,009**	**61,043**		**61,043**	**79,309**		**79,309**	**67,114**		**67,114**	**19,967**		**19,967**	**35,021**		**35,021**

Northbound Trains

Station	1			3			5			7			9			11			13			15			17			19			21			23			25			27			29			31			33		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	7,751		0	3,483		0	22,306		0	44,850		0	17,691		0	62,601		0	63,571		0	34,817		0	70,714		0	38,924		0	74,919		0	62,254		0	26,928		0	54,709		0	27,029		0	6,568		0	12,975		0
		7,751			3,483			22,306			44,850			17,691			62,601			63,571			34,817			70,714			38,924			74,919			62,254			26,928			54,709			27,029			6,568			12,975	
Wasco	329		141	127		0	0		0	1,752		1,552	548		0	0		0	1,812		1,256	943		0	1,846		1,370	997		0	0		0	2,103		2,085	827		0	0		0	639		1,124	161		0	285		639
		7,939			3,610			22,306			45,050			18,239			62,601			64,127			35,760			71,190			39,921			74,919			62,272			27,755			54,709			26,544			6,729			12,621	
Corcoran	757		173	176		0	0		0	3,624		1,292	565		0	0		0	3,080		1,544	967		0	3,007		1,595	964		0	0		0	4,580		2,187	806		0	0		0	1,331		1,120	135		0	540		703
		8,523			3,786			22,306			47,382			18,804			62,601			65,663			36,727			72,602			40,885			74,919			64,665			28,561			54,709			26,755			6,864			12,458	
Hanford	4,461		969	2,240		0	14,611		2,055	15,936		6,923	6,192		0	16,985		6,988	17,402		6,978	10,558		0	16,015		7,701	10,205		0	21,390		8,600	20,516		11,111	8,816		0	13,516		8,443	5,547		4,680	1,438		0	1,818		3,412
		12,015			6,026			34,862			56,395			24,996			72,598			76,087			47,285			80,916			51,090			87,709			74,070			37,377			59,782			27,622			8,302			10,864	
Fresno	10,221		3,495	7,160		0	23,272		13,334	23,977		19,653	15,382		0	23,808		24,297	28,150		22,208	24,715		0	25,261		23,740	24,368		0	31,865		31,609	21,103		31,490	20,205		0	12,227		28,027	4,506		11,374	2,773		0	151		8,738
		18,741			13,186			44,800			60,719			40,378			72,109			82,029			72,000			82,437			75,458			87,965			63,683			57,582			43,982			20,754			11,075			2,277	
Madera	1,203		207	614		0	0		0	2,509		1,178	1,161		0	0		0	2,552		1,310	1,770		0	2,460		1,414	1,864		0	0		0	2,048		1,646	1,414		0	0		0	365		622	165		0	7		430
		19,737			13,800			44,800			62,050			41,539			72,109			83,271			73,770			83,483			77,322			87,965			64,085			58,996			43,982			20,497			11,240			1,854	
Merced	4,885		1,313	2,700		0	7,144		4,706	8,028		6,041	4,307		0	7,428		6,981	8,252		7,010	6,051		0	8,661		8,205	7,080		0	11,114		10,409	5,704		7,683	5,089		0	3,310		6,919	674		3,022	528		0			1,854
		23,309			16,500			47,238			64,037			45,846			72,556			84,513			79,821			83,939			84,402			88,670			62,106			64,085			40,373			18,149			11,768			0	
Denair	921		687	455		0	0		0	1,327		2,838	628		0	0		0	1,309		2,973	885		0	1,428		3,358	1,073		0	0		0	929		3,450	705		0	0		0	99		1,394	61		0	0		0
		23,543			16,955			47,238			62,526			46,474			72,556			82,849			80,706			82,009			85,475			88,670			59,585			64,790			40,373			16,854			11,829			0	
Modesto	3,688		1,971	2,726		0	3,855		5,607	4,433		7,522	3,413		0	4,220		9,444	4,708		8,904	4,875		0	5,275		10,417	6,054		0	6,193		13,780	3,173		9,449	3,769		0	1,832		7,702	256		4,109	295		0	0		0
		25,260			19,681			45,486			59,437			49,887			67,332			78,653			85,581			76,867			91,529			81,083			53,309			68,559			34,503			13,001			12,124			0	
Stockton-SJ	12,708		6,277	0		0	11,269		11,713	12,293		15,256	0		0	12,164		17,894	15,692		18,692	0		0	16,912		21,042	0		0	15,365		27,596	7,110		19,054	0		0	4,345		11,791	445		6,526	0		0	0		0
		31,691			19,681			45,042			56,474			49,887			61,602			75,653			85,581			72,737			91,529			68,852			41,365			68,559			27,057			6,920			12,124			0	
Antioch-Pittsburg	1,136		3,793	0		0	0		0	962		6,742	0		0	0		0	1,256		8,111	0		0	1,510		8,349	0		0	0		0	592		6,317	0		0	0		0	35		1,162	0		0	0		0
		29,034			19,681			45,042			50,694			49,887			61,602			68,798			85,581			65,898			91,529			68,852			35,640			68,559			27,057			5,793			12,124			0	
Martinez	2,417		7,956	0		0	2,890		12,900	2,926		14,659	0		0	3,531		18,777	4,391		20,766	0		0	5,608		20,498	0		0	3,510		20,903	1,440		13,108	0		0	744		9,248	228		1,849	0		0	0		0
		23,495			19,681			35,032			38,961			49,887			46,356			52,423			85,581			51,008			91,529			51,459			23,972			68,559			18,553			4,172			12,124			0	
Richmond	21		5,476	0		0	30		7,646	34		8,033	0		0	31		8,947	53		10,696	0		0	45		10,746	0		0	32		10,639	18		5,663	0		0	5		3,991	3		625	0		0	0		0
		18,040			19,681			27,416			30,962			49,887			37,440			41,780			85,581			40,307			91,529			40,852			18,327			68,559			14,567			3,550			12,124			0	
Emeryville	0		9,616	0		0	0		15,718	0		17,995	0		0	0		21,836	0		24,041	0		0	0		22,065	0		0	0		23,736	0		10,925	0		0	0		8,742	0		2,161	0		0	0		0
		8,424			19,681			11,698			12,967			49,887			15,604			17,739			85,581			18,242			91,529			17,116			7,402			68,559			5,825			1,389			12,124			0	
Oakland	0		8,424	0		0	0		11,698	0		12,967	0		0	0		15,604	0		17,739	0		0	0		18,242	0		0	0		17,116	0		7,402	0		0	0		5,825	0		1,389	0		0	0		0
		0			19,681			0			0			49,887			0			0			85,581			0			91,529			0			0			0			68,559			0			0			12,124			0	
Stockton-Downtown	0		0	1,302		3,066	0		0	0		0	1,393		7,804	0		0	0		0	2,168		12,620	0		0	2,743		14,655	0		0	0		0	1,358		14,371	0		0	0		0	74		3,867	0		0
		0			17,917			0			0			43,476			0			0			75,129			0			79,617			0			0			55,546			0			0			8,331			0	
Lodi	0		0	745		502	0		0	0		0	736		1,463	0		0	0		0	1,211		2,508	0		0	1,572		2,786	0		0	0		0	698		2,608	0		0	0		0	36		631	0		0
		0			18,160			0			0			42,749			0			0			73,832			0			78,403			0			0			53,636			0			0			7,736			0	
Sacramento	0		0	0		18,160	0		0	0		0	0		42,749	0		0	0		0	0		73,832	0		0	0		78,403	0		0	0		0	0		53,636	0		0	0		0	0		7,736	0		0
Max Load		**31,691**			**19,681**			**47,238**			**64,037**			**49,887**			**72,598**			**84,513**			**85,581**			**83,939**			**91,529**			**88,670**			**74,070**			**68,559**			**59,782**			**27,622**			**12,124**			**12,124**		
Total	**50,498**		**50,498**	**21,728**		**21,728**	**85,377**		**85,377**	**122,651**		**122,651**	**52,016**		**52,016**	**130,768**		**130,768**	**152,228**		**152,228**	**88,960**		**88,960**	**158,742**		**158,742**	**95,844**		**95,844**	**164,388**		**164,388**	**131,570**		**131,570**	**70,615**		**70,615**	**90,688**		**90,688**	**41,157**		**41,157**	**12,234**		**12,234**	**15,776**		**15,776**

2035 Typical Peak Day Ridership for San Joaquin Trains
Station ONs & OFFs by Trains
Proposed Future 90mph San Joaquin Schedule (based on timetable provided by Caltrans 5/31/11)
(forecasts prepared 6/21/11)

Southbound Trains

Station	2			4			6			8			10			12			14			16			18			20			22			24			26			28			30			32			34		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Sacramento	0		0	192		0	0		0	0		0	231		0	0		0	0		0	236		0	0		0	221		0	0		0	0		0	192		0	0		0	0		0	62		0	0		0
		0			192			0			0			231			0			0			236			0			221			0			0			192			0			0			62			0	
Lodi	0		0	8		3	0		0	0		0	9		3	0		0	0		0	9		3	0		0	9		4	0		0	0		0	6		5	0		0	0		0	2		2	0		0
		0			196			0			0			237			0			0			241			0			225			0			0			193			0			0			62			0	
Stockton-Downtown	0		0	46		6	0		0	0		0	46		6	0		0	0		0	45		6	0		0	48		8	0		0	0		0	34		9	0		0	0		0	12		4	0		0
		0			236			0			0			276			0			0			281			0			266			0			0			218			0			0			70			0	
Oakland	0		0	0		0	51		0	51		0	0		0	48		0	47		0	0		0	59		0	0		0	57		0	51		0	0		0	42		0	48		0	0		0	25		0
		0			236			51			51			276			48			47			281			59			266			57			51			218			42			48			70			25	
Emeryville	0		0	0		0	66		0	64		0	0		0	59		0	68		0	0		0	76		0	0		0	76		0	66		0	0		0	50		0	54		0	0		0	28		0
		0			236			117			115			276			107			114			281			135			266			133			117			218			92			102			70			53	
Richmond	0		0	0		0	31		0	28		0	0		0	25		0	27		0	0		0	33		0	0		0	37		0	33		0	0		0	27		0	25		0	0		0	13		0
		0			236			148			143			276			132			142			281			167			266			170			150			218			119			127			70			66	
Martinez	0		0	0		0	64		13	62		18	0		0	49		16	65		10	0		0	65		18	0		0	73		15	62		13	0		0	45		15	39		18	0		0	20		9
		0			236			199			188			276			165			196			281			214			266			228			199			218			149			148			70			77	
Antioch-Pittsburg	0		0	0		0	24		4	0		0	0		0	26		3	0		0	0		0	24		3	0		0	28		4	0		0	0		0	25		6	0		0	0		0	8		2
		0			236			219			188			276			188			196			281			236			266			252			199			218			168			148			70			83	
Stockton	0		0	0		0	87		46	64		34	0		0	55		34	80		33	0		0	73		42	0		0	88		57	70		51	0		0	38		47	31		45	0		0	21		26
		0			236			260			218			276			209			243			281			267			266			283			218			218			159			134			70			77	
Modesto	0		0	0		14	47		17	34		12	0		14	32		11	44		13	0		16	45		16	0		18	44		21	32		19	0		20	16		15	14		14	0		7	7		7
		0			222			290			239			262			230			274			265			296			248			306			231			197			159			134			63			77	
Denair	0		0	0		3	13		4	0		0	0		3	13		4	0		0	0		3	13		4	0		3	13		5	0		0	0		4	6		5	0		0	0		1	2		2
		0			220			299			239			259			239			274			262			306			244			314			231			194			161			134			62			77	
Merced	22		0	0		18	35		29	25		22	0		17	26		19	30		25	0		20	37		29	0		22	36		36	22		31	0		23	10		25	9		23	0		8	3		12
		22			202			305			242			242			247			278			242			314			222			313			222			171			146			120			54			68	
Madera	4		0	0		5	5		7	0		0	0		5	6		8	0		0	0		6	6		8	0		6	5		10	0		0	0		6	2		8	0		0	0		2	0		3
		26			197			302			242			237			245			278			237			312			216			309			222			165			139			120			52			65	
Fresno	104		6	0		64	104		92	96		75	0		70	80		68	95		82	0		77	137		98	0		84	125		121	62		99	0		74	27		66	30		53	0		25	5		32
		124			134			314			263			167			256			292			160			351			132			313			185			91			100			97			27			38	
Hanford	36		41	0		27	33		65	28		56	0		31	28		47	30		62	0		34	53		81	0		34	37		94	13		61	0		27	9		32	6		28	0		8	1		10
		119			106			282			235			136			238			259			126			323			98			256			137			64			78			75			19			30	
Corcoran	5		9	0		3	6		10	0		0	0		3	7		11	0		0	0		3	10		15	0		3	6		15	0		0	0		2	2		7	0		0	0		1	0		1
		116			104			278			235			133			234			259			122			317			95			247			137			61			73			75			18			29	
Wasco	6		3	0		3	5		6	0		0	0		3	6		7	0		0	0		3	11		8	0		3	5		7	0		0	0		2	2		4	0		0	0		0	0		1
		119			101			277			235			130			233			259			119			321			92			245			137			59			71			75			18			28	
Bakersfield	0		119	0		101	0		277	0		235	0		130	0		233	0		259	0		119	0		321	0		92	0		245	0		137	0		59	0		71	0		75	0		18	0		28
Max Load		**124**			**236**			**314**			**263**			**276**			**256**			**292**			**281**			**351**			**266**			**314**			**231**			**218**			**168**			**148**			**70**			**83**	
Total	**177**		**177**	**245**		**245**	**570**		**570**	**453**		**453**	**286**		**286**	**461**		**461**	**485**		**485**	**290**		**290**	**642**		**642**	**277**		**277**	**630**		**630**	**410**		**410**	**232**		**232**	**301**		**301**	**255**		**255**	**76**		**76**	**133**		**133**

Northbound Trains

Station	1			3			5			7			9			11			13			15			17			19			21			23			25			27			29			31			33		
	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off	On	Aboard	Off
Bakersfield	29		0	13		0	85		0	170		0	67		0	238		0	242		0	132		0	269		0	148		0	285		0	237		0	102		0	208		0	103		0	25		0	49		0
		29			13			85			170			67			238			242			132			269			148			285			237			102			208			103			25			49	
Wasco	1		1	0		0	0		0	7		6	2		0	0		0	7		5	4		0	7		5	4		0	0		0	8		8	3		0	0		0	2		4	1		0	1		2
		30			14			85			171			69			238			244			136			271			152			285			237			105			208			101			26			48	
Corcoran	3		1	1		0	0		0	14		5	2		0	0		0	12		6	4		0	11		6	4		0	0		0	17		8	3		0	0		0	5		4	1		0	2		3
		32			14			85			180			71			238			250			140			276			155			285			246			109			208			102			26			47	
Hanford	17		4	9		0	56		8	61		26	24		0	65		27	66		27	40		0	61		29	39		0	81		33	78		42	34		0	51		32	21		18	5		0	7		13
		46			23			132			214			95			276			289			180			307			194			333			281			142			227			105			32			41	
Fresno	39		13	27		0	88		51	91		75	58		0	90		92	107		84	94		0	96		90	93		0	121		120	80		120	77		0	46		107	17		43	11		0	1		33
		71			50			170			231			153			274			312			274			313			287			334			242			219			167			79			42			9	
Madera	5		1	2		0	0		0	10		4	4		0	0		0	10		5	7		0	9		5	7		0	0		0	8		6	5		0	0		0	1		2	1		0	0		2
		75			52			170			236			158			274			316			280			317			294			334			244			224			167			78			43			7	
Merced	19		5	10		0	27		18	31		23	16		0	28		27	31		27	23		0	33		31	27		0	42		40	22		29	19		0	13		26	3		11	2		0	0		7
		89			63			180			243			174			276			321			303			319			321			337			236			244			153			69			45			0	
Denair	3		3	2		0	0		0	5		11	2		0	0		0	5		11	3		0	5		13	4		0	0		0	4		13	3		0	0		0	0		5	0		0	0		0
		89			64			180			238			177			276			315			307			312			325			337			226			246			153			64			45			0	
Modesto	14		7	10		0	15		21	17		29	13		0	16		36	18		34	19		0	20		40	23		0	24		52	12		36	14		0	7		29	1		16	1		0	0		0
		96			75			173			226			190			256			299			325			292			348			308			203			261			131			49			46			0	
Stockton-SJ	48		24	0		0	43		45	47		58	0		0	46		68	60		71	0		0	64		80	0		0	58		105	27		72	0		0	17		45	2		25	0		0	0		0
		120			75			171			215			190			234			287			325			276			348			262			157			261			103			26			46			0	
Antioch-Pittsburg	4		14	0		0	0		0	4		26	0		0	0		0	5		31	0		0	6		32	0		0	0		0	2		24	0		0	0		0	0		4	0		0	0		0
		110			75			171			193			190			234			261			325			250			348			262			135			261			103			22			46			0	
Martinez	9		30	0		0	11		49	11		56	0		0	13		71	17		79	0		0	21		78	0		0	13		79	5		50	0		0	3		35	1		7	0		0	0		0
		89			75			133			148			190			176			199			325			194			348			196			91			261			71			16			46			0	
Richmond	0		21	0		0	0		29	0		31	0		0	0		34	0		41	0		0	0		41	0		0	0		40	0		22	0		0	0		15	0		2	0		0	0		0
		69			75			104			118			190			142			159			325			153			348			155			70			261			55			13			46			0	
Emeryville	0		37	0		0	0		60	0		68	0		0	0		83	0		91	0		0	0		84	0		0	0		90	0		42	0		0	0		33	0		8	0		0	0		0
		32			75			44			49			190			59			67			325			69			348			65			28			261			22			5			46			0	
Oakland	0		32	0		0	0		44	0		46	0		0	0		59	0		67	0		0	0		69	0		0	0		65	0		28	0		0	0		22	0		5	0		0	0		0
		0			75			0			0			190			0			0			325			0			348			0			0			261			0			0			46			0	
Stockton-Downtown	0		0	5		12	0		0	0		0	5		30	0		0	0		0	8		48	0		0	10		56	0		0	0		0	5		55	0		0	0		0	0		15	0		0
		0			68			0			0			165			0			0			285			0			303			0			0			211			0			0			32			0	
Lodi	0		0	3		2	0		0	0		0	3		6	0		0	0		0	5		10	0		0	6		11	0		0	0		0	3		10	0		0	0		0	0		2	0		0
		0			69			0			0			162			0			0			281			0			298			0			0			204			0			0			29			0	
Sacramento	0		0	0		69	0		0	0		0	0		162	0		0	0		0	0		281	0		0	0		298	0		0	0		0	0		204	0		0	0		0	0		29	0		0
Max Load		**120**			**75**			**180**			**243**			**190**			**276**			**321**			**325**			**319**			**348**			**337**			**281**			**261**			**227**			**105**			**46**			**49**	
Total	**192**		**192**	**83**		**83**	**324**		**324**	**466**		**466**	**198**		**198**	**497**		**497**	**578**		**578**	**338**		**338**	**603**		**603**	**364**		**364**	**625**		**625**	**500**		**500**	**268**		**268**	**345**		**345**	**156**		**156**	**46**		**46**	**60**		**60**

APPENDIX 8.5

----- Forwarded by Royce Gotcher/HQ/Caltrans/CAGov on 01/29/2013 02:30 PM -----

"Mitchell, DJ" <DJ.Mitchell@bnsf.com>

07/20/2012 03:16 PM

To 'Royce Gotcher' <royce_gotcher@dot.ca.gov>

cc "Depler, Rick L" <Rick.Depler@bnsf.com>, "Wessler, Richard W" <Richard.Wessler@bnsf.com>, "Mitchell, DJ" <DJ.Mitchell@bnsf.com>

Subject Stockton Station issues

Royce: BNSF's position regarding passenger rail service operating through the diamonds at Stockton is driven by our recognition of the fixed carrying capacity of the BNSF/UP diamonds and collective mainline tracks approaching those diamonds. This fact is at the forefront of our thinking, as I expect it is at the forefront of the collective thinking of the Union Pacific Railroad.

As we have discussed in the past, a Stockton station cannot create an operating pattern that results in:

- More passenger train moves through the diamond than are minimally necessary; and,
- Bakersfield/Fresno/Port Chicago passenger trains being taken out of the control of our dispatchers with the expectation that they will immediately and without delay be allowed to reenter our railroad once their station work is complete (a certainty achieved only by holding all other traffic when the passenger train is off BNSF).

Said a different way, calling at a station off the BNSF mainline will add to a passenger train's trip time as it:

- Travels from BNSF to UP and along the UP to the station;
- Stops at the station;
- Completes its station work;
- Establishes engineer control at the other end of the train; and,
- Travels along the UP to the diamonds, where the passenger train would then move from the UP to the BNSF or continue across the diamonds on toward San Jose.

These moves (in one direction as described above, or the other) could add some 20 minutes to a train's running time, and in the case of the Stockton diamonds and the movement of BNSF, UP and ACE trains, additional time consumed is additional capacity consumed.

A better alternative would be to have a station adjacent to our mainline in the southeast quadrant or the southwest quadrant of the diamond, far enough south of the actual diamond to allow movements to San Jose or Sacramento as well as north and south between Bakersfield and Port Chicago; requiring as a result a connection between the UP and BNSF in the southwest and southeast quadrants of the diamond.

Looking at this matter from a passenger's perspective, the dominant flow of people and thus trains will be between Bakersfield/Fresno and San Jose, Sacramento and Oakland. A station on the north or Oakland side of the diamonds would require back up moves and thus unneeded moves through the diamonds and added time to the schedules. A station to the east or west of the diamonds causes the same problem, plus it may require the placement of additional recovery time in the schedule to accommodate the uncertainty related how difficult and time consuming any return to the BNSF may be.

We recognize how important it will be to correctly locate a station at Stockton and how this decision will impact the CAHRSA's blended service plan, whatever conventional passenger service may remain operating over UP and BNSF existing tracks, existing and future BNSF and UP freight service, and the commuter service that crosses us at Stockton. Perhaps the best thing to do is to arrange a conference call with all the stakeholders to ensure that all parties understand the issues.

DJ

From: Jerry Wilmoth [JWILMOTH@up.com]
Sent: 02/02/2013 10:03 AM PST
To: Royce Gotcher <royce_gotcher@dot.ca.gov>
Subject: Fw: Stockton Diamonds

Jerry Wilmoth | General Manager Network Infrastructure | Union Pacific Railroad | 10031 Foothills Blvd |Roseville, Ca 95747 USA
☎: 916.789.6360 | 7: 916.789.6058 | ✉: JWILMOTH@UP.COM

----- Forwarded by Jerry Wilmoth/UPC on 02/02/2013 10:03 AM -----

From: Jerry Wilmoth/UPC
To: "William Bronte" <Bill_Bronte@dot.ca.gov>
Date: 02/02/2013 10:02 AM
Subject: Stockton Diamonds

Bill - I am starting to hear strong rumbling again that the idea of allowing San Joaquin trains destined to/from Oakland to access the ACE/UP station/platform to provide passenger transfer opportunities between ACE and Amtrak is resurfacing. As we have discussed numerous times in the past, Union Pacific has very strong concerns regarding such a movement and is opposed to any such operating plan.

Issues:

There is fixed and limited capacity at the BNSF/UP diamonds and collective mainline tracks approaching those diamonds. Any movement to facilitate this would foul the interlocker plant and require the multiple and slow crossing of Union Pacific's double mainline Fresno Sub.

A Stockton Passenger station cannot create an operating pattern that results in more passenger train moves through the diamond.

The agency's cannot assume unrestricted or unlimited access (capacity) moving from one railroad to another (and back again)

Once taken out of the control of either railroads dispatcher while in the ACE/UP station, the operator cannot assume the train will be allowed to reenter the railroad once station work is complete

Passenger trains will not be allowed to hold the mainline for any period of time while awaiting authority to return or to attempt to coordinate movements between ACE and Amtrak trains. The current ACE/UP station is not configured to facilitate the simultaneous use by multiple passenger operators.

A passenger train exiting the BNSF to drop off or pick up passengers at the ACE/UP station could easily take 20 to 30 minutes to move into the station, loading/unloading passengers and make air tests to accommodate switching ends of train control and return to the BNSF route. Additional time would be required in a scenario where trains are split.

As you are well aware, the MOU we all executed this past summer to facilitate the implementation of CHSRA's Business Plan, including blended service opportunities, acknowledged and addressed the current and future challenges at Stockton. An alternative station location and a redesigned railroad interlocker plant (Colton) is currently being modeled in a joint effort by the UP/BNSF/CHSRA/Caltrans/ACE and CCJPA (Study). Therefore, any such discussions for operational changes as outlined above are premature and should only be considered during the Study. Further, no implementation of any such operating change can only occur after a solution has been identified and implemented.

I am available to discuss further at your convenience.

Jerry

Jerry Wilmoth | General Manager Network Infrastructure | Union Pacific Railroad | 10031 Foothills Blvd |Roseville, Ca 95747 USA
☎: 916.789.6360 | 7: 916.789.6058 | ✉: JWILMOTH@UP.COM

**

This email and any attachments may contain information that is confidential and/or privileged for the sole use of the intended recipient. Any use, review, disclosure, copying, distribution or reliance by others, and any forwarding of this email or its contents, without the express permission of the sender is strictly prohibited by law. If you are not the intended recipient, please contact the sender immediately, delete the e-mail and destroy all copies.
**

APPENDIX 8.6

5.0 Evaluation of Alternatives

The No-Build Alternative and Build Alternatives were evaluated to determine the reasonableness and feasibility of the alternatives, in order to identify those alternatives that will be carried forward into further analysis. The criteria assess how well each alternative meets the following:

- The purpose and need for the action.
- Technical feasibility (ROW and engineering constraints).
- Economic feasibility (market potential and/or ridership, capital, and operating costs).
- Environmental concerns.

5.1 Evaluation Criteria

The following criteria assess how each alternative meets the San Joaquin Corridor purpose and need, considering factors relating to the passenger's experience in using rail services, such as travel times, station locations and availability of connections, and service reliability and frequency. Evaluation of the Build Alternatives will be conducted using logic and reasoning to determine which alternatives have the highest probability of satisfying the purpose and need within the SDP time frame of service initiation in 2018. Only those projects that can be built for start of improved *San Joaquin* service in 2018 utilizing the first construction section of the IOS will be considered for advancement to more detailed technical studies. Projects that can be implemented between 2018 and 2022 are not being advanced because of the uncertainty of future service levels being planned by the Authority and other regional rail agencies.

Travel Time

The No-Build Alternative is represented by the existing *San Joaquin* service, which is currently scheduled to take approximately 6 hours, 10 minutes running southbound between Oakland and Bakersfield and approximately 5 hours, 20 minutes running southbound between Sacramento and Bakersfield. The No-Build Alternative does not satisfy the purpose and need of improving travel time in the Corridor.

The Build Alternatives would operate both over the existing BNSF route (local shuttle train service between Madera and Bakersfield) as well as over the first construction section of the IOS between Madera and Rosedale, which is about eight miles northwest of Bakersfield. The Build Alternatives and operating scenarios are described in more detail in Chapter 4.

The most significant trip time savings is achieved by operating trains up to 125 mph MAS on the first construction section of the IOS between Madera and north of Bakersfield. The estimated trip time from Oakland to Bakersfield is reduced to approximately 5 hours, 30 minutes, a savings of about 40 minutes over existing schedules.[(xiv)] All the Build Alternatives achieve travel time savings by reducing trip time.

The BNSF performed capacity simulations that reflected a 90 mph MAS operating over the existing BNSF tracks between Port Chicago and Bakersfield. Average speed of the service increased from 55 mph with station stops to just a little over 60 mph. There would be a travel time savings of about ten minutes on the BNSF portion of the route north of Madera.

The increase in the number of trains operating on the BNSF between Rosedale and Bakersfield may require additional track capacity, including a possible third track. This is the subject of on-going analyses by the Authority in cooperation with BNSF. Upgrading the existing BNSF line between Madera and north of Bakersfield is inconsistent with the NCUS plan and Authority *2012 Business Plan* to blend services utilizing the parallel first construction section of the IOS. The Build Alternatives have three to five local shuttle trains operating between Madera and Bakersfield plus one through Oakland – Bakersfield train,

which is either fewer or the same number of trains as the existing service. Consequently no additional track improvements are needed in this section of the BNSF for service initiation in 2018.

As it is unknown whether funding will be available to develop all of the infrastructure along the BNSF to provide for 90 mph MAS and/or acquire enough locomotives to operate over the first construction section of the IOS at 125 mph, ridership studies will be performed to identify the benefits of additional investments over conventional locomotives operating at MAS 79 mph on the BNSF and 110 mph on the first construction section of the IOS.

Station Location

All of the existing stations are located within existing communities, and most are near the center of town and the Central Business District (CBD). This part of California was primarily settled as the railroads were built in the Central Valley and the towns usually grew up around the train stations. Stations located adjacent to the CBD are also located near the densest concentrations of jobs and housing, and are convenient to major destinations.

Compared to the No-Build Alternative, the Build Alternatives would provide a new *San Joaquin* station at the proposed site of the Fresno HSR station stop along the UPRR as well as a potential stop in the vicinity of the proposed Kings/Tulare HSR stop near the Hanford Amtrak station.[(xv)] Ridership studies by the Authority will inform the decision to provide a Kings/Tulare stop along the “express” line using the HSR first construction section of the IOS. Express trains would by-pass Hanford, Corcoran, and Wasco. However, the existing stations in Hanford, Corcoran, and Wasco would continue to be served by up to six daily local shuttle trains operating between Madera and Bakersfield.

An improved Madera Station could be moved to a new or expanded location for a rail to rail connection between future HSR and *San Joaquin* trains and Thruway buses. This is the subject of future study by the Authority and other regional rail agencies.

The Authority is proposing to build a temporary platform for *San Joaquin* express trains in Fresno located near the future site of the HSR station across from the historic Southern Pacific Depot. A potential Kings/Tulare HSR Station would be located east of SR 43 (Avenue 8) and north of the Cross Valley Rail Line (San Joaquin Valley Railroad) in accordance with plans being developed by the Authority as documented in the project level Fresno–Bakersfield EIR/EIS.

An improved station in Stockton has been proposed as part of the Integrated Northern California “Blended Service” Program but would be developed subsequent to initiation of blended services in 2018. Capacity and operational studies are presently underway to evaluate the need for a revised Stockton station as well as other potential improvements to the “Stockton Diamond” where the BNSF and UPRR lines cross at grade.

The San Joaquin Corridor station locations are identified in Exhibit 1.1.

Connections

Compared to the No-Build Alternative, the Build Alternative would provide improved intermodal connections and accessibility due to increased train frequencies as well as more closely coordinated service between the San Joaquin Corridor, *Capitol Corridor* and Altamont Corridor Express (ACE), and local transit agencies.

In Stockton, connections to San Jose could be made with ACE trains, Thruway buses and the local transit agency. Trains operating through to Oakland/Richmond also provide a connection to the *Capitol Corridor*, providing rail service between the Central Coast, the East Bay and the Sacramento Valley. Connections to San Francisco Bay Area Rapid Transit and the San Francisco International Airport (SFO) (via BART) can be made at Richmond.

Amtrak Thruway buses serve many stations throughout California. For the *San Joaquin* service Thruway buses connect to trains principally at Bakersfield, Emeryville, Oakland, Sacramento, and Stockton. It is through the combined use of Amtrak Thruway buses and trains that the *San Joaquin* service reaches north to Redding, east to Reno and Las Vegas, Nevada; south to Indio; and coastal communities from Arcata to San Diego. Scheduled bus service connections at Bakersfield provide opportunities to connect with Metrolink and *Pacific Surfliner* service serving the Los Angeles basin and Southern California. Other Thruway buses at Bakersfield serve the Inland Empire region of Southern California. Potential bus connections between the proposed Coast Daylight Corridor and the San Joaquin Corridor would allow passengers to make faster rail/bus trips between the Salinas Valley and the San Joaquin Valley. These connections could include additional service on the bus route between Paso Robles and Hanford via SR-46 and SR-41, and a bus new route between Gilroy and Merced via SR-152 and SR-59.

An improved Madera Station could be moved to a new or expanded location for a rail to rail connection between future HSR and *San Joaquin* trains and Thruway buses. This is the subject of future study by the Authority and other regional rail agencies.

Reliability

There is no significant change in service reliability under the No-Build Alternative. However, service is likely to deteriorate as freight train frequencies increase causing service disruptions due to congestion. Under the Build Alternatives, passenger and freight rail operations will improve. On-time performance of passenger trains is estimated to be 90 percent. Use of the HSR IOS alleviates potential rail traffic congestion on the BNSF allowing freight trains to operate more reliably, as well.

Frequency

There are no frequency increases in the No-Build Alternative. Under the Build Alternatives, intercity passenger train frequencies would substantially increase from six daily round-trip trains up to 17 on some segments of the San Joaquin routes, especially between Madera and Bakersfield because of the potential use of the new HSR infrastructure. Between Madera and Bakersfield, the *San Joaquin* would operate up to five “shuttle” trains in addition to one through train from Oakland to Bakersfield providing local service to the Hanford, Corcoran and Wasco stations along the BNSF route connecting to other through trains at Madera and Thruway buses at Bakersfield. Up to 11 trains would operate on the HSR first construction section of the IOS.

Two distinct primary operating plans are evaluated in this SDP: A “*conservative*” scenario which would increase the number of trains operating along the trunk between Madera and Bakersfield from six to eight daily round-trips as well as an “*optimistic*” scenario in which the number of trains along this portion of the route would increase to 11 daily round-trips. The *conservative* scenario would utilize agreed to passenger “slots” already negotiated with the freight railroads (in conjunction with corollary track and signaling improvements) whereas the *optimistic* scenario would add more trains along the BNSF portions of the route without increasing passenger traffic along the UPRR Martinez Subdivision between Martinez and Oakland or between Stockton and Sacramento.

The *conservative* scenario was evaluated with either three or six daily round-trips continuing to provide local service between Madera and Bakersfield stopping at the existing Amtrak stations of Hanford, Corcoran and Wasco in addition to the “express” trains operating over the HSR first construction section of the IOS. Between Madera and Bakersfield, the *San Joaquin* would operate up to five “shuttle” trains in addition to one through train from Oakland to Bakersfield.

The *optimistic* scenario included an option to operate more trains to Sacramento by utilizing the Sacramento Subdivision (former WP route) between Stockton and Sacramento as well as an option that would rely upon expanded bus service between Sacramento and Stockton without increasing the number of trains. The use of the UPRR Sacramento Subdivision for increased service between Stockton and

Sacramento is opposed by many Northern California stakeholders. Planning by the Authority and other regional rail agencies will investigate improvements to the UPRR Fresno Subdivision. In addition, the optimistic scenario includes extending service from Port Chicago to Richmond on the BNSF via Franklin Canyon.

However, these optimistic scenarios are not likely to be constructed in time for the 2018 start of blended service and consequently Build Alternatives C and D will not be advanced to more detailed technical analysis in this SDP. However, these scenarios will continue to be evaluated as part of the *Initial Study (2012)*.

Ridership

The prior ridership forecast for the *San Joaquin* service was reported in the *San Joaquin Strategic Plan (2008)* which forecast 1.3 million passengers in 2017. Updated ridership forecasts are included in the California SRP currently in preparation and can be found in Chapter 8.

The 2008 forecast did not anticipate or account for the significant passenger rail improvements now envisioned in the *2012 Business Plan*. The *2012 Business Plan* calls for NCURS providing higher frequencies and faster running times between the San Francisco and Los Angeles markets via the San Joaquin Valley, as early as 2018. As early as 2022, the San Joaquin Valley service operating along the HSR route will be upgraded to electrified HSR providing even higher frequencies and faster running times. As a result, ridership patterns would reflect both the shifting of some longer-distance trips to the HSR line as well as the potential for increased “feeder service” traffic between the HSR stations and existing *San Joaquin* route which would interface with the northern interim terminus of the HSR system at Madera as well as continue to provide some local service to stations to the south.

This potential decrease in end-to-end *San Joaquin* riders are offset by increased ridership on the integrated services provided by regional rail services, because expanded routes, increased frequencies and faster service will make the rail mode more attractive. For example, the NCURS will reduce rail running times in the Central Valley, which will make rail/bus/rail trips between the San Francisco Bay Area and San Joaquin Valley communities faster and more attractive via the San Joaquin Corridor. The connecting rail ACE service between San Jose and Stockton would make rail trips between the San Jose area and the northern San Joaquin Valley more attractive. All the Build Alternatives increase ridership over the No-Build Alternative.

5.2 Technical Feasibility

The following criteria assess the technical feasibility of each alternative, identifying ROW requirements and possible disruptions to railroad operations, state highways, or adjacent property for each alternative. Technical feasibility also includes the timing and constructability of projects prior to service initiation in 2018. Projects not likely to be completed for start of service in 2018 would render a Build Alternative untenable and incapable of being advanced. These projects would be deferred for further detailed technical analysis in future service planning studies by the Authority and other regional rail agencies.

5.2.1 ROW Requirements

The width of railroad right-of-way varies throughout the San Joaquin Corridor. Along most of the alignment, the existing right-of-way is sufficient for completion of the proposed track improvements, with a distance of 15 to 20 feet between track centers. Therefore, no additional ROW would be required for any of the Build Alternatives utilizing existing sections of route segments.

Right-of-way will need to be acquired in the Central Valley between Merced and Bakersfield to construct the first construction section of the IOS. The Authority is responsible for acquiring ROW and constructing

the new infrastructure, track and related systems to allow *San Joaquin* trains to operate between 2018 and until 2022 when the line is electrified and HSR trains commence service.

Conceptual engineering for the IOS project includes layouts for new stations at Fresno and King/Tulare. The Fresno station would be located in Downtown Fresno on vacant UPRR property across from the historic Southern Pacific Depot. The station is outside the operating freight railroad ROW. For implementation of the *San Joaquin* express service, the Authority would construct temporary platforms and shelters similar to commuter or regional rail services. Improvements to the Madera Station may require the purchase of additional right-of-way. However, the purchase of this land is being undertaken by the Authority and is not part of this SDP.

The potential Kings/Tulare HSR Station would be located east of SR-43 (Avenue 8) and north of the Cross Valley Rail Line (San Joaquin Valley Railroad). The entire site would be approximately 27 acres, including eight acres designated for the station, bus transit center, short-term parking, and kiss-and-ride. An additional approximately 19 acres would support a surface parking lot with an estimated 1,600 spaces. The Authority has not yet made a final determination of whether this regional station would be constructed as part of the Initial Operating Segment.

In summary, ROW requirements for all the Build Alternatives within the UPRR and BNSF alignments are minimal relative to the length of the corridor and will not displace residential uses.

The first construction section of the IOS will have considerable impact on land-use. The Authority has prepared an EIR/EIS that includes environmental clearance of the proposed HSR alignment and stations in Fresno and Kings/Tulare. The Authority is undertaking the acquisition of all right-of-way and land necessary to support the first construction section of the IOS subject to future operations modeling analyses which will not be completed prior to the finalization of the SDP.

5.2.2 Disruption to Railroads, Highways or Adjacent Property

In a letter to Caltrans dated March 4, 2010, UPRR indicated that in order to accommodate any additional intercity passenger trains along its track segments from Port Chicago to Oakland and Sacramento to Stockton, one additional track would be required on each of the specified segments. It appears feasible to construct the double track and triple track improvements within the existing UPRR ROW between Port Chicago and Oakland identified in the March 4, 2010 letter. These costs could be avoided by obtaining permission to reroute trains from the UPRR to other routes.

However, to avoid construction of the additional double- and triple-track sections in the UPRR Port Chicago to Oakland segment of the *San Joaquin* route, proposals have been made to extend the San Joaquin Corridor from Port Chicago to Richmond over the BNSF via Franklin Canyon where trains can connect to the *Capitol Corridor* and BART.[(xvi)] It also appears feasible to construct the double track improvements within the existing BNSF ROW between Port Chicago and Bakersfield and between Port Chicago and Richmond identified in BNSFs most recent list of recommended improvements contained in the *BNSF San Joaquin Valley Capacity Analysis* dated October 8, 2010. However, there is very little likelihood that the improvements needed to operate trains between Port Chicago and Richmond over the BNSF route through Franklin Canyon can be environmentally cleared and constructed in time for service initiation in 2018.

Due to an Agreement with UPRR, the added train frequencies between Sacramento and Stockton could be shifted from the UPRR Fresno Subdivision to the Sacramento Subdivision (formerly Western Pacific). However, Sacramento Regional Transit, Sacramento Area Council of Governments, the City of Sacramento, the Central Valley Rail Working Group (a working group comprised of 20 major local and regional agencies between Sacramento and Merced), and other stakeholders have expressed opposition to routing passenger trains over the UPRR Sacramento Subdivision. In addition infrastructure improvements necessary to upgrade and improve the Sacramento Subdivision are not likely to be

approved or constructed by the 2018 start of blended service. It is not likely that the improvements needed to increase service beyond Port Chicago to Oakland and north of Stockton to Sacramento can be completed in time for service start-up in 2018. Consequently, those improvement projects are being deferred until future planning studies by the Authority and other regional rail agencies are completed. Consequently, Build Alternatives C and D are not being advanced to further detailed analysis.

There are no disruptions to the existing or planned highway network by any of the Build Alternatives for the expanded *San Joaquin* service other than those being mitigated by the Authority for the first construction section of the IOS.

There are no additional requirements for adjacent land acquisition by any of the Build Alternatives for the expanded *San Joaquin* service other than those adjacent parcels being by planned for acquisition by the Authority for the first construction section of the IOS or Madera Station expansion and improvements.

5.3 Economic Feasibility

Intercity passenger rail funding is primarily provided by state sources, but also includes federal, local and private funding sources. The CSRP currently being prepared suggests that funding for many of the conventional intercity passenger rail programs is mostly exhausted and additional funding has not been identified for any of the Build Alternatives and projects listed in the SDP not already funded by the California Transportation Commission. Consequently, criteria that identify capital and operating costs are used as a proxy for the economic feasibility of each alternative. Projects that are extremely costly are deemed untenable because of the uncertainty of funding allocations.

The capital cost estimates from prior studies have limited utility for evaluating the alternatives because they are now out of date. Caltrans DOR and BNSF have acknowledged that the information presented in this SDP is regenerated from the previous studies. However, Caltrans DOR and BNSF have developed new capital cost information to determine that proposed projects are necessary and sufficient to provide the additional rail capacity required to allow operation of the projected rail service levels. The project estimates were updated based on generally accepted inflationary factors and revised project descriptions. It is therefore possible to make some general order of magnitude observations about the relative cost of different types of improvement projects:

- Siding extensions: $10-20 million per mile, plus $5 million per new switch.
- New stations: $5-10 million each.
- Curve realignments: $20-150 million for each five to ten mile segment.
- Second main track: $15-40 million per mile, depending on topography.

Table 5.1 shows the indicative estimates of probable cost for the Build Alternatives and 79 and 90 mph MAS options based on the additional study by Caltrans DOR, BNSF, and others. (Table 4.4 and 4.5 shows the specific projects necessary for each Alternative.)

Table 5.1: Estimates of Probable Capital Costs (CAPEX)

Speed Option	Alternatives				
	No-Build	Build A	Build B	Build C	Build D
CAPEX 79 mph ($millions)	$39.1	$213.4	$213.4	$386.0	$1,614.1
CAPEX 90 mph ($millions)	NA	$237.8	$262.2	$499.8	$1,727.9

Source: Caltrans DOR, BNSF, and AECOM

These cost ranges indicate that increasing travel speeds to 90 mph MAS may be cost prohibitive when considering the incremental ridership and small trip time savings achieved as suggested in Chapter 8. Initial efforts should focus on improvements necessary to begin operating more passenger trains at

current operating speeds on the UPRR and BNSF route segments. Improved trip time savings will be achieved by operating *San Joaquin* express trains on the HSR first construction section of the IOS between Madera and Rosedale just north of Bakersfield, which is where the available federal American Recovery and Reinvestment Act (Stimulus) and Authority funding is being invested. Additional travel time reductions and/or additional trains can be achieved as funding becomes available for additional project improvements for the *San Joaquin* and HSR.

Build Alternatives C and D add substantial capital cost for building the infrastructure needed to increase the number of trains from eight to 11 and will not be advanced to more detailed analysis. The 90 mph MAS option for all the Build Alternatives also adds capital cost for all the Build Alternatives. The 90 mph speed option will not be advanced to more detailed technical analysis. Higher speed options for the San Joaquin can be studied by the Authority and regional rail agencies as part of service development planning for blended service beyond 2022.

5.3.1 Operating Expense (OPEX)

Operating costs were based on existing expenses on the San Joaquin service. They include train crew labor, operations and maintenance, maintenance of way and track access charges and allocated general administrative costs. These expenses do not anticipate any change in operating cost structure as a result of the implementation of the new Amtrak Section 209 pricing structure required under PRIIA that will be initiated in 2013-14. While San Joaquin expenses under Section 209 are not anticipated to increase substantially, some increases in expenses are possible. Incremental expenses associated with maintenance of way for the first construction section of the IOS and access charges for use of the HSR infrastructure have not yet been determined. The estimate of probable overall operating and maintenance expense is based on a rate of $57.94[xvii] per train-mile. The O&M cost rate of $80.76 per revenue-mile for the 90 mph option is based on estimated values for the higher speed option developed for the *Richmond–Hampton Roads Passenger Rail Project Tier 1 Final EIS*. The estimate of probable incremental daily operating and maintenance expenses of running additional trains for each of the Build Alternatives and speed option is shown in Table 5.2.

Table 5.2: Indicative Estimate of Probable Operating Cost (OPEX)

Annual Train Miles	Alternatives				
	No-Build	Build A	Build B	Build C	Build D
San Joaquin Service (mi.)	1,331,520	1,921,360	2,221,390	3,103,230	3,203,970
OPEX 79 mph	$77,161,584	$111,342,812	$128,729,551	$179,832,179	$185,670,062
OPEX 90 mph	$107,533,555	$155,169,034	$179,399,456	$250,616,855	$258,752,617

Notes:
- "NA" indicates not available or not applicable.

Build Alternatives A and B add approximately $35 - $55 million in expenses for operating 7 and 8 round trip trains while Build Alternatives C and D add substantial expenditures for operating and maintaining 11 trains. As it is unlikely the infrastructure improvements necessary to support the 11 train *optimistic* scenarios will be constructed for commencement of blended service in 2018, these alternatives will not be advanced to more detailed technical analysis in later chapters of the SDP. The 90 mph MAS option adds substantial operating expense to each of the Build Alternatives and will not be advanced to more detailed technical analysis. Higher speed options for the San Joaquin can be studied by the Authority and regional rail agencies as part service development planning for blended service beyond 2022.

Table 5.3 and Chapter 12 include more information on operating expenses, revenue and state operating costs.

5.3.2 Independent Utility

Build Alternatives A and B are usable and reasonable expenditures, even if no additional transportation improvements are made in the area. Double-tracking sections of the *San Joaquin* route along both the UPRR and BNSF route segments would benefit all trains operating in the corridor, both freight and passenger, improving their reliability and decreasing running time. The faster trip times achieved by operating *San Joaquin* express trains on the HSR tracks between Madera and Bakersfield will result in a 40-minute travel time savings over existing schedules and would retain utility even if the Authority does not complete the IOS or the entire 800-mile HSR network.

5.3.3 Phasing Potential

The program of projects for Build Alternatives A and B that facilitate service expansion on the *San Joaquin* will be timed for the completion of the first construction section of the IOS of the HSR project, which will be ready for train operation in 2018. Prioritization of individual projects within the program of project improvements has not been completed.

5.4 Environmental Resources and Quality

A Programmatic EIR for the San Joaquin Corridor is being undertaken to examine the environmental impacts including cumulative effects of the program of projects identified for the preferred service alternatives. Each individual element of the program of projects will require individual project level environmental study.

The following criteria assess major environmental concerns with respect to the improvements identified in the *San Joaquin* rail service improvement program.

5.4.1 Geologic Constraints

Some of the improvements defined above appear to have geologic constraints, such as fault crossings, coastal areas, and known areas of high landslide susceptibility.

5.4.2 Wetlands / Nature Preserves / Environmentally Sensitive Areas

Some of the improvements cross over the San Joaquin River and its branches and tributaries and other bodies of water. These improvements would require the following permits, certifications, agreements and plans:

- Section 404 permit from the United States Army Corps of Engineers (Corps).
- California Regional Water Quality Control Board (RWQCB) 401 Water Quality Certification.
- California Department of Fish and Game (CDFG) Streambed Alteration Agreement (1601 or 1603 Agreement).
- A construction storm water discharge permit – National Pollution Discharge Elimination System (NPDES) through filing a Notice of Intent (NOI) and compiling a Storm Water Pollution Prevention Plan (SWPPP) with the RWQCB.

It may also be necessary to obtain incidental take permits for listed protected species from the US Fish and Wildlife Service and CDFG. County Drainage Permits may be required from each county through which the proposed secondary segment would traverse for activities affecting watercourses and drainage facilities in unincorporated areas. A Flood Control Encroachment Permit may be required for any temporary or permanent encroachment on County Flood Control and Water Conservation District

properties or rights-of-way. High-level review of the other improvements indicates no other concerns in this category.

5.4.3 Cultural / Parks / Section 4(f) / Farmland or Agricultural Zones

The improvements are within the existing railroad ROW where this criterion is generally not applicable.

5.4.4 Sensitive Receivers

Adding more trains in each direction would add a cumulative noise source, but this would not be a significant impact given the number of trains currently operating and the ambient noise levels near sensitive receptors. High-level review indicates that the improvements defined above would not change visual/scenic resources, or affect built-up areas with institutional, medical, school and/or residential properties adjacent to the ROW.

5.5 Summary and Conclusions

Key performance indicators and evaluation criteria that address the project goals and objectives are compared and contrasted for each of the Build Alternatives and the No-Build Alternative. The summary matrix is found in Table 5.3.

The alternatives evaluation indicates that Build Alternative A, adding two more daily round-trip trains in each direction operating at current speeds, is the least costly alternative. Besides increasing the frequency of trains in the Corridor between Oakland/Sacramento and Bakersfield, the new express service will allow faster trips between the San Francisco Bay Area and the Central Valley via Thruway bus connections as outlined in the *2012 Business Plan*. Build Alternative A infrastructure improvements can be programmed and constructed before 2018 if funding becomes available.

The alternatives evaluation also indicates that ROW requirements for the Build Alternatives being advanced for more technical analysis are minimal, as are the expected impacts on railroads, state highways and adjacent properties. No significant environmental impacts are expected. Finally, there is good potential for phasing the Build Alternatives by incrementally making improvements to the corridor and operating express trains on the first construction section of the IOS. Opportunities for phasing new services are limited to incremental extensions of existing service, such as extending ACE from Sacramento to Stockton or from Stockton to Madera.

However, further examination is needed of the HSR program's potential impact on the number of riders forecast for the *San Joaquin* service and parallel competing future HSR services in the corridor for the planning years beyond 2022.

Table 5.3: Summary Evaluation Matrix

Evaluation Criteria	Alternatives				
	No-Build	Build A	Build B	Build C	Build D
Round-trips (by segment)	6	10	13	17	17
Oakland–Bakersfield (BNSF & UPRR Martinez Sub)	4	1	1	1	1
Oakland-Stockton	0	5	5	5	5
Richmond–Stockton	0	0	0	4	4
Sacramento–Stockton (UPRR)	2	2	2	2	2
Sacramento–Stockton (WP)	0	0	0	0	3
Stockton–Bakersfield (using first construction section of the IOS)	0	7	7	11	11

Evaluation Criteria	Alternatives				
	No-Build	**Build A**	**Build B**	**Build C**	**Build D**
Madera-Bakersfield (first construction section of the IOS)	0	6	6	10	10
Madera–Bakersfield (BNSF)	0	2	5	5	5
Train service miles	1,477,520	1,994,360	2,294,390	3,176,230	3,276,970
Travel savings (h:min) via IOS	0	0:40	0:40	0:40	0:40
2020 Ridership (79 mph)	1,388,000	2,060,000	2,160,000	2,470,000	2,640,000
Change from No-Build	NA	672,000	772,000	1,082,000	1,252,000
OPEX 90 mph ($thousands)	$107,533.6	$155,169.0	$179,399.4	$250,616.8	$258,752.6
OPEX 79 mph ($thousands)	$77,161.6	$111,342.8	$128,729.5	$179,832.2	$185,670.1
Revenue 79 mph($ thousands)	*$46,970.0*	*$76,400.0*	*$79,500.0*	*$90,900.0*	*$97,700.0*
Operating surplus (loss) ($thousands)	($30,191.6)	($34,942.8)	($49,229.5)	($88,932.2)	($87,970.1)
Subsidy per rider (79 mph option)	*($21.75)*	*($16.96)*	*($22.79)*	*($36.00)*	*($33.32)*
CAPEX 79 mph MAS ($millions)	$39.1	$213.4	$213.4	$386.0	$1,614.1
CAPEX 90 mph MAS($millions)	NA	$237.8	$262.2	$499.8	$1,727.9
Constructability	NA	Yes	Yes	No	No
Alternative advanced	Yes	Yes	No	No	No

Notes:

- NA indicates not available or not applicable.
- * indicates trains that are joined and split at Stockton in each direction but counted only once for total train frequency. See diagrams in Chapter 4.

APPENDIX 8.7

Office of Planning & Research
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814
(26 copies - FedEx)

AC Transit
1600 Franklin Street
Oakland, CA 94612

Alameda County Board of Supervisors
District 4, President Nate Miley
County Administration Building
1221 Oak Street, #536
Oakland, CA 94612

Alameda County Planning Commission
Mark Jacob, Commissioner (Chair)
224 W. Winton, Room 111
Hayward, CA 94544

Amtrak
Barbara Bruce
500 West Jackson Blvd
Chicago, IL, 60607

Amtrak Oakland Maintenance Facility
Kristine Moy, Env Coordinator
1303 3rd Street
Oakland, CA 94607

Amtrak Administration Office
525 W Van Buren St.
Chicago, IL 60607
(USPS – returned 12-5-12)

Antelope Valley Transit Authority
42210 6th Street West
Lancaster, CA 93534

City of Antioch
Department of Public Works
Engineering Division
PO Box 5007
Antioch, CA 94531-5007

City of Antioch
Mayor James D. Davis
PO Box 5007
Antioch, CA 94531-5007

Assembly Committee on Transportation
Victoria Grajek
1020 N Street, Room 112
Sacramento, CA 95814

Association of Bay Area Governments
Mark Green, President
P.O. Box 2050
Oakland, CA 94607-4756

Association of Bay Area Governments
101 Eighth Street
Oakland, CA 94607

City of Bakersfield
City Manager's Office, City Hall North
1600 Truxtun Ave - 5th Floor
Bakersfield, CA 93301

BNSF Railway Company
Robert Brendza
740 E. Carnegie Drive
San Bernardino, CA 92408

BNSF Railway Company
John Fleming
720 South “B” Street
Stockton, CA 95205

BNSF Railway Company
DJ Mitchell II
AVP, Passenger Operations
2650 Lou Menk Drive
Fort Worth, TX 76131

BNSF Railway Company
Walter N. Smith, P.E.
740 E. Carnegie Drive
San Bernardino, CA 92408-3571

California Dept of Fish and Game
Bay Delta Region – Main Office
7329 Silverado Trail
Napa, CA 94558

California Dept of Fish and Game
Bay Delta Region – Stockton Office
4001 North Wilson Way
Stockton, CA 95205

California Dept of Fish and Game
Central Region
1234 E. Shaw Avenue
Fresno, CA 93710

California Dept of Fish and Game
North Central Region
1701 Nimbus Road
Rancho Cordova, CA 95670

California Dept of Fish and Game
South Coast Region
3883 Ruffin Road
San Diego, CA 92123

California Dept of Food & Agriculture
1220 N Street
Sacramento, CA 95814

California Dept of Parks & Recreation
PO Box 942896
Sacramento, CA 94296

California Dept of Toxic
Substances Control
PO Box 806
Sacramento, CA 95812-0806

California Dept of Water Resources
PO Box 942836
Sacramento, CA 94236

California Division of
Mining & Geology Board
801 K Street, MS 20-15
Sacramento, CA 95814

California High Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Californians Advocating
Responsible Rail Design
Rita Wespi
648 Mariposa Avenue
Palo Alto, CA 94306

California Office of Historic Preservation
1725 23rd Street
Sacramento, CA 95816

California State Rail Plan
Advisory Committee
Caltrans Division of Rail
1120 N Street, MS 74
Sacramento, CA 95814

Caltrans Division of Rail
Gretchen Brigaman
1120 N Street, MS 74
Sacramento, CA 95814

Caltrans Division of Rail
Royce Gotcher
1120 N Street, MS 74
Sacramento, CA 95814
(sent FedEx)

Caltrans Division of Rail
Stan Hunter
1120 N Street, MS 74
Sacramento, CA 95814

Caltrans Division of Rail
Betty Miller
1120 N Street, MS 74
Sacramento, CA 95814

Caltrans District 3
Office of Environmental Planning
PO Box 911
Marysville, CA 95901

Caltrans District 4
Div of Environmental Planning
111 Grand Avenue
PO Box 23660
Oakland, CA 94612-0660

Caltrans District 4
Office of Transit & Community Planning
Becky Frank. Sr Transportation Planner
PO Box 23660
Oakland, CA 94612-0660

Caltrans District 6
Environmental Office
855 "M" Street, Suite 200
Fresno, CA 93721
(forwarded to Caltrans D7)

Caltrans District 7
Division of Environmental Planning
Agustin Barajas, Assoc Env Planner
100 S. Main Street (MS 16-A)
Los Angeles, CA 90012

Caltrans District 7
Division of Environmental Planning
Dawn Kukla, Sr Environmental Planner
100 S. Main Street (MS 16-A)
Los Angeles, CA 90012 (sent FedEx)

California Water Quality Control Board
Central Valley Regional
Sacramento Office
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

California Water Quality Control Board
Los Angeles Regional
320 W. Fourth Street, Suite 200
Los Angeles, CA 90013

California Water Quality Control Board
San Francisco Bay Regional
1515 Clay Street
Oakland, CA 94612

Capitol Corridor Joint Powers Authority
300 Lakeside Drive
Oakland, CA 94612

Coalinga Transit
155 W. Durian
Coalinga, CA 93210

Conta Costa County
Administrator's Office
David TWA, County Administrator
651 Pine St, 10th Floor
Martinez, CA 94553

Contra Costa County
Board of Supervisors
Mary N. Piepho, District III
651 Pine Street
Martinez, CA 94553

Contra Costa County
Board of Supervisors
Federal D. Glover, District V
651 Pine Street
Martinez, CA 94553

~~Contra Costa Planning Commission~~
~~Marvin Terrell, Chairman~~
30 Muir Road
Martinez, CA 94553
(returned USPS & remailed 12-13-12➜)

Dept of Conservation & Development
Attn: Maureen Parkes
Contra Costa Planning Commission
30 Muir Road
Martinez, CA 94553

Contra Costa Transportation Authority
2999 Oak Road, Suite 100
Walnut Creek, CA 94597

Corcoran Area Transit
832 Whitley Avenue
Corcoran, CA 93212

County Connection
Administrative Offices
2477 Arnold Industrial Way
Concord, CA 94520

Dept of Conservation and Development
John Cunningham, Senior
Transportation Planner
30 Muir Road
Martinez, CA 94553

Melissa Elefante Dumond, AICP
Federal Railroad Administration
Office of Passenger & Freight Programs
West Building, MS 20, Room W38-207
1200 New Jersey Avenue, SE resent
Washington, DC 20590 FedEx 12/5/12

Elk Grove E-Tran
8401 Laguna Palms Way
Elk Grove, CA 95758

City of Fresno
Mayor Ashley Swearengin
2600 Fresno Street, Room 2075
Fresno, CA 93721

Fresno Area Express
2223 G Street
Fresno, CA 93706

Fresno Council of Governments
Clark Thompson
2035 Tulare Street, Suite 201
Fresno, CA 93721

Fresno County Board of Supervisors
Susan Anderson, District 2
2281 Tulare Street, Room 300
Fresno, CA 93271-2198

Fresno County Board of Supervisors
Chairman Debbie Poochigian, District 5
2281 Tulare Street, #301
Fresno, CA 93721-2198

Fresno County Planning Commission
Randy Rocca, Commissioner
(Chairman)
2220 Tulare Street, 6th Floor
Fresno, CA 93721

Gold Country Stage Transit
13083 John Bauer Avenue
Grass Valley, CA 95945

Golden Gate Transit
1011 Anderson Drive
San Rafeal, CA 94901-5318

City of Gustine
Jesse Brown
682 3rd Avenue
Gustine, CA 95322

City of Hanford
Mayor Sue Sorensen
319 North Douty
Hanford, CA 93230

City of Hercules City Hall
Charles Long, Executive Manager-
Waterfront
111 Civic Drive
Hercules, CA 94547

J.L. Patterson & Associates
Marc Cañas
725 Town & Country Road, Suite 300
Orange, CA 92868

Kern Council of Governments
Bob Snoddy
1401 19th Street, Suite 300
Bakersfield, CA 93301

Kern County Board of Supervisors
Zack Scrivner, District 2
1115 Truxton Avenue, 5th Floor
Bakersfield, CA 93301

Kern County Board of Supervisors
Karen Goh, District 5
1115 Truxton Avenue, 5th Floor
Bakersfield, CA 93301

Kern County Planning Commission
Brandon Martin, Commissioner
(Chairman)
1115 Truxton Avenue
Bakersfield, CA 93301

Kern Regional Transit Division
Public Services Building
2700 "M" Street, Suite 400
Bakersfield, CA 93301-2370

Kings County Area Public Transit
Agency
P.O. Box 209
Hanford, CA 93232

Kings County Association of
Governments
339 West D Street, Suite "B"
Lemoore, CA 93245

Kings County Board of Supervisors
Richard Valle, District 2
339 West D Street
Lemoore, CA 92345

Kings County Board of Supervisors
Tony Barba, District 4
339 West D Street
Lemoore, CA 92345

Kings County Board of Supervisors
Richard Fagundes, District 5
339 West D Street
Lemoore, CA 92345

Kings County Planning Commission
Riley Jones, Commissioner (Chair)
1400 W. Lacey Blvd.
Hanford, CA 93230

Kings County Government Center
Terri King
1400 West Lacey Blvd
Hanford, CA 93230

City of Lancaster
Mayor R. Rex Parris
44933 Fern Avenue
Lancaster, CA 93534

Liftech Consultants Inc.
Teresa M. Ferguson
344 20th Street, Suite 360
Oakland, CA 94612

Los Angeles City
Mayor Antonio Villaraigosa
City Hall
200 N. Spring Street
Los Angeles, CA 90012

County of Los Angeles
Department of Public Works
Programs Development Division
Hank Fung
900 South Fremont Avenue, 11th Floor
Alhambra, CA 91803

LA County Board of Supervisors
Mark Ridley-Thomas, Second District
Kenneth Hahn Hall of Administration
500 West Temple Street, Room 866
Los Angeles, CA 90012

LA County Board of Supervisors
Michael D. Antonovich, Fifth District
Kenneth Hahn Hall of Administration
500 West Temple Street, Room 856
Los Angeles, CA 90012

LA County Dept of Regional Planning
Curt Pedersen, Commissioner (Chair)
320 West Temple Street
Los Angeles, CA 90012

LOSSAN Staffed by SANDAG
401 B Street, Suite 800
San Diego, CA 92101

Madera Area Express
Transit Program Manager
City of Madera
205 W. Fourth Street
Madera, CA 93637

City of Madera
Mayor Brett Frazier
c/o City Clerk
205 West Fourth Street
Madera, CA 93637

Madera County Board of Supervisors
David Rogers, District 2
200 West 4th Street
Madera, CA 93637

Madera County Board of Supervisors
Chairman Ronn Dominici, District 3
200 West 4th Street
Madera, CA 93637

Madera County Board of Supervisors
Max Rodriguez, District 4
200 West 4th Street
Madera, CA 93637

Madera County Planning Commission
Ross Thornton, Commissioner (Chair)
200 W. 4th Street
Madera, CA 93637

City of Martinez
Mayor Rob Schroder
525 Henrietta Street
Martinez, CA 94553

City of Merced
Mayor Stan Thurston
678 West 18th Street
Merced, CA 95340

Merced County Association of Governments
369 West 18th Street
Merced, CA 95340

County of Merced
Angelo Lamas
2222 M Street
Merced, CA 95340

Merced County Board of Supervisors
John Pedrozo, District 1
2222 M Street
Merced, CA 95340

Merced County Board of Supervisors
Hubert Walsh, District 2
2222 M Street
Merced, CA 95340

Merced County Board of Supervisors
Jerry O'Banion, District 5
2222 M Street
Merced, CA 95340

Merced County Planning Commission
Lynn Tanner, Commissioner (Chairman)
2222 M Street
Merced, CA 95340

Metropolitan Transportation Comm
Programming and Allocations Section
Kenneth Kao
101 Eighth Street
Oakland, Ca 94607-4700

Metropolitan Transportation Comm
Joseph P. Bort MetroCenter
Adrienne J. Tissier, Chair
101 Eighth Street
Oakland, CA 94607-4770

Modesto Area Express Operations
1001 9th Street
Modesto, CA 95354

City of Oakland
Mayor Jean Quan
1 Frank H. Ogawa Plaza, 3rd Fl
Oakland, CA 94612

City of Oakley
Mayor Kevin Romick
3231 Main Street
Oakley, CA 94561

City of Palmdale
Mayor James C. Ledford Jr.
38300 Sierra Highway
Palmdale, CA 93550

PB Americas
444 South Flower Street, Suite 3700
Los Angeles, CA 90071

City of Pittsburg
Mayor Ben Johnson
64 Civic Avenue
Pittsburg, CA 94565

City of Richmond
Mayor Gayle McLaughlin
440 Civic Center Plaza
Richmond, CA 94804

City of Rio Vista
6 North Front Street
Rio Vista, CA 94571

Sacramento Area Council of Governments
1415 L Street #300
Sacramento, CA 95814

City of Sacramento
Department of Transportation
Hinda Chandler Senior Architect
915 I Street, Room 2000
Sacramento, CA 95814

City of Sacramento
Fran Halbakken, Downtown Railyards Project Director
915 I Street
Sacramento, CA 95814

Sacramento County Board of Supervisors
Don Nottoli, District 5
700 H Street, Suite 1450
Sacramento, CA 95814

Sacramento County Planning Commission
Joe Yee, Commissioner (Chair)
827 7th Street, Room 230
Sacramento, CA 95814 (returned & remailed to Plng Division➜)

County of Sacramento
Planning Division
Leighann Moffitt, Plng Director
827 7th Street, Room 230
Sacramento, CA 95814

Sacramento Regional Transit District
P.O. Box 2110
Sacramento, CA 95812

San Francisco Bay Area Water
Emergency Transportation
The Embarcadero
Pier 9, Suite 111
San Francisco, CA 94111

San Joaquin Council of Governments
555 East Weber Avenue
Stockton, CA 95202

San Joaquin County Board of
Supervisors, District 3
Chairman Steve J Bestolarides
44 N. San Joaquin Street, Suite 627
Stockton, CA 95202

San Joaquin County Board of
Supervisors , District 4
Ken Vogel
44 N. San Joaquin Street, Suite 627
Stockton, CA 95202

San Joaquin County Board of
Supervisors, District 5
Leroy Ornellas
44 N. San Joaquin Street, Suite 627
Stockton, CA 95202

San Joaquin County Planning
Commission
Peter Johnson, Commissioner (Chair)
1810 E. Hazelton Ave.
Stockton, CA 95205

San Joaquin Regional Rail Commission
Altamont Commuter Express
Headquarters
949 East Channel Street
Stockton, CA 95202

~~San Joaquin Valley Rail Committee~~
~~Caltrans Division of Rail~~
~~Art Lloyd~~
~~1120 N Street, MS-74~~
~~Sacramento, CA 95814~~
wrong address

SJVRC Facilitator
Arthur Lloyd
150 Alma Street, Apt. 101
Menlo Park CA 94025-3730

~~San Joaquin Valley Rail Committee~~
~~Caltrans Division of Rail~~
~~Vito Chiesa, Chair~~
~~1120 N Street, MS-74~~
~~Sacramento, CA 95814~~
received at Stanilaus address below

SJVRC member - Tom Blalock
42666 Sulley Street
Fremont, CA 94539
County representing: Alameda

SJVRC member - Michael Snyder
2378 Tokay Court
Paradise, CA 95969
County representing: Alameda

SJVRC member - Howard Ableson
3150 Hilltop Mall Road #34
Richmond, CA 94806
County representing: Contra Costa

SJVRC member - Tom Bailey
1941 W. Santa Ana
Fresno, CA 93750
County representing: Chairman of the Fresno COG Rail Committee

SJVRC member - Bruce Heard
204 Cordova Street
Pasadena, CA 91101-2425
County representing: Los Angeles

SJVRC member - Dylan Stone
2001 Howard Road, Suite 201
Madera, CA 93637
County representing: Madera

SJVRC member -
Supervisor Lee Stetson
5301 Rumley Mine Road
Midpines, CA 95345
County representing: Mariposa

SJVRC member - Ed Coviello
Assistant Planner
1415 L Street, Suite 300
Sacramento, CA 95814
County representing: Sacramento

SJVRC member - Sarah Johnson
9612 Kent Street
Elk Grove, CA 95624
County representing: Sacramento

SJVRC member - Stacey Mortensen
949 East Channel Street
Stockton, CA 95202
County representing: San Joaquin

SJVRC member - Brian Schmidt
949 East Channel Street
Stockton, CA 95202
County representing: San Joaquin

SJVRC member - Ty Holschler
1395 South K Street
Tulare, CA 93274-6426
County representing: Tulare

San Joaquin Valley Regional Planning
Agency Policy Council
Dan Leavitt
1111 "I" Street, Suite 308
Modesto, CA 95354

City of San Pablo
Kelsey D. Worthy, MPA
13831 San Pablo Avenue, Bldg 3
San Pablo, CA 94806

City of Santa Clarita
Mayor Frank Ferry
23920 Valencia Boulevard
Santa Clarita, CA 91355

Santa Clarita Transit Maintenance
Facility
28250 Constellation Rd
Santa Clarita, CA 91355

Stanislaus Council of Governments
1111 "I" Street, Suite 308
Modesto, CA 95354

Stanislaus County Board of Supervisors
William O'Brien, District 1
1010 10th Street, Suite 6500
Modesto, CA 95354

Stanislaus County Board of Supervisors
Vito Chiesa, District 2
1010 10th Street, Suite 6500
Modesto, CA 95354

Stanislaus County Board of Supervisors
Jim DeMartini, District 5
1010 10th Street, Suite 6500
Modesto, CA 95354

Stanislaus County Plng Commission
Annabel Gammon, Commissioner (Chair)
1010 10th Street, Suite 3400
Modesto, CA 95354

County of Stanislaus
Matt Machado
North County Corridor TAC
1716 Morgan Rd
Modesto, CA 95358

Southern California Association of Governments
818 West 7th Street #1200
Los Angeles 90017

City of Stockton
Mayor Ann Johnston
425 N. El Dorado Street
Stockton, CA 95202

Tri-Delta Transit
801 Wilbur Avenue
Antioch, CA 94509

Tulare County Association of Governments
5955 South Mooney Boulevard
Visalia, CA 93277

Tulare County Board of Supervisors
Allen Ishida, District 1
Administration Building
2800 West Burrel Ave
Visalia, CA 93291

Tulare County Board of Supervisors
Phillip Cox, District 3
Administration Building
2800 West Burrel Ave
Visalia, CA 93291

Tulare County Board of Supervisors
Mike Ennis, District 5
Administration Building
2800 West Burrel Ave
Visalia, CA 93291

Tulare County Planning Commission
Charlie Norman, Commissioner (Chair)
Administration Building
2800 West Burrel Avenue
Visalia, CA 93291

Tulare County RMA
Henry Dong Countywide Planner II
5961 South Mooney Blvd.
Visalia, CA 93277

City of Turlock
Mayor John Lazar
156 S Broadway
Turlock, CA 95380

Union Pacific Railroad
John J. Hovanec, P.E.
AVP Engineering - Design
1400 Douglas Street, Stop 0910
Omaha, NE 68179-0910

Union Pacific Railroad
Jerry Wilmoth
10031 Foothills Blvd.
Roseville, CA 95747

West Contra Costa
Transportation Advisory Committee
Christina M. Atienza, Exec Director
13831 San Pablo Ave
San Pablo, Ca 94806

West Contra Costa
Transportation Advisory Committee
Guaranteed Ride Home Program
Valerie Lipscomb Jenkins, Admin
13831 San Pablo Avenue
San Pablo, CA 94806

Wilson & Company, Inc.
Engineers & Architects
Larry Long
625 East Carnegie Drive, Suite 100
San Bernardino, CA 92408

Yosemite Area Regional
Transportation System
Dick Whittington
880 Thornton Road
Merced, CA 95341

Wasco Chamber of Commerce
675 Oak Avenue
Wasco, CA 93280

requested & mailed 12-3-12
Aaron Fukuda
7450 Mountain View Street
Hanford CA 93230

Original Mailings	**Revised Mailings**
Amtrak Administration Office 525 W Van Buren St. Chicago, IL 60607 (USPS – returned12-5-12)	
Caltrans District 6 Environmental Office 855 “M” Street, Suite 200 Fresno, CA 93721 (forwarded to Caltrans D7)	
Contra Costa Planning Commission Marvin Terrell, Chairman 30 Muir Road Martinez, CA 94553 (returned USPS 12-13-12 & remailed ➜)	Dept of Conservation & Development Attn: Maureen Parkes Contra Costa Planning Commission 30 Muir Road Martinez, CA 94553
Melissa Elefante Dumond, AICP Federal Railroad Administration Office of Passenger & Freight Programs West Building, MS 20, Room W38-207 1200 New Jersey Avenue, SE Washington, DC 20590	Received email from Melissa Dumond Received via USPS, but was destroyed by x-ray Requested another copy sent Remailed 12/5/12 via FedEx
Sacramento County Planning Commission Joe Yee, Commissioner (Chair) 827 7th Street, Room 230 Sacramento, CA 95814 (returned USPS on 11-27 & remailed 11-27-12➜)	County of Sacramento Planning Division Leighann Moffitt, Plng Director 827 7th Street, Room 230 Sacramento, CA 95814
San Joaquin Valley Rail Committee Caltrans Division of Rail Art Lloyd 1120 N Street, MS-74 Sacramento, CA 95814 (returned USPS wrong address 11-27-12; remailed 11-27-12➜)	SJVRC Facilitator Arthur Lloyd 150 Alma Street, Apt. 101 Menlo Park CA 94025-3730
San Joaquin Valley Rail Committee Caltrans Division of Rail Vito Chiesa, Chair 1120 N Street, MS-74 Sacramento, CA 95814 (returned USPS wrong address 11-27-12; received at Stanilaus address)➜	Stanislaus County Board of Supervisors Vito Chiesa, District 2 1010 10th Street, Suite 6500 Modesto, CA 95354

San Joaquin Corridor	Meeting Record	

Meetings

1	SJC Tier 1 NEPA Coordination Meeting. Sacramento		
2	Fresno,		
3	Modesto/Stanislaus COG,		
4	Bakersfield/Kern Cog		
5	Sacramento/SACOG		
6	Merced. City of Gustine		
7	Kings County, Hanford		
8	West Contra Costa Transportation Advisory Committee		
9	Antioch		

Comments/Questions

- San Joaquin Corridor Tier 1 NEPA Coordination Meeting, March 10, 2010

- Meeting Concerns:
  - Exploration of High Speed Track
  - What is the interaction between intercity and high speed trail
  - What can inter cities expect and what do they need to prepare for
  - How will the different train speed effect different areas
  - We are looking at nine trains up to 12 trains in 203 hoc can we accomplish this
  - The effect of grade and speed
  - Who will oversee the projects and make sure the projects are done on a timely basis

- NEPA Tier 1 Study Overview – Tom Dodson
- Questions:

    - Do you share the broad scope of the project with the community?
    - In terms of the document does it help to clarify the broad scope or does that impact the final document?
    - Who will review the document, Union Pacific environmental staff?
    - Connectivity is an very important issue – the feeder service is 65% and is the core of the project.
    - Are the communities defined by the commuter stops or just the faster trains?
    - Will the document include new tracks and alternative stops?
    - How will the communities be notified about the presentations?

- Fresno, April 8, 2011

    No questions on the project

    - Interested in the high speed rail and the location of the stations.

- Modesto / Stanislaus COG, April 20, 2011

    - Concerns and questions:
    - There is no connection form the valley to the bay.
    - Why a station in Sacramento?
    - Is this current proposal the high speed rail
    - Is there adequate rail for this proposal?
    - Turlock would like to have a maintenance facility.
    - How are you going to handle both passenger and freight rail.
    - Are you considering a double track through the Tehachapi's?
    - How are you going to increase you capacity
    - How much right-away do you have and how much is it going to cost for the purchase of new right-away?
    - Why a maintenance facility in Sacramento?
    - We are running 12 now and can go to 16, do you think there will be more demand.
    - How much discussion between high speed rail and this project are you sharing alignment?
    - What is the estimated cost of this project?
    - Going from 79 to 90 are there any safety modifications needed to the rail and crossings.
    - I see that this project is a quicker and cheaper project than the high speed rail project.
    - The capital corridor has many train from Modesto to Sacramento do they buss connections?

- We have 11 thousand people going to Sacramento we need a better train transportation; we need to get people out of their cars from here to Sacramento.
- We would like to entice people to our community; we want people to be able to commute from our community to jobs.
- As the Mayor of River Bank why was the starlight expressed moved?
- Europe has both rail systems and they complement each other, will this project do the same?
- Will there be enough demand for this rail?
- What is going to be the cost of the complete he project including facilities and rail?

- Bakersfield / Kern COG, April 21, 2011

  - Are you coordinating with the high speed rail project
  - What is the time line for this process and the rail project.

- Sacramento/SACOG , April 26, 2011

  - What lines will be authorized to run on these rails.
  - What is your role compared to the commuter rail?
  - How does it compare to ACE or capital rail?
  - Has the two serviced from Sacramento to Merced or Fresno-Merced to Sacramento include a regional rail service (ACE).
  - What is the role of intercity rail with this program?
  - Does the document look at the bus system?
  - Are they considering moving the Elk Grove station?
  - Parking is a problem, are you working with park and ride?
  - A hotel parking lot would be better.
  - If you do not do the Elk Grove Park and ride we would like to look at ACE on the North side.
  - Is the money for high speed rail still available, and is the project still alive?
  - What is your relationship with high speed rail?
  - Are you coordinating with each other?

- Merced (MC C)G, May 19, 2011

  - The community is ecstatic that more commuter rails will be moving early in the morning to Sacramento from Merced.
  - Are we getting our undercrossing soon?
  - We like the idea of alternative being added in the lines and destinations.
  - I suggest that you talk to all of the municipalities throughout the corroder and ask them how many people use the train and how they feel about the upgrades.

- What is the strategy to find money?

- Kings County, Hanford, May 25, 2011

  - When is this going to be implemented?
  - Does this plan take into account the AG and the additional competition for freight?
  - Are you going to be hooked up to the ACE train?
  - I like riding on the Amtrak it took me 10 hours to go from Hanford to San Diego; you have got to improve getting over the grapevine. If I drive it takes me six hours.
  - I have my suspicions about high speed rail so I would like to look at Amtrak and all of the train systems to develop a better system and a faster system.
  - The busses are miserable.
  - You need to develop a better system to get over the Tehachapi's and the Grapevine.
  - With the expansion, when you start thinking of 8 additional tracks there is now 48 trains, what is going to be impact of the additional trains in the Hanford community.
  - If you could solve your problem from Bakersfield to LA, you would double your ridership.
  - We have been providing money for the double track for freight, what are the railroads providing, and how much money are they putting into this program.
  - On your alternative rough and alternative form Fresno to Bakersfield – a cross valley rail, who would be paying for it. Fresno or Visalia.
  - Can you run freight and passenger on the same rail?
  - In the news media the European train systems are making a profit, or are they subsidized by the government. Or are they making a profit?
  - I would like to see what these other countries are doing and what the financial investment is.
  - You mentioned in 2015 and10 round trips what is the expected ridership?
  - Is there going to be an express train form the Bay to Bakersfield?
  - In regards to the proposal are you considering urban sprawl up and down the tracks or will this contribute to condensing the population?

- West Contra Costa Transportation Advisory Committee, June 24, 20011

  - On the double tracks I have noticed some of the trains are very long are you making allowances for the long trains?
  - Who is going to pay for this?

- So, you have two hundred and fifty million dollars, that does not get you very far, what 30 miles?
- Why would someone from Bakersfield high speed rail what to travel here?
- Who is responsible for the new Richmond Station that is empty?
- Is that station going to remain empty?
- I understand that new equipment will be phased in over several years; the old equipment is not handy cap accessible. I encourage that with the new equipment there is room for people in wheel chairs.
- The alignment in the west count, what does that have to do with the Hercules Station?
- The station I Sacramento, a lot of people go to the capital and the convention center, if you are moving the station how difficult will it be for people to go the capital and the convention center?
- What consideration have you taken for the increased population and the impact?
- Are you looking at the population growth throughout?
- What is going to stop at Hercules?
- If it does not stop at Hercules, what are the commuters supposed to do?
- It sounds confusing for a person to take more than one form of transportation. What consideration are making?
- It seems to me for a 25 year project, this program is not feasible. There has to be a way to move people conveniently.
- I just don't think this is a good program. I think it is a waste of public tax payer's money. Why are you trying to move people from here to LA faster than an airplane?
- We need to stay engaged in this process and integrate this information into several other systems such as noise.
- Will this program be cost effective?
- If there is going to be more trains and extra rail, I think Hercules, which is a world class facility should be kept in the presentation as an alternative.

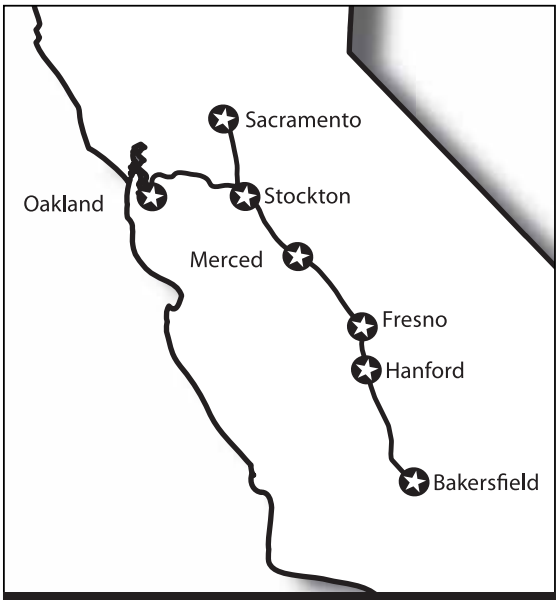
- Antioch, Tri Delta Transit Offices. September 8. 2011

  - The committee was very interested and supportive of the project
  - The committee wants to be kept informed of the progress

PUBLIC NOTICE

Notice of Preparation of a Draft Program Environmental Impact Report and Public Meetings for the San Joaquin Rail Corridor 2035 Vision Project

WHAT: Caltrans, in cooperation with multiple local agencies located within 11 counties, proposes to fund expansion of existing Amtrak rail operations within Burlington Northern Santa Fe Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along the San Joaquin Valley and San Francisco Bay area.



San Joaquin Rail Corridor

WHY: In compliance with the California Environmental Quality Act, the Notice of Preparation will be available for review online at:
www.dot.ca.gov/dist07/resources/envdocs/
A printed copy may be requested from Ms. Dawn Kukla, Caltrans, District 7, Division of Environmental Planning, 100 South Main Street, MS 16-A, Los Angeles, CA 90012 or by e-mailing Betty L. Miller at: betty_l_miller@dot.ca.gov.

Caltrans has oversight of the preparation of the Program Environmental Impact Report (PEIR), and is soliciting input from the public regarding document scope and content.

WHEN: A public meeting will be held Monday, November 19, 2012
6:00 p.m. to 7:00 p.m.

WHERE: Hyatt Regency Sacramento, Tahoe Room
1209 L Street, Sacramento, CA 95814

INFO: For complete details, additional meeting times and locations, please visit: **www.dot.ca.gov/rail** and click on Project Environmental Review.

Public comments must be received in writing no later than December 13, 2012.

Caltrans

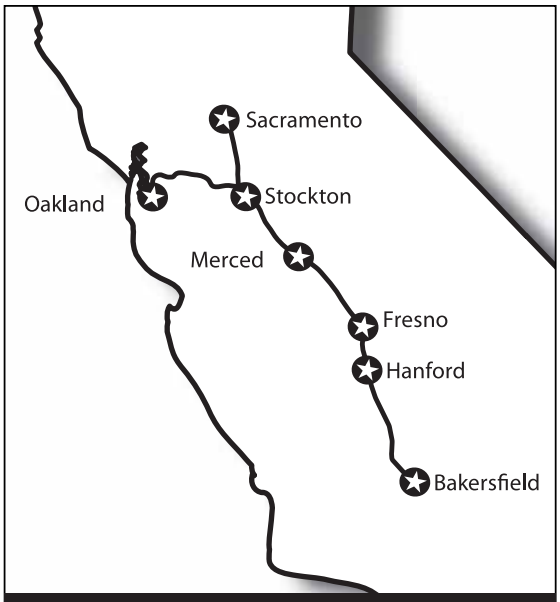
3 COL. (4.889") x 11”

Rev. 11/9/12 11:00 a

PUBLIC NOTICE

Notice of Preparation of a Draft Program Environmental Impact Report and Public Meetings for the San Joaquin Rail Corridor 2035 Vision Project

WHAT: Caltrans, in cooperation with multiple local agencies located within 11 counties, proposes to fund expansion of existing Amtrak rail operations within Burlington Northern Santa Fe Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along the San Joaquin Valley and San Francisco Bay area.



San Joaquin Rail Corridor

WHY: In compliance with the California Environmental Quality Act, the Notice of Preparation will be available for review online at:

www.dot.ca.gov/dist07/resources/envdocs/

A printed copy may be requested from Ms. Dawn Kukla, Caltrans, District 7, Division of Environmental Planning, 100 South Main Street, MS 16-A, Los Angeles, CA 90012 or by e-mailing Betty L. Miller at: betty_l_miller@dot.ca.gov.

Caltrans has oversight of the preparation of the Program Environmental Impact Report (PEIR), and is soliciting input from the public regarding document scope and content.

WHEN: A public meeting will be held Tuesday, November 20, 2012
6:30 p.m. to 7:30 p.m.

WHERE: Arnold Rue Community Center
5758 Lorraine Avenue, Stockton, CA 95210

INFO: For complete details, additional meeting times and locations, please visit: **www.dot.ca.gov/rail** and click on Project Environmental Review.

Public comments must be received in writing no later than December 13, 2012.

Caltrans

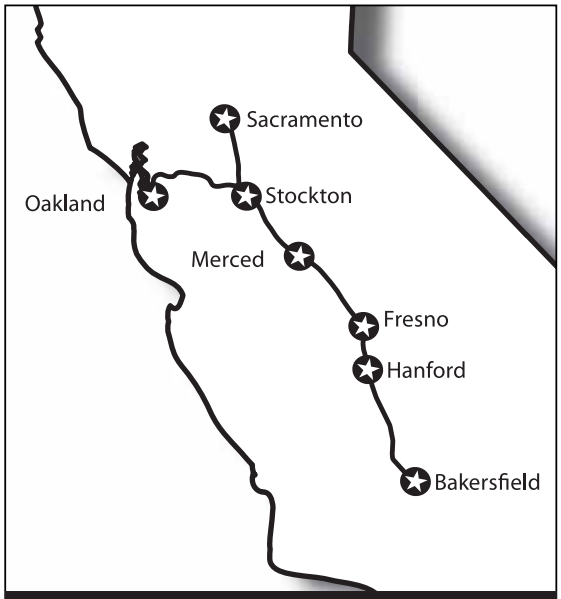
3 COL. (5.75") x 11”

Rev. 11/9/12 11:00 a

PUBLIC NOTICE

Notice of Preparation of a Draft Program Environmental Impact Report and Public Meetings for the San Joaquin Rail Corridor 2035 Vision Project

WHAT: Caltrans, in cooperation with multiple local agencies located within 11 counties, proposes to fund expansion of existing Amtrak rail operations within Burlington Northern Santa Fe Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along the San Joaquin Valley and San Francisco Bay area.



San Joaquin Rail Corridor

WHY: In compliance with the California Environmental Quality Act, the Notice of Preparation will be available for review online at:

www.dot.ca.gov/dist07/resources/envdocs/

A printed copy may be requested from Ms. Dawn Kukla, Caltrans, District 7, Division of Environmental Planning, 100 South Main Street, MS 16-A, Los Angeles, CA 90012 or by e-mailing Betty L. Miller at: betty_l_miller@dot.ca.gov.

Caltrans has oversight of the preparation of the Program Environmental Impact Report (PEIR), and is soliciting input from the public regarding document scope and content.

WHEN: A public meeting will be held Monday, November 26, 2012, 6:00 p.m. to 7:00 p.m.

WHERE: Richmond Convention Center, Bermuda Room
403 Civic Center Drive, Richmond, CA 94804

INFO: For complete details, additional meeting times and locations, please visit: **www.dot.ca.gov/rail** and click on Project Environmental Review.

Public comments must be received in writing no later than December 13, 2012.

Caltrans

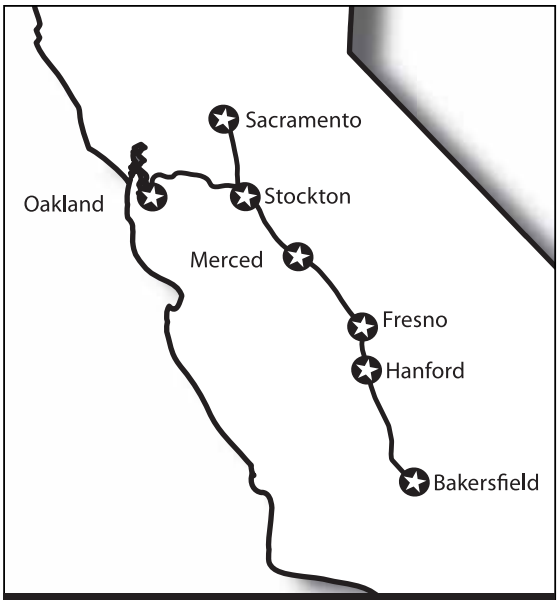
4 COL. (4") x 11.5”

Rev. 11/9/12 10:25 a

PUBLIC NOTICE

Notice of Preparation of a Draft Program Environmental Impact Report and Public Meetings for the San Joaquin Rail Corridor 2035 Vision Project

WHAT: Caltrans, in cooperation with multiple local agencies located within 11 counties, proposes to fund expansion of existing Amtrak rail operations within Burlington Northern Santa Fe Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along the San Joaquin Valley and San Francisco Bay area.



San Joaquin Rail Corridor

WHY: In compliance with the California Environmental Quality Act, the Notice of Preparation will be available for review online at:
www.dot.ca.gov/dist07/resources/envdocs/
A printed copy may be requested from Ms. Dawn Kukla, Caltrans, District 7, Division of Environmental Planning, 100 South Main Street, MS 16-A, Los Angeles, CA 90012 or by e-mailing Betty L. Miller at: betty_l_miller@dot.ca.gov.

Caltrans has oversight of the preparation of the Program Environmental Impact Report (PEIR), and is soliciting input from the public regarding document scope and content.

WHEN: A public meeting will be held Tuesday, November 27, 2012
6:00 p.m. to 7:00 p.m.

WHERE: Fresno County Public Library, Sarah McCardle Room
2420 Mariposa Street, Fresno, CA 93721

INFO: For complete details, additional meeting times and locations, please visit: **www.dot.ca.gov/rail** and click on Project Environmental Review.

Public comments must be received in writing no later than December 13, 2012.

Caltrans

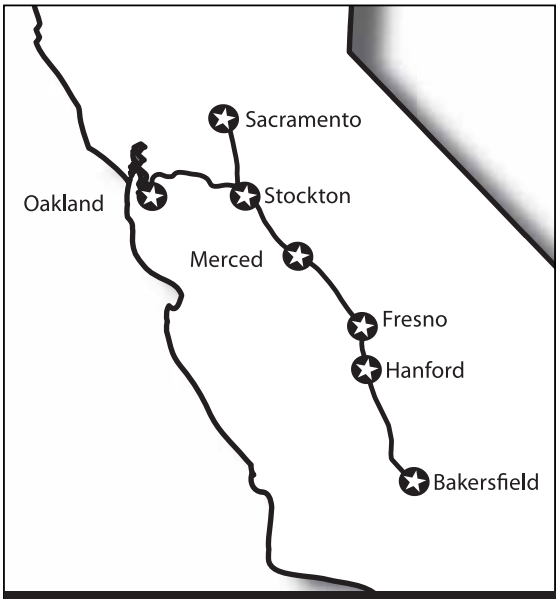
3 COL. (4.8889") x 11”

Rev. 11/9/12 10:25 a

PUBLIC NOTICE

Notice of Preparation of a Draft Program Environmental Impact Report and Public Meetings for the San Joaquin Rail Corridor 2035 Vision Project

WHAT: Caltrans, in cooperation with multiple local agencies located within 11 counties, proposes to fund expansion of existing Amtrak rail operations within Burlington Northern Santa Fe Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along the San Joaquin Valley and San Francisco Bay area.



San Joaquin Rail Corridor

WHY: In compliance with the California Environmental Quality Act, the Notice of Preparation will be available for review online at:

www.dot.ca.gov/dist07/resources/envdocs/

A printed copy may be requested from Ms. Dawn Kukla, Caltrans, District 7, Division of Environmental Planning, 100 South Main Street, MS 16-A, Los Angeles, CA 90012 or by e-mailing Betty L. Miller at: betty_l_miller@dot.ca.gov.

Caltrans has oversight of the preparation of the Program Environmental Impact Report (PEIR), and is soliciting input from the public regarding document scope and content.

WHEN: A public meeting will be held Thursday, November 29, 2012, 6:30 p.m. to 7:30 p.m.

WHERE: Kern Council of Governments, Board Room
1401 19th Street, Suite 300, Bakersfield, CA 93301

INFO: For complete details, additional meeting times and locations, please visit: **www.dot.ca.gov/rail** and click on Project Environmental Review.

Public comments must be received in writing no later than December 13, 2012.

Caltrans

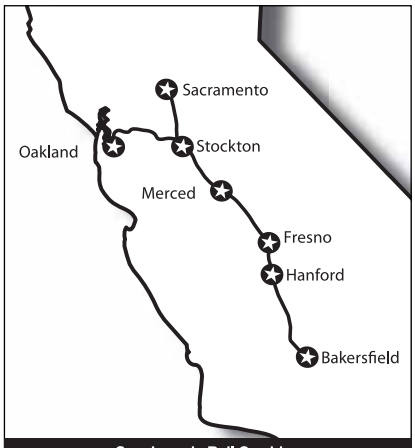
4 COL. (4") x 11.5”

Rev. 11/9/12 10:25 a

PUBLIC NOTICE

Notice of Preparation of a Draft Program Environmental Impact Report and Public Meetings for the San Joaquin Rail Corridor 2035 Vision Project

WHAT: Caltrans, in cooperation with multiple local agencies located within 11 counties, proposes to fund expansion of existing Amtrak rail operations within Burlington Northern Santa Fe Railway Company (BNSF) and Union Pacific Railroad (UPRR) rights-of-way along the San Joaquin Valley and San Francisco Bay area.



San Joaquin Rail Corridor

WHY: In compliance with the California Environmental Quality Act, the Notice of Preparation will be available for review online at: **www.dot.ca.gov/dist07/resources/envdocs/.** A printed copy may be requested from Ms. Dawn Kukla, Caltrans, District 7, Division of Environmental Planning, 100 South Main Street, MS 16-A, Los Angeles, CA 90012 or by e-mailing Betty L. Miller at: betty_l_miller@dot.ca.gov.

Caltrans has oversight of the preparation of the Program Environmental Impact Report (PEIR), and is soliciting input from the public regarding document scope and content.

WHEN: A public meeting will be held Tuesday, December 4, 2012
5:00 p.m. to 6:00 p.m.

WHERE: Caltrans District 7, Division of Environmental Planning
First Floor Conference Room
100 South Main Street, Los Angeles, CA 90012

Note: *Parking is available in the Caltrans parking structure. Meeting attendees will need to check in with building security on the first floor and will be directed to the conference room.*

INFO: For complete details, additional meeting times and locations, please visit: **www.dot.ca.gov/rail** and click on Project Environmental Review.

Public comments must be received in writing no later than December 13, 2012.

Caltrans

4 COL. (4.55") x 9.75"

Rev. 11/14/12 9:02 a

SAN JOAQUIN CORRIDOR PROGRAM ENVIRONMENTAL IMPACT REPORT

Oakland and Sacramento to Bakersfield and then Los Angeles Union Station

VOLUME 2
(DRAFT PEIR – TECHNICAL APPENDICES)

California Department of Transportation

2014

Caltrans

SCH #2012111039

Improve Rail Infrastructure throughout the San Joaquin Rail Corridor from Bakersfield to Sacramento and Oakland over a 20-Year Period

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

Submitted Pursuant to: (State) Division 13, Public Resources Code

State of California
Department of Transportation

April 14, 2014
Date

Ronald Kosinski
Deputy District Director
Division of Environmental Planning, District 7
California Department of Transportation

The following person may be contacted for additional information concerning this document:

Dawn Kukla
Senior Environmental Planner, Division of Environmental Planning
California Department of Transportation
100 S. Main Street
Los Angeles, CA 90012
dawn.kukla@dot.ca.gov

Table of Contents

Volume 1 – PROGRAM ENVIRONMENTAL IMPACT REPORT *(under separate cover)*

Volume 2 – PEIR TECHNICAL APPENDICES

Appendix 1	Emission Requirements
Appendix 2	Air Quality and GHG Impact Analyses
Appendix 3	Program Natural Environmental Study
Appendix 4	Critical Habitat Maps
Appendix 5a	Preliminary Historical/Archaeological Resources Study for the San Joaquin Corridor Amtrak California Service Programmatic Environmental Impact Report
Appendix 5b	Historic Property Survey Report for the Proposed Railway Station in the City of Elk Grove Sacramento County, California
Appendix 5c	Letter Report Re: Identification of Historic Properties for the Proposed Railway Station in the City of Hercules in Contra Costa County, California
Appendix 5d	Historic Property Survey Report for the San Joaquin Corridor Amtrak California Service Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno in San Joaquin, Merced, and Fresno Counties, California
Appendix 5e	Letter Report Re: Paleontological Sensitivity Assessment for the San Joaquin Corridor Amtrak California Service Programmatic EIR in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California
Appendix 6	FEMA FIRM Panels
Appendix 7	Noise and Vibration Impact Analyses
Appendix 8	At-Grade Crossings

Table of Contents

Tab

APPENDIX 1 – Emission Requirements 1

APPENDIX 2 – Air Quality and GHG Impact Analysis 2

APPENDIX 3 – Program Natural Environmental Study 3

APPENDIX 4 – Critical Habitat Maps 4

APPENDIX 5 – Cultural Resources 5

» 5a: Prelim. Historical/Archaeological Resources Study (San Joaquin Corridor Amtrak California)

» 5b: Historic Property Survey Report (City of Elk Grove)

» 5c: Letter Report: Identification of Historic Properties (City of Hercules)

» 5d: Historic Property Survey Report (San Joaquin Corridor Amtrak California)

» 5e: Paleontological Sensitivity Assessment (San Joaquin Corridor Amtrak California)

APPENDIX 6 – FEMA FIRM Panels 6

APPENDIX 7 – Noise and Vibration Impact Analysis 7

APPENDIX 8 – At-Grade Crossings 8

APPENDIX 1

Emission Requirements

EPA United States Environmental Protection Agency

Emission Standards Reference Guide

Locomotives -- Exhaust Emission Standards

	Duty-Cycle[b]	Tier	Year[c]	HC[i] (g/hp-hr)	NOx (g/bhp-hr)	PM (g/bhp-hr)	CO (g/bhp-hr)	Smoke (percentage) [m]	Minimum Useful Life (hours / years / miles)[n]	Warranty Period (hours / years / miles)[n]
Federal[a]	Line-haul	Tier 0	1973-1992[d,e]	1.00	9.5 [ABT]	0.22 [ABT]	5.0	30 / 40 / 50	(7.5 x hp) / 10 / 750,000[o]	1/3 * Useful Life
		Tier 1	1993-2004[d,e]	0.55	7.4 [ABT]	0.22 [ABT]	2.2	25 / 40 / 50	(7.5 x hp) / 10 / 750,000[o]	
									(7.5 x hp) / 10 / -	
		Tier 2	2005-2011[d]	0.30	5.5 [ABT]	0.10[k] [ABT]	1.5	20 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 3	2012-2014[f]	0.30	5.5 [ABT]	0.10 [ABT]	1.5	20 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 4	2015+[g]	0.14	1.3 [ABT]	0.03 [ABT]	1.5	-	(7.5 x hp) / 10 / -	
	Switch	Tier 0	1973-2001	2.10	11.8 [ABT]	0.26 [ABT]	8.0	30 / 40 / 50	(7.5 x hp) / 10 / 750,000[o]	
		Tier 1	2002-2004[h]	1.20	11.0 [ABT]	0.26 [ABT]	2.5	25 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 2	2005-2010[h]	0.60	8.1 [ABT]	0.13[l] [ABT]	2.4	20 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 3	2011-2014	0.60	5.0 [ABT]	0.10 [ABT]	2.4	20 / 40 / 50	(7.5 x hp) / 10 / -	
		Tier 4	2015+	0.14[j]	1.3[j][ABT]	0.03 [ABT]	2.4	-	(7.5 x hp) / 10 / -	

Notes:

a These standards apply to locomotives that are propelled by engines with total rated horsepower (hp) of 750 kilowatts (kW) (1006 hp) or more, unless the owner chooses to have the equipment certified to meet the requirements of locomotives. This does not include vehicles propelled by engines with total rated horsepower of less than 750 kW (1006 hp); see the requirements in 40 Code of Federal Regulations (CFR) Parts 86, 89 and 1039. The test procedures specify chassis-based testing of locomotives. These test procedures include certification testing, production line testing, and in-use testing using the Federal Test Procedure (FTP) when the locomotive has reached between 50-70 percent of its useful life.

b Line-haul locomotives are powered by an engine with a maximum rated power (or a combination of engines having a total rated power) greater than 2300 hp. Switch locomotives are powered by an engine with a maximum rated power (or a combination of engines having a total rated power) of 2300 hp or less.

c The Tier 0 standards apply to locomotives manufactured after 1972 when they are manufactured or remanufactured. Note that interim standards may apply for Tier 0 or Tier 1 locomotives remanufactured in 2008 or 2009, or for Tier 2 locomotives manufactured or remanufactured in 2008-2012.

d Line-haul locomotives subject to the Tier 0 through Tier 2 emission standards must also meet switch standards of the same tier.

e The Tier 0 standards apply for 1993-2001 locomotives not originally manufactured with a separate loop intake air cooling system

f Tier 3 line-haul locomotives must also meet Tier 2 switch standards.

g Manufacturers using credits may elect to meet a combined nitrogen oxides (NOx) plus hydrocarbon (HC) standard of 1.4 grams per brakehorsepower-hour (g/bhp-hr) instead of the otherwise applicable Tier 4 NOx and HC standards.

h Tier 1 and Tier 2 switch locomotives must also meet line-haul standards of the same tier.

i The numerical emission standards for HC must be met based on the following types of hydrocarbon emissions for locomotives powered by the following fuels: (1) alcohol: total hydrocarbon equivalent (THCE) emissions for Tier 3 and earlier locomotives, and non-methane hydrocarbon equivalent (NMHCE) for Tier 4; (2) natural gas and liquefied petroleum gas: non-methane hydrocarbon (NMHC) emissions; and (3) diesel: total hydrocarbon (THC) emissions for Tier 3 and earlier locomotives, and NMHC for Tier 4.

j Manufacturers may elect to meet a combined NOx+HC standard of 1.4 g/bhp-hr instead of the otherwise applicable Tier 4 NOx and HC standards.

k The line-haul particulate matter (PM) standard for newly remanufactured Tier 2 locomotives is 0.20 g/bhp-hr until January 1, 2013, except as specified in 40 CFR Part 1033.150(a).

l The switch PM standard for new Tier 2 locomotives is 0.24 g/bhp-hr until January 1, 2013, except as specified in 40 CFR Part 1033.150(a).

m The smoke opacity standards apply only for locomotives certified to one or more PM standards or Family Emission Limits (FEL) greater than 0.05 g/bhp-hr. Percentages apply to smoke opacity at steady state/30-second peak/3-second peak, as measured continuously during testing.

n Useful life and warranty period are expressed in megawatt-hours (mw-hr), years, or miles, whichever comes first. Manufacturers are required to certify to longer useful lives if their locomotives are designed to last longer between overhauls than the minimum useful life value.

o For locomotives originally manufactured before January 1, 2000, and not equipped with mw-hr meters.

Code of Federal Regulations (CFR) Citations:

- 40 CFR 1033.101 = Emission Standards and Useful Life
- 40 CFR 1033.120 = Warranty Requirements

Last updated on Wednesday, November 14, 2012

http://www.epa.gov/otaq/standards/nonroad/locomotives.htm

APPENDIX 2

Air Quality and GHG Impact Analyses

AIR QUALITY and GHG IMPACT ANALYSES

SAN JOAQUIN CORRIDOR PROJECT

CENTRAL VALLEY AND BAY AREA, CALIFORNIA

Prepared by:

Giroux & Associates
1820 E Garry St., #211
Santa Ana, CA 92705

Prepared for:

Tom Dodson & Associates
Attn: Tom Dodson
2150 N. Arrowhead Avenue
San Bernardino, California 92405

Date:

April 4, 2014

Project No.: P11-038 AQ

Table of Contents

EXECUTIVE SUMMARY 3
PROJECT DESCRIPTION 5
METEOROLOGY/CLIMATE 7
Air Quality 8
California Air Basins 8
Ambient Air Quality Standards (AAQS) 8
Baseline Air Quality 14
AIR QUALITY PLANNING 17
Impact Analysis 18
Construction Activity Impacts 18
San Joaquin Valley Unified APCD 19
Bay Area AQMD 19
Sacramento Metropolitan AQMD 20
Mojave Desert AQMD 20
South Coast AQMD 21
Passenger Transportation Energy Efficiency and Emissions 21
Construction Activity Impacts 23
Microscale CO Analysis 24
Particulate Matter Hot Spot Analysis 25
Mobile Source Air Toxics (MSAT) 25
Naturally Occuring Asbestos (NOA) 26
Train Depot Operations 27
Lay Over Facilities 29
Mitigation 32
Greenhouse Gases/Global Climate Change 33
Lead Agency Climate Change Policy 33
Introduction/Background 33
Regulatory Framework 37
GHG Impact Thresholds 40
Operational GHG Impacts 41
Construction Activity GHG Impacts 43

EXECUTIVE SUMMARY

The proposed San Joaquin Corridor project is designed to accommodate an increased ridership from currently around 1.07 million to 3.04 million passengers per year by 2035. Anticipated side benefits include improved track safety and increased passenger travel speeds. The number of daily passenger trains to meet the forecast demand would need to increase from 6 in each direction between Stockton and Bakersfield to 11 per day (22 per day total). With a new Stockton to Sacramento connection, some of the new trains in/out of Stockton will be split between the Sacramento and Bay Area.

The San Joaquin Corridor and its route alternatives traverse a variety of climate zones and air quality jurisdictions. A description of the atmospheric environment must acknowledge this variability. However, almost every jurisdiction along the corridor fails to meet clean air standards for ozone and for particulate matter. There is some variation in the severity of the violations, but these air pollutants are an on-going issue in much of California.

Moving people out of cars and into high occupancy transportation is seen as air quality positive. However, the energy expenditure per passenger mile for a 2-occupant auto, 20 passenger bus, 100 passenger airplane or 100 passenger Amtrak (the typical current train passenger load of corridor trains) tend to vary only by a small amount. The major emission difference is that diesel fueled transportation generates around 30 times as much NOx or PM-2.5 (soot) per mile than gasoline engines. Until low-NOx and low-PM-2.5 Tier 4 locomotives achieve greater market penetration within the next decade, there is no operational air quality benefit for most criteria pollutants. Future average passenger loads per train are expected to increase substantially from 100 passengers per train to 155 per train mile. That increase in transportation efficiency will not, however, overcome the dramatic NOx and PM-2.5 emissions "penalty" for diesel combustion. Any potentially substantial air quality impact differences from project implementation would derive almost exclusively from construction activities. Because use of Tier 4-rated locomotives can enhance operational air quality benefits of passenger rail compared to existing emissions per travel mile, a measure to require use of Tier 4 equipment in all new engine purchases and all major overhauls is recommended.

Project implementation would require construction of two new stations (Hercules and Elk Grove), possible relocation of an existing station (Stockton), and development of a lay-over facility in Fresno or Merced. A very detailed impact analysis of the Hercules Intermodal Transit Center (ITC) facility (Hercules EIR 2011) suggests that train stations are not a sufficient air emissions generator as to create a possible air pollution "hot spot." That same conclusion had been reached in train depot impact analysis for High Speed Rail facilities that would entail major rail-support improvements (parking structures, loading docks, etc.). Air quality impacts from rail support facilities would not be substantial.

As with criteria air pollutants, a shift from automobiles to trains would affect the carbon footprint of inter-city passenger transportation. However, as with the criteria air pollutants, there is not a major difference in greenhouse gas (GHG) emissions between a 100-passenger train and a 2-occupant automobile in terms of per passenger mile. Trains have a GHG advantage over the single occupant commuter, but not necessarily the multi-occupant automobile. Operationally, the

GHG impact comparison between the with-and no-project alternatives is negligible for existing Amtrak load factors. However, hauling one or two additional cars to accommodate increased load factors consumes only a limited fraction of added fuel. At an assumed future load factor of 155 passengers per train mile, train travel may enjoy a very nominal GHG emissions advantage. Project implementation will occur in conjunction with an anticipated increase in train occupancy rates (passengers per mile). Because of the baseline weight of locomotives and rail cars, passenger occupancy has no measurable effect on energy consumption. The increase in a forecast 185 percent increase in passenger boarding's will be accommodated by an 83 percent increase in train traffic. The remainder of passenger growth will result from more passengers per mile with essentially zero GHG emissions growth from that travel segment.

Quantifiable impact differences among alternate modes of passenger transportation derive mainly from the construction activities needed to implement the alternatives. Double tracking of much of the San Joaquin Corridor would be necessary to accommodate an increase of 2+ million passengers in the next two decades. Some increase in roadway capacity might be necessary to move the same number of travelers, but train passengers are all restricted to one link while roadway travel has multiple options. Emissions calculations for double track and facility construction suggest that peak activities could cause substantial air pollution increases along the corridor alignment, particularly from NOx emissions from diesel-fueled equipment. These findings are based upon emission factors for the current construction equipment fleet. With emissions control programs in place, a greater level of activities can be accommodated for future construction scenarios before emissions increases would be considered substantial. State and federal programs require an on-going phase-in of Tier 3 and then Tier 4 off-road equipment. A measure that requires use of cleaner equipment in early construction phases, or to document that NOx control programs are equally effective, has been adopted.

Diesel-fueled transportation causes toxic air contaminants (TAC) to be released from diesel particulate matter. Under CEQA, health risks from TAC exposure with project implementation must be evaluated. However, DPM emission rates from locomotives and other diesel-fueled transportation sources are predicted to decrease much faster than any growth in the number of such sources. EPA's Tier 4 standard from DPM emissions from locomotives requires a twelve-fold reduction in DPM emissions from the current locomotive fleet. All San Joaquin Corridor locomotives are expected to be Tier-4 rated by 2035. Future DPM impacts near tracks or other rail support facilities will be less than for existing conditions even with substantial planned growth.

NEPA guidelines require that transportation projects must demonstrate conformity with applicable air quality plans and programs. A formal conformity demonstration is not required under CEQA. However, it can be noted that the increase to 5 trains each way by 2035 and in feeder-bus systems as part of the thru-way bus system can be shown to not meet the "project of air quality concern" (POAQC) under federal guidelines.

PROJECT DESCRIPTION

The San Joaquin Corridor Program includes 314.7 miles of track from Bakersfield to Oakland and a 43.6 mile track segment from Stockton to Sacramento. Some of the proposed project alternatives include train segments between Fresno to Porterville. Bakersfield to Los Angeles via Lancaster, and Port Chicago to Richmond via BNSF tracks versus on UPRR lines. Figure 1 shows the San Joaquin Intercity Route map. Approximately 250 miles of the Corridor are currently single-tracked.

Two passenger train travel speed goals are under consideration. In the near term (5-10 years), travel speed goals of 79 mph and 90 mph have been evaluated in terms of physical improvements needed to support such service. For the long term planning horizon (beyond 2035), the San Joaquin corridor is envisioned as carrying a tripling of existing annual ridership with a corresponding increase from 12 to 22 passenger trains per day. The travel speed goal is to accommodate 90 mph trains where feasible.

Much of the increased system design efficiency would derive from a substantial increase in the number of double-tracked segments with some additional siding and spur tracks to reduce passenger/freight track competition. Bridges will need to be widened on the existing BNSF right-of-way and up to 28 new bridges would be required along the new UPRR tracks from Stockton to Sacramento. Similarly, an estimated 1,000 existing drainage culverts would need to be extended to accommodate a second track berm and almost 250 new culverts must be constructed on the new Stockton to Sacramento segment. Many at-grade crossings would need to be improved if two tracks are crossed instead of one. Because each grade separated crossing costs $25 million or more, all crossings are expected to remain at-grade.

In addition to track improvements, the proposed project includes several physical facilities. These include a station modernization or relocation in Stockton, an intermodal transit center in Hercules, an Amtrak California Station in Elk Grove, and a layover facility in either Fresno or Merced to allow early-morning passengers to reach the Bay Area or Bakersfield at the start of the work day.

In order to accommodate the various program objectives, the amount of rolling stock must be increased. Additionally, state-owned commuter rail systems will be at the end of their useful lives by 2035. Acquisition of such equipment will not have any direct environmental effects, but represents a further commitment of project resources.

Figure 1

Source: J.L. Patterson & Associates, Inc. / Amtrak California

METEOROLOGY/CLIMATE

Because of wide geographic and topographic diversity along the program alignment, the baseline atmospheric environment is dramatically variable. Climatic conditions are heavily driven by the distance separation from the Pacific Ocean in the west to the Mojave Desert in the east with intervening mountains and valleys further creating micro-climates. California is divided into 16 climate zones. The San Joaquin Corridor Program, including project alternatives, passes through five zones, including:

Zone No.	Generic Descriptor	Reference City
3	Bay Area	Oakland
9	South Coast Inland	San Clarita
12	Northern San Joaquin	Stockton and Sacramento
13	Southern San Joaquin	Fresno and Bakersfield
14	High Desert	Lancaster

Temperature differences in various climate zones are dramatic near the coast and then taper off quickly in moving west to east. The coastline is typically warmer than inland areas in winter and much cooler than interior valleys in summer. The onshore/offshore airflow from cool to warm dominates the smaller nocturnal temperature gradient from a cooler north to a warmer south.

Rainfall would normally be expected to have a north to south decrease in response to the weakening of mid-latitude storms as they move from northwest to southeast. That natural pattern is similarly partly obscured by north-south mountain ranges that create damp winter coastal areas and corresponding interior rain shadow effects.

Much of the proposed project, except for a short excursion into the Bay Area, is located in inland valleys with hot summers, cool winters and rain shadow conditions. The blocking action of the Coast Range disrupts the strong summer onshore and weak winter offshore airflow patterns. Although there is often a strong onshore flow through the Carquinez Strait, the strength of the flow diminishes as it fans out in the central valley. Local airflow patterns tend therefore to be more dominated by mountain/valley winds rather than ocean/desert interaction. The lack of a sustained prevailing wind pattern also leads to poor dispersion conditions. Summers are periods when photochemical smog created by abundant sunlight is not rapidly dispersed. In winter, poor ventilation leads to prolonged periods of “tule fog” and elevated localized particulate or odor levels associated with agriculturally dominated activities in the Central Valley.

The limited horizontal circulation potential is exacerbated by vertical temperature structures that restrict the vertical depth through which contaminants can be mixed. When temperatures increase with height (inversions), vertical mixing is suppressed. In summer, sinking air within the off shore high pressure cell creates regional subsidence inversions. They form an elevated lid above most California interior valleys. They are a major reason why parts of the Central Valley have warm season air quality that is almost as degraded as that in the Los Angeles Basin. During the winter, air near the ground cools rapidly while the air aloft remains warmer. The radiation inversions thus created contribute to micro-scale air stagnation. They often burn off after sunrise, but can persist for days if thick fog inhibits inversion burn off.

AIR QUALITY

CALIFORNIA AIR BASINS

The same diversity in climate created by physical features in the state combines to create a similar pattern of semi-homogeneous air quality. California is divided into 15 air basins. The project alignment and its alternatives pass through 5 of these basins. Although air quality is also affected by patterns of populations and industrial development, the role of meteorology and climate is so strong such that the distribution of air basins and climate zones is very similar.

The San Joaquin corridor traverses the San Joaquin Valley, Bay Area and Sacramento Valley Air Basins. Implementation of the alternative to connect the system from Bakersfield to the Los Angeles Basin would pass through the Mojave Desert and South Coast Air Basins. The characterization of existing basin wide air quality is expressed in terms of applicable ambient air quality standards. Future air quality will derive from mandatory implementation plans for pollutants that are not in attainment with standards, or maintenance plans for any attainment pollutants.

AMBIENT AIR QUALITY STANDARDS (AAQS)

In order to gauge the significance of the air quality impacts of the proposed San Joaquin Corridor Program, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 1. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where

appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide (NO_2) that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA’s 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted. In December, 2012, the federal annual standard for PM-2.5 was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of some basin’s non-attainment status for PM-2.5 may be increased by this action and thus require accelerated planning for future PM-2.5 attainment.

Table 1

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM10)[8]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)[8]	24 Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
Nitrogen Dioxide (NO_2)[9]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[10]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[10]	—	
Lead[11,12]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m³		
Visibility Reducing Particles[13]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page …

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (6/4/13)

Table 1 (continued)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

9. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

10. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

11. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

12. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

13. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (6/4/13)**

Table 2
Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA had proposed a further strengthening of the 8-hour standard. Draft standards were published. The anticipated future 8-hour standard was 0.065 ppm. Environmental organizations generally praised this proposal. Most manufacturing, transportation or power generation groups opposed the new standard as economically unwise in an uncertain fiscal climate. In recognition of the fact that a stronger ozone standard could adversely impact employment, that proposal has been placed on indefinite hold.

A new federal one-hour standard for nitrogen dioxide (NO_2) has also recently been adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in various California air basins, the California Air Resources Board has requested the EPA to designate all California air basins as being in attainment for this standard. The federal standard for sulfur dioxide (SO_2) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, SO_2 is typically not a problem pollutant throughout the state.

BASELINE AIR QUALITY

Attainment designations are made annually by the California Air Resources Board (CARB) for state standards. The U.S. Environmental Protection Agency (EPA) performs the same service for federal standards. The applicable time span for making that determination is the last three years of complete monitoring data. The 2013 designations thus represent data from 2010 through 2012. There is a slight difference in state versus federal non-attainment definitions. Any single violation of state standards in the last three years is considered non-attainment. The federal definition is no more than three violations in the last three years (average of no more than one per year). The definition also makes a provision to exclude days with highly unusual events such as wildfires because they are not representative of "ambient" air quality. If there are insufficient monitoring data to conclusively support a finding, the basin may be designated as being "Unclassified".

For some pollutants such as ozone or PM-10, a qualifier may be added to indicate the degree of severity of the non-attainment with respect to the applicable AAQS. Table 3 summarizes the baseline air quality along the proposed project alignment and its route alternatives. With some variation in non-attainment severity, the entire alignment experiences violations of standards for ozone, PM-2.5 and PM-10, and meets standards for CO and NO_2 (except SCAB).

Unless there is significant pollution transport from one air basin into another (such as from the SCAB into MDAB), air quality trends can be inferred from basin wide patterns of emissions. Future air quality within the air basins along the project alignment will follow the daily emissions burden within each basin. Table 4 is the predicted daily burden of ROG and NOx (ozone precursors), CO and particulate matter based upon growth forecasts, anticipated vehicular improvements and the phase-in of pollution control programs.

Throughout much of the state, NOx emissions are expected to decline, but ROG emissions trends will see slower reductions. Slow improvement in ozone concentrations (created by ROG and NOx and sunlight) is expected, but "slow" is the operative word. CO emissions are forecast to continue to substantially decline such that continued attainment of standards is expected. Because particulate emission trends are forecast to be very flat, ultimate attainment of particulate standards may actually be harder than for ozone.

Table 3
Air Quality Standards Attainment Status

Pollutant	Air Basin	State Standards	Federal Standards
Ozone	SJVAB	Severe Non-Attainment	Extreme Non-Attainment
	BAAB	Serious Non-Attainment	Marginal Non-Attainment
	SVAB	Serious Non-Attainment	Severe Non-Attainment
	MDAB	Moderate Non-Attainment	Severe Non-Attainment
	SCAB	Extreme Non-Attainment	Extreme Non-Attainment
PM-2.5	SJVAB	Non-Attainment	Non-Attainment
	BAAB	Non-Attainment	Non-Attainment
	SVAB	Non-Attainment	Non-Attainment
	MDAB	Unclassified	Unclassified
	SCAB	Non-Attainment	Non-Attainment
PM-10	SJVAB	Non-Attainment	Attainment
	BAAB	Non-Attainment	Unclassified
	SVAB	Non-Attainment	Moderate Non-Attainment
	MDAB	Non-Attainment	Serious Non-Attainment
	SCAB	Non-Attainment	Attainment/Maintenance
Carbon Monoxide	SJVAB	Attainment/Unclassified	Attainment/Maintenance
	BAAB	Attainment/Unclassified	Attainment/Maintenance
	SVAB	Attainment/Unclassified	Attainment/Maintenance
	MDAB	Attainment/Unclassified	Attainment/Unclassified
	SCAB	Attainment/Unclassified	Attainment/Maintenance
Nitrogen Dioxide	SCAB	Attainment	Attainment/Unclassified
	SJVAB	Attainment	Attainment/Unclassified
	BAAB	Attainment	Attainment/Unclassified
	SVAB	Attainment	Attainment/Unclassified
	MDAB	Attainment	Attainment/Unclassified
	SCAB	Non-Attainment	Attainment/Unclassified

SJVAB San Joaquin Valley Air Basin
BAAB Bay Area Air Basin
SVAB Sacramento Valley Air Basin (Sacramento Metro Area)
MDAB Mojave Desert Air Basin
SCAB South Coast Air Basin

Table 4
Program Alignment Emissions Forecasts (tons/day) [a]

Pollutant/Basin	2008	2010	2015	2020
SJVAB				
NOx	566	524	398	316
ROG	369	361	346	345
CO	1352	1272	1086	988
PM-10	300	302	303	310
PM-2.5	105	104	101	102
BAAB				
NOx	448	414	335	284
ROG	377	359	331	318
CO	1748	1596	1340	1206
PM-10	212	216	225	236
PM-2.5	81	82	83	85
SVAB				
NOx	270	249	198	161
ROG	192	184	172	166
CO	1105	1041	917	845
PM-10	230	232	238	242
PM-2.5	75	75	75	76
MDAB				
NOx	272	250	223	204
ROG	92	91	90	93
CO	432	400	357	337
PM-10	200	203	211	219
PM-2.5	54	54	57	59
SCAB				
NOx	917	836	667	561
ROG	632	596	545	525
CO	3344	3039	2556	2281
PM-10	308	314	328	340
PM-2.5	110	110	111	113

[a] with current emission reductions programs and adopted growth forecasts

Source: California Air Resources Board, California Emissions Projection Analysis Model, 2009

AIR QUALITY PLANNING

For those pollutants shown as "non-attainment" in Table 3 (except for marginal), the CAAA (amended in 1990) require that an air quality management plan be developed, adopted and approved by specified agencies. Attainment plans for federal standards are typically locally adopted by air quality agencies, reviewed by, and sent to the EPA for final approval. The entire combined package of plans becomes the State Implementation Plan (SIP) after EPA approval. Federal law prohibits the participation by any federal agency in any project, plan or program that does not conform to the SIP. Participation most typically entails funding or permitting a proposed action.

Because of a wide diversity of the attainment status of various air basins covering the project alignment and its route alternatives, there is a quilt-work pattern of federal attainment plans. That pattern is further complicated by periodic revisions to AAQS and to attainment designations that require corresponding plan revisions. When attainment is demonstrated for areas that were formerly classified as non-attainment for federal standards, the attainment plan converts to a maintenance plan to prevent future backsliding.

Transportation projects typically must demonstrate conformity with the SIP on two scales of motion. Regional conformity must be confirmed by documenting that the proposed action has been incorporated into the appropriate component of the regional transportation plan (RTP). The inclusion of the proposed project into the adopted transportation project budgets must also be verified. Locally, the proposed project must not create air pollution "hot spots" in the project vicinity.

Conformity determination on a project level is generally required for projects receiving FHWA/FTA funding. The project must be consistent with the regional conformity determination. Potential localized emissions impacts on health-based pollutant standards must be addressed. The local impact analysis generally entails a CO hot spot analysis and a PM-10/PM-2.5 analysis for projects of air quality concern. Because there is currently no FHWA/FTA involvement in the proposed project, this process would only be triggered if there is a future NEPA document preparation requirement

In 1988 California adopted a California Clean Air Act (CCAA) as a companion to federal air quality attainment planning. The CCAA differs from federal requirements only insofar as requiring a demonstration of continued progress towards attainment without any fixed deadlines. The CCAA requires a three-year update of local clean air plans (CAP). Adoption of CAPs was initially a separate planning process. In most jurisdictions, the state CAP and the federal SIP have often been rolled into a single plan since they address very similar issues. As with the federal plans, the intensity of the CAP process varies somewhat within various project jurisdictions as a function of the severity of existing air quality problems.

IMPACT ANALYSIS

Project operations would replace on-road mobile source emissions with presumably more efficient train travel. However, a comparison of transportation fuel efficiency shows that trains, buses or multi-occupant personal vehicles have little substantial benefit (Wikipedia, Energy efficiency in transportation). The energy expenditures for a 2-person automobile, a 20-passenger Amtrak thru-way bus or a 100-passenger San Joaquin Corridor train are as follows:

Car:	120,000 BTU/gal(gas)÷25 mph÷2 passengers = 2,400 BTU/passenger mile
Bus:	140,000 BTU/gal(diesel)÷6 mph÷20 passengers = 1,167 BTU/passenger mile
Pass. Train:	2,435 BTU/pass-mile Amtrak annual report

Regional effects are thus air quality neutral except that diesel and gasoline-powered exhausts have different characteristics/composition. Potential air quality impacts would derive from temporary construction activities. Localized impacts at any new passenger stations such as site access or parking facilities as well as added delays for at-grade crossings may also result from increased train traffic.

A reduction in idling train emissions may also result when multiple track availability precludes the need to shuttle trains on/off sidings to allow for priority train passage. Microscale effects tend to be very localized. Construction activity impacts are also localized, but become potentially cumulatively significant within any single air basin when summed over a variety of simultaneous improvements.

CONSTRUCTION ACTIVITY IMPACTS

Construction activity impacts are treated differently in each air quality jurisdiction along the proposed project and its route alternatives. Until recently, many air quality jurisdictions had concluded that use of best management practices (BMPs) for fugitive dust control were considered to be adequate to conclude that no air quality impact would occur. Current BAAB and SJVAB CEQA guidelines conclude that use of BMP's will be adequate to prevent any fugitive dust impacts. SVAB guidelines agree that smaller construction projects that use BMPs will not have a fugitive dust air quality impact.

Similarly, quantification of equipment exhaust emissions and any comparison to impact guidelines was only historically required on a limited basis. With the realization that off-road equipment exhaust represents a non-negligible component of a jurisdictions emissions burden, more recent CEQA guidelines have been modified to address these emissions impacts more explicitly. The motivation for these requirements has been strengthened by adoption of risk assessment guidelines that acknowledge the impact of diesel exhaust in human health risk. Many updated CEQA analysis guidelines thus require evaluation of equipment exhaust emissions as precursors to ozone formation (ROG and NOx) as well as diesel particulate matter (DPM) impacts to excess human cancer risk. A strong focus on effective impact mitigation from construction activities remains as a substantial part of CEQA guidelines in various air districts. Use of BMPs alone, however, may not insure that construction impacts have been adequately

mitigated. A summary of CEQA impact thresholds for construction for various air districts is provided below.

San Joaquin Valley Unified APCD

Construction projects are considered to have an air quality impact if they cause the following annual emissions to be exceeded (tons/year):

CO	-	100
NOx	-	10
ROG	-	10
SOx	-	27
PM-10	-	15
PM-2.5	-	15

Projects must comply with District Regulation VIII related to dust control. Additionally, if annual emissions of ROG or NOx exceed 2.0 tons per year, then District Rule 9510 is triggered that requires use of cleaner equipment than the statewide average, or the payment of mitigation fees.

Bay Area AQMD

CEQA impact thresholds were revised/updated in 2010. After some legal maneuvers that suspended their implementation, further legal arguments reinstated them. In contrast to previous guidelines that supported a finding of no substantial impact using BMPs without requiring emissions quantifications daily equipment exhaust must now be compared to relatively stringent standards for equipment exhaust emissions.

In addition to exhaust emissions analysis, the current Bay Area AQMD CEQA guidelines require an analysis of individual and cumulative health risks associated with release of toxic air contaminants, especially DPM. The current BAAB CEQA impact thresholds are as follows:

Exhaust Emissions

ROG	-	54 lb/day
NOx	-	54 lb/day
PM-10	-	82 lb/day
PM-2.5	-	82 lb/day

Fugitive Dust	Use BMPs
Risks & Hazards (Individual)	Excess cancer risk < 10 in a million, and Chronic or acute hazard index <1.0, and Ambient PM2.5 increase <0.3 µg/m3 Zone of Influence = 1,000 feet
Risks & Hazards (Cumulative)	Comply with Quantified Risk Plan, or, Excess cancer risk <100 in a million, or Chronic or acute hazard index <10.0, and Ambient PM-2.5 increase <0.8 µg/m3, Zone of Influence = 1,000 feet

Health risk analysis requires project specific information as to location, duration and intensity of emissions of hazardous emissions. Such data are not available at a program level of detail. Subsequent analysis may be required when such data become available.

Sacramento Metropolitan AQMD

NOx - 85 lb/day

ROG - None

Any emissions that would contribute substantially to an existing or projected violation of a California AAQS are considered an adverse impact. A substantial contribution is 5% of a CAAQS.

Mojave Desert AQMD.

Construction activity emissions are aggregated with operational emissions and include indirect emissions generated beyond the immediate project boundary. CEQA emissions thresholds characterizing an air quality impact in the MDAQMD are as follows:

Pollutant	Annual (ton/year)	Daily (pound/day)
CO	100	548
NOx	25	137
VOC	25	137
SOx	25	137
PM-10	15	82

South Coast AQMD

NOx	**100 lb/day**
VOC	**75 lb/day**
PM-10	**150 lb/day**
PM2.5	**55 lb/day**
SOx	**150 lb/day**
CO	**550 lb/day**
Lead	**3lb/day**

Incremental increases of PM-10 or PM2.5 of 10.4 $\mu g/m^3$ per day at any off-site sensitive receptor would also be considered an impact under the SCAQMD Local Significance Threshold (LST) policy.

PASSENGER TRANSPORTATION ENERGY EFFICIENCY AND EMISSIONS

Modes of passenger transportation that are powered by internal combustion engines do not differ dramatically in terms of their energy efficiency (BTU consumed per passenger mile). Larger passenger loads of multi-occupant vehicles are off-set by dramatically increased vehicle weights. A number of factors affect efficiency, but average vehicle occupancy is critical in making any comparisons. Trains are more efficient than single occupant cars for commuting purposes. However, long distance intercity travel often involves couples or families with little change in miles per gallon, but increased fuel efficiency per individual passenger.

The intercity rail estimate is based upon train occupancy of 100 passengers/train mile (the current San Joaquin Corridor ridership). The future build-out occupancy is presumed to be 155 passengers/train mile. The increase to 5 trains each way and the increased occupancy by adding one Amtrak California Car (seating capacity = 74 passengers) would accommodate 3 million passengers per year.

With increased ridership, the energy expenditure efficiency per passenger mile improves dramatically for train travel. By adding one full car per train, the energy efficiency is reduced to 1,620 BTU/passenger mile. Even if two cars are added to account for variable traffic demand, the train at 1,850 BTU/passenger mile is comparable to a 20-passenger bus and much more energy efficient than the 2-occupant automobile. However, because buses and trains are diesel-powered, their NOx emissions per gallon of fuel burned are as much as 30 times higher than for a gasoline fueled automobile. NOx is a critical contributor to photochemical smog production. Gasoline produces more CO per gallon than diesel, but since there are no CO non-attainment areas in California, the NOx “penalty” is a potentially more serious issue.

Passenger transportation-related air pollution emissions were calculated by combining identified energy efficiencies with the most current emission factors for autos, buses, and Amtrak locomotives. On-road emission factors were derived from the California EMFAC2011 computer model. Locomotive factors were obtained from EPA documents assuming that the current San Joaquin Corridor engines are a mix of Tier 2 and Tier 3 units. The emission factors per passenger mile of travel are shown in Table 5.

Table 5
Transportation Emission Factors (gram/passenger mile) Year 2035

Pollutant	Auto[1]	Bus[1]	Exist Train[2]	Tier 4 Train[3]	Tier 4 + Occupancy[4]
HC	0.003	0.009	0.110	0.014	0.009
CO	0.205	0.043	0.463	0.463	0.299
NOx	0.025	0.468	2.400	0.362	0.023
PM-10	0.001	0.004	0.063	0.005	0.003
PM-2.5	0.001	0.004	0.063	0.005	0.003

[1] EMFAC2011, Year 2035
[2] EPA-420-F-09-025 (2009)
[3] EPA Tier 4 Standards
[4] Average occupancy (pass mile/train mile) increases to 155

The San Joaquin Corridor currently accommodates 400,000 passenger miles per day of travel demand. By 2035, the 3+million annual passengers are calculated to travel 1.14 million passenger miles per day. Part of this demand will be met by adding 10 trains (5 up/5 down), the other part by increasing train occupancy from 100 passenger mile per track mile (PM/TM) to 155 PM/TM per train. Daily air pollution emissions from train travel will be reduced versus existing conditions by cleaner locomotives and by increased occupancy factors. Table 6 compares the air pollution emissions from existing versus future passenger train travel, and also contrasts daily total emissions from the 1.14 million future passenger miles by train, bus, or private automobile.

Two obvious conclusions can be drawn as follows:

1. Except for CO, future train travel by 3+ million passengers per year will generate fewer criteria pollutants than existing travel by 1.07 million passengers per year. This conclusion derives from assumed Tier 4 locomotives in the entire fleet and an increase in ridership per train.

2. However, Table 6 shows that future travel by bus or automotive may be more pollution efficient than intercity passenger travel, even with Tier 4 locomotives and improved passenger occupancy levels.

Implementation of the San Joaquin Corridor Plan thus will not create an air quality impact, but is not environmentally preferred compared to intercity transportation alternatives. It does, however, carry out the objectives of the California Rail Master Plan (2013) to accommodate future travel demand by rail instead of on-road mechanisms. This comparison does not take into account the energy expenditure associated with a lesser useful life of an automobile than train rolling stock and other infrastructure support (fuel distribution, roadway repair, street lighting, etc.) that consume energy. However, purely in terms of air pollution generated by intercity travel, trains do not have any substantial advantage over on-road transportation.

Table 6
Intercity Travel Emission Comparison (lb/day)

	Existing	Future (1.14 E06 pm/day)			
Pollutant	**Train (400,000 pm/day)**	**Cars**	**Future Buses**	**Trains***	**Δ Trains**
HC	97.0	7.5	22.6	21.0	-76.0
CO	408.3	505.0	108.0	751.2	+342.9
NOx	2116.3	62.8	1175.7	587.9	-1528.8
PM-10/PM-2.5	55.6	2.5	10.0	7.5	-48.1

*All Tier 4/155 pm/tm occupancy

CONSTRUCTION ACTIVITY IMPACTS

The proposed project would entail the installation of approximately 250 miles of second track and other support facilities over a 20-year period. The locations and phasing of such construction is unknown. A generic construction scenario was therefore created to identify a single unit of activity that could be applied to any segment of the project alignment. Each mile of track improvements was assumed to require 30 work-days of track-bed improvements, and 30 work-days of track installation, drainage structures and other improvements. Construction of physical facilities such as new train stations, or lay-over's was assumed to require approximately 7 months for clearing/grading, new construction, paving and finish work. The CalEEMod (2013.2.2) computer model was used to generate emissions from a representative construction fleet and vendor deliveries. Calculated emissions for a peak activity day and for the duration of the construction of one generic component are summarized in Table 7a for a current construction fleet. The same calculation was performed for a year 2035 fleet to demonstrate the effects of off-road equipment emissions controls that would minimize impact potential shown in Table 7b. It is not known how many projects will occur simultaneously. At approximately 250 miles of track installation over 20 years, an average of 12.5 miles of tracks would be installed each year. At 3 months of work per mile, three segments might be under simultaneous construction.

A comparison with the suggested impact thresholds shows that three segments can easily be accommodated within the San Joaquin Valley Air Basin guideline of 10 tons per year of NOx or ROG. In the Sacramento Valley Air Basin, the NOx impact guideline of 85 pounds per day could be exceeded if three segments of double track were under simultaneous construction. The daily NOx guideline could also be exceeded if the Elk Grove station construction were to occur at the same time as more than one segment of track installation. The Bay Area CEQA impact level of 54 pounds per day represents the most severe constraint. More than one simultaneous track-laying project or concurrent improvements of the Hercules ITC with track-laying activities could exceed the CEQA impact guideline.

Maintaining an acceptable impact can be accomplished by construction scheduling spread out over a suitable period. It can also be achieved by use of the cleanest available diesel equipment. The calculations in Table 7 show that in each successive year emissions will decline in response to the mandatory entry of Tier 4 rated new equipment into the fleet. New purchases and low emissions overhauls will allow for progressively greater annual construction activities without

exceeding CEQA impact thresholds independent of implementation of added mitigation measures. Any conclusion regarding what level of construction activity may create an air quality impact clearly needs to consider the year of construction.

Table 7a
Construction Activity Air Pollution Emissions-Existing Fleet

	ROG	NOx	CO	PM-10*	PM-2.5*
Peak Day (lb/day)					
Double Track	4.3	37.9	23.8	4.2	3.0
Structures	8.6	43.7	29.6	5.7	4.0
Annual (tons/year)					
Double Track	0.12	1.02	0.67	0.10	0.08
Structures	0.27	2.00	1.27	0.16	0.14

*including compliance with dust control measures such as SJVUAPCD Regulation VIII or BAAQMD CEQA BMPs.

Table 7b
CalEEMod2013.2.2 Results
Construction Activity Air Pollution Emissions-2035 Fleet

	ROG	NOx	CO	PM-10*	PM-2.5*
Peak Day (lb/day)					
Double Track	1.5	5.3	13.2	3.0	1.7
Structures	1.5	5.9	17.4	3.2	1.7
Annual (tons/year)					
Double Track	0.03	0.16	0.35	0.10	0.05
Structures	0.06	0.35	0.84	0.02	0.01

Source: CalEEMod2013.2.2

MICROSCALE CO ANALYSIS

An increase in passenger train activity would create added brief periods of delay for on-road traffic waiting for the train to pass. Such delay is brief for Amtrak trains of one engine and typically six cars. Similarly, congestion effects would increase around the new Stockton or Elk Grove stations or the lay-over facility. The applicable CAAQS is an hourly or 8-hour standard. Idling by a small number of cars at a grade crossing for less than one minute would not measurably increase CO levels relative to a one-or eight-hour average.

Increased traffic around train-oriented fixed facilities could, however, generate congestion effects lasting for longer periods. The proposed project has not conducted detailed traffic studies that would allow for an explicit microscale CO impact study. However, several CO impact studies for rail facilities have concluded that such facilities do not generate enough traffic/congestion to create any CO “hot spots”. For example, the air quality technical report for

the California High Speed (HSR) Project EIR calculated the worst case CO concentrations around the Fresno and Merced HSR stations, the Merced Maintenance Facility and long major facility access points. The calculated one-hour CO level was less than 6.0 ppm for one hour, and less than 4 ppm for 8-hours, including background concentrations. The CAAQS is 20 ppm for one hour and 9 ppm for 8 hours. Similarly, the final Hercules ITC found that microscale CO concentrations were less than 5 ppm for one hour and slightly over 4 ppm for 8 hours, including any background concentrations, at 25 feet from any site access roadway. Use of these findings as surrogates for new San Joaquin Corridor facilities suggests negligible microscale impact potential.

PARTICULATE MATTER HOT SPOT ANALYSIS

The San Joaquin Valley is located in a designated non-attainment area for PM-2.5. Under federal guidelines, projects of air quality concern (POAQC) require a quantitative PM-2.5 analysis if federal funding or approvals are involved. A project would not be a POAQC if it attracts only a small number of diesel vehicles congregating at a single location.

Most guidance as to what constitutes a POAQC is roadway vehicle emissions based. For example, federal guidelines consider projects associated with roadways carrying 10,000 diesel-powered trucks to be a POAQC. Conversely, an increase in arrivals at a bus terminal of less than five buses during a peak hour is cited as an example of a project that is not a POAQC. There are currently twelve daily Amtrak arrivals at stations along the San Joaquin Corridor. The build-out forecast is for 22 arrivals per day (eleven in each direction). Amtrak operations will increase by less than 50 percent with no more than two trains per hour (one in each direction) since they are spaced fairly evenly throughout the day. The forecast increase in train movements will not likely generate sufficient PM-10/PM-2.5 as to require a particulate matter hot spot analysis.

MOBILE SOURCE AIR TOXICS (MSAT)

The Federal Highway Administration (FHWA) has issued guidance on the analysis of MSAT exposure in NEPA documents. FHWA guidance distinguishes between projects that are exempt or have no meaningful MSAT effects versus those with potential MSAT effects. The latter category is divided between those projects with low versus higher potential effects. Los potential impact projects require a qualitative analysis in NEPA documents. Higher potential MSAT effects must be analyzed in a quantitative analysis. FHWA guidelines characterize higher potential projects as those that generate 10 tons per year of any hazardous air pollutant (HAP) or 25 tons per year of all major hazardous air pollutants.

The proposed project is being environmentally cleared through CEQA. Because the FHWA guidance is focused on roadway projects for NEPA clearance, it is not likely the best prototype for a train-oriented CEQA document. Local jurisdictions along the corridor all have developed guidelines and/or thresholds for minimizing sensitive receptor exposure to project-related MSAT emissions. The primary MSAT associated with heavy vehicle transportation is diesel particulate matter (DPM). DPM is a known carcinogen. The adopted excess cancer risk factor is 300 in a million if a person remain outdoors at the same location for 24 hours per day, 350 days per year for the next 70 years beginning at three months before birth for a 1 $\mu g/m^3$ DPM exposure. More

recent guidelines that incorporate the age sensitivity of infants and children recommend a lifetime excess cancer unit risk factor of around 500 in a million per one microgram per cubic meter exposure. A recurring issue with the use of this risk factor is that no known person has remained "chained to their porch" from 3 months before birth until 69.75 years later for 350 days per year. This factor is useful for comparative purposes among various locations but bears no relationship to actual inhalation health risk.

However, even if the localized emissions burden is not accurately linked to actual health risk, MSAT exposure clearly has adverse consequences. Although minor amounts of MSATs are released by vehicles accessing rail facilities, the primary concern is from locomotive exhaust DPM emissions. The EMD engine in current use generates around 40 grams of DPM per hour at idle and around 400 grams per hour at full throttle. With existing requirements to reduce particulate matter from railroad diesel engines through retrofits during engine overhauls (basically installing diesel particulate filters), DPM reductions of 86% from base case (2014) conditions are forecast (EPA-420-F-09-025).

An existing operational scenario of 12 passenger trains with one engine and 46 freight trains with three engines was assumed to increase to 22 passenger trains (1 engine) and 48 freights (3 engines) by 2035. Each passenger train was assumed to idle for 5 minutes and spend 1 minute each at half-throttle during arrival and departure. Freights usually do not stop, but slow to half throttle while passing through a station. The resulting DPM emissions generated in the immediate vicinity of a prototype train station are as follows (grams/day):

	Amtrak Idling	**Amtrak Arrive/Depart**	**Freight Passage**	**Total**
Existing	40	80	221	341
Existing w/ Project	73	147	231	451
2035 no Project	6	11	31	48
2035 w/Project	11	20	32	63

If all 10 new passenger trains (5 in each direction) were added to the system instantaneously, the MSAT emissions increase would be 100 grams per day. However, the anticipated particulate emissions controls on locomotives are predicted to occur much faster than the rate of passenger growth. As a result, the MSAT emissions burden due to train operations will decrease over time. The DPM emissions increment associated with future passenger rail increases would be 14 grams per day. Annual DPM emissions in the vicinity of the prototype station are currently 0.14 tons compared to the MSAT definition of a higher potential effects threshold of 10 tons per year. With required new Tier 4 locomotives and existing engine retrofits to Tier 4 standards, the DPM level in 2035 would be 0.025 tons per year. The proposed project would have low MSAT potential effects.

NATURALLY OCCURRING ASBESTOS (NOA)

NOA is found within serpentine rock formations in a number of counties along the corridor alignment. However, even if NOA were present in the rock used for rail ballast, train activities would not disturb the rock during project operations.

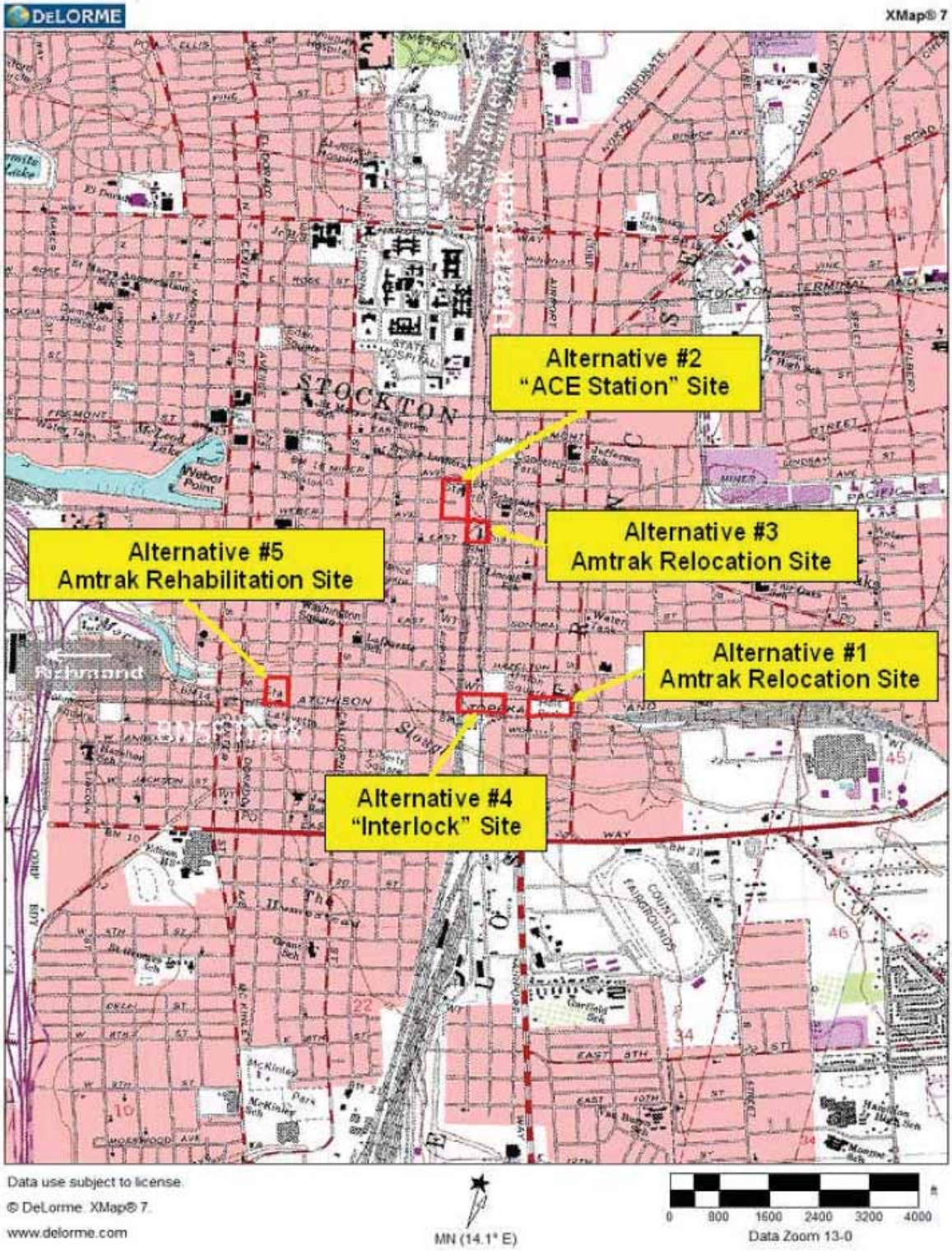
TRAIN DEPOT OPERATIONS

Relocation of the Stockton Amtrak station to one of 5 locations shown in Figure 2 or new construction of stations in Hercules or Elk Grove would introduce a greater intensity of automobile exhaust emissions into the immediate train station vicinity. Impacts may vary depending upon source-receptor distances, vehicle mixes and background pollution levels. However, for the typical suburban vehicular fleet it takes several thousand cars per hour concentrated into a very small area to create even a minor air pollution "hot spot". The number of vehicles per hour entering or leaving a typical Amtrak station along the corridor is less than one hundred. Station access is not a sufficiently intensive activity as to create any potentially substantial air quality impacts from on-road sources.

The Stockton station relocation or the Elk Grove station are developed, a subsequent of supplemental environmental document may be required to evaluate project level impacts. At the current program level of analysis, impact potential appears to be low.

Several stations offer thru-way bus connections that presumably will create an increase in bus access/egress as train ridership grows. The Bakersfield Amtrak station, at the southern terminus of the San Joaquin Corridor, has the most bus activity. Currently, a maximum of five buses meet any arriving train. The number of buses per scheduled train at Bakersfield is not likely to change as ridership grows, but the number of events per day would likely increase. The cumulative emissions associated with bus activity would proportionally increase, but peak hourly impacts would remain unchanged. Because most buses are diesel-fueled, increased daily connecting bus service would increase the DPM burden around the bus depot. As previously noted, diesel emissions improvements are forecast to exceed the rate of train passenger growth such that future DPM emissions will be less than today. Increased bus service will slow the improvement rate, but will not fully impede progress. The DPM impact from bus service growth, using the Bakersfield thru-way facility as a worst-case, is less-than-significant with over 400 feet of distance separation from the terminal to the nearest apartments to the south. Buses do not idle between drop-off and pick-up as a matter of company policy and fuel conservation. A terminal with 10 buses or less is considered a "small terminal" under federal air quality analysis guidelines. Impacts from a small terminal with limited DPM emissions and a substantial set-back to the nearest residents are therefore minimal. On-going conversion of much of the diesel bus fleet to compressed natural gas over the next two decades will further reinforce that finding.

Figure 2


DeLORME
XMap® 7
Alternative #2
"ACE Station" Site
Alternative #3
Amtrak Relocation Site
Alternative #5
Amtrak Rehabilitation Site
Alternative #1
Amtrak Relocation Site
Alternative #4
"Interlock" Site
STOCKTON
Data use subject to license.
© DeLorme. XMap® 7.
www.delorme.com
MN (14.1° E)
0 800 1600 2400 3200 4000
Data Zoom 13-0

LAY OVER FACILITIES

Two candidate lay-over facilities at the location shown in Figures 3 and 4 would allow for an early morning departure that would reach the Bay Area for a full work-day. The primary source of potential impact is from engine idling to provide on-board power during the lay-over period. No maintenance or servicing would typically occur except perhaps to dump the lavatories or to receive fresh goods for the café car. The current DPM emission rate for an idling locomotive is 40 grams/hour (EPA 2009). With an 8-hour lay-over, this would result in 320 grams of DPM emissions per day. If the lay-over train runs 6-days per week, annual DPM emissions would total 0.11 tons per year near the Fresno or Merced lay-over yards. By 2035, the annual emissions would be 0.017 tons of DPM. As previously noted, federal guidelines consider any project that generates 10 tons of hazardous air pollutants per year to have a higher impact potential. A locomotive idling in a lay-over yard does not have a high impact potential.

Figure 3

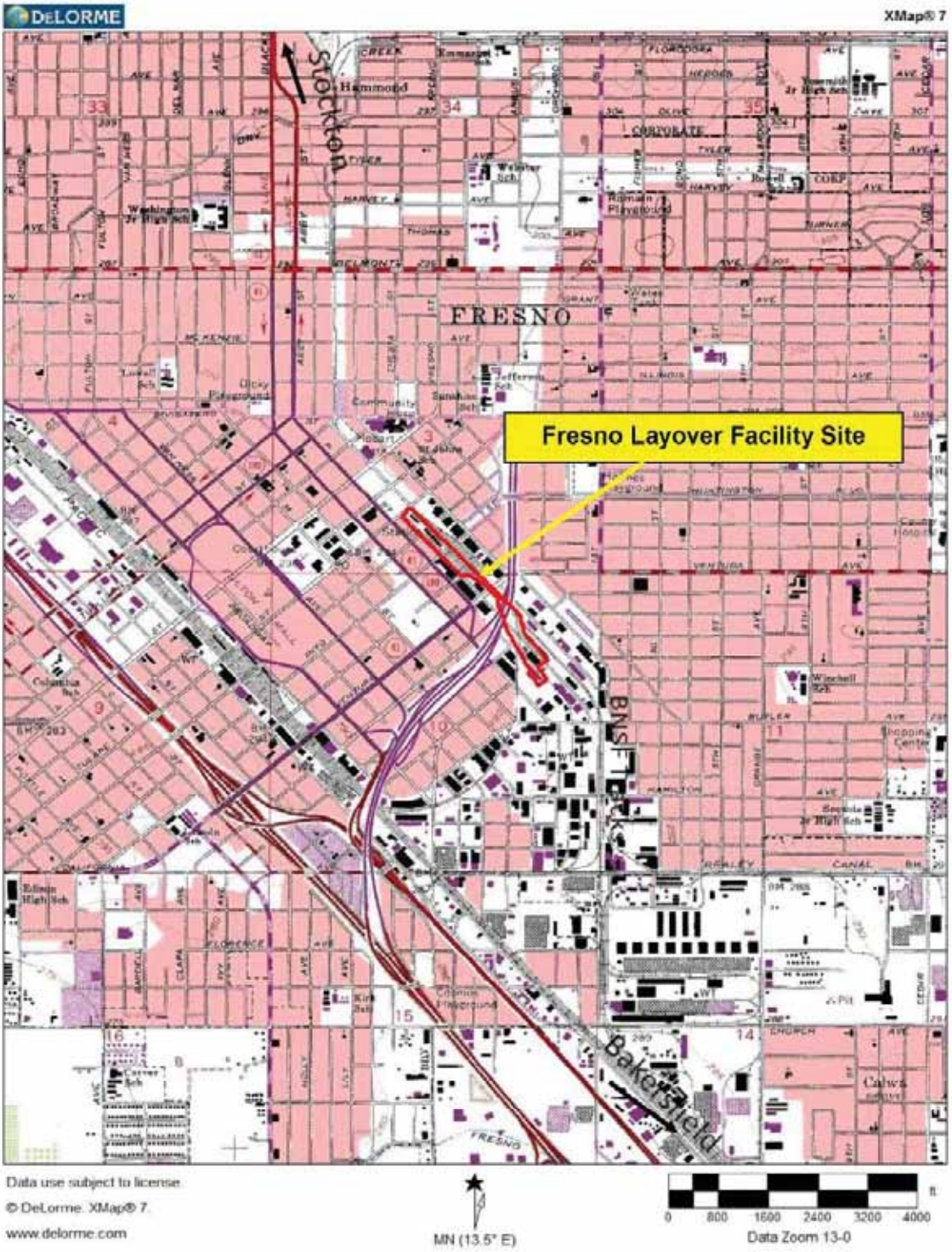
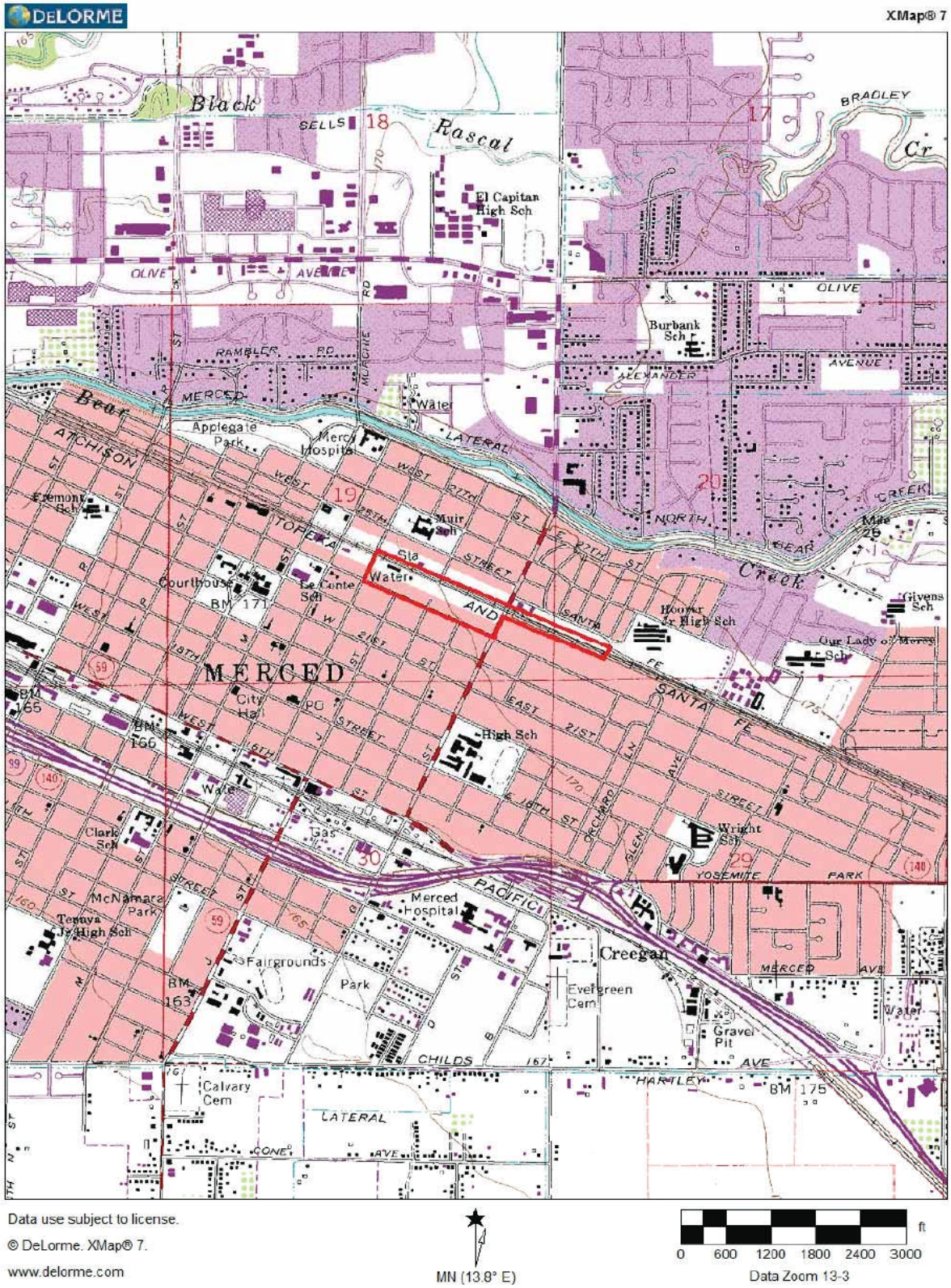

DELORME
XMap® 7
Fresno Layover Facility Site
FRESNO
Stockton
Bakersfield
BNSF Tracks
Data use subject to license.
© DeLorme. XMap® 7.
www.delorme.com
MN (13.5° E)
0 800 1600 2400 3200 4000 ft
Data Zoom 13-0

Figure 4



Data use subject to license.

© DeLorme. XMap® 7.

www.delorme.com

MN (13.8° E)

0 600 1200 1800 2400 3000 ft

Data Zoom 13-3

AVOIDANCE, MININIMIZATION OR COMPENSATORY

Operational activities were demonstrated to have a negligible air quality impact that would require discretionary mitigation. Project construction activities may cause CEQA thresholds to be exceeded early during the 20-year build-out if several improvements are under simultaneous construction. Project activities also require compliance with dust control BMPs consistent with rules and regulations of the applicable air district. Although compliance with rules is technically not mitigation, specific measures for fugitive dust control are included in the following menu of measures.

MM AQ-1: Simultaneous double-track construction shall not exceed one segment within the BAAB or two segments within the Sacramento Metro area unless it is demonstrated that combined NOx emissions will not exceed daily CEQA impact thresholds though the use of cleaner off-road equipment.

MM AQ-2: Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a “no visible dust” criterion either at the point of emission or at the right of way line, depending on local regulations.

MM AQ-3: Spread soil binder on any unpaved roads used for construction purposes and all project construction parking areas.

MM AQ-4: Wash off trucks as they leave the right of way as necessary to control fugitive dust emissions.

MM AQ-5: Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.

MM AQ-6: Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

GREENHOUSE GASES/GLOBAL CLIMATE CHANGE

LEAD AGENCY CLIMATE CHANGE POLICY

While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the projects direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing the measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.
(Source: SER, Chapter 13, Energy, Climate Change).

Caltrans does consider climate change to be a potential threat to safety and mobility. Consideration of climate change is required for all state transportation projects per policy as follows:

Adaptation: Adjustment to transportation infrastructure in response to actual or expected climatic effects includes the development of methods to protect people, places, and resources from the impacts of global climate change. This can include, but is not limited to, taking future climate change impacts such as sea level rise into consideration, and planning and implementing appropriate design changes to bridges and other appropriate transportation infrastructure. (Source: Directors Policy, DP-30, June 22, 2012).

INTRODUCTION/BACKGROUND

The Earth's climate has changed many times during the planet's history, with events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the Earth's orbit, and the amount of energy released from the Sun have affected the Earth's climate.

The Earth's greenhouse effect is a natural occurrence that helps regulate the temperature of our planet. When the Sun heats the Earth, some of this heat escapes back to space. The rest of the heat, also known as infrared radiation, is trapped in the atmosphere by clouds and greenhouse gases (GHGs), such as water vapor and carbon dioxide (CO_2), which occur naturally. If all of these GHGs were to suddenly disappear, our planet would be 60°F colder and would not support life as we know it. However, beginning in the late 18th century human activities associated with the Industrial Revolution have enhanced the natural greenhouse effect by adding GHGs to the natural mix at a faster rate than at any other time on record.[1] Today, fossil fuel combustion continues to be one of the primary sources of CO_2 emissions. The five major fuel consuming sectors contributing to CO_2 emissions are electricity generation, transportation, and industrial, residential, and commercial uses.

[1] Environmental Protection Agency (EPA), *Frequently Asked Questions About Global Warming and Climate Change: Back to Basics, http://www.epa.gov/climatechange/downloads/Climate_Basics.pdf. Accessed 12/13/11.*

Scientists have observed a global warming trend beginning around the late 1800s. The global temperature record shows an average warming of about 1.3°F over the past century. The most rapid warming has occurred in recent decades. According to the National Oceanic and Atmospheric Administration (NOAA), seven of the eight warmest years on record have occurred since 2001. Within the past 30 years, the rate of warming across the globe has been approximately three times greater than the rate over the last 100 years. Past climate information suggests the warmth of the last half-century is unusual in at least the previous 1,300 years in the Northern Hemisphere. The preponderance of scientific evidence indicates that most of this recent warming is very likely the result of human activities.

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation. In February 2007, the IPCC issued a report on global climate change. The IPCC concluded that warming of the Earth's climate system is now "unequivocal" (i.e., "definite") and that changes in climate are now affecting physical and biological systems on every continent. The IPCC bases these conclusions on observations of increases in average air and ocean temperatures, melting of snow and ice, and rising average sea level across the globe.

The IPCC's best estimates are that the average global temperature rise between years 2000 and 2100 could range from 0.6 degrees Celsius (1.08 degrees Fahrenheit) with no increase in GHG emissions above 2000 levels, to 4.0 degrees Celsius (7.2 degrees Fahrenheit) with a substantial increase in GHG emissions (IPCC, 2007). Large increases in global temperatures could have massive deleterious impacts on the natural and human environments.

Climate change could impact the natural environment in California by triggering, among others things:

- Rising sea levels along the California coastline;
- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- Increase in heat-related human deaths, an increase in infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- Changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems could occur at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission, 2005).

In 2004, total worldwide greenhouse gas emissions were estimated to be 20,135 Million Metric Tons (MMT) CO_2 equivalents (CO_2e), excluding emissions/removals from land use, land use change, and forestry (Association of Environmental Professionals AEP, 2007). In 2004, greenhouse emissions in the U.S. were 7074.4 MMT CO_2e (Association of Environmental Professionals, 2007). California is a substantial contributor of greenhouse gas as it is the second largest contributor in the U.S. and the sixteenth largest in the world (California Energy Commission, 2006). In 2004, California produced approximately 500 MMT CO_2e, which is approximately seven percent of U.S. emissions (California Energy Commission, 2006). The major source of greenhouse gas in California is transportation, contributing 41 percent of the State's total greenhouse emissions. Electricity generation is the second largest source, contributing 22 percent of the State's greenhouse gas emissions. In 2009 the United States GHG emissions were 6,633.2 MMT CO_2e (US Environmental Protection Agency, 2011), indicating a decreasing trend. With vegetative carbon "sinks" (which absorb atmospheric carbon) taken into account, this number is reduced to 5,618.2 MMT CO_2e.

Climate Change and Global Warming

The term climate change is often used interchangeably with the term global warming, but according to the National Academy of Sciences, "the phrase 'climate change' is growing in preferred use to 'global warming' because it helps convey that there are [other] changes in addition to rising temperatures." When used in this analysis, the term climate change refers to any distinct change in measures of climate lasting for a long period of time. In other words, "climate change" means major changes in temperature, rainfall, snow, or wind patterns lasting for decades or longer. Global warming is an average increase in temperatures near the Earth's surface and in the lowest layer of the atmosphere. Increases in temperatures in our Earth's atmosphere can contribute to changes in global climate patterns. Global warming can be considered part of climate change along with changes in precipitation, sea level, etc. Global change is a broad term that refers to changes in the global environment, including climate change, ozone depletion, and land use change.

Primary Greenhouse Gas Emissions

According to the US Environmental Protection Agency (EPA), a GHG is any gas that absorbs infrared radiation in the atmosphere. This absorption traps heat within the atmosphere creating a greenhouse effect that is slowly raising global temperatures. California state law defines GHG to include the following: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (Health and Safety Code, Section 38505g).

Although CO_2 is the most common of these gases, the other gases generally have a higher global warming potential (GWP). CO_2 equivalent (CO_2e) is a measure of GHG emissions that compares the global warming potential (GWP) of the individual greenhouse gases with the GWP of CO_2. CO_2e emissions are calculated by multiplying the metric tons of a gas by the appropriate

GWP factor and are commonly expressed as metric tons of carbon dioxide equivalents ($MTCO_2e$). Below is a description of each GHG, as described by the California Climate Action Registry (CCAR) General Reporting Protocol, including their sources of emissions and GWP.

Carbon Dioxide (CO_2)

Consisting of a single carbon and two oxygen atoms, CO_2 is the most common of the six GHGs and provides the reference point for the GWP of other gases. Thus, the GWP of CO_2 is equal to one. CO_2 is emitted in a number of ways, including naturally through the carbon cycle, and through human activities, most notably the burning of fossil fuels. Carbon dioxide emissions are also produced as a by-product of various non-energy related industrial activities including production of metals such as steel, production of mineral products such as cement, and chemical production.

Nitrous Oxide (N_2O)

Consisting of two nitrogen atoms and a single oxygen atom, N_2O possesses a GWP of 310, and is typically generated as a result of soil cultivation practices, particularly the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.

Methane (CH_4)

Consisting of a single carbon atom and four hydrogen atoms, CH_4 possesses a GWP of 21, and is produced through the anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Hydrofluorocarbons (HFCs)

Primarily used as refrigerants, HFCs consist of a class of gases containing hydrogen, fluorine, and carbon that possess a range of high and very high GWP values from 120 to 12,000. HFCs can slowly leak out of air conditioning systems by permeation through hoses, or leakage due to deterioration of seals and fittings. In mobile air conditioning systems, larger leaks may occur during traffic accidents, maintenance and servicing, and vehicle disposal.

Perfluorocarbons (PFCs)

PFCs consist of a class of gases containing carbon and fluorine that possess a very high GWP range from 5,700 to 11,900. PFCs were originally introduced as alternatives to ozone depleting substances and are typically emitted as by-products of industrial and manufacturing processes.

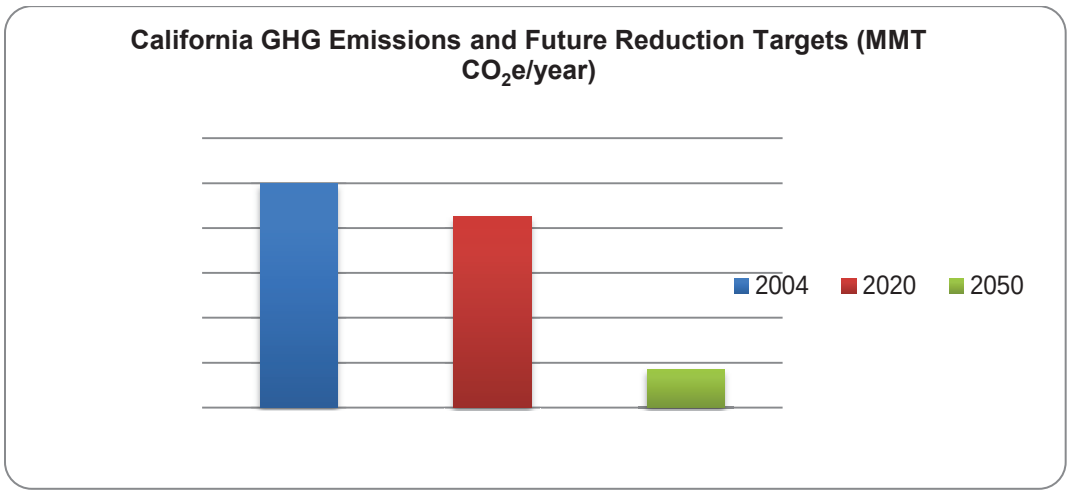
Sulfur Hexafluoride (SF_6)

Consisting of a single sulfur atom and six fluorine atoms, SF_6 possesses a very high GWP of 23,900 and is primarily used in electrical transmission and distribution systems.

REGULATORY FRAMEWORK

California Executive Order S-3-05

In 2005, Governor Arnold Schwarzenegger issued California Executive Order S-3-05 establishing the following emission targets for California: 1) reduce GHG emissions to 2000 levels by 2010; 2) reduce GHG emissions to 1990 levels (427 MMT CO_2e) by 2020; and 3) reduce GHG emissions to 80 percent below 1990 levels (85 MMT CO_2e) by 2050. Executive Orders are binding on State agencies. Accordingly, S-3-05 will guide State agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local efforts.



California Global Warming Solutions Action of 2006 (AB 32)

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the *California Global Warming Solutions Act of 2006*. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide greenhouse gas (GHG) emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also includes guidance to institute emission reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions. AB 32 demonstrates California's commitment to reducing the rate of GHG emissions and the State's associated contribution to climate change, without intending to limit population or economic growth. Although AB 32 did not amend the California Environmental Quality Act (CEQA), it identifies the environmental problems in California caused by global warming (Health and Safety Code, Section 38501a).

Pursuant to AB 32, on December 16, 2010, CARB endorsed a regulation implementing California's GHG cap-and-trade program. Subject to a variety of final actions by the Executive Director and approval by the Office of Administrative Law (OAL), the regulations will be included within Title 17 of the California Code of Regulation, sections 95800-96022, entitled "California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms."

The cap-and-trade program covers approximately 80 percent of the State's total GHG emissions and is considered a key element in achieving the overall strategy set forth in the Scoping Plan. The program, as implemented through the regulation, "caps" GHG emissions by issuing annual allowances to regulated entities. Covered entities include those that meet the inclusion threshold of 25,000 metric ton of carbon dioxide equivalent ($MTCO_2e$) per year and engage in: cement production, cogeneration, glass production, hydrogen production, iron and steel production, lime manufacturing, nitric acid production, operation of oil and natural gas facilities, petroleum refining, paper and pulp manufacturing, electricity generation (including electricity importers), and the supplying of natural gas.

The regulation also allows entities that engage in the above production and manufacturing activities to opt-in even if they do not meet the 25,000 metric ton inclusion threshold. Others may also voluntarily associate into the program. By opening the program to non-covered entities, CARB hopes to create a trading market in which investment banks, citizens groups and the general public would be allowed to hold allowances and would be subject to the registration and reporting requirements. The first compliance phase is from January 1, 2012 through December 31, 2014, and will cover all major industrial sources, including the electricity industry and large industrial plants that manufacture glass, paper, concrete, and other products. The second compliance phase will run from January 1, 2015 through December 31, 2017, and will cover distributors of transportation fuels, natural gas and other fuels. A third compliance period will run from January 1, 2018 through December 31, 2020.

CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. In order to advise the Board, CARB staff convened an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee.

Senate Bill (SB) 97

Senate Bill (SB) 97, enacted in 2007, amends the CEQA statute to establish that GHG emissions and their effects is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency (Resources Agency) guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions by July 1, 2009. On April 13, 2009, OPR submitted to the Resources Agency proposed amendments to the state CEQA Guidelines for GHG emissions. The Natural Resources Agency adopted amendments to the CEQA Guidelines for greenhouse gas emissions that became effective on March 18, 2010. These new CEQA Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents.

As an interim step toward development of required guidelines, OPR published a technical advisory entitled, *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review*, in June 2008. OPR recommends that lead agencies make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, and to mitigate the impacts where feasible. OPR acknowledges in this document that the most difficult part of the climate change analysis will be the determination of significance. OPR also asked the California Air Resources Board (ARB)

technical staff to recommend a method for setting thresholds, which would encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state.

State of California Climate Change Proposed Scoping Plan

In October 2008, ARB published its *Climate Change Proposed Scoping Plan* (*Proposed Scoping Plan*), which is the State's plan to achieve GHG reductions required by AB 32. The *Proposed Scoping Plan* states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. The plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation regulation to fund the program. The *Proposed Scoping Plan* was approved at the Board hearing on December 12, 2008. In August 2011, the Scoping Plan was re-approved by the Board.

In addition to the Scoping Plan, ARB has also released the Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (ARB Draft Staff Proposal). The ARB Draft Staff Proposal includes potential interim performance standards for project types and emissions sources including construction, energy, water use, waste, transportation, and total mass GHG emissions. Specific thresholds and performance criteria for these categories have yet to be developed.

Implementation of the adopted Scoping Plan was put on hold as a result of a lawsuit filed by the Association of Irritated Residents (AIR) against the Air Resources Board (ARB). The suit claimed that the Scoping Plan, in conjunction with its market-based cap-and-trade program, violated AB-32 and that it constitutes a "project" for which CEQA clearance must be performed. In 2011, the San Francisco Superior Court ruled that the ARB violated CEQA but did not violate AB-32. ARB prepared an addendum that went through the CEQA process. On June 19, 2012, the First District Court of Appeal upheld the ARB's Scoping Plan. Cap-and-trade is scheduled to begin in 2013.

Senate Bill (SB) 375

SB 375 was signed in September 2008 and aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). It also establishes new streamlining opportunities for compatible projects under CEQA.

With the approval of the SCS, governments within the SCAG region will now be able to streamline the CEQA processing requirements for selected projects. CEQA streamlining is only available to projects that are at least 50 percent residential, and which meet other requirements.

CALGreen Program

In November 2008, the California Building Standards Commission established the California Green Building Standards Code (CALGreen) which sets performance standards for residential and nonresidential development to reduce environmental impacts and encourage sustainable construction practices. When the CALGreen code went into effect in 2009, compliance through 2010 was voluntary. As of January 1, 2011, the CALGreen code is mandatory for all new buildings constructed in the State. The CALGreen code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality (California 2010 Green Building Standards Code, California Code of Regulations Title 24, Part 11).

GHG IMPACT THRESHOLDS

As noted above, the State Natural Resources Agency adopted amendments to the CEQA Guidelines for GHG emissions that became effective on March 18, 2010. These new CEQA Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents. According to the amendments made to Appendix G of the CEQA Guidelines, the project would have a GHG emissions impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a substantial impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purposed of reducing the emissions of GHGs.

The adopted CEQA amendments require a lead agency to make a good-faith effort based, to the extent possible, on scientific and factual data in order to describe, calculate, or estimate the amount of GHG emissions resulting from a project. They give discretion to the lead agency in whether to:

1) Use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use; and/or
2) Rely on a qualitative analysis or performance-based standards.

In addition, a lead agency should consider the following factors, among others, when assessing the impacts from GHG emissions on the environment:

1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2) Whether the project emissions exceed an adopted numerical impact threshold that the lead agency determines applies to the project; and
3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The amendments call on lead agencies to establish impact thresholds for their respective jurisdictions and clarify that the effects of GHG emissions are cumulative, and should be analyzed in the context of CEQA's requirements for cumulative impact analysis.

Because of the flexibility in the criteria for assigning impact significance to a given quantity of project-related GHG missions, there has been a diverse response that varies throughout the state. Air quality management agencies throughout California have addressed GHG impact thresholds, but no clear consensus has been reached.

Along the San Joaquin Corridor alignment, the BAAQMD has adopted an impact threshold level of 1,100 MT of CO_2e per year for project operations. The SMAQMD has proposed, but not yet adopted, a threshold of 900-1100 MT per year for development projects. The SJUAPCD has recommended that development projects either comply with an approved GHG emissions reduction plan or that they implement Best Performance Standards (BPS). These thresholds all seem oriented toward long-term project operations. The BAAQMD specifically exempts construction activity impacts from GHG emissions impact determination. The Sacramento Metro and the San Joaquin Valley air pollution agencies are focused on land development impacts without any discussion of construction impacts.

As detailed below, the "carbon footprint" of passenger train travel and of private automobiles with an average vehicle occupancy of 2.0 persons is almost identical. Any GHG impacts unique to the proposed project derive almost exclusively from construction. There are technically no GHG impact thresholds for construction-related emissions in any corridor air quality jurisdictions. Except perhaps that 20 years of proposed improvements might constitute a functionally chronic GHG emissions source, the only requirement is to quantify those emissions without making a significance determination.

OPERATIONAL GHG IMPACTS

Although train travel is often reported to be environmentally "friendly" in terms of minimizing greenhouse gas emissions, it is only slightly preferred over private automobiles when realistic assumptions are made as to the vehicle occupancy. According to studies by Amtrak and by energy agencies, the following CO_2 emissions are generated per mile of passenger travel:

	Existing	**2035**
20 passenger bus [a]	54.3	72.2
2 passenger auto [b]	177.8	111.1
100 passenger train [c]	176.8	-
155 passenger train [d]	-	114.1

[a] 6 mpg existing 7 mpg future
[b] 25 mpg existing 40 mpg future
[c] 1.07 million passengers @ 12 trains existing
[d] 3.04 million passengers @ 22 trains future

At close to 2.0 persons per automobile, train and car GHG emissions for the same travel distance are essentially identical. With assumed continued automobile fuel efficiency and with an increased train occupancy factor, car and train travel will remain fairly close in terms of GHG emissions per passenger mile. There is no advantage, nor any penalty in terms of GHG emissions for train travel versus the automobile. Any GHG emissions impact differences would derive primarily from construction activities.

The proposed project would, however, implement the California Rail Master Plan (2013). The comparison also does not take into account various secondary GHG impacts associated with auto travel (fuel distribution, safety, or shorter equipment life) not experienced by passenger train travel. Regardless, a high occupancy bus is the best GHG emissions minimization alternative.

By converting the stated Amtrak average fuel expenditure of 2.435 BTU per passenger mile to CO_2-equivalent GHG emissions of 10.16 kg per gallon of diesel fuel burned, the San Joaquin Corridor carrying 400,000 passenger miles per day generates 70.7 metric tons (MT) of GHG per day. The future 2035 condition of 1,140,000 passenger miles results in 130.0 MT per day. By comparison, if the same future mile of travel occurs by a 20-passenger bus at 7 mpg or a 2-passenger automobile averaging 40 mph, daily GHG emissions would be as follows:

Daily GHG Emissions (MT/day)

Scenario	Trains	Cars	Buses
Existing	70.7	71.1	33.7
2035	130.0	126.6	82.3

With assumed improved automobile fuel economy and increased train ridership per individual train, cars and trains remain almost identical in terms of daily GHG emissions for intercity travel.

By way of perspective, the San Joaquin Corridor generates only a minute fraction of the daily statewide GHG burden. Amtrak calculates that the three state-supported rail systems carry around 515 million passenger miles per day. The passenger travel on the four interstate lines is not separately calculated, but combining the track length within the state by the published ridership produces another estimated 210 million passenger miles carried each year. The resulting comparison shows Amtrak to be a minor contributor the state GHG burden as follows:

Source	Daily GHG	% of State
San Joaquin Corridor	70.0 MT/day	0.006%
All CA Amtrak	351.0 MT/day	0.029%
All CA Trains	6,822 MT/day	0.056%
All California	1,277,700 MT/day	100%

The corridor train travel is, and will continue to be, a very small increment of the state GHG burden.

CONSTRUCTION ACTIVITY GHG IMPACTS

CO_2 –equivalent emissions were calculated for a generic set of activities related to track and ancillary structures and for stationary facility construction. The CalEEMod predicts that each mile of track improvements (double track, drainage, bridges, etc.) will entail the release of 84 metric tons (MT) of CO_2e GHGs. Each fixed facility will cause 165 MT of CO_2e to be generated. Total project GHG emissions for 250 miles of track improvement and four fixed facilities (three stations in Stockton, Elk Grove and Hercules and one lay-over facility) over 20 years of build-out will cause an average of 1,095 MT per year to be released as follows:

(250 miles x 85 ton/mile + 4 facilities x 165 ton/facility)/20 years of build-out
= 1,095 MT per year

As previously stated, there are no adopted numerical impact thresholds for construction activities. The standard is that project activities should not create a substantial increase compared to the no project alternative. "Substantial" is a qualitative term when related to GHG emissions. By way of comparison, the BAAQMD CEQA GHG threshold is 1,100 MT per year. The annual average construction activity emissions are almost exactly 1,100 MT per year. Construction activities were presumed to be temporary. For a 20-year project build-out, however, construction activity emissions would be chronic rather than temporary. It would be fair to say that project construction GHG emissions would border on being substantial in years of extensive construction activity. If more than 12.5 miles of track improvement are installed in any year. A GHG reduction program should be implemented as follows:

MM GHG-1 In any year when track improvement installation is expected to exceed 12.5 miles, a GHG reduction program shall become part of construction specifications. The program shall document that through the use of alternative fuels or cleaner equipment or other equally effective measures, annual GHG emissions from construction activities will be at least 28.9% less than for the business-as-usual condition (the AB-32 compliance goal).

GHG emissions from project alternatives cannot be quantified with sufficient certainty because the engineering has not adequately progressed as to facilitate construction activity quantification. If a connection from the corridor terminus in Bakersfield to the Los Angeles Basin becomes a viable option, supplemental or subsequent environmental documentation would likely address this issue.

APPENDIX

CalEEMod Computer Model Output

San Joaquin Train Station

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	5.00	1000sqft	5.00	5,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2015
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Train station modeled as strip mall" building, 5,000 sf, 5 acre lot

Construction Phase - Grading: 8 days, Construction: 100 days, Paving 18 days

Off-road Equipment - Grading: 1 excavator, 1 grader, 1 dozer, 3 loader/backhoes

Off-road Equipment - Construction: 1 crane, 3 forklifts, 1 gen set, 1 loader/backhoe, 1 welder

Off-road Equipment - Paving: 2 pavers, 2 paving equipment, 2 rollers

Vehicle Trips - construction emissions only

Trips and VMT - 15 workers

Construction Off-road Equipment Mitigation - water 2 times a day

□a□le □ame	Col□mn □ame	Defa□lt Val□e	□e□ Val□e
t□lConstr□ctionP□ase	□□mDays	230.00	100.00
t□lConstr□ctionP□ase	P□aseEndDate	6/25/2014	12/24/2014
t□lConstr□ctionP□ase	P□ase□tartDate	5/31/2014	11/29/2014
t□l□and□se	□ot□creage	0.11	5.00
t□lPro□ectC□aracteristics	□perational□ear	2014	2015
t□l□rips□ndVM□	□ or□er□rip□□m□er	2.00	15.00
t□lVe□icle□rips	□□□□	42.04	0.00
t□lVe□icle□rips	□□□□	20.43	0.00
t□lVe□icle□rips	□ D□□□	44.32	0.00

2.0 □missions □□mmary

2.1 O□erall Constr□ction

Unmiti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	tons/yr										M□/yr					
2014	0.2461	1.9□11	1.2552	1.□□00e□003	0.0341	0.134□	0.16□□	0.0156	0.1264	0.1420	0.0000	162.592□	162.592□	0.0409	0.0000	163.4510
2015	0.02□□	0.016□	0.0124	2.0000e□005	0.0000	1.4400e□003	1.4400e□003	0.0000	1.4400e□003	1.4400e□003	0.0000	1.6596	1.6596	2.2000e□004	0.0000	1.6642
□otal	**0.2□□□**	**1.□□□□**	**1.2□□□**	**1.□□00e□00□**	**0.0□41**	**0.1□□2**	**0.1□0□**	**0.01□□**	**0.12□□**	**0.14□4**	**0.0000**	**1□4.2□2□**	**1□4.2□2□**	**0.0411**	**0.0000**	**1□□.11□1**

Miti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	tons/yr										M□/yr					
2014	0.2461	1.9□11	1.2552	1.□□00e□003	0.019□	0.134□	0.1544	□.1600e□003	0.1264	0.1346	0.0000	162.5925	162.5925	0.0409	0.0000	163.450□
2015	0.02□□	0.016□	0.0124	2.0000e□005	0.0000	1.4400e□003	1.4400e□003	0.0000	1.4400e□003	1.4400e□003	0.0000	1.6596	1.6596	2.2000e□004	0.0000	1.6642
□otal	**0.2□□□**	**1.□□□□**	**1.2□□□**	**1.□□00e□00□**	**0.01□□**	**0.1□□2**	**0.1□□□**	**□.1□00e□00□**	**0.12□□**	**0.1□□0**	**0.0000**	**1□4.2□21**	**1□4.2□21**	**0.0411**	**0.0000**	**1□□.114□**

	□O□	**NO□**	**CO**	**□O2**	**□□□iti□e PM10**	**□□ha□st PM10**	**PM10 □otal**	**□□□iti□e PM2.□**	**□□ha□st PM2.□**	**PM2.□ □otal**	**□io□CO2**	**N□io□CO2**	**□otal CO2**	**CH4**	**N20**	**CO2e**
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**42.□1**	**0.00**	**□.4□**	**4□.□□**	**0.00**	**□.1□**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmiti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rea	0.0230	0.0000	5.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□005	9.0000e□005	0.0000	0.0000	9.0000e□005
Energy	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	16.2551	16.2551	6.6000e□004	1.□000e□004	16.3244
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□aste						0.0000	0.0000		0.0000	0.0000	1.065□	0.0000	1.065□	0.0630	0.0000	2.3□□3
□ater						0.0000	0.0000		0.0000	0.0000	0.11□5	0.□141	0.9316	0.0121	2.9000e□004	1.2□65
□otal	**0.02□□**	**2.□□00e□00□**	**2.□□00e□00□**	**2.0000e□00□**	**0.0000**	**2.1000e□004**	**2.1000e□004**	**0.0000**	**2.1000e□004**	**2.1000e□004**	**1.1□□2**	**1□.0□□4**	**1□.2□2□**	**0.0□□□**	**4.□000e□004**	**1□.□□□□**

2.2 O□erall Operational

Miti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rea	0.0230	0.0000	5.0000e□ 005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□ 005	9.0000e□ 005	0.0000	0.0000	9.0000e□ 005
Energy	3.0000e□ 004	2.□300e□ 003	2.3000e□ 003	2.0000e□ 005		2.1000e□ 004	2.1000e□ 004		2.1000e□ 004	2.1000e□ 004	0.0000	16.2551	16.2551	6.6000e□ 004	1.□000e□ 004	16.3244
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□aste						0.0000	0.0000		0.0000	0.0000	1.065□	0.0000	1.065□	0.0630	0.0000	2.3□□3
□ater						0.0000	0.0000		0.0000	0.0000	0.11□5	0.□141	0.9316	0.0121	2.9000e□ 004	1.2□63
□otal	**0.02□□**	**2.□□00e□ 00□**	**2.□□00e□ 00□**	**2.0000e□ 00□**	**0.0000**	**2.1000e□ 004**	**2.1000e□ 004**	**0.0000**	**2.1000e□ 004**	**2.1000e□ 004**	**1.1□□2**	**1□.0□□4**	**1□.2□2□**	**0.0□□□**	**4.□000e□ 004**	**1□.□□□1**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**

□.0 Constr□ction □etail

Constr□ction Phase

P□ase □□m□er	P□ase □ame	P□ase □ype	□tart Date	End Date	□□m Days □ ee□	□□m Days	P□ase Description
1	Grading	Grading	1/1/2014	1/10/2014	5	□	
2	□□ilding Constr□ction	□□ilding Constr□ction	1/11/2014	5/30/2014	5	100	
3	Pa□ing	Pa□ing	11/29/2014	12/24/2014	5	1□	
4	□rc□itect□ral Coating	□rc□itect□ral Coating	12/25/2014	1/19/2015	5	1□	

□cres o□□ra□in□ (□ite Preparation Phase)□0

□cres o□□ra□in□ (□ra□in□ Phase)□4

□cres o□Pa□in□□0

□esi□ential In□oor□0□□esi□ential O□t□oor□0□Non□□esi□ential In□oor□□□□00□Non□□esi□ential O□t□oor□2□□00 (□rchitect□ral Coatin□ □s□□t)

O□□□oa□ □□□ipment

P□ase □ame	□ffroad E□□ipment □ype	□mo□nt	□sage □o□rs	□orse Po□er	□oad □actor
□rc□itect□ral Coating	□ir Compressors	1	6.00	□□	0.4□
Grading	E□ca□ators	1	□.00	162	0.3□
□□ilding Constr□ction	Generator □ets	1	□.00	□4	0.□4
Grading	Graders	1	□.00	1□4	0.41
□□ilding Constr□ction	Cranes	1	□.00	226	0.29
□□ilding Constr□ction	□or□lifts	3	□.00	□9	0.20
Pa□ing	Pa□ing E□□ipment	2	□.00	130	0.36
Pa□ing	Pa□ers	2	□.00	125	0.42
Pa□ing	□ollers	2	□.00	□0	0.3□
□□ilding Constr□ction	□ elders	1	□.00	46	0.45
Grading	□□□□er □ired Do□ers	1	□.00	255	0.40
□□ilding Constr□ction	□ractors/□oaders/□ac□□oes	3	□.00	9□	0.3□
Grading	□ractors/□oaders/□ac□□oes	3	□.00	9□	0.3□

□rips an□ □M□

P□ase □ame	□ffroad E□□ipment Co□nt	□ or□er □rip □□m□er	Vendor □rip □□m□er	□a□ling □rip □□m□er	□ or□er □rip □engt□	Vendor □rip □engt□	□a□ling □rip □engt□	□ or□er Ve□icle Class	Vendor Ve□icle Class	□a□ling Ve□icle Class
Grading	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□□ilding Constr□ction	9	15.00	1.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
Pa□ing	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□rc□itect□ral Coating	1	0.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□

□.1 Miti□ation Meas□res Constr□ction

□ ater E□posed □rea

Clean Pa□ed □oads

□.2 □ra□in□ □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□□giti□e D□st					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	0.0155	0.1644	0.10□0	1.2000e□004		9.4900e□003	9.4900e□003		□.□300e□003	□.□300e□003	0.0000	11.4□56	11.4□56	3.3900e□003	0.0000	11.546□
□otal	**0.01□□**	**0.1□44**	**0.10□0**	**1.2000e□004**	**0.02□2**	**□.4□00e□00□**	**0.0□□□**	**0.01□□**	**□.□□00e□00□**	**0.0222**	**0.0000**	**11.4□□□**	**11.4□□□**	**□.□□00e□00□**	**0.0000**	**11.□4□□**

□.2 □ra□in□ □2014

Unmiti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	2.□000e□004	3.5000e□004	3.4400e□003	1.0000e□005	4.□000e□004	0.0000	4.□000e□004	1.3000e□004	0.0000	1.3000e□004	0.0000	0.4561	0.4561	3.0000e□005	0.0000	0.4566
□otal	**2.□000e□004**	**□.□000e□004**	**□.4400e□00□**	**1.0000e□00□**	**4.□000e□004**	**0.0000**	**4.□000e□004**	**1.□000e□004**	**0.0000**	**1.□000e□004**	**0.0000**	**0.4□□1**	**0.4□□1**	**□.0000e□00□**	**0.0000**	**0.4□□□**

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□□giti□e D□st					0.011□	0.0000	0.011□	6.0600e□003	0.0000	6.0600e□003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	0.0155	0.1644	0.10□0	1.2000e□004		9.4900e□003	9.4900e□003		□.□300e□003	□.□300e□003	0.0000	11.4□56	11.4□56	3.3900e□003	0.0000	11.546□
□otal	**0.01□□**	**0.1□44**	**0.10□0**	**1.2000e□004**	**0.011□**	**□.4□00e□00□**	**0.021□**	**□.0□00e□00□**	**□.□□00e□00□**	**0.014□**	**0.0000**	**11.4□□□**	**11.4□□□**	**□.□□00e□00□**	**0.0000**	**11.□4□□**

□.2 □ra□in□ □2014

Miti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	2.□000e□004	3.5000e□004	3.4400e□003	1.0000e□005	4.□000e□004	0.0000	4.□000e□004	1.3000e□004	0.0000	1.3000e□004	0.0000	0.4561	0.4561	3.0000e□005	0.0000	0.4566
□otal	**2.□000e□004**	**□.□000e□004**	**□.4400e□00□**	**1.0000e□00□**	**4.□000e□004**	**0.0000**	**4.□000e□004**	**1.□000e□004**	**0.0000**	**1.□000e□004**	**0.0000**	**0.4□□1**	**0.4□□1**	**□.0000e□00□**	**0.0000**	**0.4□□□**

□.□ □□il□in□ Constr□ction □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.1934	1.562□	0.9465	1.3400e□003		0.1114	0.1114		0.1049	0.1049	0.0000	122.□□□1	122.□□□1	0.0313	0.0000	123.5433
□otal	**0.1□□4**	**1.□□2□**	**0.□4□□**	**1.□400e□00□**		**0.1114**	**0.1114**		**0.104□**	**0.104□**	**0.0000**	**122.□□□1**	**122.□□□1**	**0.0□1□**	**0.0000**	**12□.□4□□**

□.□ □□il□in□ Constr□ction □2014

Unmiti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	□.□000e□004	6.□900e□003	□.9□00e□003	1.0000e□005	3.3000e□004	1.4000e□004	4.□000e□004	9.0000e□005	1.3000e□004	2.2000e□004	0.0000	1.111□	1.111□	1.0000e□005	0.0000	1.1120
□ or□er	3.5000e□003	4.4000e□003	0.0430	□.0000e□005	5.9□00e□003	5.0000e□005	6.0300e□003	1.5900e□003	5.0000e□005	1.6400e□003	0.0000	5.□00□	5.□00□	3.4000e□004	0.0000	5.□0□□
□otal	**4.2□00e□00□**	**0.0112**	**0.0□10**	**□.0000e□00□**	**□.□000e□00□**	**1.□000e□004**	**□.□000e□00□**	**1.□□00e□00□**	**1.□000e□004**	**1.□□00e□00□**	**0.0000**	**□.□124**	**□.□124**	**□.□000e□004**	**0.0000**	**□.□1□□**

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.1934	1.562□	0.9465	1.3400e□003		0.1114	0.1114		0.1049	0.1049	0.0000	122.□□□0	122.□□□0	0.0313	0.0000	123.5431
□otal	**0.1□□4**	**1.□□2□**	**0.□4□□**	**1.□400e□00□**		**0.1114**	**0.1114**		**0.104□**	**0.104□**	**0.0000**	**122.□□□0**	**122.□□□0**	**0.0□1□**	**0.0000**	**12□.□4□1**

□.□ □□il□in□ Constr□ction □2014

Miti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	□.□000e□004	6.□900e□003	□.9□00e□003	1.0000e□005	3.3000e□004	1.4000e□004	4.□000e□004	9.0000e□005	1.3000e□004	2.2000e□004	0.0000	1.111□	1.111□	1.0000e□005	0.0000	1.1120
□ or□er	3.5000e□003	4.4000e□003	0.0430	□.0000e□005	5.9□00e□003	5.0000e□005	6.0300e□003	1.5900e□003	5.0000e□005	1.6400e□003	0.0000	5.□00□	5.□00□	3.4000e□004	0.0000	5.□0□□
□otal	**4.2□00e□00□**	**0.0112**	**0.0□10**	**□.0000e□00□**	**□.□000e□00□**	**1.□000e□004**	**□.□000e□00□**	**1.□□00e□00□**	**1.□000e□004**	**1.□□00e□00□**	**0.0000**	**□.□124**	**□.□124**	**□.□000e□004**	**0.0000**	**□.□1□□**

□.4 Pa□in□ □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0213	0.234□	0.134□	2.0000e□004		0.0131	0.0131		0.0120	0.0120	0.0000	19.29□1	19.29□1	5.□000e□003	0.0000	19.4169
Pa□ing	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.021□**	**0.2□4□**	**0.1□4□**	**2.0000e□004**		**0.01□1**	**0.01□1**		**0.0120**	**0.0120**	**0.0000**	**1□.2□□1**	**1□.2□□1**	**□.□000e□00□**	**0.0000**	**1□.41□□**

□.4 Pa□in□ □2014

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	6.3000e□ 004	□.9000e□ 004	□.□500e□ 003	1.0000e□ 005	1.0□00e□ 003	1.0000e□ 005	1.0□00e□ 003	2.9000e□ 004	1.0000e□ 005	2.9000e□ 004	0.0000	1.0261	1.0261	6.0000e□ 005	0.0000	1.02□4
□otal	**□.□000e□ 004**	**□.□000e□ 004**	**□.□□00e□ 00□**	**1.0000e□ 00□**	**1.0□00e□ 00□**	**1.0000e□ 00□**	**1.0□00e□ 00□**	**2.□000e□ 004**	**1.0000e□ 00□**	**2.□000e□ 004**	**0.0000**	**1.02□1**	**1.02□1**	**□.0000e□ 00□**	**0.0000**	**1.02□4**

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0213	0.234□	0.134□	2.0000e□ 004		0.0131	0.0131		0.0120	0.0120	0.0000	19.29□1	19.29□1	5.□000e□ 003	0.0000	19.416□
Pa□ing	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.021□**	**0.2□4□**	**0.1□4□**	**2.0000e□ 004**		**0.01□1**	**0.01□1**		**0.0120**	**0.0120**	**0.0000**	**1□.2□□1**	**1□.2□□1**	**□.□000e□ 00□**	**0.0000**	**1□.41□□**

□.4 Pa□in□ □2014

Miti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	6.3000e□004	□.9000e□004	□.□500e□003	1.0000e□005	1.0□00e□003	1.0000e□005	1.0□00e□003	2.9000e□004	1.0000e□005	2.9000e□004	0.0000	1.0261	1.0261	6.0000e□005	0.0000	1.02□4
□otal	**□.□000e□004**	**□.□000e□004**	**□.□□00e□00□**	**1.0000e□00□**	**1.0□00e□00□**	**1.0000e□00□**	**1.0□00e□00□**	**2.□000e□004**	**1.0000e□00□**	**2.□000e□004**	**0.0000**	**1.02□1**	**1.02□1**	**□.0000e□00□**	**0.0000**	**1.02□4**

□.□ □rchitect□ral Coatin□ □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rc□it. Coating	9.6600e□003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	1.1200e□003	6.9400e□003	4.□000e□003	1.0000e□005		6.1000e□004	6.1000e□004		6.1000e□004	6.1000e□004	0.0000	0.63□3	0.63□3	9.0000e□005	0.0000	0.6402
□otal	**0.010□**	**□.□400e□00□**	**4.□000e□00□**	**1.0000e□00□**		**□.1000e□004**	**□.1000e□004**		**□.1000e□004**	**□.1000e□004**	**0.0000**	**0.□□□□**	**0.□□□□**	**□.0000e□00□**	**0.0000**	**0.□402**

□.□ □rchitect□ral Coatin□ □2014

Unmiti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rc□it. Coating	9.6600e□ 003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	1.1200e□ 003	6.9400e□ 003	4.□000e□ 003	1.0000e□ 005		6.1000e□ 004	6.1000e□ 004		6.1000e□ 004	6.1000e□ 004	0.0000	0.63□3	0.63□3	9.0000e□ 005	0.0000	0.6402
□otal	**0.010□**	**□.□400e□ 00□**	**4.□000e□ 00□**	**1.0000e□ 00□**		**□.1000e□ 004**	**□.1000e□ 004**		**□.1000e□ 004**	**□.1000e□ 004**	**0.0000**	**0.□□□□**	**0.□□□□**	**□.0000e□ 00□**	**0.0000**	**0.□402**

□.□ □rchitect□ral Coatin□ □2014

Miti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.□ □rchitect□ral Coatin□ □201□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rc□it. Coating	0.0251					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	2.6400e□003	0.016□	0.0124	2.0000e□005		1.4400e□003	1.4400e□003		1.4400e□003	1.4400e□003	0.0000	1.6596	1.6596	2.2000e□004	0.0000	1.6642
□otal	**0.02□□**	**0.01□□**	**0.0124**	**2.0000e□00□**		**1.4400e□00□**	**1.4400e□00□**		**1.4400e□00□**	**1.4400e□00□**	**0.0000**	**1.□□□□**	**1.□□□□**	**2.2000e□004**	**0.0000**	**1.□□42**

□.□ □rchitect□ral Coatin□ □201□

Unmiti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rc□it. Coating	0.0251					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	2.6400e□003	0.016□	0.0124	2.0000e□005		1.4400e□003	1.4400e□003		1.4400e□003	1.4400e□003	0.0000	1.6596	1.6596	2.2000e□004	0.0000	1.6642
□otal	**0.02□□**	**0.01□□**	**0.0124**	**2.0000e□00□**		**1.4400e□00□**	**1.4400e□00□**		**1.4400e□00□**	**1.4400e□00□**	**0.0000**	**1.□□□□**	**1.□□□□**	**2.2000e□004**	**0.0000**	**1.□□42**

□.□ □rchitect□ral Coatin□ □201□

Miti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational □etail □Mobile

4.1 Miti□ation Meas□res Mobile

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□nmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 □rip □□mmary In□ormation

	□□eage Daily □rip □ate			□nmitigated	Mitigated
□and □se	□ ee□day	□at□rday	□□nday	□nn□al VM□	□nn□al VM□
□trip Mall	0.00	0.00	0.00		
□otal	0.00	0.00	0.00		

4.□ □rip □ype In□ormation

	Miles			□rip □			□rip P□rpose □		
□and □se	□□□ or C□□	□□□ or C□C	□□□ or C□□□	□□□ or C□□	□□□ or C□C	□□□ or C□□□	Primary	Di□erted	Pass□□y
□trip Mall	9.50	□.30	□.30	16.60	64.40	19.00	45	40	15

□D□	□D□1	□D□2	MDV	□□D1	□□D2	M□D	□□D	□□□□	□□□□	MC□	□□□□	M□
0.464542	0.064□19	0.1600□4	0.16□695	0.0453□□	0.006034	0.016996	0.06154□	0.001122	0.00149□	0.00630□	0.000655	0.002321

□.0 □ner□y □etail

4.4 □leet Mi□

□istorical Energy □se: □

□.1 Miti□ation Meas□res □ner□y

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	13.2□01	13.2□01	6.0000e□004	1.2000e□004	13.3312
Electricity □nmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	13.2□01	13.2□01	6.0000e□004	1.2000e□004	13.3312
□at□ralGas Mitigated	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	2.9□50	2.9□50	6.0000e□005	5.0000e□005	2.9931
□at□ralGas □nmitigated	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	2.9□50	2.9□50	6.0000e□005	5.0000e□005	2.9931

□.2 □ner□y by □an□ Use □Nat□ral□as

Unmiti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	tons/yr										M□/yr					
□trip Mall	55□50	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	2.9□50	2.9□50	6.0000e□005	5.0000e□005	2.9931
□otal		**□.0000e□004**	**2.□□00e□00□**	**2.□000e□00□**	**2.0000e□00□**		**2.1000e□004**	**2.1000e□004**		**2.1000e□004**	**2.1000e□004**	**0.0000**	**2.□□□0**	**2.□□□0**	**□.0000e□00□**	**□.0000e□00□**	**2.□□□1**

□.2 □ner□y by □an□ Use □Nat□ral□as

Miti□ate□

	□at□ralGa s □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	tons/yr										M□/yr					
□trip Mall	55□50	3.0000e□ 004	2.□300e□ 003	2.3000e□ 003	2.0000e□ 005		2.1000e□ 004	2.1000e□ 004		2.1000e□ 004	2.1000e□ 004	0.0000	2.9□50	2.9□50	6.0000e□ 005	5.0000e□ 005	2.9931
□otal		**□.0000e□ 004**	**2.□□00e□ 00□**	**2.□000e□ 00□**	**2.0000e□ 00□**		**2.1000e□ 004**	**2.1000e□ 004**		**2.1000e□ 004**	**2.1000e□ 004**	**0.0000**	**2.□□□0**	**2.□□□0**	**□.0000e□ 00□**	**□.0000e□ 00□**	**2.□□□1**

□.□ □ner□y by □an□ Use □□lectricity

Unmiti□ate□

	Electricity □se	□otal C□2	C□4	□2□	C□2e
□and □se	□□ □/yr	M□/yr			
□trip Mall	45650	13.2□01	6.0000e□ 004	1.2000e□ 004	13.3312
□otal		**1□.2□01**	**□.0000e□ 004**	**1.2000e□ 004**	**1□.□□12**

□.□ □ner□y by □an□ Use □□lectricity

Miti□ate□

	Electricity □se	□otal C□2	C□4	□2□	C□2e
□and □se	□□ □/yr	M□/yr			
□trip Mall	45650	13.2□01	6.0000e□ 004	1.2000e□ 004	13.3312
□otal		**1□.2□01**	**□.0000e□ 004**	**1.2000e□ 004**	**1□.□□12**

□.0 □rea □etail

□.1 Miti□ation Meas□res □rea

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Mitigated	0.0230	0.0000	5.0000e□ 005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□ 005	9.0000e□ 005	0.0000	0.0000	9.0000e□ 005
□nmitigated	0.0230	0.0000	5.0000e□ 005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□ 005	9.0000e□ 005	0.0000	0.0000	9.0000e□ 005

□.2 □rea by □□bCate□ory

Unmiti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	tons/yr										M□/yr					
□rc□itect□ral Coating	3.4□00e□003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cons□mer Prod□cts	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□andscaping	0.0000	0.0000	5.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□005	9.0000e□005	0.0000	0.0000	9.0000e□005
□otal	**0.02□0**	**0.0000**	**□.0000e□00□**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**□.0000e□00□**	**□.0000e□00□**	**0.0000**	**0.0000**	**□.0000e□00□**

Miti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	tons/yr										M□/yr					
□rc□itect□ral Coating	3.4□00e□003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cons□mer Prod□cts	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□andscaping	0.0000	0.0000	5.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□005	9.0000e□005	0.0000	0.0000	9.0000e□005
□otal	**0.02□0**	**0.0000**	**□.0000e□00□**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**□.0000e□00□**	**□.0000e□00□**	**0.0000**	**0.0000**	**□.0000e□00□**

□.0 Water □etail

□.1 Miti□ation Meas□res Water

	□otal C□2	C□4	□2□	C□2e
Category	M□/yr			
Mitigated	0.9316	0.0121	2.9000e□ 004	1.2□63
□nmitigated	0.9316	0.0121	2.9000e□ 004	1.2□65

□.2 Water by □an□ Use

Unmiti□ate□

	□ndoor/ □□tdoor □se	□otal C□2	C□4	□2□	C□2e
□and □se	Mgal	M□/yr			
□trip Mall	0.3□0363 / 0.226996	0.9316	0.0121	2.9000e□ 004	1.2□65
□otal		**0.□□1□**	**0.0121**	**2.□000e□ 004**	**1.2□□□**

□.2 Water by □an□ Use

Miti□ate□

	□ndoor/ □□tdoor □se	□otal C□2	C□4	□2□	C□2e
□and □se	Mgal	M□/yr			
□trip Mall	0.3□0363 / 0.226996	0.9316	0.0121	2.9000e□ 004	1.2□63
□otal		**0.□□1□**	**0.0121**	**2.□000e□ 004**	**1.2□□□**

□.0 Waste □etail

□.1 Miti□ation Meas□res Waste

Cate□ory/Year

	□otal C□2	C□4	□2□	C□2e
	M□/yr			
Mitigated	1.065□	0.0630	0.0000	2.3□□3
□nmitigated	1.065□	0.0630	0.0000	2.3□□3

□.2 Waste by □an□ Use

Unmiti□ate□

	□ aste Disposed	□otal C□2	C□4	□2□	C□2e
□and □se	tons	M□/yr			
□trip Mall	5.25	1.065□	0.0630	0.0000	2.3□□3
□otal		**1.0□□□**	**0.0□□0**	**0.0000**	**2.□□□□**

Miti□ate□

	□ aste Disposed	□otal C□2	C□4	□2□	C□2e
□and □se	tons	M□/yr			
□trip Mall	5.25	1.065□	0.0630	0.0000	2.3□□3
□otal		**1.0□□□**	**0.0□□0**	**0.0000**	**2.□□□□**

□.0 Operational O□□roa□

E□□ipment □ype	□□m□er	□o□rs/Day	Days/□ear	□orse Po□er	□oad □actor	□□el □ype

10.0 □e□etation

□an □oa□□in □rain

□an □oa□□in Co□nty□□nn□al

1.0 Project Characteristics

1.1 □an□ Usa□e

□and □ses	□i□e	Metric	□ot □creage	□loor □□rface □rea	Pop□lation
□ser Defined □nd□strial	1.00	□ser Defined □nit	5.00	0.00	0

1.2 Other Project Characteristics

Urbani□ation	□r□an	**Win□ □pee□ (m/s)**	2.□	**Precipitation □re□ (□ays)**	51
Climate □one	3			**Operational Year**	2015
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.□ User □ntere□ Comments □ Non□□e□a□lt □ata

Pro□ect C□aracteristics □

□and □se □□rain □rac□ □nstall

Constr□ction P□ase □30 days prep□30 days install

□ff□road E□□ipment □Prep: 1 grader□1 do□er□1 loader/□ac□□oe□1 roller□1 compactor□1 □ater tr□c□

□ff□road E□□ipment □□nstall: 1 crane□1 for□lift□1 generator set□2 □elders

□rips and VM□ □15 □or□ers eac□ p□ase 10 □endor deli□eries a day

Constr□ction □ff□road E□□ipment Mitigation □□ater e□posed area 2 times a day

□a□le □ame	Col□mn □ame	Defa□lt Val□e	□e□ Val□e
t□lConstr□ctionP□ase	□□mDays	230.00	30.00
t□lConstr□ctionP□ase	□□mDays	□.00	30.00
t□lConstr□ctionP□ase	P□aseEndDate	3/25/2014	3/2□/2014
t□lConstr□ctionP□ase	P□ase□tartDate	2/12/2014	2/15/2014
t□lGrading	□cres□fGrading	15.00	4.00
t□l□and□se	□ot□creage	0.00	5.00
t□l□ff□oadE□□ipment	□orsePo□er	400.00	300.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		□ollers
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		□ff□□ig□□ay □r□c□s
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		Plate Compactors
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	1.00	2.00
t□l□ff□oadE□□ipment	□sage□o□rs	□.00	6.00
t□lPro□ectC□aracteristics	□perational□ear	2014	2015
t□l□rips□ndVM□	Vendor□rip□□m□er	0.00	10.00
t□l□rips□ndVM□	□ or□er□rip□□m□er	1□.00	15.00
t□l□rips□ndVM□	□ or□er□rip□□m□er	0.00	15.00

2.0 □missions □□mmary

2.1 O□erall Constr□ction

Unmiti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	tons/yr										M□/yr					
2014	0.11□0	1.0236	0.669□	9.0000e□004	0.0□44	0.0614	0.1359	0.03□□	0.05□4	0.0961	0.0000	□3.0496	□3.0496	0.0212	0.0000	□3.4955
□otal	**0.11□0**	**1.02□□**	**0.□□□□**	**□.0000e□004**	**0.0□44**	**0.0□14**	**0.1□□□**	**0.0□□□**	**0.0□□4**	**0.0□□1**	**0.0000**	**□□.04□□**	**□□.04□□**	**0.0212**	**0.0000**	**□□.4□□□**

Miti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	tons/yr										M□/yr					
2014	0.11□0	1.0236	0.669□	9.0000e□004	0.0360	0.0614	0.09□4	0.01□1	0.05□4	0.0□55	0.0000	□3.0495	□3.0495	0.0212	0.0000	□3.4955
□otal	**0.11□0**	**1.02□□**	**0.□□□□**	**□.0000e□004**	**0.0□□0**	**0.0□14**	**0.0□□4**	**0.01□1**	**0.0□□4**	**0.0□□□**	**0.0000**	**□□.04□□**	**□□.04□□**	**0.0212**	**0.0000**	**□□.4□□□**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**□1.□□**	**0.00**	**2□.2□**	**□□.2□**	**0.00**	**21.44**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmiti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rea	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□aste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ater						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0000**	**0.0000**	**1.0000e□00□**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e□00□**	**2.0000e□00□**	**0.0000**	**0.0000**	**2.0000e□00□**

2.2 O□erall Operational

Miti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rea	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□aste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ater						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0000**	**0.0000**	**1.0000e□00□**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e□00□**	**2.0000e□00□**	**0.0000**	**0.0000**	**2.0000e□00□**

	□O□	**NO□**	**CO**	**□O2**	**□□iti□e PM10**	**□□ha□st PM10**	**PM10 □otal**	**□□iti□e PM2.□**	**□□ha□st PM2.□**	**PM2.□ □otal**	**□io□CO2**	**N□io□CO2**	**□otal CO2**	**CH4**	**N20**	**CO2e**
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

□.0 Constr□ction □etail

Constr□ction Phase

P□ase □□m□er	P□ase □ame	P□ase □ype	□tart Date	End Date	□□m Days □ ee□	□□m Days	P□ase Description
1	□rac□ □ed Prep	Grading	1/1/2014	2/11/2014	5	30	
2	□rac□/□ignal □nstallation	□□ilding Constr□ction	2/15/2014	3/2□/2014	5	30	

□cres o□□ra□in□ (□ite Preparation Phase)□0

□cres o□□ra□in□ (□ra□in□ Phase)□0

□cres o□Pa□in□□0

□esi□ential In□oor□0□□esi□ential O□t□oor□0□Non□□esi□ential In□oor□0□Non□□esi□ential O□t□oor□0 (□rchitect□ral Coatin□ □s□□t)

O□□□oa□ □□□ipment

P□ase □ame	□ffroad E□□ipment □ype	□mo□nt	□sage □o□rs	□orse Po□er	□oad □actor
□rac□□ed Prep	□ollers	1	6.00	□0	0.3□
□rac□□ed Prep	□ff□□ig□□ay □r□c□s	1	4.00	300	0.3□
□rac□□ed Prep	Plate Compactors	1	4.00	□	0.43
□rac□□ed Prep	E□ca□ators	1	□.00	162	0.3□
□rac□/□ignal □nstallation	Cranes	1	□.00	226	0.29
□rac□/□ignal □nstallation	□or□lifts	1	□.00	□9	0.20
□rac□/□ignal □nstallation	Generator □ets	1	□.00	□4	0.□4
□rac□/□ignal □nstallation	□ractors/□oaders/□ac□□oes	3	□.00	9□	0.3□
□rac□□ed Prep	□□□□er □ired Do□ers	1	6.00	255	0.40
□rac□□ed Prep	Graders	1	□.00	1□4	0.41
□rac□□ed Prep	□ractors/□oaders/□ac□□oes	1	□.00	9□	0.3□
□rac□/□ignal □nstallation	□ elders	2	□.00	46	0.45

□rips an□ □M□

P□ase □ame	□ffroad E□□ipment Co□nt	□ or□er □rip □□m□er	Vendor □rip □□m□er	□a□ling □rip □□m□er	□ or□er □rip □engt□	Vendor □rip □engt□	□a□ling □rip □engt□	□ or□er Ve□icle Class	Vendor Ve□icle Class	□a□ling Ve□icle Class
□rac□□ed Prep	□	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□rac□/□ignal □nstallation	□	15.00	10.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□

□.1 Miti□ation Meas□res Constr□ction

□ ater E□posed □rea

Clean Pa□ed □oads

□.2 □rac□ □e□ Prep □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□□giti□e D□st					0.0699	0.0000	0.0699	0.03□5	0.0000	0.03□5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	0.0526	0.56□2	0.3429	4.3000e□ 004		0.0304	0.0304		0.02□9	0.02□9	0.0000	41.0139	41.0139	0.0121	0.0000	41.26□5
□otal	**0.0□2□**	**0.□□□2**	**0.□42□**	**4.□000e□ 004**	**0.0□□□**	**0.0□04**	**0.1002**	**0.0□□□**	**0.02□□**	**0.0□□4**	**0.0000**	**41.01□□**	**41.01□□**	**0.0121**	**0.0000**	**41.2□□□**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	1.0500e□ 003	1.3200e□ 003	0.0129	2.0000e□ 005	1.□900e□ 003	2.0000e□ 005	1.□100e□ 003	4.□000e□ 004	1.0000e□ 005	4.9000e□ 004	0.0000	1.□102	1.□102	1.0000e□ 004	0.0000	1.□123
□otal	**1.0□00e□ 00□**	**1.□200e□ 00□**	**0.012□**	**2.0000e□ 00□**	**1.□□00e□ 00□**	**2.0000e□ 00□**	**1.□100e□ 00□**	**4.□000e□ 004**	**1.0000e□ 00□**	**4.□000e□ 004**	**0.0000**	**1.□102**	**1.□102**	**1.0000e□ 004**	**0.0000**	**1.□12□**

□.2 □rac□ □e□ Prep □2014

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□□giti□e D□st					0.0314	0.0000	0.0314	0.0169	0.0000	0.0169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	0.0526	0.56□2	0.3429	4.3000e□ 004		0.0304	0.0304		0.02□9	0.02□9	0.0000	41.0139	41.0139	0.0121	0.0000	41.26□4
□otal	**0.0□2□**	**0.□□□2**	**0.□42□**	**4.□000e□ 004**	**0.0□14**	**0.0□04**	**0.0□1□**	**0.01□□**	**0.02□□**	**0.044□**	**0.0000**	**41.01□□**	**41.01□□**	**0.0121**	**0.0000**	**41.2□□4**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	1.0500e□ 003	1.3200e□ 003	0.0129	2.0000e□ 005	1.□900e□ 003	2.0000e□ 005	1.□100e□ 003	4.□000e□ 004	1.0000e□ 005	4.9000e□ 004	0.0000	1.□102	1.□102	1.0000e□ 004	0.0000	1.□123
□otal	**1.0□00e□ 00□**	**1.□200e□ 00□**	**0.012□**	**2.0000e□ 00□**	**1.□□00e□ 00□**	**2.0000e□ 00□**	**1.□100e□ 00□**	**4.□000e□ 004**	**1.0000e□ 00□**	**4.□000e□ 004**	**0.0000**	**1.□102**	**1.□102**	**1.0000e□ 004**	**0.0000**	**1.□12□**

□.□ □rac□/□i□nal Installation □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0609	0.4334	0.2□□0	3.9000e□ 004		0.0306	0.0306		0.0291	0.0291	0.0000	35.2□02	35.2□02	□.9200e□ 003	0.0000	35.46□5
□otal	**0.0□0□**	**0.4□□4**	**0.2□□0**	**□.□000e□ 004**		**0.0□0□**	**0.0□0□**		**0.02□1**	**0.02□1**	**0.0000**	**□□.2□02**	**□□.2□02**	**□.□200e□ 00□**	**0.0000**	**□□.4□□□**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3400e□ 003	0.0204	0.0240	4.0000e□ 005	9.□000e□ 004	4.2000e□ 004	1.4000e□ 003	2.□000e□ 004	3.9000e□ 004	6.□000e□ 004	0.0000	3.3351	3.3351	4.0000e□ 005	0.0000	3.335□
□ or□er	1.0500e□ 003	1.3200e□ 003	0.0129	2.0000e□ 005	1.□900e□ 003	2.0000e□ 005	1.□100e□ 003	4.□000e□ 004	1.0000e□ 005	4.9000e□ 004	0.0000	1.□102	1.□102	1.0000e□ 004	0.0000	1.□123
□otal	**□.□□00e□ 00□**	**0.021□**	**0.0□□□**	**□.0000e□ 00□**	**2.□□00e□ 00□**	**4.4000e□ 004**	**□.2100e□ 00□**	**□.□000e□ 004**	**4.0000e□ 004**	**1.1□00e□ 00□**	**0.0000**	**□.04□□**	**□.04□□**	**1.4000e□ 004**	**0.0000**	**□.04□2**

□.□ □rac□/□i□nal Installation □2014

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0609	0.4334	0.2□□0	3.9000e□ 004		0.0306	0.0306		0.0291	0.0291	0.0000	35.2□02	35.2□02	□.9200e□ 003	0.0000	35.46□5
□otal	**0.0□0□**	**0.4□□4**	**0.2□□0**	**□.□000e□ 004**		**0.0□0□**	**0.0□0□**		**0.02□1**	**0.02□1**	**0.0000**	**□□.2□02**	**□□.2□02**	**□.□200e□ 00□**	**0.0000**	**□□.4□□□**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3400e□ 003	0.0204	0.0240	4.0000e□ 005	9.□000e□ 004	4.2000e□ 004	1.4000e□ 003	2.□000e□ 004	3.9000e□ 004	6.□000e□ 004	0.0000	3.3351	3.3351	4.0000e□ 005	0.0000	3.335□
□ or□er	1.0500e□ 003	1.3200e□ 003	0.0129	2.0000e□ 005	1.□900e□ 003	2.0000e□ 005	1.□100e□ 003	4.□000e□ 004	1.0000e□ 005	4.9000e□ 004	0.0000	1.□102	1.□102	1.0000e□ 004	0.0000	1.□123
□otal	**□.□□00e□ 00□**	**0.021□**	**0.0□□□**	**□.0000e□ 00□**	**2.□□00e□ 00□**	**4.4000e□ 004**	**□.2100e□ 00□**	**□.□000e□ 004**	**4.0000e□ 004**	**1.1□00e□ 00□**	**0.0000**	**□.04□□**	**□.04□□**	**1.4000e□ 004**	**0.0000**	**□.04□2**

4.0 Operational □etail □Mobile

4.1 Mitigation Measures Mobile

	G		C	2	gitive PM10	Exhaust PM10	PM10 Total	gitive PM2.5	Exhaust PM2.5	PM2.5 Total	io C2	io C2	Total C2	C4	2O	C2e
Category	tons/yr										M/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
nmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

D	D1	D2	MDV	D1	D2	MD	D			MC		M
0.464542	0.064719	0.160074	0.167695	0.045377	0.006034	0.016996	0.061547	0.001122	0.001497	0.006307	0.000655	0.002321

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use:

□.1 Miti□ation Meas□res □ner□y

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity □nmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□at□ralGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□at□ralGas □nmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

□.2 □ner□y by □an□ Use □Nat□ral□as

Unmiti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	tons/yr										M□/yr					
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.2 □ner□y by □an□ Use □Nat□ral□as

Miti□ate□

	□at□ralGa s □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	tons/yr										M□/yr					
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.□ □ner□y by □an□ Use □□lectricity

Unmiti□ate□

	Electricity □se	□otal C□2	C□4	□2□	C□2e
□and □se	□□ □/yr	M□/yr			
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.□ □ner□y by □an□ Use □□lectricity

Miti□ate□

	Electricity □se	□otal C□2	C□4	□2□	C□2e
□and □se	□□ □/yr	M□/yr			
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.0 □rea □etail

□.1 Miti□ation Meas□res □rea

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Mitigated	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
□nmitigated	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005

□.2 □rea by □□bCate□ory

Unmiti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	tons/yr										M□/yr					
□rc□itect□ral Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cons□mer Prod□cts	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□andscaping	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
□otal	**0.0000**	**0.0000**	**1.0000e□00□**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e□00□**	**2.0000e□00□**	**0.0000**	**0.0000**	**2.0000e□00□**

Miti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	tons/yr										M□/yr					
□rc□itect□ral Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cons□mer Prod□cts	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□andscaping	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
□otal	**0.0000**	**0.0000**	**1.0000e□00□**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e□00□**	**2.0000e□00□**	**0.0000**	**0.0000**	**2.0000e□00□**

□.0 Water □etail

□.1 Miti□ation Meas□res Water

	□otal C□2	C□4	□2□	C□2e
Category	M□/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
□nmitigated	0.0000	0.0000	0.0000	0.0000

□.2 Water by □an□ Use

Unmiti□ate□

	□ndoor/ □ □tdoor □se	□otal C□2	C□4	□2□	C□2e
□and □se	Mgal	M□/yr			
□ser Defined □nd□strial	0 / 0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.2 Water by □an□ Use

Miti□ate□

	□ndoor/ □□tdoor □se	□otal C□2	C□4	□2□	C□2e
□and □se	Mgal	M□/yr			
□ser Defined □nd□strial	0 / 0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.0 Waste □etail

□.1 Miti□ation Meas□res Waste

Cate□ory/Year

	□otal C□2	C□4	□2□	C□2e
	M□/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
□nmitigated	0.0000	0.0000	0.0000	0.0000

□.2 Waste by □an□ Use

Unmiti□ate□

	□ aste Disposed	□otal C□2	C□4	□2□	C□2e
□and □se	tons	M□/yr			
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Miti□ate□

	□ aste Disposed	□otal C□2	C□4	□2□	C□2e
□and □se	tons	M□/yr			
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.0 Operational O□□roa□

E□□ipment □ype	□□m□er	□o□rs/Day	Days/□ear	□orse Po□er	□oad □actor	□□el □ype

10.0 □e□etation

□an □oa□□in □rain □tation

□an □oa□□in Co□nty□□□mmer

1.0 Project Characteristics

1.1 □an□ Usa□e

□and □ses	□i□e	Metric	□ot □creage	□loor □□rface □rea	Pop□lation
□trip Mall	5.00	1000s□ft	5.00	5□000.00	0

1.2 Other Project Characteristics

Urbani□ation	□r□an	**Win□ □pee□ (m/s)**	2.□	**Precipitation □re□ (□ays)**	51
Climate □one	3			**Operational Year**	2015
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.□ User □ntere□ Comments □ Non□□e□a□lt □ata

Pro□ect C□aracteristics □

□and □se □□rain station modeled as strip mall□□□ilding□5□000 sf□5 acre lot

Constr□ction P□ase □Grading: □ days□Constr□ction: 100 days□Pa□ing 1□ days

□ff□road E□□ipment □Grading: 1 e□ca□ator□1 grader□1 do□er□3 loader/□ac□□oes

□ff□road E□□ipment □Constr□ction: 1 crane□3 for□lifts□1 gen set□1 loader/□ac□□oe□1 □elder

□ff□road E□□ipment □Pa□ing: 2 pa□ers□2 pa□ing e□□ipment□2 rollers

Ve□icle □rips □constr□ction emissions only

□rips and VM□ □15 □or□ers

Constr□ction □ff□road E□□ipment Mitigation □□ater 2 times a day

□a□le □ame	Col□mn □ame	Defa□lt Val□e	□e□ Val□e
t□lConstr□ctionP□ase	□□mDays	230.00	100.00
t□lConstr□ctionP□ase	P□aseEndDate	6/25/2014	12/24/2014
t□lConstr□ctionP□ase	P□ase□tartDate	5/31/2014	11/29/2014
t□l□and□se	□ot□creage	0.11	5.00
t□lPro□ectC□aracteristics	□perational□ear	2014	2015
t□l□rips□ndVM□	□ or□er□rip□□m□er	2.00	15.00
t□lVe□icle□rips	□□□□	42.04	0.00
t□lVe□icle□rips	□□□□	20.43	0.00
t□lVe□icle□rips	□ D□□□	44.32	0.00

2.0 □missions □□mmary

2.1 O□erall Constr□ction (Ma□im□m □aily □mission)

Unmiti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	l□/day										l□/day					
2014	4.30□□	41.1□□□	2□.6913	0.0313	6.6□56	2.3□25	9.04□0	3.4002	2.1□2□	5.5□2□	0.0000	3□299.0□0 5	3□299.0□0 5	0.9420	0.0000	3□31□□62 5
2015	4.2691	2.5□03	1.901□	2.9□00e□ 003	0.0000	0.2209	0.2209	0.0000	0.2209	0.2209	0.0000	2□1.44□1	2□1.44□1	0.036□	0.0000	2□2.21□□
□otal	□.□□□□	**4□.□4□1**	**2□.□□□0**	**0.0□4□**	□.□□□□	**2.□□□4**	□.2□□□	**□.4002**	**2.40□□**	□.□0□□	**0.0000**	**□□□□0.□2□ □**	**□□□□0.□2□ □**	**0.□□□□**	**0.0000**	**□□□01.0□0 2**

Miti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	l□/day										l□/day					
2014	4.30□□	41.1□□□	2□.6913	0.0313	3.0□1□	2.3□25	5.4442	1.54□1	2.1□2□	3.□30□	0.0000	3□299.0□0 5	3□299.0□0 5	0.9420	0.0000	3□31□□62 5
2015	4.2691	2.5□03	1.901□	2.9□00e□ 003	0.0000	0.2209	0.2209	0.0000	0.2209	0.2209	0.0000	2□1.44□1	2□1.44□1	0.036□	0.0000	2□2.21□□
□otal	□.□□□□	**4□.□4□1**	**2□.□□□0**	**0.0□4□**	□.0□1□	**2.□□□4**	□.□□□1	**1.□4□1**	**2.40□□**	□.□□1□	**0.0000**	**□□□□0.□2□ □**	**□□□□0.□2□ □**	**0.□□□□**	**0.0000**	**□□□01.0□0 2**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	□□.□□	**0.00**	□□.□□	□4.4□	**0.00**	□1.□1	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmiti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	I□/day										I□/day					
□rea	0.1261	1.0000e□005	5.3000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1600e□003
Energy	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**0.12□□**	**0.01□0**	**0.01□1**	**□.0000e□00□**	**0.0000**	**1.1400e□00□**	**1.1400e□00□**	**0.0000**	**1.1400e□00□**	**1.1400e□00□**		**1□.□□0□**	**1□.□□0□**	**□.4000e□004**	**□.□000e□004**	**1□.0□□□**

Miti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	I□/day										I□/day					
□rea	0.1261	1.0000e□005	5.3000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1600e□003
Energy	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**0.12□□**	**0.01□0**	**0.01□1**	**□.0000e□00□**	**0.0000**	**1.1400e□00□**	**1.1400e□00□**	**0.0000**	**1.1400e□00□**	**1.1400e□00□**		**1□.□□0□**	**1□.□□0□**	**□.4000e□004**	**□.□000e□004**	**1□.0□□□**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

□.0 Constr□ction □etail

Constr□ction Phase

P□ase □□m□er	P□ase □ame	P□ase □ype	□tart Date	End Date	□□m Days □ ee□	□□m Days	P□ase Description
1	Grading	Grading	1/1/2014	1/10/2014	5	□	
2	□□ilding Constr□ction	□□ilding Constr□ction	1/11/2014	5/30/2014	5	100	
3	Pa□ing	Pa□ing	11/29/2014	12/24/2014	5	1□	
4	□rc□itect□ral Coating	□rc□itect□ral Coating	12/25/2014	1/19/2015	5	1□	

□cres o□□ra□in□ (□ite Preparation Phase)□0

□cres o□□ra□in□ (□ra□in□ Phase)□4

□cres o□Pa□in□□0

□esi□ential In□oor□0□□esi□ential O□t□oor□0□Non□□esi□ential In□oor□□□□00□Non□□esi□ential O□t□oor□2□□00 (□rchitect□ral Coatin□ □s□□t)

O□□□oa□ □□□ipment

P□ase □ame	□ffroad E□□ipment □ype	□mo□nt	□sage □o□rs	□orse Po□er	□oad □actor
□rc□itect□ral Coating	□ir Compressors	1	6.00	□□	0.4□
Grading	E□ca□ators	1	□.00	162	0.3□
□□ilding Constr□ction	Generator □ets	1	□.00	□4	0.□4
Grading	Graders	1	□.00	1□4	0.41
□□ilding Constr□ction	Cranes	1	□.00	226	0.29
□□ilding Constr□ction	□or□lifts	3	□.00	□9	0.20
Pa□ing	Pa□ing E□□ipment	2	□.00	130	0.36
Pa□ing	Pa□ers	2	□.00	125	0.42
Pa□ing	□ollers	2	□.00	□0	0.3□
□□ilding Constr□ction	□ elders	1	□.00	46	0.45
Grading	□□□□er □ired Do□ers	1	□.00	255	0.40
□□ilding Constr□ction	□ractors/□oaders/□ac□□oes	3	□.00	9□	0.3□
Grading	□ractors/□oaders/□ac□□oes	3	□.00	9□	0.3□

□rips an□ □M□

P□ase □ame	□ffroad E□□ipment Co□nt	□ or□er □rip □□m□er	Vendor □rip □□m□er	□a□ling □rip □□m□er	□ or□er □rip □engt□	Vendor □rip □engt□	□a□ling □rip □engt□	□ or□er Ve□icle Class	Vendor Ve□icle Class	□a□ling Ve□icle Class
Grading	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□□ilding Constr□ction	9	15.00	1.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
Pa□ing	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□rc□itect□ral Coating	1	0.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□

□.1 Miti□ation Meas□res Constr□ction

□ ater E□posed □rea

Clean Pa□ed □oads

□.2 □ra□in□ □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□□giti□e D□st					6.5523	0.0000	6.5523	3.36□5	0.0000	3.36□5			0.0000			0.0000
□ff□□oad	3.□669	41.099□	26.□53□	0.029□		2.3□14	2.3□14		2.1□1□	2.1□1□		3□162.4266	3□162.4266	0.9345		3□1□2.051□
□otal	**□.□□□□**	**41.0□□□**	**2□.□□□□**	**0.02□□**	**□.□□2□**	**2.□□14**	**□.□2□□**	**□.□□□□**	**2.1□1□**	**□.□4□2**		**□1□2.42□□**	**□1□2.42□□**	**0.□□4□**		**□1□2.0□1□**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□003	0.1232	1.0300e□003	0.1243	0.032□	9.4000e□004	0.0336		136.6539	136.6539	□4□00e□003		136.□10□
□otal	**0.0□□□**	**0.0□□1**	**0.□□□□**	**1.□□00e□00□**	**0.12□2**	**1.0□00e□00□**	**0.124□**	**0.0□2□**	**□.4000e□004**	**0.0□□□**		**1□□.□□□□**	**1□□.□□□□**	**□.4□00e□00□**		**1□□.□10□**

□.2 □ra□in□ □2014

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□□giti□e D□st					2.94□6	0.0000	2.94□6	1.5154	0.0000	1.5154			0.0000			0.0000
□ff□□oad	3.□669	41.099□	26.□53□	0.029□		2.3□14	2.3□14		2.1□1□	2.1□1□	0.0000	3□162.4266	3□162.4266	0.9345		3□1□2.051□
□otal	**□.□□□□**	**41.0□□□**	**2□.□□□□**	**0.02□□**	**2.□4□□**	**2.□□14**	**□.□200**	**1.□1□4**	**2.1□1□**	**□.□□□1**	**0.0000**	**□1□2.42□□**	**□1□2.42□□**	**0.□□4□**		**□1□2.0□1□**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□003	0.1232	1.0300e□003	0.1243	0.032□	9.4000e□004	0.0336		136.6539	136.6539	□4□00e□003		136.□10□
□otal	**0.0□□□**	**0.0□□1**	**0.□□□□**	**1.□□00e□00□**	**0.12□2**	**1.0□00e□00□**	**0.124□**	**0.0□2□**	**□.4000e□004**	**0.0□□□**		**1□□.□□□□**	**1□□.□□□□**	**□.4□00e□00□**		**1□□.□10□**

□.□ □□il□in□ Constr□ction □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	3.□6□0	31.253□	1□.929□	0.026□		2.22□0	2.22□0		2.09□3	2.09□3		2□□09.1969	2□□09.1969	0.6□□9		2□□23.6630
□otal	**□.□□□0**	**□1.2□□□**	**1□.□2□□**	**0.02□□**		**2.22□0**	**2.22□0**		**2.0□□□**	**2.0□□□**		**2□□0□.1□□□**	**2□□0□.1□□□**	**0.□□□□**		**2□□2□.□□□0**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0142	0.1304	0.1306	2.4000e□004	6.6□00e□003	2.□100e□003	9.4□00e□003	1.9100e□003	2.5□00e□003	4.4900e□003		24.5□54	24.5□54	2.□000e□004		24.5911
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□003	0.1232	1.0300e□003	0.1243	0.032□	9.4000e□004	0.0336		136.6539	136.6539	□4□00e□003		136.□10□
□otal	**0.0□□1**	**0.20□□**	**1.0□□0**	**1.□□00e□00□**	**0.12□□**	**□.□400e□00□**	**0.1□□□**	**0.0□4□**	**□.□200e□00□**	**0.0□□1**		**1□1.2□□□**	**1□1.2□□□**	**□.□400e□00□**		**1□1.401□**

□.□ □□il□in□ Constr□ction □2014

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	3.□6□0	31.253□	1□.929□	0.026□		2.22□0	2.22□0		2.09□3	2.09□3	0.0000	2□□09.1969	2□□09.1969	0.6□□9		2□□23.6630
□otal	**□.□□□0**	**□1.2□□□**	**1□.□2□□**	**0.02□□**		**2.22□0**	**2.22□0**		**2.0□□□**	**2.0□□□**	**0.0000**	**2□□0□.1□□□**	**2□□0□.1□□□**	**0.□□□□**		**2□□2□.□□□0**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0142	0.1304	0.1306	2.4000e□004	6.6□00e□003	2.□100e□003	9.4□00e□003	1.9100e□003	2.5□00e□003	4.4900e□003		24.5□54	24.5□54	2.□000e□004		24.5911
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□003	0.1232	1.0300e□003	0.1243	0.032□	9.4000e□004	0.0336		136.6539	136.6539	□4□00e□003		136.□10□
□otal	**0.0□□1**	**0.20□□**	**1.0□□0**	**1.□□00e□00□**	**0.12□□**	**□.□400e□00□**	**0.1□□□**	**0.0□4□**	**□.□200e□00□**	**0.0□□1**		**1□1.2□□□**	**1□1.2□□□**	**□.□400e□00□**		**1□1.401□**

□.4 Pa□in□ □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	2.3610	26.0□5□	14.9649	0.0223		1.4523	1.4523		1.3361	1.3361		2□363.4906	2□363.4906	0.69□4		2□3□□.15□□
Pa□ing	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□otal	**2.□□10**	**2□.0□□□**	**14.□□4□**	**0.022□**		**1.4□2□**	**1.4□2□**		**1.□□□1**	**1.□□□1**		**2□□□□.4□0□**	**2□□□□.4□0□**	**0.□□□4**		**2□□□□.1□□□**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□003	0.1232	1.0300e□003	0.1243	0.032□	9.4000e□004	0.0336		136.6539	136.6539	□4□00e□003		136.□10□
□otal	**0.0□□□**	**0.0□□1**	**0.□□□□**	**1.□□00e□00□**	**0.12□2**	**1.0□00e□00□**	**0.124□**	**0.0□2□**	**□.4000e□004**	**0.0□□□**		**1□□.□□□□**	**1□□.□□□□**	**□.4□00e□00□**		**1□□.□10□**

□.4 Pa□in□ □2014

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	2.3610	26.0□5□	14.9649	0.0223		1.4523	1.4523		1.3361	1.3361	0.0000	2□363.4906	2□363.4906	0.69□4		2□3□□.15□□
Pa□ing	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□otal	**2.□□10**	**2□.0□□□**	**14.□□4□**	**0.022□**		**1.4□2□**	**1.4□2□**		**1.□□□1**	**1.□□□1**	**0.0000**	**2□□□□.4□0□**	**2□□□□.4□0□**	**0.□□□4**		**2□□□□.1□□□**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□003	0.1232	1.0300e□003	0.1243	0.032□	9.4000e□004	0.0336		136.6539	136.6539	□4□00e□003		136.□10□
□otal	**0.0□□□**	**0.0□□1**	**0.□□□□**	**1.□□00e□00□**	**0.12□2**	**1.0□00e□00□**	**0.124□**	**0.0□2□**	**□.4000e□004**	**0.0□□□**		**1□□.□□□□**	**1□□.□□□□**	**□.4□00e□00□**		**1□□.□10□**

□.□ □rchitect□ral Coatin□ □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□rc□it. Coating	3.□625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□ff□□oad	0.4462	2.□□□3	1.9216	2.9□00e□003		0.2452	0.2452		0.2452	0.2452		2□1.44□1	2□1.44□1	0.0401		2□2.2905
□otal	**4.□0□□**	**2.□□□□**	**1.□21□**	**2.□□00e□00□**		**0.24□2**	**0.24□2**		**0.24□2**	**0.24□2**		**2□1.44□1**	**2□1.44□1**	**0.0401**		**2□2.2□0□**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

□.□ □rchitect□ral Coatin□ □2014

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□rc□it. Coating	3.□625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□ff□□oad	0.4462	2.□□□3	1.9216	2.9□00e□003		0.2452	0.2452		0.2452	0.2452	0.0000	2□1.44□1	2□1.44□1	0.0401		2□2.2905
□otal	**4.□0□□**	**2.□□□□**	**1.□21□**	**2.□□00e□00□**		**0.24□2**	**0.24□2**		**0.24□2**	**0.24□2**	**0.0000**	**2□1.44□1**	**2□1.44□1**	**0.0401**		**2□2.2□0□**

Miti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

□.□ □rchitect□ral Coatin□ □201□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□rc□it. Coating	3.□625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□ff□□oad	0.4066	2.5□03	1.901□	2.9□00e□003		0.2209	0.2209		0.2209	0.2209		2□1.44□1	2□1.44□1	0.036□		2□2.21□□
□otal	**4.2□□1**	**2.□□0□**	**1.□01□**	**2.□□00e□00□**		**0.220□**	**0.220□**		**0.220□**	**0.220□**		**2□1.44□1**	**2□1.44□1**	**0.0□□□**		**2□2.21□□**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

□.□ □rchitect□ral Coatin□ □201□

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□rc□it. Coating	3.□625					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□ff□□oad	0.4066	2.5□03	1.901□	2.9□00e□003		0.2209	0.2209		0.2209	0.2209	0.0000	2□1.44□1	2□1.44□1	0.036□		2□2.21□□
□otal	**4.2□□1**	**2.□□0□**	**1.□01□**	**2.□□00e□00□**		**0.220□**	**0.220□**		**0.220□**	**0.220□**	**0.0000**	**2□1.44□1**	**2□1.44□1**	**0.0□□□**		**2□2.21□□**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational □etail □Mobile

4.1 Miti□ation Meas□res Mobile

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	I□/day										I□/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□nmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 □rip □□mmary In□ormation

	□□□eage Daily □rip □ate			□nmitigated	Mitigated
□and □se	□ ee□day	□at□rday	□□nday	□nn□al VM□	□nn□al VM□
□trip Mall	0.00	0.00	0.00		
□otal	0.00	0.00	0.00		

4.□ □rip □ype In□ormation

	Miles			□rip □			□rip P□rpose □		
□and □se	□□□ or C□□	□□□ or C□C	□□□ or C□□□	□□□ or C□□	□□□ or C□C	□□□ or C□□□	Primary	Di□erted	Pass□□y
□trip Mall	9.50	□.30	□.30	16.60	64.40	19.00	45	40	15

□D□	□D□1	□D□2	MDV	□□D1	□□D2	M□D	□□D	□□□□	□□□□	MC□	□□□□	M□
0.464542	0.064□19	0.1600□4	0.16□695	0.0453□□	0.006034	0.016996	0.06154□	0.001122	0.00149□	0.00630□	0.000655	0.002321

□.0 □ner□y □etail

4.4 □leet Mi□

□istorical Energy □se: □

□.1 Miti□ation Meas□res □ner□y

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□at□ralGas Mitigated	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□
□at□ralGas □nmitigated	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□

□.2 □ner□y by □an□ Use □Nat□ral□as

Unmiti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	l□/day										l□/day					
□trip Mall	152.□4	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□
□otal		**1.□□00e□00□**	**0.01□0**	**0.012□**	**□.0000e□00□**		**1.1400e□00□**	**1.1400e□00□**		**1.1400e□00□**	**1.1400e□00□**		**1□.□□□4**	**1□.□□□4**	**□.4000e□004**	**□.□000e□004**	**1□.0□□□**

□.2 □ner□y by □an□ Use □Nat□ral□as

Miti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	□/day										□/day					
□trip Mall	0.152□4	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□
□otal		**1.□□00e□00□**	**0.01□0**	**0.012□**	**□.0000e□00□**		**1.1400e□00□**	**1.1400e□00□**		**1.1400e□00□**	**1.1400e□00□**		**1□.□□□4**	**1□.□□□4**	**□.4000e□004**	**□.□000e□004**	**1□.0□□□**

□.0 □rea □etail

□.1 Miti□ation Meas□res □rea

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	□/day										□/day					
Mitigated	0.1261	1.0000e□005	5.3000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1600e□003
□nmitigated	0.1261	1.0000e□005	5.3000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1600e□003

□.2 □rea by □□bCate□ory

Unmiti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	I□/day										I□/day					
□rc□itect□ral Coating	0.0191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Cons□mer Prod□cts	0.10□0					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□andscaping	5.0000e□005	1.0000e□005	5.3000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1600e□003
□otal	**0.12□1**	**1.0000e□00□**	**□.□000e□004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.0□00e□00□**	**1.0□00e□00□**	**0.0000**		**1.1□00e□00□**

Miti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	I□/day										I□/day					
Cons□mer Prod□cts	0.10□0					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□andscaping	5.0000e□005	1.0000e□005	5.3000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1600e□003
□rc□itect□ral Coating	0.0191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□otal	**0.12□1**	**1.0000e□00□**	**□.□000e□004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.0□00e□00□**	**1.0□00e□00□**	**0.0000**		**1.1□00e□00□**

□.0 Water □etail

□.1 Miti□ation Meas□res Water

□.0 Waste □etail

□.1 Miti□ation Meas□res Waste

□.0 Operational O□□roa□

E□□ipment □ype	□□m□er	□o□rs/Day	Days/□ear	□orse Po□er	□oad □actor	□□el □ype

10.0 □e□etation

□an □oa□□in □rain

□an □oa□□in Co□nty□□□mmer

1.0 Project Characteristics

1.1 □an□ Usa□e

□and □ses	□i□e	Metric	□ot □creage	□loor □□rface □rea	Pop□lation
□ser Defined □nd□strial	1.00	□ser Defined □nit	5.00	0.00	0

1.2 Other Project Characteristics

Urbani□ation	□r□an	**Win□ □pee□ (m/s)**	2.□	**Precipitation □re□ (□ays)**	51
Climate □one	3			**Operational Year**	2015
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.□ User □ntere□ Comments □ Non□□e□a□lt □ata

Pro□ect C□aracteristics □

□and □se □□rain □rac□ □nstall

Constr□ction P□ase □30 days prep□30 days install

□ff□road E□□ipment □Prep: 1 grader□1 do□er□1 loader/□ac□□oe□1 roller□1 compactor□1 □ater tr□c□

□ff□road E□□ipment □□nstall: 1 crane□1 for□lift□1 generator set□2 □elders

□rips and VM□ □15 □or□ers eac□ p□ase 10 □endor deli□eries a day

Constr□ction □ff□road E□□ipment Mitigation □□ater e□posed area 2 times a day

□a□le □ame	Col□mn □ame	Defa□lt Val□e	□e□ Val□e
t□lConstr□ctionP□ase	□□mDays	230.00	30.00
t□lConstr□ctionP□ase	□□mDays	□.00	30.00
t□lConstr□ctionP□ase	P□aseEndDate	3/25/2014	3/2□/2014
t□lConstr□ctionP□ase	P□ase□tartDate	2/12/2014	2/15/2014
t□lGrading	□cres□fGrading	15.00	4.00
t□l□and□se	□ot□creage	0.00	5.00
t□l□ff□oadE□□ipment	□orsePo□er	400.00	300.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		□ollers
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		□ff□□ig□□ay □r□c□s
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		Plate Compactors
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	1.00	2.00
t□l□ff□oadE□□ipment	□sage□o□rs	□.00	6.00
t□lPro□ectC□aracteristics	□perational□ear	2014	2015
t□l□rips□ndVM□	Vendor□rip□□m□er	0.00	10.00
t□l□rips□ndVM□	□ or□er□rip□□m□er	1□.00	15.00
t□l□rips□ndVM□	□ or□er□rip□□m□er	0.00	15.00

2.0 □missions □□mmary

2.1 O□erall Constr□ction (Ma□im□m □aily □mission)

Unmiti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	l□/day										l□/day					
2014	4.2□3□	3□.□954	23.□96□	0.0303	4.□□12	2.0695	6.□064	2.5306	1.9653	4.3942	0.0000	3□150.6600	3□150.6600	0.□94□	0.0000	3□169.4515
□otal	**4.2□□□**	**□□.□□□4**	**2□.□□□□**	**0.0□0□**	**4.□□12**	**2.0□□□**	**□.□0□4**	**2.□□0□**	**1.□□□□**	**4.□□42**	**0.0000**	**□1□0.□□00**	**□1□0.□□00**	**0.□□4□**	**0.0000**	**□1□□.4□1□**

Miti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	l□/day										l□/day					
2014	4.2□3□	3□.□954	23.□96□	0.0303	2.2193	2.0695	4.2445	1.156□	1.9653	3.0203	0.0000	3□150.6600	3□150.6600	0.□94□	0.0000	3□169.4515
□otal	**4.2□□□**	**□□.□□□4**	**2□.□□□□**	**0.0□0□**	**2.21□□**	**2.0□□□**	**4.244□**	**1.1□□□**	**1.□□□□**	**□.020□**	**0.0000**	**□1□0.□□00**	**□1□0.□□00**	**0.□□4□**	**0.0000**	**□1□□.4□1□**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**□□.□□**	**0.00**	**□□.□4**	**□4.2□**	**0.00**	**□1.2□**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmiti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□rea	1.0000e□005	0.0000	1.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**1.0000e□00□**	**0.0000**	**1.1000e□004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e□004**	**2.2000e□004**	**0.0000**	**0.0000**	**2.□000e□004**

Miti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□rea	1.0000e□005	0.0000	1.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**1.0000e□00□**	**0.0000**	**1.1000e□004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e□004**	**2.2000e□004**	**0.0000**	**0.0000**	**2.□000e□004**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

□.0 Constr□ction □etail

Constr□ction Phase

P□ase □□m□er	P□ase □ame	P□ase □ype	□tart Date	End Date	□□m Days □ ee□	□□m Days	P□ase Description
1	□rac□ □ed Prep	Grading	1/1/2014	2/11/2014	5	30	
2	□rac□/□ignal □nstallation	□□ilding Constr□ction	2/15/2014	3/2□/2014	5	30	

□cres o□□ra□in□ (□ite Preparation Phase)□0

□cres o□□ra□in□ (□ra□in□ Phase)□0

□cres o□Pa□in□□0

□esi□ential In□oor□0□□esi□ential O□t□oor□0□Non□□esi□ential In□oor□0□Non□□esi□ential O□t□oor□0 (□rchitect□ral Coatin□ □s□□t)

O□□□oa□ □□□ipment

P□ase □ame	□ffroad E□□ipment □ype	□mo□nt	□sage □o□rs	□orse Po□er	□oad □actor
□rac□□ed Prep	□ollers	1	6.00	□0	0.3□
□rac□□ed Prep	□ff□□ig□□ay □r□c□s	1	4.00	300	0.3□
□rac□□ed Prep	Plate Compactors	1	4.00	□	0.43
□rac□□ed Prep	E□ca□ators	1	□.00	162	0.3□
□rac□/□ignal □nstallation	Cranes	1	□.00	226	0.29
□rac□/□ignal □nstallation	□or□lifts	1	□.00	□9	0.20
□rac□/□ignal □nstallation	Generator □ets	1	□.00	□4	0.□4
□rac□/□ignal □nstallation	□ractors/□oaders/□ac□□oes	3	□.00	9□	0.3□
□rac□□ed Prep	□□□□er □ired Do□ers	1	6.00	255	0.40
□rac□□ed Prep	Graders	1	□.00	1□4	0.41
□rac□□ed Prep	□ractors/□oaders/□ac□□oes	1	□.00	9□	0.3□
□rac□/□ignal □nstallation	□ elders	2	□.00	46	0.45

□rips an□ □M□

P□ase □ame	□ffroad E□□ipment Co□nt	□ or□er □rip □□m□er	Vendor □rip □□m□er	□a□ling □rip □□m□er	□ or□er □rip □engt□	Vendor □rip □engt□	□a□ling □rip □engt□	□ or□er Ve□icle Class	Vendor Ve□icle Class	□a□ling Ve□icle Class
□rac□□ed Prep	□	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□rac□/□ignal □nstallation	□	15.00	10.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□

□.1 Miti□ation Meas□res Constr□ction

□ ater E□posed □rea

Clean Pa□ed □oads

□.2 □rac□ □e□ Prep □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□□giti□e D□st					4.65□0	0.0000	4.65□0	2.49□9	0.0000	2.49□9			0.0000			0.0000
□ff□□oad	3.506□	3□□163	22.□592	0.02□5		2.0242	2.0242		1.□626	1.□626		3□014.006 1	3□014.006 1	0.□□□4		3□032.640 □
□otal	**□.□0□□**	**□□.□1□□**	**22.□□□2**	**0.02□□**	**4.□□□0**	**2.0242**	**□.□□22**	**2.4□□□**	**1.□□2□**	**4.□□0□**		**□014.00□ 1**	**□014.00□ 1**	**0.□□□4**		**□0□2.□40 □**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□ 003	0.1232	1.0300e□ 003	0.1243	0.032□	9.4000e□ 004	0.0336		136.6539	136.6539	□4□00e□ 003		136.□10□
□otal	**0.0□□□**	**0.0□□1**	**0.□□□□**	**1.□□00e□ 00□**	**0.12□2**	**1.0□00e□ 00□**	**0.124□**	**0.0□2□**	**□.4000e□ 004**	**0.0□□□**		**1□□.□□□□**	**1□□.□□□□**	**□.4□00e□ 00□**		**1□□.□10□**

□.2 □rac□ □e□ Prep □2014

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□□giti□e D□st					2.0961	0.0000	2.0961	1.1241	0.0000	1.1241			0.0000			0.0000
□ff□□oad	3.506□	3□.□163	22.□592	0.02□5		2.0242	2.0242		1.□626	1.□626	0.0000	3□014.006 1	3□014.006 1	0.□□□4		3□032.640 □
□otal	**□.□0□□**	**□□.□1□□**	**22.□□□2**	**0.02□□**	**2.0□□1**	**2.0242**	**4.120□**	**1.1241**	**1.□□2□**	**2.□□□□**	**0.0000**	**□014.00□ 1**	**□014.00□ 1**	**0.□□□4**		**□0□2.□40 □**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□ 003	0.1232	1.0300e□ 003	0.1243	0.032□	9.4000e□ 004	0.0336		136.6539	136.6539	□4□00e□ 003		136.□10□
□otal	**0.0□□□**	**0.0□□1**	**0.□□□□**	**1.□□00e□ 00□**	**0.12□2**	**1.0□00e□ 00□**	**0.124□**	**0.0□2□**	**□.4000e□ 004**	**0.0□□□**		**1□□.□□□□**	**1□□.□□□□**	**□.4□00e□ 00□**		**1□□.□10□**

□.□ □rac□/□i□nal Installation □2014

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	4.062□	2□.□91□	1□.46□4	0.0263		2.0404	2.0404		1.93□6	1.93□6		2□592.652 0	2□592.652 0	0.6555		2□606.41□ 3
□otal	**4.0□2□**	**2□.□□1□**	**1□.4□□4**	**0.02□□**		**2.0404**	**2.0404**		**1.□□□□**	**1.□□□□**		**2□□□2.□□2 0**	**2□□□2.□□2 0**	**0.□□□□**		**2□□0□.41□ □**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1422	1.3036	1.3056	2.4000e□ 003	0.066□	0.02□1	0.094□	0.0191	0.025□	0.0449		245.□541	245.□541	2.□100e□ 003		245.9110
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□ 003	0.1232	1.0300e□ 003	0.1243	0.032□	9.4000e□ 004	0.0336		136.6539	136.6539	□4□00e□ 003		136.□10□
□otal	**0.2210**	**1.□□2□**	**2.24□1**	**□.□□00e□ 00□**	**0.1□00**	**0.02□1**	**0.21□1**	**0.0□1□**	**0.02□□**	**0.0□□□**		**□□2.□0□0**	**□□2.□0□0**	**0.0102**		**□□2.□21□**

□.□ □rac□/□i□nal Installation □2014

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	4.062□	2□.□91□	1□.46□4	0.0263		2.0404	2.0404		1.93□6	1.93□6	0.0000	2□592.652 0	2□592.652 0	0.6555		2□606.41□ 3
□otal	**4.0□2□**	**2□.□□1□**	**1□.4□□4**	**0.02□□**		**2.0404**	**2.0404**		**1.□□□□**	**1.□□□□**	**0.0000**	**2□□□2.□□2 0**	**2□□□2.□□2 0**	**0.□□□□**		**2□□0□.41□ □**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1422	1.3036	1.3056	2.4000e□ 003	0.066□	0.02□1	0.094□	0.0191	0.025□	0.0449		245.□541	245.□541	2.□100e□ 003		245.9110
□ or□er	0.0□□□	0.0□91	0.93□5	1.5500e□ 003	0.1232	1.0300e□ 003	0.1243	0.032□	9.4000e□ 004	0.0336		136.6539	136.6539	□4□00e□ 003		136.□10□
□otal	**0.2210**	**1.□□2□**	**2.24□1**	**□.□□00e□ 00□**	**0.1□00**	**0.02□1**	**0.21□1**	**0.0□1□**	**0.02□□**	**0.0□□□**		**□□2.□0□0**	**□□2.□0□0**	**0.0102**		**□□2.□21□**

4.0 Operational □etail □Mobile

4.1 Miti□ation Meas□res Mobile

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	I□/day										I□/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□nmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 □rip □□mmary In□ormation

	□□□eage Daily □rip □ate			□nmitigated	Mitigated
□and □se	□ ee□day	□at□rday	□□nday	□nn□al VM□	□nn□al VM□
□ser Defined □nd□strial	0.00	0.00	0.00		
□otal	0.00	0.00	0.00		

4.□ □rip □ype In□ormation

	Miles			□rip □			□rip P□rpose □		
□and □se	□□□ or C□□	□□□ or C□C	□□□ or C□□□	□□□ or C□□	□□□ or C□C	□□□ or C□□□	Primary	Di□erted	Pass□□y
□ser Defined □nd□strial	9.50	□.30	□.30	0.00	0.00	0.00	0	0	0

□D□	□D□1	□D□2	MDV	□□D1	□□D2	M□D	□□D	□□□□	□□□□	MC□	□□□□	M□
0.464542	0.064□19	0.1600□4	0.16□695	0.0453□□	0.006034	0.016996	0.06154□	0.001122	0.00149□	0.00630□	0.000655	0.002321

□.0 □ner□y □etail

4.4 □leet Mi□

□istorical Energy □se: □

□.1 Miti□ation Meas□res □ner□y

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□at□ralGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□at□ralGas □nmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

□.2 □ner□y by □an□ Use □Nat□ral□as

Unmiti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	l□/day										l□/day					
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.2 □ner□y by □an□ Use □Nat□ral□as

Miti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	□/day										□/day					
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.0 □rea □etail

□.1 Miti□ation Meas□res □rea

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	□/day										□/day					
Mitigated	1.0000e□005	0.0000	1.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
□nmitigated	1.0000e□005	0.0000	1.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004

□.2 □rea by □□bCate□ory

Unmiti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	l□/day										l□/day					
□rc□itect□ral Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Cons□mer Prod□cts	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□andscaping	1.0000e□005	0.0000	1.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
□otal	**1.0000e□00□**	**0.0000**	**1.1000e□004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e□004**	**2.2000e□004**	**0.0000**		**2.□000e□004**

Miti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	l□/day										l□/day					
□rc□itect□ral Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Cons□mer Prod□cts	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□andscaping	1.0000e□005	0.0000	1.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
□otal	**1.0000e□00□**	**0.0000**	**1.1000e□004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e□004**	**2.2000e□004**	**0.0000**		**2.□000e□004**

□.0 Water □etail

□.1 Miti□ation Meas□res Water

□.0 Waste □etail

□.1 Miti□ation Meas□res Waste

□.0 Operational O□□roa□

E□□ipment □ype	□□m□er	□o□rs/Day	Days/□ear	□orse Po□er	□oad □actor	□□el □ype

10.0 □e□etation

□an □oa□□in □rain □tation

□an □oa□□in Co□nty□□nn□al

1.0 Project Characteristics

1.1 □an□ Usa□e

□and □ses	□i□e	Metric	□ot □creage	□loor □□rface □rea	Pop□lation
□trip Mall	5.00	1000s□ft	5.00	5□000.00	0

1.2 Other Project Characteristics

Urbani□ation	□r□an	**Win□ □pee□ (m/s)**	2.□	**Precipitation □re□ (□ays)**	51
Climate □one	3			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.□ User □ntere□ Comments □ Non□□e□a□lt □ata

Pro□ect C□aracteristics □

□and □se □□rain station modeled as strip mall□□□ilding□5□000 sf□5 acre lot

Constr□ction P□ase □Grading: □ days□Constr□ction: 100 days□Pa□ing 1□ days

□ff□road E□□ipment □Constr□ction: 1 crane□3 for□lifts□1 gen set□1 loader/□ac□□oe□1 □elder

□ff□road E□□ipment □Grading: 1 e□ca□ator□1 grader□1 do□er□3 loader/□ac□□oes

□ff□road E□□ipment □Pa□ing: 2 pa□ers□2 pa□ing e□□ipment□2 rollers

□rips and VM□ □15 □or□ers

Ve□icle □rips □constr□ction emissions only

Constr□ction □ff□road E□□ipment Mitigation □□ater 2 times a day

□a□le □ame	Col□mn □ame	Defa□lt Val□e	□e□ Val□e
t□lConstr□ctionP□ase	□□mDays	230.00	100.00
t□lConstr□ctionP□ase	P□aseEndDate	5/30/2035	6/1/2035
t□lConstr□ctionP□ase	P□ase□tartDate	1/11/2035	1/13/2035
t□l□and□se	□ot□creage	0.11	5.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□lPro□ectC□aracteristics	□perational□ear	2014	2035
t□l□rips□ndVM□	Vendor□rip□□m□er	1.00	5.00
t□l□rips□ndVM□	□ or□er□rip□□m□er	2.00	15.00

2.0 □missions □□mmary

2.1 O□erall Constr□ction

Unmiti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	tons/yr										M□/yr					
2035	0.0649	0.3506	0.□449	1.□400e□003	0.0354	5.9600e□003	0.0413	0.0159	5.9300e□003	0.0219	0.0000	146.02□6	146.02□6	5.2100e□003	0.0000	146.13□0
□otal	**0.0□4□**	**0.□□0□**	**0.□44□**	**1.□400e□00□**	**0.0□□4**	**□.□□00e□00□**	**0.041□**	**0.01□□**	**□.□□00e□00□**	**0.021□**	**0.0000**	**14□.02□□**	**14□.02□□**	**□.2100e□00□**	**0.0000**	**14□.1□□0**

Miti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	tons/yr										M□/yr					
2035	0.0649	0.3506	0.□449	1.□400e□003	0.0210	5.9600e□003	0.0269	□.5300e□003	5.9300e□003	0.0145	0.0000	146.02□4	146.02□4	5.2100e□003	0.0000	146.13□9
□otal	**0.0□4□**	**0.□□0□**	**0.□44□**	**1.□400e□00□**	**0.0210**	**□.□□00e□00□**	**0.02□□**	**□.□□00e□00□**	**□.□□00e□00□**	**0.014□**	**0.0000**	**14□.02□4**	**14□.02□4**	**□.2100e□00□**	**0.0000**	**14□.1□□□**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**40.□□**	**0.00**	**□4.□□**	**4□.4□**	**0.00**	**□□.□□**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmiti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rea	0.0230	0.0000	5.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□005	9.0000e□005	0.0000	0.0000	9.0000e□005
Energy	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	16.2551	16.2551	6.6000e□004	1.□000e□004	16.3244
Mo□ile	0.0□03	0.1462	0.□405	1.9600e□003	0.11□□	3.2200e□003	0.1210	0.0316	2.9□00e□003	0.0346	0.0000	131.6313	131.6313	2.9900e□003	0.0000	131.6941
□aste						0.0000	0.0000		0.0000	0.0000	1.065□	0.0000	1.065□	0.0630	0.0000	2.3□□3
□ater						0.0000	0.0000		0.0000	0.0000	0.11□5	0.□141	0.9316	0.0121	2.9000e□004	1.2□65
□otal	**0.0□□□**	**0.14□□**	**0.□42□**	**1.□□00e□00□**	**0.11□□**	**□.4□00e□00□**	**0.1212**	**0.0□1□**	**□.1□00e□00□**	**0.0□4□**	**1.1□□2**	**14□.□00□**	**14□.□□□□**	**0.0□□□**	**4.□000e□004**	**1□1.□□□4**

2.2 O□erall Operational

Miti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rea	0.0230	0.0000	5.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□005	9.0000e□005	0.0000	0.0000	9.0000e□005
Energy	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	16.2551	16.2551	6.6000e□004	1.□000e□004	16.3244
Mo□ile	0.0□03	0.1462	0.□405	1.9600e□003	0.11□□	3.2200e□003	0.1210	0.0316	2.9□00e□003	0.0346	0.0000	131.6313	131.6313	2.9900e□003	0.0000	131.6941
□aste						0.0000	0.0000		0.0000	0.0000	1.065□	0.0000	1.065□	0.0630	0.0000	2.3□□3
□ater						0.0000	0.0000		0.0000	0.0000	0.11□5	0.□141	0.9316	0.0121	2.9000e□004	1.2□63
□otal	**0.0□□□**	**0.14□□**	**0.□42□**	**1.□□00e□00□**	**0.11□□**	**□.4□00e□00□**	**0.1212**	**0.0□1□**	**□.1□00e□00□**	**0.0□4□**	**1.1□□2**	**14□.□00□**	**14□.□□□□**	**0.0□□□**	**4.□000e□004**	**1□1.□□□2**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**

□.0 Constr□ction □etail

Constr□ction Phase

P□ase □□m□er	P□ase □ame	P□ase □ype	□tart Date	End Date	□□m Days □ ee□	□□m Days	P□ase Description
1	Grading	Grading	1/1/2035	1/10/2035	5	□	
2	□□ilding Constr□ction	□□ilding Constr□ction	1/13/2035	6/1/2035	5	100	
3	Pa□ing	Pa□ing	6/2/2035	6/2□/2035	5	1□	

□cres o□□ra□in□ (□ite Preparation Phase)□0

□cres o□□ra□in□ (□ra□in□ Phase)□4

□cres o□Pa□in□□0

□esi□ential In□oor□0□□esi□ential O□t□oor□0□Non□□esi□ential In□oor□0□Non□□esi□ential O□t□oor□0 (□rchitect□ral Coatin□ □s□□t)

O□□□oa□ □□□ipment

P□ase □ame	□ffroad E□□ipment □ype	□mo□nt	□sage □o□rs	□orse Po□er	□oad □actor
Grading	E□ca□ators	1	□.00	162	0.3□
Grading	Graders	1	□.00	1□4	0.41
Grading	□□□□er □ired Do□ers	1	□.00	255	0.40
Grading	□ractors/□oaders/□ac□□oes	3	□.00	9□	0.3□
□□ilding Constr□ction	Cranes	1	□.00	226	0.29
□□ilding Constr□ction	□or□lifts	3	□.00	□9	0.20
□□ilding Constr□ction	Generator □ets	1	□.00	□4	0.□4
□□ilding Constr□ction	□ractors/□oaders/□ac□□oes	1	□.00	9□	0.3□
□□ilding Constr□ction	□ elders	1	□.00	46	0.45
Pa□ing	Pa□ers	2	□.00	125	0.42
Pa□ing	Pa□ing E□□ipment	2	□.00	130	0.36
Pa□ing	□ollers	2	□.00	□0	0.3□

□rips an□ □M□

P□ase □ame	□ffroad E□□ipment Co□nt	□ or□er □rip □□m□er	Vendor □rip □□m□er	□a□ling □rip □□m□er	□ or□er □rip □engt□	Vendor □rip □engt□	□a□ling □rip □engt□	□ or□er Ve□icle Class	Vendor Ve□icle Class	□a□ling Ve□icle Class
Grading	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□□ilding Constr□ction	9	15.00	5.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
Pa□ing	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□

□.1 Miti□ation Meas□res Constr□ction

□ ater E□posed □rea

Clean Pa□ed □oads

□.2 □ra□in□ □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□□giti□e D□st					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	5.□600e□003	0.023□	0.06□□	1.4000e□004		6.4000e□004	6.4000e□004		6.4000e□004	6.4000e□004	0.0000	12.459□	12.459□	4.□000e□004	0.0000	12.4696
□otal	**□.□□00e□00□**	**0.02□□**	**0.0□□□**	**1.4000e□004**	**0.02□2**	**□.4000e□004**	**0.02□□**	**0.01□□**	**□.4000e□004**	**0.0141**	**0.0000**	**12.4□□□**	**12.4□□□**	**4.□000e□004**	**0.0000**	**12.4□□□**

□.2 □ra□in□ □20□□

Unmiti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	□.0000e□005	1.0000e□004	9.6000e□004	1.0000e□005	4.□000e□004	0.0000	4.□000e□004	1.3000e□004	0.0000	1.3000e□004	0.0000	0.3191	0.3191	1.0000e□005	0.0000	0.3193
□otal	**□.0000e□00□**	**1.0000e□004**	**□.□000e□004**	**1.0000e□00□**	**4.□000e□004**	**0.0000**	**4.□000e□004**	**1.□000e□004**	**0.0000**	**1.□000e□004**	**0.0000**	**0.□1□1**	**0.□1□1**	**1.0000e□00□**	**0.0000**	**0.□1□□**

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□□giti□e D□st					0.011□	0.0000	0.011□	6.0600e□003	0.0000	6.0600e□003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	5.□600e□003	0.023□	0.06□□	1.4000e□004		6.4000e□004	6.4000e□004		6.4000e□004	6.4000e□004	0.0000	12.459□	12.459□	4.□000e□004	0.0000	12.4695
□otal	**□.□□00e□00□**	**0.02□□**	**0.0□□□**	**1.4000e□004**	**0.011□**	**□.4000e□004**	**0.0124**	**□.0□00e□00□**	**□.4000e□004**	**□.□000e□00□**	**0.0000**	**12.4□□□**	**12.4□□□**	**4.□000e□004**	**0.0000**	**12.4□□□**

□.2 □ra□in□ □20□□

Miti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	□.0000e□005	1.0000e□004	9.6000e□004	1.0000e□005	4.□000e□004	0.0000	4.□000e□004	1.3000e□004	0.0000	1.3000e□004	0.0000	0.3191	0.3191	1.0000e□005	0.0000	0.3193
□otal	**□.0000e□00□**	**1.0000e□004**	**□.□000e□004**	**1.0000e□00□**	**4.□000e□004**	**0.0000**	**4.□000e□004**	**1.□000e□004**	**0.0000**	**1.□000e□004**	**0.0000**	**0.□1□1**	**0.□1□1**	**1.0000e□00□**	**0.0000**	**0.□1□□**

□.□ □□il□in□ Constr□ction □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0463	0.2□33	0.5995	1.2100e□003		3.4000e□003	3.4000e□003		3.4000e□003	3.4000e□003	0.0000	102.29□9	102.29□9	3.□200e□003	0.0000	102.3□□1
□otal	**0.04□□**	**0.2□□□**	**0.□□□□**	**1.2100e□00□**		**□.4000e□00□**	**□.4000e□00□**		**□.4000e□00□**	**□.4000e□00□**	**0.0000**	**102.2□□□**	**102.2□□□**	**□.□200e□00□**	**0.0000**	**102.□□□1**

□.□ □□il□in□ Constr□ction □20□□

Unmiti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4□00e□003	9.0□00e□003	0.0221	6.0000e□005	1.6300e□003	2.2000e□004	1.□500e□003	4.□000e□004	2.0000e□004	6.□000e□004	0.0000	5.0160	5.0160	4.0000e□005	0.0000	5.016□
□or□er	9.3000e□004	1.1900e□003	0.0120	□.0000e□005	5.9□00e□003	4.0000e□005	6.0200e□003	1.5900e□003	4.0000e□005	1.6300e□003	0.0000	3.9□□9	3.9□□9	1.3000e□004	0.0000	3.9916
□otal	**2.4000e□00□**	**0.010□**	**0.0□41**	**1.□000e□004**	**□.□000e□00□**	**2.□000e□004**	**□.□□00e□00□**	**2.0□00e□00□**	**2.4000e□004**	**2.□000e□00□**	**0.0000**	**□.004□**	**□.004□**	**1.□000e□004**	**0.0000**	**□.00□4**

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0463	0.2□33	0.5995	1.2100e□003		3.4000e□003	3.4000e□003		3.4000e□003	3.4000e□003	0.0000	102.29□□	102.29□□	3.□200e□003	0.0000	102.3□□0
□otal	**0.04□□**	**0.2□□□**	**0.□□□□**	**1.2100e□00□**		**□.4000e□00□**	**□.4000e□00□**		**□.4000e□00□**	**□.4000e□00□**	**0.0000**	**102.2□□□**	**102.2□□□**	**□.□200e□00□**	**0.0000**	**102.□□□0**

□.□ □□il□in□ Constr□ction □20□□

Miti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.4□00e□003	9.0□00e□003	0.0221	6.0000e□005	1.6300e□003	2.2000e□004	1.□500e□003	4.□000e□004	2.0000e□004	6.□000e□004	0.0000	5.0160	5.0160	4.0000e□005	0.0000	5.016□
□or□er	9.3000e□004	1.1900e□003	0.0120	□.0000e□005	5.9□00e□003	4.0000e□005	6.0200e□003	1.5900e□003	4.0000e□005	1.6300e□003	0.0000	3.9□□9	3.9□□9	1.3000e□004	0.0000	3.9916
□otal	**2.4000e□00□**	**0.010□**	**0.0□41**	**1.□000e□004**	**□.□000e□00□**	**2.□000e□004**	**□.□□00e□00□**	**2.0□00e□00□**	**2.4000e□004**	**2.□000e□00□**	**0.0000**	**□.004□**	**□.004□**	**1.□000e□004**	**0.0000**	**□.00□4**

□.4 Pa□in□ □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0101	0.0431	0.1394	2.5000e□004		1.6500e□003	1.6500e□003		1.6500e□003	1.6500e□003	0.0000	21.22□0	21.22□0	□.2000e□004	0.0000	21.2452
Pa□ing	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0101**	**0.04□1**	**0.1□□4**	**2.□000e□004**		**1.□□00e□00□**	**1.□□00e□00□**		**1.□□00e□00□**	**1.□□00e□00□**	**0.0000**	**21.22□0**	**21.22□0**	**□.2000e□004**	**0.0000**	**21.24□2**

□.4 Pa□in□ □20□□

Unmiti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	1.□000e□ 004	2.1000e□ 004	2.1□00e□ 003	1.0000e□ 005	1.0□00e□ 003	1.0000e□ 005	1.0□00e□ 003	2.9000e□ 004	1.0000e□ 005	2.9000e□ 004	0.0000	0.□1□0	0.□1□0	2.0000e□ 005	0.0000	0.□1□5
□otal	**1.□000e□ 004**	**2.1000e□ 004**	**2.1□00e□ 00□**	**1.0000e□ 00□**	**1.0□00e□ 00□**	**1.0000e□ 00□**	**1.0□00e□ 00□**	**2.□000e□ 004**	**1.0000e□ 00□**	**2.□000e□ 004**	**0.0000**	**0.□1□0**	**0.□1□0**	**2.0000e□ 00□**	**0.0000**	**0.□1□□**

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0101	0.0431	0.1394	2.5000e□ 004		1.6500e□ 003	1.6500e□ 003		1.6500e□ 003	1.6500e□ 003	0.0000	21.22□0	21.22□0	□.2000e□ 004	0.0000	21.2452
Pa□ing	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0101**	**0.04□1**	**0.1□□4**	**2.□000e□ 004**		**1.□□00e□ 00□**	**1.□□00e□ 00□**		**1.□□00e□ 00□**	**1.□□00e□ 00□**	**0.0000**	**21.22□0**	**21.22□0**	**□.2000e□ 004**	**0.0000**	**21.24□2**

□.4 Pa□in□ □20□□

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	1.□000e□ 004	2.1000e□ 004	2.1□00e□ 003	1.0000e□ 005	1.0□00e□ 003	1.0000e□ 005	1.0□00e□ 003	2.9000e□ 004	1.0000e□ 005	2.9000e□ 004	0.0000	0.□1□0	0.□1□0	2.0000e□ 005	0.0000	0.□1□5
□otal	**1.□000e□ 004**	**2.1000e□ 004**	**2.1□00e□ 00□**	**1.0000e□ 00□**	**1.0□00e□ 00□**	**1.0000e□ 00□**	**1.0□00e□ 00□**	**2.□000e□ 004**	**1.0000e□ 00□**	**2.□000e□ 004**	**0.0000**	**0.□1□0**	**0.□1□0**	**2.0000e□ 00□**	**0.0000**	**0.□1□□**

4.0 Operational □etail □Mobile

4.1 Miti□ation Meas□res Mobile

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Mitigated	0.0□03	0.1462	0.□405	1.9600e□ 003	0.11□□	3.2200e□ 003	0.1210	0.0316	2.9□00e□ 003	0.0346	0.0000	131.6313	131.6313	2.9900e□ 003	0.0000	131.6941
□nmitigated	0.0□03	0.1462	0.□405	1.9600e□ 003	0.11□□	3.2200e□ 003	0.1210	0.0316	2.9□00e□ 003	0.0346	0.0000	131.6313	131.6313	2.9900e□ 003	0.0000	131.6941

4.2 □rip □□mmary In□ormation

	□□eage Daily □rip □ate			□nmitigated	Mitigated
□and □se	□ ee□day	□at□rday	□□nday	□nn□al VM□	□nn□al VM□
□trip Mall	221.60	210.20	102.15	312□4□4	312□4□4
□otal	221.60	210.20	102.15	312□4□4	312□4□4

4.□ □rip □ype In□ormation

	Miles			□rip □			□rip P□rpose □		
□and □se	□□□ or C□□	□□□ or C□C	□□□ or C□□□	□□□ or C□□	□□□ or C□C	□□□ or C□□□	Primary	Di□erted	Pass□□y
□trip Mall	9.50	□.30	□.30	16.60	64.40	19.00	45	40	15

□D□	□D□1	□D□2	MDV	□□D1	□□D2	M□D	□□D	□□□□	□□□□	MC□	□□□□	M□
0.462000	0.06492□	0.15□404	0.160569	0.04404□	0.00596□	0.020332	0.0□140□	0.001159	0.0014□4	0.006921	0.000529	0.002254

□.0 □ner□y □etail

4.4 □leet Mi□

□istorical Energy □se: □

□.1 Miti□ation Meas□res □ner□y

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	13.2□01	13.2□01	6.0000e□004	1.2000e□004	13.3312
Electricity □nmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	13.2□01	13.2□01	6.0000e□004	1.2000e□004	13.3312
□at□ralGas Mitigated	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	2.9□50	2.9□50	6.0000e□005	5.0000e□005	2.9931
□at□ralGas □nmitigated	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	2.9□50	2.9□50	6.0000e□005	5.0000e□005	2.9931

□.2 □ner□y by □an□ Use □Nat□ral□as

Unmiti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	tons/yr										M□/yr					
□trip Mall	55□50	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	2.9□50	2.9□50	6.0000e□005	5.0000e□005	2.9931
□otal		**□.0000e□004**	**2.□□00e□00□**	**2.□000e□00□**	**2.0000e□00□**		**2.1000e□004**	**2.1000e□004**		**2.1000e□004**	**2.1000e□004**	**0.0000**	**2.□□□0**	**2.□□□0**	**□.0000e□00□**	**□.0000e□00□**	**2.□□□1**

□.2 □ner□y by □an□ Use □Nat□ral□as

Miti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	tons/yr										M□/yr					
□trip Mall	55□50	3.0000e□004	2.□300e□003	2.3000e□003	2.0000e□005		2.1000e□004	2.1000e□004		2.1000e□004	2.1000e□004	0.0000	2.9□50	2.9□50	6.0000e□005	5.0000e□005	2.9931
□otal		**□.0000e□004**	**2.□□00e□00□**	**2.□000e□00□**	**2.0000e□00□**		**2.1000e□004**	**2.1000e□004**		**2.1000e□004**	**2.1000e□004**	**0.0000**	**2.□□□0**	**2.□□□0**	**□.0000e□00□**	**□.0000e□00□**	**2.□□□1**

□.□ □ner□y by □an□ Use □□lectricity

Unmiti□ate□

	Electricity □se	□otal C□2	C□4	□2□	C□2e
□and □se	□□ □/yr	M□/yr			
□trip Mall	45650	13.2□01	6.0000e□004	1.2000e□004	13.3312
□otal		**1□.2□01**	**□.0000e□004**	**1.2000e□004**	**1□.□□12**

□.□ □ner□y by □an□ Use □□lectricity

Miti□ate□

	Electricity □se	□otal C□2	C□4	□2□	C□2e
□and □se	□□ □/yr	M□/yr			
□trip Mall	45650	13.2□01	6.0000e□ 004	1.2000e□ 004	13.3312
□otal		**1□.2□01**	**□.0000e□ 004**	**1.2000e□ 004**	**1□.□□12**

□.0 □rea □etail

□.1 Miti□ation Meas□res □rea

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Mitigated	0.0230	0.0000	5.0000e□ 005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□ 005	9.0000e□ 005	0.0000	0.0000	9.0000e□ 005
□nmitigated	0.0230	0.0000	5.0000e□ 005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□ 005	9.0000e□ 005	0.0000	0.0000	9.0000e□ 005

□.2 □rea by □□bCate□ory

Unmiti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	tons/yr										M□/yr					
□rc□itect□ral Coating	3.4□00e□003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cons□mer Prod□cts	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□andscaping	0.0000	0.0000	5.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□005	9.0000e□005	0.0000	0.0000	9.0000e□005
□otal	**0.02□0**	**0.0000**	**□.0000e□00□**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**□.0000e□00□**	**□.0000e□00□**	**0.0000**	**0.0000**	**□.0000e□00□**

Miti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	tons/yr										M□/yr					
□rc□itect□ral Coating	3.4□00e□003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cons□mer Prod□cts	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□andscaping	0.0000	0.0000	5.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e□005	9.0000e□005	0.0000	0.0000	9.0000e□005
□otal	**0.02□0**	**0.0000**	**□.0000e□00□**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**□.0000e□00□**	**□.0000e□00□**	**0.0000**	**0.0000**	**□.0000e□00□**

□.0 Water □etail

□.1 Miti□ation Meas□res Water

	□otal C□2	C□4	□2□	C□2e
Category	M□/yr			
Mitigated	0.9316	0.0121	2.9000e□004	1.2□63
□nmitigated	0.9316	0.0121	2.9000e□004	1.2□65

□.2 Water by □an□ Use

Unmiti□ate□

	□ndoor/□□t door □se	□otal C□2	C□4	□2□	C□2e
□and □se	Mgal	M□/yr			
□trip Mall	0.3□0363 / 0.226996	0.9316	0.0121	2.9000e□004	1.2□65
□otal		**0.□□1□**	**0.0121**	**2.□000e□004**	**1.2□□□**

□.2 Water by □an□ Use

Miti□ate□

	□ndoor/□□t door □se	□otal C□2	C□4	□2□	C□2e
□and □se	Mgal	M□/yr			
□trip Mall	0.3□0363 / 0.226996	0.9316	0.0121	2.9000e□004	1.2□63
□otal		**0.□□1□**	**0.0121**	**2.□000e□004**	**1.2□□□**

□.0 Waste □etail

□.1 Miti□ation Meas□res Waste

Cate□ory/Year

	□otal C□2	C□4	□2□	C□2e
	M□/yr			
Mitigated	1.065□	0.0630	0.0000	2.3□□3
□nmitigated	1.065□	0.0630	0.0000	2.3□□3

□.2 Waste by □an□ Use

Unmiti□ate□

	□ aste Disposed	□otal C□2	C□4	□2□	C□2e
□and □se	tons	M□/yr			
□trip Mall	5.25	1.065□	0.0630	0.0000	2.3□□3
□otal		**1.0□□□**	**0.0□□0**	**0.0000**	**2.□□□□**

Miti□ate□

	□ aste Disposed	□otal C□2	C□4	□2□	C□2e
□and □se	tons	M□/yr			
□trip Mall	5.25	1.065□	0.0630	0.0000	2.3□□3
□otal		**1.0□□□**	**0.0□□0**	**0.0000**	**2.□□□□**

□.0 Operational O□□roa□

E□□ipment □ype	□□m□er	□o□rs/Day	Days/□ear	□orse Po□er	□oad □actor	□□el □ype

10.0 □e□etation

□an □oa□□in □rain □tation

□an □oa□□in Co□nty□□□mmer

1.0 Project Characteristics

1.1 □an□ Usa□e

□and □ses	□i□e	Metric	□ot □creage	□loor □□rface □rea	Pop□lation
□trip Mall	5.00	1000s□ft	5.00	5□000.00	0

1.2 Other Project Characteristics

Urbani□ation	□r□an	**Win□ □pee□ (m/s)**	2.□	**Precipitation □re□ (□ays)**	51
Climate □one	3			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.□ User □ntere□ Comments □ Non□□e□a□lt □ata

Pro□ect C□aracteristics □

□and □se □□rain station modeled as strip mall□□□ilding□5□000 sf□5 acre lot

Constr□ction P□ase □Grading: □ days□Constr□ction: 100 days□Pa□ing 1□ days

□ff□road E□□ipment □Constr□ction: 1 crane□3 for□lifts□1 gen set□1 loader/□ac□□oe□1 □elder

□ff□road E□□ipment □Grading: 1 e□ca□ator□1 grader□1 do□er□3 loader/□ac□□oes

□ff□road E□□ipment □Pa□ing: 2 pa□ers□2 pa□ing e□□ipment□2 rollers

□rips and VM□ □15 □or□ers

Ve□icle □rips □constr□ction emissions only

Constr□ction □ff□road E□□ipment Mitigation □□ater 2 times a day

□a□le □ame	Col□mn □ame	Defa□lt Val□e	□e□ Val□e
t□lConstr□ctionP□ase	□□mDays	230.00	100.00
t□lConstr□ctionP□ase	P□aseEndDate	5/30/2035	6/1/2035
t□lConstr□ctionP□ase	P□ase□tartDate	1/11/2035	1/13/2035
t□l□and□se	□ot□creage	0.11	5.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□lPro□ectC□aracteristics	□perational□ear	2014	2035
t□l□rips□ndVM□	Vendor□rip□□m□er	1.00	5.00
t□l□rips□ndVM□	□ or□er□rip□□m□er	2.00	15.00

2.0 □missions □□mmary

2.1 O□erall Constr□ction (Ma□im□m □aily □mission)

Unmiti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	l□/day										l□/day					
2035	1.4□60	5.9344	1□.4443	0.0360	6.6□56	0.1□41	6.□35□	3.4002	0.1□40	3.5603	0.0000	3□529.3□6□	3□529.3□6□	0.1326	0.0000	3□532.1622
□otal	**1.4□□0**	**□.□□44**	**1□.444□**	**0.0□□0**	**□.□□□□**	**0.1□41**	**□.□□□□**	**□.4002**	**0.1□40**	**□.□□0□**	**0.0000**	**□□□2□.□□□□**	**□□□2□.□□□□**	**0.1□2□**	**0.0000**	**□□□□2.1□22**

Miti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	l□/day										l□/day					
2035	1.4□60	5.9344	1□.4443	0.0360	3.0□1□	0.1□41	3.2319	1.54□1	0.1□40	1.□0□2	0.0000	3□529.3□6□	3□529.3□6□	0.1326	0.0000	3□532.1622
□otal	**1.4□□0**	**□.□□44**	**1□.444□**	**0.0□□0**	**□.0□1□**	**0.1□41**	**□.2□1□**	**1.□4□1**	**0.1□40**	**1.□0□2**	**0.0000**	**□□□2□.□□□□**	**□□□2□.□□□□**	**0.1□2□**	**0.0000**	**□□□□2.1□22**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**□□.□□**	**0.00**	**□2.□2**	**□4.4□**	**0.00**	**□2.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmiti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□rea	0.1261	0.0000	5.1000e□ 004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□ 003	1.0900e□ 003	0.0000		1.1500e□ 003
Energy	1.6500e□ 003	0.0150	0.0126	9.0000e□ 005		1.1400e□ 003	1.1400e□ 003		1.1400e□ 003	1.1400e□ 003		1□.9694	1□.9694	3.4000e□ 004	3.3000e□ 004	1□.0□□□
Mo□ile	0.452□	0.□3□9	3.9051	0.0124	0.□2□6	0.0193	0.□4□9	0.1950	0.01□□	0.212□		915.23□4	915.23□4	0.019□		915.6530
□otal	**0.□□0□**	**0.□□2□**	**□.□1□2**	**0.012□**	**0.□2□□**	**0.0204**	**0.□4□0**	**0.1□□0**	**0.01□□**	**0.21□□**		**□□□.20□□**	**□□□.20□□**	**0.0201**	**□.□000e□ 004**	**□□□.□□2□**

Miti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□rea	0.1261	0.0000	5.1000e□ 004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□ 003	1.0900e□ 003	0.0000		1.1500e□ 003
Energy	1.6500e□ 003	0.0150	0.0126	9.0000e□ 005		1.1400e□ 003	1.1400e□ 003		1.1400e□ 003	1.1400e□ 003		1□.9694	1□.9694	3.4000e□ 004	3.3000e□ 004	1□.0□□□
Mo□ile	0.452□	0.□3□9	3.9051	0.0124	0.□2□6	0.0193	0.□4□9	0.1950	0.01□□	0.212□		915.23□4	915.23□4	0.019□		915.6530
□otal	**0.□□0□**	**0.□□2□**	**□.□1□2**	**0.012□**	**0.□2□□**	**0.0204**	**0.□4□0**	**0.1□□0**	**0.01□□**	**0.21□□**		**□□□.20□□**	**□□□.20□□**	**0.0201**	**□.□000e□ 004**	**□□□.□□2□**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

□.0 Constr□ction □etail

Constr□ction Phase

P□ase □□m□er	P□ase □ame	P□ase □ype	□tart Date	End Date	□□m Days □ ee□	□□m Days	P□ase Description
1	Grading	Grading	1/1/2035	1/10/2035	5	□	
2	□□ilding Constr□ction	□□ilding Constr□ction	1/13/2035	6/1/2035	5	100	
3	Pa□ing	Pa□ing	6/2/2035	6/2□/2035	5	1□	

□cres o□□ra□in□ (□ite Preparation Phase)□0

□cres o□□ra□in□ (□ra□in□ Phase)□4

□cres o□Pa□in□□0

□esi□ential In□oor□0□□esi□ential O□t□oor□0□Non□□esi□ential In□oor□0□Non□□esi□ential O□t□oor□0 (□rchitect□ral Coatin□ □s□□t)

O□□□oa□ □□□ipment

P□ase □ame	□ffroad E□□ipment □ype	□mo□nt	□sage □o□rs	□orse Po□er	□oad □actor
Grading	E□ca□ators	1	□.00	162	0.3□
Grading	Graders	1	□.00	1□4	0.41
Grading	□□□er □ired Do□ers	1	□.00	255	0.40
Grading	□ractors/□oaders/□ac□□oes	3	□.00	9□	0.3□
□□ilding Constr□ction	Cranes	1	□.00	226	0.29
□□ilding Constr□ction	□or□lifts	3	□.00	□9	0.20
□□ilding Constr□ction	Generator □ets	1	□.00	□4	0.□4
□□ilding Constr□ction	□ractors/□oaders/□ac□□oes	1	□.00	9□	0.3□
□□ilding Constr□ction	□ elders	1	□.00	46	0.45
Pa□ing	Pa□ers	2	□.00	125	0.42
Pa□ing	Pa□ing E□□ipment	2	□.00	130	0.36
Pa□ing	□ollers	2	□.00	□0	0.3□

□rips an□ □M□

P□ase □ame	□ffroad E□□ipment Co□nt	□ or□er □rip □□m□er	Vendor □rip □□m□er	□a□ling □rip □□m□er	□ or□er □rip □engt□	Vendor □rip □engt□	□a□ling □rip □engt□	□ or□er Ve□icle Class	Vendor Ve□icle Class	□a□ling Ve□icle Class
Grading	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□□ilding Constr□ction	9	15.00	5.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
Pa□ing	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□

□.1 Miti□ation Meas□res Constr□ction

□ ater E□posed □rea

Clean Pa□ed □oads

□.2 □ra□in□ □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□□giti□e D□st					6.5523	0.0000	6.5523	3.36□5	0.0000	3.36□5			0.0000			0.0000
□ff□□oad	1.4649	5.912□	1□.1690	0.0345		0.1593	0.1593		0.1593	0.1593		3□433.6091	3□433.6091	0.129□		3□436.3340
□otal	**1.4□4□**	**□.□12□**	**1□.1□□0**	**0.0□4□**	**□.□□2□**	**0.1□□□**	**□.□11□**	**□.□□□□**	**0.1□□□**	**□.□2□□**		**□4□□.□01**	**□4□□.□01**	**0.12□□**		**□4□□.□□40**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0211	0.021□	0.2□53	1.5400e□003	0.1232	□.5000e□004	0.1241	0.032□	□.9000e□004	0.0335		95.□6□□	95.□6□□	2.□900e□003		95.□2□3
□otal	**0.0211**	**0.021□**	**0.2□□□**	**1.□400e□00□**	**0.12□2**	**□.□000e□004**	**0.1241**	**0.0□2□**	**□.□000e□004**	**0.0□□□**		**□□.□□□□**	**□□.□□□□**	**2.□□00e□00□**		**□□.□2□□**

□.2 □ra□in□ □20□□

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□□giti□e D□st					2.94□6	0.0000	2.94□6	1.5154	0.0000	1.5154			0.0000			0.0000
□ff□□oad	1.4649	5.912□	1□.1690	0.0345		0.1593	0.1593		0.1593	0.1593	0.0000	3□433.6091	3□433.6091	0.129□		3□436.3340
□otal	**1.4□4□**	**□.□12□**	**1□.1□□0**	**0.0□4□**	**2.□4□□**	**0.1□□□**	**□.10□□**	**1.□1□4**	**0.1□□□**	**1.□□4□**	**0.0000**	**□4□□.□0□1**	**□4□□.□0□1**	**0.12□□**		**□4□□.□□40**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0211	0.021□	0.2□53	1.5400e□003	0.1232	□.5000e□004	0.1241	0.032□	□.9000e□004	0.0335		95.□6□□	95.□6□□	2.□900e□003		95.□2□3
□otal	**0.0211**	**0.021□**	**0.2□□□**	**1.□400e□00□**	**0.12□2**	**□.□000e□004**	**0.1241**	**0.0□2□**	**□.□000e□004**	**0.0□□□**		□□.□□□□	□□.□□□□	**2.□□00e□00□**		□□.□2□□

□.□ □□il□in□ Constr□ction □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	0.9265	5.4661	11.9903	0.0242		0.06□9	0.06□9		0.06□9	0.06□9		2□255.3055	2□255.3055	0.0□20		2□25□.02□3
□otal	**0.□2□□**	**□.4□□1**	**11.□□0□**	**0.0242**		**0.0□□□**	**0.0□□□**		**0.0□□□**	**0.0□□□**		**2□2□□.□0□□**	**2□2□□.□0□□**	**0.0□20**		**2□2□□.02□□**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.02□0	0.1□54	0.335□	1.1□00e□003	0.0335	4.3900e□003	0.03□□	9.5□00e□003	4.0400e□003	0.0136		110.9446	110.9446	□.9000e□004		110.9613
□ or□er	0.0211	0.021□	0.2□53	1.5400e□003	0.1232	□.5000e□004	0.1241	0.032□	□.9000e□004	0.0335		95.□6□□	95.□6□□	2.□900e□003		95.□2□3
□otal	**0.04□1**	**0.1□□1**	**0.□111**	**2.□200e□00□**	**0.1□□□**	**□.2400e□00□**	**0.1□1□**	**0.042□**	**4.□□00e□00□**	**0.04□1**		**20□.□122**	**20□.□122**	**□.□□00e□00□**		**20□.□□□□**

□.□ □□il□in□ Constr□ction □20□□

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	0.9265	5.4661	11.9903	0.0242		0.06□9	0.06□9		0.06□9	0.06□9	0.0000	2□255.305 5	2□255.305 5	0.0□20		2□25□.02□ 3
□otal	**0.□2□□**	**□.4□□1**	**11.□□0□**	**0.0242**		**0.0□□□**	**0.0□□□**		**0.0□□□**	**0.0□□□**	**0.0000**	**2□2□□.□0□ □**	**2□2□□.□0□ □**	**0.0□20**		**2□2□□.02□ □**

Miti□ate□ Constr□ction O□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.02□0	0.1□54	0.335□	1.1□00e□ 003	0.0335	4.3900e□ 003	0.03□□	9.5□00e□ 003	4.0400e□ 003	0.0136		110.9446	110.9446	□.9000e□ 004		110.9613
□ or□er	0.0211	0.021□	0.2□53	1.5400e□ 003	0.1232	□.5000e□ 004	0.1241	0.032□	□.9000e□ 004	0.0335		95.□6□□	95.□6□□	2.□900e□ 003		95.□2□3
□otal	**0.04□1**	**0.1□□1**	**0.□111**	**2.□200e□ 00□**	**0.1□□□**	**□.2400e□ 00□**	**0.1□1□**	**0.042□**	**4.□□00e□ 00□**	**0.04□1**		**20□.□122**	**20□.□122**	**□.□□00e□ 00□**		**20□.□□□□**

□.4 Pa□in□ □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	1.1165	4.□□92	15.4905	0.02□5		0.1□32	0.1□32		0.1□32	0.1□32		2□599.9□6 6	2□599.9□6 6	0.1001		2□602.0□□ 1
Pa□ing	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□otal	**1.11□□**	**4.□□□2**	**1□.4□0□**	**0.02□□**		**0.1□□2**	**0.1□□2**		**0.1□□2**	**0.1□□2**		**2□□□□.□□□ □**	**2□□□□.□□□ □**	**0.1001**		**2□□02.0□□ 1**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0211	0.021□	0.2□53	1.5400e□ 003	0.1232	□.5000e□ 004	0.1241	0.032□	□.9000e□ 004	0.0335		95.□6□□	95.□6□□	2.□900e□ 003		95.□2□3
□otal	**0.0211**	**0.021□**	**0.2□□□**	**1.□400e□ 00□**	**0.12□2**	**□.□000e□ 004**	**0.1241**	**0.0□2□**	**□.□000e□ 004**	**0.0□□□**		□□.□□□□	□□.□□□□	**2.□□00e□ 00□**		□□.□2□□

□.4 Pa□in□ □20□□

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	1.1165	4.□□92	15.4905	0.02□5		0.1□32	0.1□32		0.1□32	0.1□32	0.0000	2□599.9□6 6	2□599.9□6 6	0.1001		2□602.0□□ 1
Pa□ing	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□otal	**1.11□□**	**4.□□□2**	**1□.4□0□**	**0.02□□**		**0.1□□2**	**0.1□□2**		**0.1□□2**	**0.1□□2**	**0.0000**	**2□□□□.□□□ □**	**2□□□□.□□□ □**	**0.1001**		**2□□02.0□□ 1**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0211	0.021□	0.2□53	1.5400e□ 003	0.1232	□.5000e□ 004	0.1241	0.032□	□.9000e□ 004	0.0335		95.□6□□	95.□6□□	2.□900e□ 003		95.□2□3
□otal	**0.0211**	**0.021□**	**0.2□□□**	**1.□400e□ 00□**	**0.12□2**	**□.□000e□ 004**	**0.1241**	**0.0□2□**	**□.□000e□ 004**	**0.0□□□**		□□.□□□□	□□.□□□□	**2.□□00e□ 00□**		□□.□2□□

4.0 Operational □etail □Mobile

4.1 Miti□ation Meas□res Mobile

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	I□/day										I□/day					
Mitigated	0.452□	0.□3□9	3.9051	0.0124	0.□2□6	0.0193	0.□4□9	0.1950	0.01□□	0.212□		915.23□4	915.23□4	0.019□		915.6530
□nmitigated	0.452□	0.□3□9	3.9051	0.0124	0.□2□6	0.0193	0.□4□9	0.1950	0.01□□	0.212□		915.23□4	915.23□4	0.019□		915.6530

4.2 □rip □□mmary In□ormation

	□□eage Daily □rip □ate			□nmitigated	Mitigated
□and □se	□ ee□day	□at□rday	□□nday	□nn□al VM□	□nn□al VM□
□trip Mall	221.60	210.20	102.15	312□4□4	312□4□4
□otal	221.60	210.20	102.15	312□4□4	312□4□4

4.□ □rip □ype In□ormation

	Miles			□rip □			□rip P□rpose □		
□and □se	□□□ or C□□	□□□ or C□C	□□□ or C□□□	□□□ or C□□	□□□ or C□C	□□□ or C□□□	Primary	Di□erted	Pass□□y
□trip Mall	9.50	□.30	□.30	16.60	64.40	19.00	45	40	15

□D□	□D□1	□D□2	MDV	□□D1	□□D2	M□D	□□D	□□□□	□□□□	MC□	□□□□	M□
0.462000	0.06492□	0.15□404	0.160569	0.04404□	0.00596□	0.020332	0.0□140□	0.001159	0.0014□4	0.006921	0.000529	0.002254

□.0 □ner□y □etail

4.4 □leet Mi□

□istorical Energy □se: □

□.1 Miti□ation Meas□res □ner□y

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□at□ralGas Mitigated	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□
□at□ralGas □nmitigated	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□

□.2 □ner□y by □an□ Use □Nat□ral□as

Unmiti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	l□/day										l□/day					
□trip Mall	152.□4	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□
□otal		**1.□□00e□00□**	**0.01□0**	**0.012□**	**□.0000e□00□**		**1.1400e□00□**	**1.1400e□00□**		**1.1400e□00□**	**1.1400e□00□**		**1□.□□□4**	**1□.□□□4**	**□.4000e□004**	**□.□000e□004**	**1□.0□□□**

□.2 □ner□y by □an□ Use □Nat□ral□as

Miti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	I□/day										I□/day					
□trip Mall	0.152□4	1.6500e□003	0.0150	0.0126	9.0000e□005		1.1400e□003	1.1400e□003		1.1400e□003	1.1400e□003		1□.9694	1□.9694	3.4000e□004	3.3000e□004	1□.0□□□
□otal		**1.□□00e□00□**	**0.01□0**	**0.012□**	**□.0000e□00□**		**1.1400e□00□**	**1.1400e□00□**		**1.1400e□00□**	**1.1400e□00□**		**1□.□□□4**	**1□.□□□4**	**□.4000e□004**	**□.□000e□004**	**1□.0□□□**

□.0 □rea □etail

□.1 Miti□ation Meas□res □rea

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	I□/day										I□/day					
Mitigated	0.1261	0.0000	5.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1500e□003
□nmitigated	0.1261	0.0000	5.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1500e□003

□.2 □rea by □□bCate□ory

Unmiti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	I□/day										I□/day					
□rc□itect□ral Coating	0.0191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Cons□mer Prod□cts	0.10□0					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□andscaping	5.0000e□005	0.0000	5.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1500e□003
□otal	**0.12□1**	**0.0000**	**□.1000e□004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.0□00e□00□**	**1.0□00e□00□**	**0.0000**		**1.1□00e□00□**

Miti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	I□/day										I□/day					
□rc□itect□ral Coating	0.0191					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Cons□mer Prod□cts	0.10□0					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□andscaping	5.0000e□005	0.0000	5.1000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		1.0900e□003	1.0900e□003	0.0000		1.1500e□003
□otal	**0.12□1**	**0.0000**	**□.1000e□004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.0□00e□00□**	**1.0□00e□00□**	**0.0000**		**1.1□00e□00□**

□.0 Water □etail

□.1 Miti□ation Meas□res Water

□.0 Waste □etail

□.1 Miti□ation Meas□res Waste

□.0 Operational O□□roa□

E□□ipment □ype	□□m□er	□o□rs/Day	Days/□ear	□orse Po□er	□oad □actor	□□el □ype

10.0 □e□etation

□an □oa□□in □rain

□an □oa□□in Co□nty□□nn□al

1.0 Project Characteristics

1.1 □an□ Usa□e

□and □ses	□i□e	Metric	□ot □creage	□loor □□rface □rea	Pop□lation
□ser Defined □nd□strial	1.00	□ser Defined □nit	5.00	0.00	0

1.2 Other Project Characteristics

Urbani□ation	□r□an	**Win□ □pee□ (m/s)**	2.□	**Precipitation □re□ (□ays)**	51
Climate □one	3			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.□ User □ntere□ Comments □ Non□□e□a□lt □ata

Pro□ect C□aracteristics □

□and □se □□rain □rac□ □nstall

Constr□ction P□ase □30 days prep□30 days install

□ff□road E□□ipment □Prep: 1 grader□1 do□er□1 loader/□ac□□oe□1 roller□1 compactor□1 □ater tr□c□

□ff□road E□□ipment □□nstall: 1 crane□1 for□lift□1 generator set□2 □elders

□rips and VM□ □15 □or□ers eac□ p□ase 10 □endor deli□eries a day

Constr□ction □ff□road E□□ipment Mitigation □□ater e□posed area 2 times a day

□a□le □ame	Col□mn □ame	Defa□lt Val□e	□e□ Val□e
t□lConstr□ctionP□ase	□□mDays	230.00	30.00
t□lConstr□ctionP□ase	□□mDays	□.00	30.00
t□lConstr□ctionP□ase	P□aseEndDate	3/23/2035	4/11/2035
t□lConstr□ctionP□ase	P□ase□tartDate	2/10/2035	3/1/2035
t□lGrading	□cres□fGrading	15.00	4.00
t□l□and□se	□ot□creage	0.00	5.00
t□l□ff□oadE□□ipment	□orsePo□er	400.00	300.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		□ollers
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		Plate Compactors
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		□ff□□ig□□ay □r□c□s
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	1.00	2.00
t□l□ff□oadE□□ipment	P□ase□ame		□rac□□ed Prep
t□l□ff□oadE□□ipment	P□ase□ame		□rac□□ed Prep
t□l□ff□oadE□□ipment	P□ase□ame		□rac□□ed Prep
t□lPro□ectC□aracteristics	□perational□ear	2014	2035
t□l□rips□ndVM□	Vendor□rip□□m□er	0.00	10.00
t□l□rips□ndVM□	□ or□er□rip□□m□er	0.00	15.00

2.0 □missions □□mmary

2.1 O□erall Constr□ction

Unmiti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	tons/yr										M□/yr					
2035	0.0349	0.15□6	0.3514	□6000e□ 004	0.09□0	3.5100e□ 003	0.1005	0.0511	3.5000e□ 003	0.0546	0.0000	□6.550□	□6.550□	2.□□00e□ 003	0.0000	□6.6091
□otal	**0.0□4□**	**0.1□□□**	**0.□□14**	**□.□000e□ 004**	**0.0□□0**	**□.□100e□ 00□**	**0.100□**	**0.0□11**	**□.□000e□ 00□**	**0.0□4□**	**0.0000**	**□□.□□0□**	**□□.□□0□**	**2.□□00e□ 00□**	**0.0000**	**□□.□0□1**

Miti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	tons/yr										M□/yr					
2035	0.0349	0.1325	0.3514	□6000e□ 004	0.0462	3.5100e□ 003	0.049□	0.023□	3.5000e□ 003	0.02□2	0.0000	□6.5506	□6.5506	2.□□00e□ 003	0.0000	□6.6090
□otal	**0.0□4□**	**0.1□2□**	**0.□□14**	**□.□000e□ 004**	**0.04□2**	**□.□100e□ 00□**	**0.04□□**	**0.02□□**	**□.□000e□ 00□**	**0.02□2**	**0.0000**	**□□.□□0□**	**□□.□□0□**	**2.□□00e□ 00□**	**0.0000**	**□□.□0□0**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**1□.4□**	**0.00**	**0.00**	**□2.41**	**0.00**	**□0.□□**	**□□.□□**	**0.00**	**□0.24**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmiti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rea	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□aste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ater						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0000**	**0.0000**	**1.0000e□00□**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e□00□**	**2.0000e□00□**	**0.0000**	**0.0000**	**2.0000e□00□**

2.2 O□erall Operational

Miti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□rea	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□aste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ater						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0000**	**0.0000**	**1.0000e□00□**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e□00□**	**2.0000e□00□**	**0.0000**	**0.0000**	**2.0000e□00□**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

□.0 Constr□ction □etail

Constr□ction Phase

P□ase □□m□er	P□ase □ame	P□ase □ype	□tart Date	End Date	□□m Days □ ee□	□□m Days	P□ase Description
1	□rac□ □ed Prep	Grading	1/1/2035	2/9/2035	5	30	
2	□rac□/□ignal □nstallation	□□ilding Constr□ction	3/1/2035	4/11/2035	5	30	

□cres o□□ra□in□ (□ite Preparation Phase)□0

□cres o□□ra□in□ (□ra□in□ Phase)□0

□cres o□Pa□in□□0

□esi□ential In□oor□0□□esi□ential O□t□oor□0□Non□□esi□ential In□oor□0□Non□□esi□ential O□t□oor□0 (□rchitect□ral Coatin□ □s□□t)

O□□□oa□ □□□ipment

P□ase □ame	□ffroad E□□ipment □ype	□mo□nt	□sage □o□rs	□orse Po□er	□oad □actor
□rac□□ed Prep	Graders	1	□.00	1□4	0.41
□rac□□ed Prep	□ollers	1	□.00	□0	0.3□
□rac□□ed Prep	Plate Compactors	1	□.00	□	0.43
□rac□□ed Prep	□ff□□ig□□ay □r□c□s	1	□.00	300	0.3□
□rac□□ed Prep	□□□□er □ired Do□ers	1	□.00	255	0.40
□rac□□ed Prep	□ractors/□oaders/□ac□□oes	1	□.00	9□	0.3□
□rac□/□ignal □nstallation	Cranes	1	□.00	226	0.29
□rac□/□ignal □nstallation	□or□lifts	1	□.00	□9	0.20
□rac□/□ignal □nstallation	Generator □ets	1	□.00	□4	0.□4
□rac□/□ignal □nstallation	□ elders	2	□.00	46	0.45

□rips an□ □M□

P□ase □ame	□ffroad E□□ipment Co□nt	□ or□er □rip □□m□er	Vendor □rip □□m□er	□a□ling □rip □□m□er	□ or□er □rip □engt□	Vendor □rip □engt□	□a□ling □rip □engt□	□ or□er Ve□icle Class	Vendor Ve□icle Class	□a□ling Ve□icle Class
□rac□□ed Prep	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□rac□/□ignal □nstallation	9	15.00	10.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□

□.1 Miti□ation Meas□res Constr□ction

□ ater E□posed □rea

Clean Pa□ed □oads

□.2 □rac□ □e□ Prep □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□□giti□e D□st					0.0925	0.0000	0.0925	0.0499	0.0000	0.0499	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	0.0220	0.0□00	0.193□	4.9000e□ 004		2.5300e□ 003	2.5300e□ 003		2.5300e□ 003	2.5300e□ 003	0.0000	46.□□35	46.□□35	1.□□00e□ 003	0.0000	46.□106
□otal	**0.0220**	**0.0□00**	**0.1□□□**	**4.□000e□ 004**	**0.0□2□**	**2.□□00e□ 00□**	**0.0□□0**	**0.04□□**	**2.□□00e□ 00□**	**0.0□24**	**0.0000**	**4□.□□□□**	**4□.□□□□**	**1.□□00e□ 00□**	**0.0000**	**4□.□10□**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	2.□000e□ 004	3.6000e□ 004	3.6100e□ 003	2.0000e□ 005	1.□900e□ 003	1.0000e□ 005	1.□100e□ 003	4.□000e□ 004	1.0000e□ 005	4.9000e□ 004	0.0000	1.196□	1.196□	4.0000e□ 005	0.0000	1.19□5
□otal	**2.□000e□ 004**	**□.□000e□ 004**	**□.□100e□ 00□**	**2.0000e□ 00□**	**1.□□00e□ 00□**	**1.0000e□ 00□**	**1.□100e□ 00□**	**4.□000e□ 004**	**1.0000e□ 00□**	**4.□000e□ 004**	**0.0000**	**1.1□□□**	**1.1□□□**	**4.0000e□ 00□**	**0.0000**	**1.1□□□**

□.2 □rac□ □e□ Prep □20□□

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□□giti□e D□st					0.0416	0.0000	0.0416	0.0225	0.0000	0.0225	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ff□□oad	0.0220	0.0539	0.193□	4.9000e□ 004		2.5300e□ 003	2.5300e□ 003		2.5300e□ 003	2.5300e□ 003	0.0000	46.□□35	46.□□35	1.□□00e□ 003	0.0000	46.□105
□otal	**0.0220**	**0.0□□□**	**0.1□□□**	**4.□000e□ 004**	**0.041□**	**2.□□00e□ 00□**	**0.0441**	**0.022□**	**2.□□00e□ 00□**	**0.02□0**	**0.0000**	**4□.□□□□**	**4□.□□□□**	**1.□□00e□ 00□**	**0.0000**	**4□.□10□**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	2.□000e□ 004	3.6000e□ 004	3.6100e□ 003	2.0000e□ 005	1.□900e□ 003	1.0000e□ 005	1.□100e□ 003	4.□000e□ 004	1.0000e□ 005	4.9000e□ 004	0.0000	1.196□	1.196□	4.0000e□ 005	0.0000	1.19□5
□otal	**2.□000e□ 004**	**□.□000e□ 004**	**□.□100e□ 00□**	**2.0000e□ 00□**	**1.□□00e□ 00□**	**1.0000e□ 00□**	**1.□100e□ 00□**	**4.□000e□ 004**	**1.0000e□ 00□**	**4.□000e□ 004**	**0.0000**	**1.1□□□**	**1.1□□□**	**4.0000e□ 00□**	**0.0000**	**1.1□□□**

□.□ □rac□/□i□nal Installation □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0114	0.0□25	0.13□2	2.9000e□004		□.2000e□004	□.2000e□004		□.2000e□004	□.2000e□004	0.0000	24.3□42	24.3□42	9.2000e□004	0.0000	24.3935
□otal	**0.0114**	**0.0□2□**	**0.1□□2**	**2.□000e□004**		**□.2000e□004**	**□.2000e□004**		**□.2000e□004**	**□.2000e□004**	**0.0000**	**24.□□42**	**24.□□42**	**□.2000e□004**	**0.0000**	**24.□□□□**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	□.□000e□004	5.4500e□003	0.0133	4.0000e□005	9.□000e□004	1.3000e□004	1.1100e□003	2.□000e□004	1.2000e□004	4.0000e□004	0.0000	3.0096	3.0096	2.0000e□005	0.0000	3.0101
□ or□er	2.□000e□004	3.6000e□004	3.6100e□003	2.0000e□005	1.□900e□003	1.0000e□005	1.□100e□003	4.□000e□004	1.0000e□005	4.9000e□004	0.0000	1.196□	1.196□	4.0000e□005	0.0000	1.19□5
□otal	**1.1□00e□00□**	**□.□100e□00□**	**0.01□□**	**□.0000e□00□**	**2.□□00e□00□**	**1.4000e□004**	**2.□200e□00□**	**□.□000e□004**	**1.□000e□004**	**□.□000e□004**	**0.0000**	**4.20□□**	**4.20□□**	**□.0000e□00□**	**0.0000**	**4.20□□**

□.□ □rac□/□i□nal Installation □20□□

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□ff□□oad	0.0114	0.0□25	0.13□2	2.9000e□ 004		□.2000e□ 004	□.2000e□ 004		□.2000e□ 004	□.2000e□ 004	0.0000	24.3□42	24.3□42	9.2000e□ 004	0.0000	24.3935
□otal	**0.0114**	**0.0□2□**	**0.1□□2**	**2.□000e□ 004**		**□.2000e□ 004**	**□.2000e□ 004**		**□.2000e□ 004**	**□.2000e□ 004**	**0.0000**	**24.□□42**	**24.□□42**	**□.2000e□ 004**	**0.0000**	**24.□□□□**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	□.□000e□ 004	5.4500e□ 003	0.0133	4.0000e□ 005	9.□000e□ 004	1.3000e□ 004	1.1100e□ 003	2.□000e□ 004	1.2000e□ 004	4.0000e□ 004	0.0000	3.0096	3.0096	2.0000e□ 005	0.0000	3.0101
□ or□er	2.□000e□ 004	3.6000e□ 004	3.6100e□ 003	2.0000e□ 005	1.□900e□ 003	1.0000e□ 005	1.□100e□ 003	4.□000e□ 004	1.0000e□ 005	4.9000e□ 004	0.0000	1.196□	1.196□	4.0000e□ 005	0.0000	1.19□5
□otal	**1.1□00e□ 00□**	**□.□100e□ 00□**	**0.01□□**	**□.0000e□ 00□**	**2.□□00e□ 00□**	**1.4000e□ 004**	**2.□200e□ 00□**	**□.□000e□ 004**	**1.□000e□ 004**	**□.□000e□ 004**	**0.0000**	**4.20□□**	**4.20□□**	**□.0000e□ 00□**	**0.0000**	**4.20□□**

4.0 Operational □etail □Mobile

4.1 Miti□ation Meas□res Mobile

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□nmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 □rip □□mmary In□ormation

	□□□eage Daily □rip □ate			□nmitigated	Mitigated
□and □se	□ ee□day	□at□rday	□□nday	□nn□al VM□	□nn□al VM□
□ser Defined □nd□strial	0.00	0.00	0.00		
□otal	0.00	0.00	0.00		

4.□ □rip □ype In□ormation

	Miles			□rip □			□rip P□rpose □		
□and □se	□□□ or C□□	□□□ or C□C	□□□ or C□□□	□□□ or C□□	□□□ or C□C	□□□ or C□□□	Primary	Di□erted	Pass□□y
□ser Defined □nd□strial	9.50	□.30	□.30	0.00	0.00	0.00	0	0	0

□D□	□D□1	□D□2	MDV	□□D1	□□D2	M□D	□□D	□□□□	□□□□	MC□	□□□□	M□
0.462000	0.06492□	0.15□404	0.160569	0.04404□	0.00596□	0.020332	0.0□140□	0.001159	0.0014□4	0.006921	0.000529	0.002254

□.0 □ner□y □etail

4.4 □leet Mi□

□istorical Energy □se: □

□.1 Miti□ation Meas□res □ner□y

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity □nmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□at□ralGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□at□ralGas □nmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

□.2 □ner□y by □an□ Use □Nat□ral□as

Unmiti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	tons/yr										M□/yr					
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.2 □ner□y by □an□ Use □Nat□ral□as

Miti□ate□

	□at□ralGa s □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	tons/yr										M□/yr					
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.□ □ner□y by □an□ Use □□lectricity

Unmiti□ate□

	Electricity □se	□otal C□2	C□4	□2□	C□2e
□and □se	□□ □/yr	M□/yr			
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.□ □ner□y by □an□ Use □□lectricity

Miti□ate□

	Electricity □se	□otal C□2	C□4	□2□	C□2e
□and □se	□□ □/yr	M□/yr			
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.0 □rea □etail

□.1 Miti□ation Meas□res □rea

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	tons/yr										M□/yr					
Mitigated	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
□nmitigated	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005

□.2 □rea by □□bCate□ory

Unmiti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	tons/yr										M□/yr					
□rc□itect□ral Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cons□mer Prod□cts	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□andscaping	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
□otal	**0.0000**	**0.0000**	**1.0000e□00□**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e□00□**	**2.0000e□00□**	**0.0000**	**0.0000**	**2.0000e□00□**

Miti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	tons/yr										M□/yr					
□rc□itect□ral Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Cons□mer Prod□cts	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□andscaping	0.0000	0.0000	1.0000e□005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e□005	2.0000e□005	0.0000	0.0000	2.0000e□005
□otal	**0.0000**	**0.0000**	**1.0000e□00□**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e□00□**	**2.0000e□00□**	**0.0000**	**0.0000**	**2.0000e□00□**

□.0 Water □etail

□.1 Miti□ation Meas□res Water

	□otal C□2	C□4	□2□	C□2e
Category	M□/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
□nmitigated	0.0000	0.0000	0.0000	0.0000

□.2 Water by □an□ Use

Unmiti□ate□

	□ndoor/□□t door □se	□otal C□2	C□4	□2□	C□2e
□and □se	Mgal	M□/yr			
□ser Defined □nd□strial	0 / 0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.2 Water by □an□ Use

Miti□ate□

	□ndoor/□□t door □se	□otal C□2	C□4	□2□	C□2e
□and □se	Mgal	M□/yr			
□ser Defined □nd□strial	0 / 0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.0 Waste □etail

□.1 Miti□ation Meas□res Waste

Cate□ory/Year

	□otal C□2	C□4	□2□	C□2e
	M□/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
□nmitigated	0.0000	0.0000	0.0000	0.0000

□.2 Waste by □an□ Use

Unmiti□ate□

	□ aste Disposed	□otal C□2	C□4	□2□	C□2e
□and □se	tons	M□/yr			
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Miti□ate□

	□ aste Disposed	□otal C□2	C□4	□2□	C□2e
□and □se	tons	M□/yr			
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.0 Operational O□□roa□

E□□ipment □ype	□□m□er	□o□rs/Day	Days/□ear	□orse Po□er	□oad □actor	□□el □ype

10.0 □e□etation

□an □oa□□in □rain

□an □oa□□in Co□nty□□□mmer

1.0 Project Characteristics

1.1 □an□ Usa□e

□and □ses	□i□e	Metric	□ot □creage	□loor □□rface □rea	Pop□lation
□ser Defined □nd□strial	1.00	□ser Defined □nit	5.00	0.00	0

1.2 Other Project Characteristics

Urbani□ation	□r□an	**Win□ □pee□ (m/s)**	2.□	**Precipitation □re□ (□ays)**	51
Climate □one	3			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.□ User □ntere□ Comments □ Non□□e□a□lt □ata

Pro□ect C□aracteristics □

□and □se □□rain □rac□ □nstall

Constr□ction P□ase □30 days prep□30 days install

□ff□road E□□ipment □Prep: 1 grader□1 do□er□1 loader/□ac□□oe□1 roller□1 compactor□1 □ater tr□c□

□ff□road E□□ipment □□nstall: 1 crane□1 for□lift□1 generator set□2 □elders

□rips and VM□ □15 □or□ers eac□ p□ase 10 □endor deli□eries a day

Constr□ction □ff□road E□□ipment Mitigation □□ater e□posed area 2 times a day

□a□le □ame	Col□mn □ame	Defa□lt Val□e	□e□ Val□e
t□lConstr□ctionP□ase	□□mDays	230.00	30.00
t□lConstr□ctionP□ase	□□mDays	□.00	30.00
t□lConstr□ctionP□ase	P□aseEndDate	3/23/2035	4/11/2035
t□lConstr□ctionP□ase	P□ase□tartDate	2/10/2035	3/1/2035
t□lGrading	□cres□fGrading	15.00	4.00
t□l□and□se	□ot□creage	0.00	5.00
t□l□ff□oadE□□ipment	□orsePo□er	400.00	300.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		□ollers
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		Plate Compactors
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□ype		□ff□□ig□□ay □r□c□s
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	3.00	1.00
t□l□ff□oadE□□ipment	□ff□oadE□□ipment□nit□mo□nt	1.00	2.00
t□l□ff□oadE□□ipment	P□ase□ame		□rac□□ed Prep
t□l□ff□oadE□□ipment	P□ase□ame		□rac□□ed Prep
t□l□ff□oadE□□ipment	P□ase□ame		□rac□□ed Prep
t□lPro□ectC□aracteristics	□perational□ear	2014	2035
t□l□rips□ndVM□	Vendor□rip□□m□er	0.00	10.00
t□l□rips□ndVM□	□ or□er□rip□□m□er	0.00	15.00

2.0 □missions □□mmary

2.1 O□erall Constr□ction (Ma□im□m □aily □mission)

Unmiti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	l□/day										l□/day					
2035	1.4900	5.352□	13.1904	0.0344	6.2□6□	0.169□	6.4565	3.35□2	0.169□	3.52□0	0.0000	3□533.032□	3□533.032□	0.132□	0.0000	3□535.□1□3
□otal	**1.4□00**	**□.□□2□**	**1□.1□04**	**0.0□44**	**□.2□□□**	**0.1□□□**	**□.4□□□**	**□.□□□2**	**0.1□□□**	**□.□2□0**	**0.0000**	**□□□□□.0□2□**	**□□□□□.0□2□**	**0.1□2□**	**0.0000**	**□□□□□.□1□□**

Miti□ate□ Constr□ction

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□ear	l□/day										l□/day					
2035	1.4900	5.2063	13.1904	0.0344	2.□96□	0.169□	3.0666	1.5292	0.169□	1.69□9	0.0000	3□533.032□	3□533.032□	0.132□	0.0000	3□535.□1□3
□otal	**1.4□00**	**□.20□□**	**1□.1□04**	**0.0□44**	**2.□□□□**	**0.1□□□**	**□.0□□□**	**1.□2□2**	**0.1□□□**	**1.□□□□**	**0.0000**	**□□□□□.0□2□**	**□□□□□.0□2□**	**0.1□2□**	**0.0000**	**□□□□□.□1□□**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	**0.00**	**2.□□**	**0.00**	**0.00**	**□□.□2**	**0.00**	**□2.□0**	**□4.4□**	**0.00**	**□1.□4**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmiti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	I□/day										I□/day					
□rea	1.0000e□005	0.0000	1.0000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**1.0000e□00□**	**0.0000**	**1.0000e□004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e□004**	**2.2000e□004**	**0.0000**	**0.0000**	**2.□000e□004**

Miti□ate□ Operational

	□□G	□□□	C□	□□2	□□giti□e PM10	E□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	I□/day										I□/day					
□rea	1.0000e□005	0.0000	1.0000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mo□ile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□otal	**1.0000e□00□**	**0.0000**	**1.0000e□004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e□004**	**2.2000e□004**	**0.0000**	**0.0000**	**2.□000e□004**

	□O□	NO□	CO	□O2	□□□iti□e PM10	□□ha□st PM10	PM10 □otal	□□□iti□e PM2.□	□□ha□st PM2.□	PM2.□ □otal	□io□CO2	N□io□CO2	□otal CO2	CH4	N20	CO2e
Percent □e□□ction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

□.0 Constr□ction □etail

Constr□ction Phase

P□ase □□m□er	P□ase □ame	P□ase □ype	□tart Date	End Date	□□m Days □ ee□	□□m Days	P□ase Description
1	□rac□ □ed Prep	Grading	1/1/2035	2/9/2035	5	30	
2	□rac□/□ignal □nstallation	□□ilding Constr□ction	3/1/2035	4/11/2035	5	30	

□cres o□□ra□in□ (□ite Preparation Phase)□0

□cres o□□ra□in□ (□ra□in□ Phase)□0

□cres o□Pa□in□□0

□esi□ential In□oor□0□□esi□ential O□t□oor□0□Non□□esi□ential In□oor□0□Non□□esi□ential O□t□oor□0 (□rchitect□ral Coatin□ □s□□t)

O□□□oa□ □□□ipment

P□ase □ame	□ffroad E□□ipment □ype	□mo□nt	□sage □o□rs	□orse Po□er	□oad □actor
□rac□□ed Prep	Graders	1	□.00	1□4	0.41
□rac□□ed Prep	□ollers	1	□.00	□0	0.3□
□rac□□ed Prep	Plate Compactors	1	□.00	□	0.43
□rac□□ed Prep	□ff□□ig□□ay □r□c□s	1	□.00	300	0.3□
□rac□□ed Prep	□□□□er □ired Do□ers	1	□.00	255	0.40
□rac□□ed Prep	□ractors/□oaders/□ac□□oes	1	□.00	9□	0.3□
□rac□/□ignal □nstallation	Cranes	1	□.00	226	0.29
□rac□/□ignal □nstallation	□or□lifts	1	□.00	□9	0.20
□rac□/□ignal □nstallation	Generator □ets	1	□.00	□4	0.□4
□rac□/□ignal □nstallation	□ elders	2	□.00	46	0.45

□rips an□ □M□

P□ase □ame	□ffroad E□□ipment Co□nt	□ or□er □rip □□m□er	Vendor □rip □□m□er	□a□ling □rip □□m□er	□ or□er □rip □engt□	Vendor □rip □engt□	□a□ling □rip □engt□	□ or□er Ve□icle Class	Vendor Ve□icle Class	□a□ling Ve□icle Class
□rac□□ed Prep	6	15.00	0.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□
□rac□/□ignal □nstallation	9	15.00	10.00	0.00	10.□0	□.30	20.00	□D□Mi□	□D□□Mi□	□□D□

□.1 Miti□ation Meas□res Constr□ction

□ ater E□posed □rea

Clean Pa□ed □oads

□.2 □rac□ □e□ Prep □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□□giti□e D□st					6.1635	0.0000	6.1635	3.3255	0.0000	3.3255			0.0000			0.0000
□ff□□oad	1.46□9	5.3310	12.9151	0.032□		0.1690	0.1690		0.1690	0.1690		3□43□.265 0	3□43□.265 0	0.129□		3□439.990 0
□otal	**1.4□□□**	**□.□□10**	**12.□1□1**	**0.0□2□**	**□.1□□□**	**0.1□□0**	**□.□□2□**	**□.□2□□**	**0.1□□0**	**□.4□4□**		**□4□□.2□□ 0**	**□4□□.2□□ 0**	**0.12□□**		**□4□□.□□0 0**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0211	0.021□	0.2□53	1.5400e□ 003	0.1232	□.5000e□ 004	0.1241	0.032□	□.9000e□ 004	0.0335		95.□6□□	95.□6□□	2.□900e□ 003		95.□2□3
□otal	**0.0211**	**0.021□**	**0.2□□□**	**1.□400e□ 00□**	**0.12□2**	**□.□000e□ 004**	**0.1241**	**0.0□2□**	**□.□000e□ 004**	**0.0□□□**		**□□.□□□□**	**□□.□□□□**	**2.□□00e□ 00□**		**□□.□2□□**

□.2 □rac□ □e□ Prep □20□□

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□□giti□e D□st					2.□□36	0.0000	2.□□36	1.4965	0.0000	1.4965			0.0000			0.0000
□ff□□oad	1.46□9	3.5909	12.9151	0.032□		0.1690	0.1690		0.1690	0.1690	0.0000	3□43□.265 0	3□43□.265 0	0.129□		3□439.990 0
□otal	**1.4□□□**	**□.□□0□**	**12.□1□1**	**0.0□2□**	**2.□□□□**	**0.1□□0**	**2.□42□**	**1.4□□□**	**0.1□□0**	**1.□□□□**	**0.0000**	**□4□□.2□□ 0**	**□4□□.2□□ 0**	**0.12□□**		**□4□□.□□0 0**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0211	0.021□	0.2□53	1.5400e□ 003	0.1232	□.5000e□ 004	0.1241	0.032□	□.9000e□ 004	0.0335		95.□6□□	95.□6□□	2.□900e□ 003		95.□2□3
□otal	**0.0211**	**0.021□**	**0.2□□□**	**1.□400e□ 00□**	**0.12□2**	**□.□000e□ 004**	**0.1241**	**0.0□2□**	**□.□000e□ 004**	**0.0□□□**		**□□.□□□□**	**□□.□□□□**	**2.□□00e□ 00□**		**□□.□2□□**

□.□ □rac□/□i□nal Installation □20□□

Unmiti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	0.□591	4.□339	9.1493	0.0196		0.054□	0.054□		0.054□	0.054□		1□□91.1993	1□□91.1993	0.06□4		1□□92.6142
□otal	**0.□□□1**	**4.□□□□**	**□.14□□**	**0.01□□**		**0.0□4□**	**0.0□4□**		**0.0□4□**	**0.0□4□**		**1□□□1.1□□□**	**1□□□1.1□□□**	**0.0□□4**		**1□□□2.□142**

Unmiti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0560	0.350□	0.6□16	2.3600e□003	0.0669	□.□□00e□003	0.0□5□	0.0192	□.0□00e□003	0.02□2		221.□□92	221.□□92	1.5900e□003		221.9225
□ or□er	0.0211	0.021□	0.2□53	1.5400e□003	0.1232	□.5000e□004	0.1241	0.032□	□.9000e□004	0.0335		95.□6□□	95.□6□□	2.□900e□003		95.□2□3
□otal	**0.0□□1**	**0.□□24**	**0.□4□□**	**□.□000e□00□**	**0.1□01**	**□.□□00e□00□**	**0.1□□□**	**0.0□1□**	**□.□□00e□00□**	**0.0□0□**		**□1□.□□□□**	**□1□.□□□□**	**4.4□00e□00□**		**□1□.□□0□**

□.□ □rac□/□i□nal Installation □20□□

Miti□ate□ Constr□ction On□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□ff□□oad	0.□591	4.□339	9.1493	0.0196		0.054□	0.054□		0.054□	0.054□	0.0000	1□□91.1993	1□□91.1993	0.06□4		1□□92.6142
□otal	**0.□□□1**	**4.□□□□**	**□.14□□**	**0.01□□**		**0.0□4□**	**0.0□4□**		**0.0□4□**	**0.0□4□**	**0.0000**	**1□□□1.1□□□**	**1□□□1.1□□□**	**0.0□□4**		**1□□□2.□142**

Miti□ate□ Constr□ction O□□□□ite

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□a□ling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0560	0.350□	0.6□16	2.3600e□003	0.0669	□.□□00e□003	0.0□5□	0.0192	□.0□00e□003	0.02□2		221.□□92	221.□□92	1.5900e□003		221.9225
□ or□er	0.0211	0.021□	0.2□53	1.5400e□003	0.1232	□.5000e□004	0.1241	0.032□	□.9000e□004	0.0335		95.□6□□	95.□6□□	2.□900e□003		95.□2□3
□otal	**0.0□□1**	**0.□□24**	**0.□4□□**	**□.□000e□00□**	**0.1□01**	**□.□□00e□00□**	**0.1□□□**	**0.0□1□**	**□.□□00e□00□**	**0.0□0□**		**□1□.□□□□**	**□1□.□□□□**	**4.4□00e□00□**		**□1□.□□0□**

4.0 Operational □etail □Mobile

4.1 Miti□ation Meas□res Mobile

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	I□/day										I□/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□nmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 □rip □□mmary In□ormation

	□□□eage Daily □rip □ate			□nmitigated	Mitigated
□and □se	□ ee□day	□at□rday	□□nday	□nn□al VM□	□nn□al VM□
□ser Defined □nd□strial	0.00	0.00	0.00		
□otal	0.00	0.00	0.00		

4.□ □rip □ype In□ormation

	Miles			□rip □			□rip P□rpose □		
□and □se	□□□ or C□□	□□□ or C□C	□□□ or C□□□	□□□ or C□□	□□□ or C□C	□□□ or C□□□	Primary	Di□erted	Pass□□y
□ser Defined □nd□strial	9.50	□.30	□.30	0.00	0.00	0.00	0	0	0

□D□	□D□1	□D□2	MDV	□□D1	□□D2	M□D	□□D	□□□□	□□□□	MC□	□□□□	M□
0.462000	0.06492□	0.15□404	0.160569	0.04404□	0.00596□	0.020332	0.0□140□	0.001159	0.0014□4	0.006921	0.000529	0.002254

□.0 □ner□y □etail

4.4 □leet Mi□

□istorical Energy □se: □

□.1 Miti□ation Meas□res □ner□y

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	l□/day										l□/day					
□at□ralGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□at□ralGas □nmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

□.2 □ner□y by □an□ Use □Nat□ral□as

Unmiti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	l□/day										l□/day					
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.2 □ner□y by □an□ Use □Nat□ral□as

Miti□ate□

	□at□ralGas □se	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□and □se	□□□□/yr	□/day										□/day					
□ser Defined □nd□strial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

□.0 □rea □etail

□.1 Miti□ation Meas□res □rea

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
Category	□/day										□/day					
Mitigated	1.0000e□005	0.0000	1.0000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
□nmitigated	1.0000e□005	0.0000	1.0000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004

□.2 □rea by □□bCate□ory

Unmiti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	l□/day										l□/day					
□rc□itect□ral Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Cons□mer Prod□cts	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□andscaping	1.0000e□005	0.0000	1.0000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
□otal	**1.0000e□00□**	**0.0000**	**1.0000e□004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e□004**	**2.2000e□004**	**0.0000**		**2.□000e□004**

Miti□ate□

	□□G	□□□	C□	□□2	□□giti□e PM10	E□□a□st PM10	PM10 □otal	□□giti□e PM2.5	E□□a□st PM2.5	PM2.5 □otal	□io□C□2	□□io□C□2	□otal C□2	C□4	□2□	C□2e
□□□Category	l□/day										l□/day					
□rc□itect□ral Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Cons□mer Prod□cts	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□andscaping	1.0000e□005	0.0000	1.0000e□004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e□004	2.2000e□004	0.0000		2.3000e□004
□otal	**1.0000e□00□**	**0.0000**	**1.0000e□004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e□004**	**2.2000e□004**	**0.0000**		**2.□000e□004**

□.0 Water □etail

□.1 Miti□ation Meas□res Water

□.0 Waste □etail

□.1 Miti□ation Meas□res Waste

□.0 Operational O□□roa□

E□□ipment □ype	□□m□er	□o□rs/Day	Days/□ear	□orse Po□er	□oad □actor	□□el □ype

10.0 □e□etation

APPENDIX 3

Program Natural Environmental Study

SAN JOAQUIN CORRIDOR AMTRAK CALIFORNIA SERVICE
Oakland and Sacramento to Bakersfield and then Los Angeles Union Station

Pro□ram Nat□ral □n□ironment □t□□y

□isc□ssions o□□iolo□ical □ssessments

□ecember 201□

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Program Natural Environment Study

Discussions of Biological Assessments

December 2013

STATE OF CALIFORNIA
Department of Transportation

Prepared By: _____ Date: 2/11/2014

Lisa M. Patterson, Ecologist/Regulatory Specialist
(909) 838-1333
J.L. Patterson & Associates
725 Town & Country Road, Suite 300
Orange, CA 92868

Recommended for Approval by: _____ Date: 2/14/14

Christopher Stevenson, Associate Environmental Planner
California Department of Transportation
District 7 Environmental Local Assistance

Approved By: _____ Date: 2/24/14

Paul Caron, District Biologist
California Department of Transportation
District 7 Environmental Local Assistance

□able o□Contents

List of Abbreviated Terms ..... *iv*

Chapter 1 Intro□□ction 1

1.1 Pro□ect □□mmary 1
1.1.1 □pecific □ □ecti□es 2
1.2 Pro□ect Description 3
1.2.1 □□t□re □ine Capacity Demand: □□□□ □ail□ay and □nion Pacific 3
1.2.1.1 □□□□ □ail□ay □acility □mpro□ements 3
1.2.1.2 □nion Pacific □ailroad □acility □mpro□ements ..... □
1.2.2 E□panded Program Elements ..... □
1.2.2.1 □e□ □tations 9
1.2.2.2 □ayo□er □acilities 12
1.3 □lternati□es 13
1.3.1 □lternati□e □1: □o Pro□ect □lternati□e 13
1.3.2 □lternati□e □2: Proposed Pro□ect □it□ a □econdary □egment from □resno to Visalia 13
1.3.3 □lternati□e □3: Proposed Pro□ect □it□ a □econdary □egment from □a□ersfield to □os □ngeles 14
1.3.4 □lternati□e □4: Proposed Pro□ect □□□□ □rac□ □lignment from Port C□icago to □ic□mond 14
1.4 Permits and □ppro□als □eeded 15

Chapter 2 □t□□y Metho□s 16

2.1 □eg□latory □e□□irements 16
2.1.1 □ederal 16
2.1.1.1 □ederal □ailroad □dministration 16
2.1.1.2 Clean □ ater □ct 16
2.1.1.3 □ection 10 of t□e □i□ers and □ar□ors □ct 16
2.1.1.4 Endangered □pecies □ct ..... 1□
2.1.1.5 □is□ and □ ildlife Coordination □ct ..... 1□
2.1.1.6 Magn□son □te□ens □is□ery Conser□ation and Management □ct ..... 1□
2.1.1.□ □ald and Golden Eagle Protection □ct ..... 1□
2.1.1.□ Migratory □ird □reaty □ct 19
2.1.1.9 E□ec□ti□e □rders 19
2.1.2 □tate 10
2.1.2.1 California □is□ and Game Code 19
2.1.3 □ocal 21
2.1.3.1 □ern Co□nty 21
2.2 □t□dies □e□□ired 21
2.3 Personnel and □□r□ey Dates 22
2.4 □imitations t□at May □nfl□ence □es□lts 22

□able o□Contents

Chapter □ □es□lts□ □n□ironmental □ettin□ 23

3.1 Description of t□e E□isting □iological and P□ysical Conditions of t□e □□□ 23
3.1.1 □t□dy □rea 23
3.1.2 P□ysical Conditions 24
3.1.2.1 □opograp□y and □oils 24
3.1.2.2 □iological and P□ysical Conditions of t□e □t□dy □rea 25
3.2 □egional □a□itat and □and □se in t□e □ssessment □reas 25
3.2.1 □egional □a□itat 35
3.2.2 □and □ses 40
3.3 □egional □pecial □tat□s □pecies and □a□itats of Concern ..... 4□
3.3.1 □pecial □tat□s Plant and □nimal □pecies Potentially □cc□rs □long or □ it□in t□e Pro□ect □ssessment □reas ..... 4□
3.3.2 □at□ral Comm□nities of □pecial Concern ..... □3
3.3.3 □pecial □tat□s Plant □pecies ..... □6
3.3.4 □pecial □tat□s □ ildlife □pecies ..... □6
3.3.4.1 □n□erte□rates ..... □6
3.3.4.2 □eptiles and □mp□i□ians ..... □□
3.3.4.3 Mammals 92
3.3.4.4 □irds 99
3.3.4.5 □is□ 103
3.3.4.6 Essential □is□ □a□itat and □egionally □mportant Commercial and/or □ecreational □is□eries 106
3.3.4.□ Essential □is□ □a□itat □ssessment 110

Chapter 4 □isc□ssion o□Impacts an□ Miti□ation 112

4.1 Disc□ssion of Pro□ect □mpacts 112
4.2 Mitigation Meas□res 114
4.3 □eg□latory Compliance 119
4.4 Critical □a□itat 119
4.5 □ etlands and □t□er □ ater Coordination □□mmary 120
4.6 C□m□lati□e □mpacts 121

Chapter □ □e□erences 123

Chapter □ □i□□res 140

□□□□□□

□a□le 1.4.1 Permits and □ppro□als 15
□a□le 3.1.1 □oil □ypes 25
□a□le 3.2.1 □ ildlife □a□itat □ypes□□and □se□and □ypical Vegetation ..... 2□
□a□le 3.3.1 □egionally □mportant Commercial and/or □ecreational □is□eries ..... 10□

□ist o□□bbre□iate□ □erms

amsl	a□erage mean sea le□el
□PE	□rea of Potential Effect
□□□	□iological □nalysis □rea
□□□□	□□□□ □ail□ay Company
□□□	□iological □t□dy □rea
Caltrans	California Department of □ransportation
CD□□	California Department of □is□ and □ ildlife
CE□	Co□ncil on En□ironmental □ □ality
CE□□	California En□ironmental □ □ality □ct
CE□□	California Endangered □pecies □ct
C□GC	California □is□ and Game Code
C□□	Code of □ederal □eg□lations
C□DD□	California □at□ral Di□ersity Data□ase
C□□□	California red□legged frogs
C□ □	Clean □ ater □ct
DC□	Designated Critical □a□itats
D□□	Di□ision of □ail
Eagle □ct	□□e □ald and Golden Eagle Protection □ct
E□□	Essential □is□ □a□itat
E□□	En□ironmental □mpact □eport
E□□	En□ironmental □mpact □tatement
E□	E□ec□ti□e □rders
E□C	Emergency □perations Center
EP□	□.□. En□ironmental Protection □gency
E□□	Endangered □pecies □ct
□E	□ederally Endangered
□E□□	□ederal Endangered □pecies □ct
□MPs	□is□ery Management Plans
□□	□ederally □□reatened
□□C	□ntermodal □ransit Center
□□P	□ncidental □a□e Permit
M□□□	Migratory □ird □reaty □ct
MP	Milepost
mp□	miles per □o□r
M□□CP	M□ltiple □pecies □a□itat Conser□ation Plan

□ist o□□bbre□iate□ □erms

□CCP	□at□ral Comm□nity Conser□ation Plans
□EP□	□ational En□ironmental Policy □ct
□M□□	□ational Marine □is□eries □er□ice
□□P	□otice of Preparation
□PP□	□ati□e Plant Protect □ct
PE□□	Program En□ironmental □mpact □eport
P□E□	Program □at□ral En□ironmental □t□dy
□□□	□ig□t□of□□ ay
□□C	□ail □raffic Controller
□□ □C□	□egional □ ater □ □ality Control □oard
□□C	□pecies of □pecial Concern
□C□□□	□o□t□ern California □egional □ail □□t□ority
□□V□	□an □oa□□in Valley □ail
□□	□tate □o□te
□□	□tate □□reatened
□□ □C□	□tate □ ater □eso□rces Control □oard
□D□	□om Dodson & □ssociates
□□D	□ransit □riented De□elopment
□P□□	□nion Pacific □ailroad □or □P□
□.□.	□nited □tates
□□□CE	□.□. □rmy Corps of Engineers
□□C	□nited □tates Code
□□□□ □	□.□. □is□ and □ ildlife □er□ices
□□G□	□.□. Geological □□r□ey
V□□	Valley foot□ill riparian
V□□	Valley oa□ □oodland

Note: California Department of Fish and Game (CDFG) changed its name to California Department of Fish and Wildlife (CDFW) effective January 1, 2013. However, the name has not been changed in published references nor has been changed in the Fish and Game Code.

Chapter 1. Intro□□ction

□□e P□rpose and intended □se of t□is Program □at□ral En□ironmental □t□dy □P□E□□ is to e□al□ate t□e general onsite □iological reso□rces and determine t□e potential for occ□rrence of special□stat□s species□Designated Critical □a□itats □DC□□□and ot□er special □iological and a□□atic reso□rce areas[1] □it□in t□e □an □oa□□in Corridor □mtra□ California □er□ice Pro□ect□s □Pro□ect□ □iological □nalysis □rea □□□□□. □□e □□□ is defined as t□e Pro□ect□s estimated potential p□ysical gro□nd dist□r□ance area□pl□s a □□ffer □one □□ere indirect impacts may res□lt from f□t□re constr□ction. Potential impacts □it□in t□e Pro□ect□s □□□ are identified in □ection 5.0 of t□is doc□ment. □ig□re 1□1 depicts t□e □an □oa□□in Corridor. □ig□res 1□2 t□ro□g□ 1□□ depict t□e proposed facility impro□ements on t□e □□□□ trac□s and □ig□res 1□9 and 1□10 s□o□ t□e □P□□ trac□segments t□at □o□ld □e impro□ed.

□□e p□rpose of t□e proposed rail impro□ements □it□in t□e □an □oa□□in Corridor is to accommodate e□isting and f□t□re California intercity passenger rail demand and pro□ected increases in riders□ip t□ro□g□ 2035. □□e proposed pro□ect □o□ld also ser□e to impro□e rail safety and operation and pro□ide increased a□aila□ility of p□□lic transportation□□□ic□ □o□ld□in t□rn□□elp to red□ce emissions from □e□ic□lar tra□el and ac□ie□e t□e mass transit goals of □tate and local plans.

□□e proposed pro□ect constit□tes a programmatic pro□ect t□at en□isions constr□ction of specific rail infrastr□ct□re □it□in t□e Corridor t□at □ill □e constr□cted o□er t□e ne□t 22 years. □ program□ le□el□first tier□en□ironmental doc□ment is considered appropriate for a corridor□□ide pro□ect as en□isioned □y Caltrans. □□e program is designed to meet t□e forecasted increase in intercity passenger demand o□er t□e 25□year period□ t□e e□panded n□m□er of passenger train operations re□□ired to meet t□is forecasted demand□and t□e specific infrastr□ct□re impro□e□ ments re□□ired to s□pport pro□ected f□t□re operations. Concept□al and site specific impact e□al□ations are presented□depending □pon pro□ected operations and t□e rail infrastr□ct□re impro□ements re□□ired to s□pport t□ose operations.

□□e specific facilities □a□e not □een designed□and t□erefore t□e □□antification of f□t□re specific dist□r□ance areas and limits are not a□aila□le for t□is st□dy. □dditionally□□iological s□r□eys are typically only □alid for one to t□o years. □□erefore□t□is P□E□ □ill identify areas t□at are proposed to □a□e facility impro□ements or facility constr□ction occ□r □it□in t□e □□□□and identify t□e potential/li□eli□ood for sensiti□e reso□rces to occ□r. □nce a specific facility impro□ement is designed□a □iological □t□dy □rea □□□□□can □e identified□a □iological s□r□ey s□o□ld □e cond□cted□and a site specific □E□ can □e prepared to address t□e identified reso□rce impacts.

1.1 Project □□mmary

Caltrans□in cooperation □it□ m□ltiple local agencies located □it□in 11 California co□nties□ propose to f□nd e□pansion of t□e e□isting rail system □it□in t□e □□□□ □ail□ay Company □□□□□□and □nion Pacific □ailroad □□P□□□rig□ts□of□□ay along t□ree segments of passenger rail corridor in t□e □an □oa□□in Valley and portions of t□e □an □rancisco □ay area. □f federal f□nding □ecomes a□aila□le in t□e f□t□re□a separate doc□ment for compliance □it□ t□e □ational En□ironmental Policy □ct □□EP□□□ill □e prepared at t□at time. □□e map in □ig□re 1□1 s□o□s □mtra□s e□isting □an □oa□□in Corridor intercity rail passenger ro□te. □ome of t□e proposed pro□ect alternati□es □o□ld □tili□e alternati□e rig□ts□of□□ay along t□e additional □P□□ rig□ts□of□ □ay and □o□t□ern California □egional □ail □□t□rority □□C□□□□□also □no□n as Metrolin□. □□e e□pansion of t□is system □o□ld ser□e to accommodate e□isting and f□t□re passenger rail demand and pro□ected increases in riders□ip t□ro□g□ 2035.

Caltrans is the lead state agency for the environmental review. Caltrans is evaluating the San Joaquin Corridor Project as a state program to be implemented over the next 22 years or through 2035. The objective in preparing the PEIR is to review potential impacts of proposed rail improvement projects to the San Joaquin Intercity Passenger Rail Corridor (San Joaquin Corridor) through 2035.

1.1.1 Specific Objectives

- Install a second or third main track along:
  - 1[illegible].5 miles of the Bakersfield to Port Chicago segment of [illegible] track
  - 22.11 miles of the Port Chicago to Oakland segment of BP[illegible] track
  - 40.62 miles of the Stockton to Sacramento segment (Fresno [illegible] division) of BP[illegible] track.
- Install new sidings for passing track in order to facilitate train flow on shot tracks.
- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations.
- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures.
- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems.
- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas.
- Increase the maximum operating speed of passenger trains in all existing segments of the existing San Joaquin Corridor from 79 miles per hour (mph) to 90 mph.
- Obtain additional operating equipment (rolling stock) to meet the forecasted future customer demand for passenger trains.
- Install new passenger train infrastructure such as additional layover or maintenance facilities to support expansion of future train operations.
- Increase existing passenger train operations from 12 trains (6 roundtrips) to 22 trains (11 round trips) by 2035.

The PEIR provides a detailed description of the proposed project and alternatives with a focus on those characteristics and activities that can cause physical changes in the human physical and biological environment. A statement of purpose and need for the proposed project is included. A project's "need" is an identified transportation deficiency or limitation and its "purpose" is the set of objectives that will be met by addressing the transportation deficiency. A reasonable solution or range of solutions is developed and evaluated based on the objectives. A project's purpose and need statement is designed to meet the requirements of federal and state statutes and regulations by providing a basis for the selection of reasonable and practicable alternatives, a comparison of those alternatives, and the selection of an alternative for implementation.

The purpose of the proposed project improvements is to accommodate existing and future projected California intercity passenger rail demand and projected increases in ridership through 2035 along the San Joaquin Corridor. The proposed project would also serve to improve rail safety and operation and provide increased availability of public transportation (public) would in turn help to reduce emissions from vehicular travel and achieve the goals of state and local mass transit plans. The need for increased passenger rail capacity and the concurrent proposed improvements to the San Joaquin Corridor is demonstrated by ridership increases that have resulted in shot sold out trains and an increased number of standees on board the

□mtra□ trains in California□□□t partic□larly along t□e □an □oa□□in Corridor □mtra□ trains. □ra□el demand is pro□ected to gro□ t□reefold o□er t□e co□rse of t□is planning period□□ell e□ceeding □mtra□s c□rrent si□passenger train capacity □it□in t□e □an □oa□□in Corridor.

1.2 Project □escription

□□e proposed pro□ect tra□erses appro□imately 35□ miles of e□isting trac□ t□at is located mainly t□ro□g□o□t California□s Central Valley□reac□ing into portions of t□e □an □rancisco □ay area□ and incl□des t□ree main rail line segments:

- □a□ersfield to Port C□icago □□□□□□ Milepost □□□.□ to Milepost 1164.0 □2□6.6 trac□ miles□□
- Port C□icago to □a□land □□P□□ Milepost 41.3 to Milepost 3.2 □3□.1 trac□ miles□□and
- □toc□ton to □acramento □□P□ □ □ased on comments s□□mitted on t□e □otice of Preparation□ t□e sole alignment e□al□ated is □P□s □resno □□□di□ision trac□. □□is segment □o□ld e□tend generally to t□e east of □ig□□ay 99 from □toc□ton to □acramento from MP □2.96 to MP 39.35 □43.61 miles□.

□ome of t□e Pro□ect alternati□es incl□de secondary passenger train segments t□at e□tend □eyond t□e e□isting areas presently ser□ed □y t□e t□ree main □an □oa□□in Corridor trac□ segments. □□ese secondary passenger train segments incl□de:

- □a□ersfield to □ancaster □□P trac□s□and □ancaster to □os □ngeles □□C□□□/Metrolin□□ □ntelope Valley □ine□□and
- Port C□icago to □ic□mond on t□e e□isting □□□□ main line.

1.2.1 □□t□re □ine Capacity □eman□□ □N□□ □ail□ay an□ Union Paci□ic

Caltrans met □it□ □ot□ □□□□ and □P□□ and re□□ested t□ey model t□e passenger sc□ed□les for t□e ser□ice proposed in t□is doc□ment in order for t□e railroads to assess t□e a□ility of t□eir respecti□e infrastr□ct□re and to s□pport t□e f□t□re demand for trac□ capacity□incl□ding freig□t. □□□□ □sed its o□n □□C □□ail □raffic Controller□model to determine specific pro□ects t□at □o□ld □e needed. □n t□e ot□er □and□instead of modeling t□e proposed ser□ice increases on its trac□ system□ t□e □P□□ concl□ded t□at an additional trac□ □o□ld □e re□□ired on its system to accommodate additional passenger trains and t□□s re□□ested specific trac□ impro□ements to t□eir railroad infrastr□ct□re □□ic□ t□ey stated □o□ld □e needed to s□pport t□e proposed increases in passenger train operations.

1.2.1.1 □N□□ □ail□ay □acility Impro□ements

□sing t□e passenger demand data□□□□□ proceeded □it□ line capacity modeling to identify t□e trac□ modifications □et□een Port C□icago and □a□ersfield t□at t□e railroad considered necessary to s□pport t□e proposed 2020 operating scenario □16 trains□and t□e 2035 operating scenario □22 trains□. Port C□icago is t□e location □□ere intercity passenger trains c□rrently operating □et□een □a□land and □a□ersfield transition □et□een t□e □□□□ and □P□□ trac□s.

□□□□ e□al□ated fo□r different sc□ed□le proposals□as follo□s:

- □ daily ro□nd trip trains on t□e f□ll □a□ersfield to Port C□icago segment □total of 16 trains□ □it□ t□e passenger trains operating at a ma□im□m speed of □9 miles per □o□r □mp□□. □□is scenario is termed t□e 5/10 year □9 mp□ plan.
- 11 daily ro□nd trip trains on t□e f□ll □a□ersfield to □toc□ton segment □total of 22 trains□□it□ t□e passenger trains operating at a ma□im□m speed of □9 mp□. □□is scenario is termed t□e 25 year □9 mp□ plan.
- □ daily ro□nd trip trains on t□e f□ll □a□ersfield to □toc□ton segment □total of 16 trains□□it□ t□e passenger trains operating at a ma□im□m speed of 90 mp□. □□is scenario is termed t□e 5/10 year 90 mp□ plan.
- 11 daily ro□nd trip trains on t□e f□ll □a□ersfield to □toc□ton segment □total of 22 trains□□it□ t□e passenger trains operating at a ma□im□m speed of 90 mp□. □□is scenario is termed t□e 25 year 90 mp□ plan.

1.2.1.1.1 □he □/10 Year □□ mph Plan

□□e □□□□ modeling identified si□ trac□ impro□ement pro□ects t□at □ill need to □e constr□cted in order to accommodate t□e forecasted passenger trains and freig□t trains at □9 mp□ for t□e ne□t 5 to 10 years. □□o mainline trac□s are re□□ired in si□ne□ segments □□ic□ total appro□imately 35.1 miles of trac□. □□ese 35.1 miles are □ro□en into 25.6 miles of ne□ trac□ constr□ction□and 9.5 miles of □pgraded e□isting trac□. □□e segments identified for mainline do□□le trac□ are:

1. Do□□le □rac□ G□ernsey □MP 960.3□ to □anford □MP 96□.4□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.1 miles of ne□ railroad □ig□fill □e constr□cted. □dditionally one □ridge □ill □e constr□cted and t□ree c□l□ert str□ct□res □ill □e e□tended.

2. Con□ert Gregg □iding to do□□le trac□ □et□een MP100□.9 and MP1013.9: □□is fi□e mile siding □pgrade □ill not re□□ire any additional str□ct□res or fill for railroad □ed. □□e trac□ □ill □e replaced □it□ mainline trac□□and on trac□ signals may need to □e □pgraded.

3. Do□□le □rac□ □eGrand □MP1041.5□ to Planada □MP 104□.3□: □□is segment □ill re□□ire t□e constr□ction of appro□imately 5.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment □ill re□□ire second □ridges □e constr□cted o□er t□ree □ater□ays incl□ding Miles Cree□. □dditionally□eig□t c□l□erts □ill □e e□tended.

4. Do□□le □rac□ Mile Post 110□.0 to □ aln□t □MP 1116.9□: □□is do□□le trac□ segment □ill re□□ire t□e constr□ction of appro□imately 9.9 miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment occ□rs □it□in t□e □toc□ton to Escalon pro□ect area. □□is pro□ect de□eloped second □ridges ad□acent to t□e e□isting □ridges in t□is segment. □□o c□l□erts □ill □e e□tended in t□is segment.

5. □pgrade and E□tend Pitts□□rg □iding: □□e e□isting Pitts□□rg □iding □MP1152.□ to MP1154.1□ □ill □e □pgraded to mainline trac□. □□is □pgrade □ill not res□lt in any additional railroad □ed or e□pand t□e footprint of t□e e□isting railroad. □□e Pitts□□rg □iding □ill □e e□tended 2.□ miles from MP 1154.1 to MP 1156.9. □□is e□tension □ill res□lt in t□e constr□ction of 2.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□□and □ill re□□ire t□e constr□ction of t□o □ridges□and t□e e□tension of t□o c□l□erts.

6. Constr□ct a Drill □rac□ at t□e Cane□o □iding: □□e Cane□o □iding occ□rs □et□een MP 9□1.2 and MP 9□3.1. □□e constr□ction of a drill trac□ in □et□een t□ese miles posts □ill re□□ire t□e constr□ction of ne□ railroad □ed ad□acent to t□e e□isting railroad trac□s□ and □ill re□□ire t□e e□tension of t□o c□l□erts.

1.2.1.1.2 □he 2□ Year □□ mph Plan

□□e □□□□ modeling identified t□irteen areas for trac□ impro□ements t□at □ill need to □e constr□cted in order to accommodate t□e forecasted passenger trains and freig□t trains at □9 mp□ in 25 years. □□is model r□n re□□ires all si□ impro□ements identified in t□e 5/10 year □9 mp□ scenario a□o□e□ and an additional se□en areas of trac□ impro□ements. □□o mainline trac□s are also re□□ired in se□en ne□ segments □□ic□ total appro□imately 5□.1 miles of ne□ mainline trac□. □□erefore□t□is scenario □ill re□□ire 93.2 miles of t□o mainline trac□s. □□e additional segments identified for mainline do□□le trac□ are:

□. Do□□le □rac□ □astro □MP □91.1□ to □□after □MP 905.4□: □□is do□□le trac□ segment incl□des t□e constr□ction of 14.3 miles of ne□ railroad □ig□fill □e constr□cted. □dditionally□1□ c□l□ert str□ct□res □ill □e e□tended.

□. Do□□le □rac□ □ngiola □MP 942.1□ to Corcoran □MP 950.9□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.□ miles of ne□ railroad □ig□fill □e constr□cted. □dditionally□5 ne□ □ridges □ill □e constr□cted□ and 6 c□l□ert str□ct□res □ill □e e□tended.

9. Do□□le □rac□ □igarden □MP1005.0□ to MP 100□.6: □□is segment □ill re□□ire t□e constr□ction of appro□imately 3.6 miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment □ill re□□ire eig□t c□l□erts to □e e□tended.

10. Do□□le □rac□ MP1013.9 to Madera □MP1019.6□: □□is do□□le trac□ segment incl□des t□e constr□ction of 5.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment □ill re□□ire a second □ridge □e constr□cted o□er Cotton□ood Cree□□ and eig□t c□l□erts □ill □e e□tended.

11. Do□□le □rac□ Planada □MP 104□.3□ to Merced □MP 1056.1□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.□ miles of ne□ railroad □ig□fill □e constr□cted. □dditionally□2 ne□ □ridges □ill □e constr□cted□ and 11 c□l□ert str□ct□res □ill □e e□tended.

12. Do□□le □rac□ Escalon □MP 1100.9□ to D□ffy □MP 1109.6□: □□is do□□le trac□ segment □ill re□□ire t□e constr□ction of appro□imately □.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment occ□rs □it□in t□e □toc□ton to Escalon pro□ect area. □□is pro□ect de□eloped second □ridges ad□acent to t□e e□isting □ridges in t□is segment. □□erefore t□e pro□ect □ill create t□e railroad □ig□fill along t□is segment□ and e□tend 2 c□l□erts □ill □e e□tended in t□is segment.

13. Do□□le □rac□ Pitts□□rg □MP 1155.□□ to Port C□icago □MP 1164.0□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.2 miles of ne□ railroad □ig□fill □e constr□cted. □dditionally□ □ ne□ □ridges □ill □e constr□cted□ and 5 c□l□ert str□ct□res □ill □e e□tended.

1.2.1.1. □ □he □/10 Year □0 mph Plan

□□e □□□□ modeling identified 9 areas for trac□ impro□ements t□at □ill need to □e constr□cted in order to accommodate t□e forecasted passenger trains and freig□t trains at 90 mp□ in o□er t□e ne□t 5 to 10 years. □□is model re□□ires all si□ impro□ements identified in t□e 5/10 year □9 mp□ scenario a□o□e□ and an additional t□ree segments of second mainline trac□ constr□ction. □□erefore t□is scenario □ill re□□ire 59.2 miles of t□o mainline trac□s. □□e segments identified for mainline do□□le trac□ are:

1. Do□□le □rac□ G□ernsey □MP 960.3□ to □anford □MP 96□.4□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.1 miles of ne□ railroad □ig□□fill □e constr□cted. □dditionally one □ridge □ill □e constr□cted and t□ree c□l□ert str□ct□res □ill □e e□tended.

2. Con□ert Gregg □iding to do□□le trac□ □et□een MP100□.9 and MP1013.9: □□is fi□e mile siding □pgrade □ill not re□□ire any additional str□ct□res or fill for railroad □ed. □□e trac□ □ill □e replaced □it□ mainline trac□□ and on trac□ signals may need to □e □pgraded.

3. Do□□le □rac□ □eGrand □MP1041.5□ to Planada □MP 104□.3□: □□is segment □ill re□□ire t□e constr□ction of appro□imately 5.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment □ill re□□ire second □ridges □e constr□cted o□er t□ree □ater□ays incl□ding Miles Cree□. □dditionally □eig□t c□l□erts □ill □e e□tended.

4. Do□□le □rac□ Mile Post 110□.0 to □ aln□t □MP 1116.9□: □□is do□□le trac□ segment □ill re□□ire t□e constr□ction of appro□imately 9.9 miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment occ□rs □it□in t□e □toc□ton to Escalon pro□ect area. □□is pro□ect de□eloped second □ridges ad□acent to t□e e□isting □ridges in t□is segment. □□o c□l□erts □ill □e e□tended in t□is segment.

5. □pgrade and E□tend Pitts□□rg □iding: □□e e□isting Pitts□□rg □iding □MP1152.□ to MP1154.1□ □ill □e □pgraded to mainline trac□. □□is □pgrade □ill not res□lt in any additional railroad □ed or e□pand t□e footprint of t□e e□isting railroad. □□e Pitts□□rg □iding □ill □e e□tended 2.□ miles from MP 1154.1 to MP 1156.9. □□is e□tension □ill res□lt in t□e constr□ction of 2.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□□ and □ill re□□ire t□e constr□ction of t□o □ridges □ and t□e e□tension of t□o c□l□erts.

6. Constr□ct a Drill □rac□ at t□e Cane□o □iding: □□e Cane□o □iding occ□rs □et□een MP 9□1.2 and MP 9□3.1. □□e constr□ction of a drill trac□ in □et□een t□ese miles posts □ill re□□ire t□e constr□ction of ne□ railroad □ed ad□acent to t□e e□isting railroad trac□s□ and □ill re□□ire t□e e□tension of t□o c□l□erts.

□. Do□□le □rac□ □astro □MP □91.1□ to □na □MP □9□.□□: □□is do□□le trac□ segment incl□des t□e constr□ction of 6.6 miles of ne□ railroad □ig□□fill □e constr□cted. □dditionally □11 c□l□ert str□ct□res □ill □e e□tended.

□. Do□□le □rac□ Planada □MP 104□.3□ to Merced □MP 1056.1□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.□ miles of ne□ railroad □ig□□fill □e constr□cted. □dditionally □2 ne□ □ridges □ill □e constr□cted □ and 11 c□l□ert str□ct□res □ill □e e□tended.

9. Do□□le □rac□ Escalon □MP 1100.9□to D□ffy □MP 1109.6□: □□is do□□le trac□ segment □ill re□□ire t□e constr□ction of appro□imately □.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment occ□rs □it□in t□e □toc□ton to Escalon pro□ect area. □□is pro□ect de□eloped second □ridges ad□acent to t□e e□isting □ridges in t□is segment. □□erefore t□e pro□ect □ill create t□e railroad □ig□fill along t□is segment□and e□tend 2 c□l□erts □ill □e e□tended in t□is segment.

1.2.1.1.4 □he 2□ Year □0 mph Plan

□□e □□□□ modeling identified 1□ areas for trac□ impro□ements t□at □ill need to □e constr□cted in order to accommodate t□e forecasted passenger trains and freig□t trains at 90 mp□ in 25 years. □□is model re□□ires all nine impro□ements identified in t□e 5/10 year 90 mp□ scenario a□o□e□ and an additional eig□t segments of second mainline trac□ constr□ction. □□erefore t□is scenario □ill re□□ire 109.9 miles of t□o mainline trac□s. □□e segments identified for mainline do□□le trac□ are:

10. Do□□le □rac□ □na □MP □9□.□□ to □□after □MP 905.4□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.□ miles of ne□ railroad □ig□fill □e constr□cted ad□acent to t□e e□isting trac□. □dditionally□□ c□l□ert str□ct□res □ill □e e□tended.

11. Do□□le □rac□ Elmo □MP 919.2□to □andrini □MP 924.6□: □□is do□□le trac□ segment incl□des t□e constr□ction of 5.4 miles of ne□ railroad □ig□fill □e constr□cted ad□acent to t□e e□isting trac□. □dditionally□1 c□l□ert str□ct□re □ill □e e□tended.

12. Do□□le □rac□ □llens□ort□ □MP 932.3□ to Corcoran □MP 950.9□: □□is do□□le trac□ segment incl□des t□e constr□ction of 1□.6 miles of ne□ railroad □ig□fill □e constr□cted. □dditionally□3 ne□ □ridges □ill □e constr□cted□and 9 c□l□ert str□ct□res □ill □e e□tended.

13. Do□□le □rac□ □igarden □MP1005.0□ to MP 100□.6: □□is segment □ill re□□ire t□e constr□ction of appro□imately 3.6 miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment □ill re□□ire eig□t c□l□erts to □e e□tended.

14. Do□□le □rac□ MP1013.9 to Madera □MP1019.6□: □□is do□□le trac□ segment incl□des t□e constr□ction of 5.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment □ill re□□ire a second □ridge □e constr□cted o□er Cotton□ood Cree□□and eig□t c□l□erts □ill □e e□tended.

15. Do□□le □rac□ □l□□r □MP 1062.9□to □allico □MP 10□2.6□: □□is do□□le trac□ segment incl□des t□e constr□ction of 9.□ miles of ne□ railroad □ig□fill □e constr□cted. □dditionally□one ne□ □ridge o□er t□e Merced □i□er □ill □e constr□cted□and 11 c□l□ert str□ct□res □ill □e e□tended.

16. Do□□le □rac□ Pitts□□rg □MP 1155.□□to Port C□icago □MP 1164.0□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.2 miles of ne□ railroad □ig□fill □e constr□cted. □dditionally□ □ ne□ □ridges □ill □e constr□cted□ and 5 c□l□ert str□ct□res □ill □e e□tended.

1.2.1.2 Union Paci□ic □ailroa□ □acility Impro□ements

□n a letter to Caltrans□□P□□ indicated t□at in order to accommodate any additional intercity passenger trains along its trac□ segments from □a□land to Port C□icago and □toc□ton to □acramento□one additional trac□ □o□ld □e re□□ired on eac□ of t□e specified segments. □□□s□a t□ird trac□ □o□ld need to □e installed from □ic□mond to Martine□ and a second trac□ □o□ld need to □e installed from Martine□ to Port C□icago and from □toc□ton to □acramento. □□is proposal is disc□ssed in more detail □elo□.

□n order to e□al□ate an act□al impro□ement scenario for t□e □P□□ trac□ segments from □a□land to Port C□icago and □toc□ton to □acramento□Caltrans contracted □it□ an engineering firm □it□ e□pertise in railroad engineering to e□amine t□ese alignments and identify t□e scope of impro□ements t□at co□ld reasona□ly □e installed □it□in t□ese t□o specific segments of t□e □an □oa□□in Corridor. □mpro□ements □ill □e considered for t□e □P □resno □□□di□ision □et□een □toc□ton and □acramento. □lt□o□g□ □P□□ did not model t□e ro□te□Caltrans accepts t□at t□ere is a need for an additional trac□ to □e installed on eac□ segment□res□lting in t□ree trac□s from □a□land to Martine□ and t□o trac□s from Martine□ to Port C□icago□as □ell as t□o trac□s on t□e □resno □□□di□ision □et□een □toc□ton and □acramento.

□ased □pon field s□r□eys and a re□ie□ of e□isting trac□ c□arts□it □as □een determined t□at it is possi□le to add t□e re□□ired trac□ impro□ements to eac□ of t□e □P□□ corridors.

□□e □P□□ □iles and □racy □□□di□isions □o□ld □e impro□ed □it□ a t□ird main trac□ □eginning at □□ellmo□nd on t□e □est □MP 5.20□and ending at Martine□ on t□e east □MP 32.00□. □efer to □ig□re 1□9.

□ do□□le trac□ □o□ld □e added on t□e □racy □□□di□ision from Martine□ at MP 36 to Port C□icago at MP 41.3. □ig□re 1□9 s□o□s t□e trac□ impro□ements along t□is □P□□ □□□di□isions.

□□e areas to □e impro□ed incl□de segments of e□isting siding□□□ic□ □o□ld □e □pgraded to mainline standards□and a ne□ second/t□ird trac□ □eginning at MP 6.35.

□nstallation of an additional trac□ □as considered infeasi□le as a res□lt of t□e engineering re□ie□ on t□o segments east of □□ellmo□nd□in □ic□mond and □et□een Croc□ett and Costa.

□f t□e appro□imate 3□.10 miles of t□e □racy □□□di□ision considered for impro□ement□ appro□imately 33 miles of second or t□ird trac□ □o□ld □e installed.

□P □resno □□□di□ision trac□ □ill □e constr□ction along t□e entire 43.61 miles of t□e □resno □□□di□ision. □□e proposed pro□ect □o□ld eit□er install a ne□ second trac□ or □pgrade an e□isting siding to □main line trac□□stat□s if appro□ed. □n addition□an estimated 2□ ne□ □ridges □o□ld □e constr□cted along t□e □P □resno □□□di□ision to accommodate t□e additional trac□ facilities. □t is estimated t□at t□e e□tension of appro□imately 24□ c□l□erts □o□ld □e re□□ired on t□e □resno □□□di□ision. E□act c□l□ert locations □o□ld □e determined d□ring t□e pro□ect de□elopment p□ase.

1.2.2 □□pan□e□ Pro□ram □lements

□ □ariety of program elements □infrastr□ct□re s□pport systems□are presented □ere for incl□sion in all of t□e alternati□es analy□ed in t□is doc□ment. □□ese incl□de □ot□ fi□ed stoc□ □rail

infrastr□ct□re s□c□ as trac□s□signals□stations□ot□er □□ilding□electric □ires□etc.□and rolling stoc□ □all t□e □e□icles t□at mo□e on a rail□ay□.

1.2.2.1 Ne□ □tations

□□e □□P incl□ded disc□ssion of a ne□ or □pdated station in □toc□ton□□□ic□ is disc□ssed in f□rt□er detail □elo□. □n response to t□e □□P□ se□eral additional station locations □ere s□ggested for consideration. Caltrans re□ie□ed t□ese s□ggestions and concl□ded t□at t□o of t□ese station locations merit f□rt□er consideration: t□e City of □erc□les and t□e City of El□ Gro□e. Descriptions of t□ese t□o proposed station locations are pro□ided □elo□.

1.2.2.1.1 □toc□ton □tation □lternati□es

□ ne□ rail station□or ref□r□is□ment of t□e e□isting station in □toc□ton□is proposed as part of t□e pro□ect. □mtra□ California c□rrently □as one rail station in □toc□ton□t□e □an □oa□□in □treet □tation located at □35 □o□t□ □an □oa□□in □treet□□□ic□ consists of a □□ilding □it□ a □aiting room and par□ing areas for □□ses and a□tos. □□e station ser□es □ □mtra□ California trains on t□e □a□land to □a□ersfield ro□te. □□ere is also a second □mtra□ California stop t□at □as one platform □it□ a s□elter □t□e □CE □tation located at 949 East C□annel □treet□ser□ed □y 4 □mtra□ California trains on t□e □toc□ton to □acramento ro□te.

□t is □oped t□at an alternati□e station can □e □□ilt t□at co□ld ser□e □ot□ □mtra□ and □CE. □□is station □o□ld incl□de standard rail station design feat□res□s□c□ as platforms t□at e□tend t□e f□ll lengt□ of t□e passenger □oarding area. □t □o□ld □e e□□ipped □it□ s□elter□lig□ting□signage□ sc□ed□les□leaning □ars□information □ios□s□tic□et □ending mac□ines□as □ell as □a□e ade□□ate space for dedicated □□s passenger circ□lation□loading or □nloading □ays and s□elters□□an□ s□□ttle□ta□ica□□and passenger □e□icle drop□off. □nce a ne□ station site is selected and f□nds □ecome a□aila□le□t□e pro□ect □ill follo□ a general constr□ction scenario.

Plans for t□e ne□ station incl□de a police□staffed□ state□of□t□e□art□ Emergency □perations Center □E□C□□in □□ic□ all stations□staffed and □nstaffed□□o□ld □e monitored. □□e E□C □ill incorporate a sec□rity management system t□at consists of □ideo s□r□eillance□access control□ motion detection□intercoms and emergency mass notifications to ens□re ma□im□m safety for all passengers □it□in o□r facilities.

□i□e alternati□e locations □ere considered for t□e ne□ □toc□ton station in t□e □□P. □□e □□P eliminated t□ree of t□e possi□le locations □nder consideration□ □o□e□er□ after re□ie□ing comments on t□e □□P□Caltrans decided to maintain consideration of □oint or ad□acent □mtra□ California/□ce stations. Descriptions of t□e locations to □e considered in t□e Draft PE□□ are as follo□s □□ee □ig□re 1□11 for t□e □toc□ton □tation alternati□e locations□.

Stockton Station Alternative 1: □lternati□e 1 □o□ld incl□de t□e de□elopment of a ne□ □mtra□ California station to □e located at t□e corner of East □cotts □□en□e and □o□t□ □ ilson □ ay□compass nort□ of t□e □□□□ mainline in t□e City of □toc□ton. □□e site is c□rrently de□eloped □it□ ind□strial and commercial □ses. □mplementation of t□is alternati□e □o□ld incl□de t□e demolition of e□isting facilities in order to accommodate t□e ne□ train station. □tandard rail station design feat□res□ as descri□ed a□o□e□ □o□ld □e implemented. Caltrans concl□ded t□at □lternati□e 1 s□o□ld not □e gi□en f□rt□er consideration for t□o reasons. □irst□ □eca□se a station at t□is location □o□ld re□□ire a diffic□lt □ac□□p mane□□er for trains □eading to t□e □an □rancisco □ay area □□a□land□□□□ic□ comprises t□e ma□ority of t□e train mo□ements t□ro□g□ □toc□ton. □econd□re□erse train mo□ements

t□ro□g□ t□e □toc□ton Diamond are considered □naccepta□le to □ot□ □P and □□□□. □t □o□ld also ca□se delays in t□e sc□ed□le. □□erefore□□lternati□e 1 □ill not □e gi□en f□rt□er consideration in t□is en□ironmental doc□ment.

Stockton Station Alternative 2: □lternati□e 2 □o□ld incl□de t□e de□elopment of a ne□ □mtra□ California station as part of t□e e□isting □o□ert □. Ca□ral □ltamont Comm□ter E□press □□CE□train station located at 949 East C□annel □treet in t□e City of □toc□ton. □□e site is c□rrently de□eloped □it□ a □□s station and par□ing lots. □□e e□isting □P□□ mainline r□ns directly east of t□e site. □e□eral residences along C□annel □treet □o□ld need to □e demolis□ed as part of t□e implementation of □lternati□e 2. □imilarly□t□e □toc□ton Ci□ic Center□located on t□e corner of East Miner □□en□e and □o□t□ □□rora □treet□□o□ld □e demolis□ed as part of implementation of □lternati□e 2. □tandard rail station design feat□res□as descri□ed a□o□e□□o□ld □e implemented. Caltrans conc□□ded t□at □lterna□ ti□e 2 s□o□ld not □e gi□en f□rt□er consideration for t□e same reasons o□tlined for □toc□ton □tation □lternati□e 1. □o□e□er□comments s□□mitted in response to t□e □□P disc□ssed t□e City of □toc□ton□s goal of locating t□e □mtra□ California □tation in t□e do□nto□n core of t□e City. □n response Caltrans □as decided to incl□de an e□al□ation of t□e Ca□ral train station in t□e Draft PE□□.

Stockton Station Alternative 3: □lternati□e 3 □o□ld incl□de t□e de□elopment of a ne□ □mtra□ California station located at t□e site of t□e old □ estern Pacific train depot□on t□e corner of □ e□er □□en□e and □ort□ □nion □treet in t□e City of □toc□ton. Portions of t□e site are □nde□eloped□ □□t t□e old depot remains. □tandard rail station design feat□res□ as descri□ed a□o□e□□o□ld □e implemented. Caltrans originally conc□□ded t□at □lternati□e 3 s□o□ld not □e gi□en f□rt□er consideration for t□e same reasons o□tlined for □toc□ton □tation □lternati□e 1.

Stockton Station Alternative 4: □lternati□e 4 □o□ld incl□de t□e de□elopment of a ne□ □mtra□ California station located at t□e corner of East □cotts □□en□e and Pilgrim □treet in t□e City of □toc□ton on t□e □□□□ rig□t□of□□ay. C□rrently□t□e site is de□eloped □it□ a man□□ fact□ring plant. □□e site also contains a rail interloc□ connecting t□e □P and □□□□ railroads. □mplementation of □lternati□e 4 □o□ld incl□de t□e demolition of t□e man□□ fact□ring plant. E□isting trac□s are located □est and so□t□ of t□is site. □tandard rail station design feat□res□as descri□ed a□o□e□ □o□ld □e implemented. □□is alternati□e location □o□ld ser□e passengers on □ot□ t□e □a□land to □a□ersfield and □acramento to □a□ersfield ro□tes. □lternati□e 4 is t□e preferred location for a ne□ passenger rail station□ □eca□se it co□ld easily ser□e □ot□ t□e □a□land and □acramento trains t□at □se t□e □an □oa□□in Corridor.

Stockton Station Alternative 5: □lternati□e 5 □o□ld re□a□ilitate t□e e□isting □mtra□ California station located on t□e □□□□ rig□t□of□□ay at □35 □o□t□ □an □oa□□in □treet in t□e City of □toc□ton. E□isting train trac□s are located directly so□t□ of t□is site. □e□a□ilitation of t□is station □o□ld incl□de an e□pansion of e□isting facilities to accommodate additional passengers. □□is □lternati□e □o□ld also incl□de t□e demolition of commercial □ses c□rrently located on t□e so□t□ern portion of t□e site to accommodate e□pansion. □tandard rail station design feat□res□as descri□ed a□o□e□□o□ld □e implemented. □lternati□e 5 is considered a □ia□le□if not t□e preferred□alternati□e.

1.2.2.1.2 Hercules Station

The Final EIR for the Hercules Intermodal Transit Center (HITC) Project was prepared in June 2011 and approved by the City of Hercules on August 2011. A Notice of Determination was filed with the Contra Costa County Clerk on August 10, 2011 in order to complete the CEQA review process. On June 14, 2012, the Federal Transit Administration issued a NEPA Record of Decision for the Hercules HITC Project. Based on input in response to the PEIR, NEPA Caltrans concurs with the inclusion of this potential new Amtrak California Station for evaluation in the Draft PEIR. Station details provided below are largely excerpted from the NEPA Final EIR Executive Summary for the HITC Project. See Figure 1-12 for proposed station location.

The Hercules HITC Project would construct a new station and passenger platform intended to improve transit access to approved surrounding transit-oriented housing and business developments. Refer to Figure 3-1 through 3-19. The approved Hercules HITC Project would create permanent station and passing tracks through the project area and past the station stop to meet freight and passenger operational requirements. In order to improve operation of the rail line and accommodate a passenger platform, Hercules HITC Project approved acquisition of 1.[illegible] acres of new right-of-way to allow for realigning and straightening the existing UP track to the east away from San Pablo Bay. Hercules HITC Project also approved spreading the tracks to accommodate a passenger platform between a dedicated station track and a station-passing track and construction of a new railroad bridge over Refugio Creek and installation of new riprap to meet current 50-year and 200-year storm event design criteria. Rail improvements approved as part of the Hercules HITC Project include:

1. Creation of a new signal-controlled station-passing track (Main Track 1 [M-1]) capable of holding a full length freight train.

2. Construction of a new dedicated station track on the land side of the existing M-2 from MP 20.4 to MP 22.1 (approx. 600 feet of new track) (adjust the horizontal alignment of M-2 to shift the track landward by approximately 1.5 feet or less from MP 22.1 to MP 22.3

3. A new right hand turnout on M-2 at the existing crossover at MP 20.4 at the west end of the HITC Project.

4. Construction of a new crossover and turnout at MP 22.1 to the new dedicated station track to be used primarily by passenger trains

5. Relocation of the railroad bridge across Refugio Creek approximately 100 feet east of the current bridge location to accommodate the new mouth for the Creek as part of Refugio Creek and Ohrt Channel Restoration. The new bridge would have a larger span of approximately 6[illegible] feet.

6. The existing industrial siding will remain in place and the existing crossover within the limits of the station platform would be removed.

The approved passenger platform would be 35 feet wide by 800 feet long with two passenger shelter structures. The proposed station building would provide grade-separated pedestrian access over the tracks to the passenger rail platform. The station roof would be covered in photovoltaic cells that would generate about 4[illegible]100 [illegible] of energy per year and the passenger platform would accommodate small-scale wind turbines that would generate potentially another 2[illegible]400 [illegible] of energy per year.

□□e pro□ect also appro□ed realigning and dredging □ef□gio Cree□ c□annel □□ere it enters □an Pa□lo □ay to impro□e flo□ d□ring □ea□y rain e□ents and □ig□ tides to red□ce t□e e□isting ris□ of local flooding. □□e appro□ed □erc□les □□C Pro□ect incl□des pro□ision of grade□separated pedestrian access o□er t□e railroad trac□s to t□e f□t□re □erc□les Point open space to impro□e safety and promote p□□lic access to t□e □an Pa□lo □ay. □□e □erc□les □□C Pro□ect also appro□ed constr□ction of a par□ing lot□completion of t□e □aterfront m□lti□□se trail □□ay □rail□ ad□acent to t□e site□and pro□ision of p□□lic □□s ser□ice and pedestrian access to t□e facility. More detail regarding all aspects of t□e proposed □erc□les □tation are a□aila□le in t□e □erc□les □□C □inal E□□ dated □pril 2012.

1.2.2.1. □ □l□ □ro□e □tation

□□e City of El□ Gro□e rece□ed a grant from Caltrans to select a site and de□elop a plan for an □mtra□ California □tation. □□e Caltrans grant □as iss□ed in □e□r□ary 200□. □□e City selected a site ad□acent to t□e □P trac□s in t□e nort□ern portion of t□e City and proceeded to de□elop a station layo□t. □□is long slender parcel encompasses appro□imately 14.1 acres located nort□ of t□e intersection of Camp□ell □oad and □lorin □oad in t□e City. □□e property location is s□o□n on □ig□re 3□20. □□e City progressed as far as de□eloping a preliminary design for t□e proposed station and re□designated t□e property on t□e General Plan for □ransit □riented De□elopment □□□D□. □t □as at t□is point t□at f□nding for t□e pro□ect ran o□t and t□e City □as □na□le to complete an en□ironmental doc□ment for t□e proposed □mtra□ California □tation. □□e pro□ect □as closed□o□t in □cto□er 2011. □ee □ig□re 1□13 for a map s□o□ing t□e location of t□e potential El□ Gro□e □mtra□ California □tation site

1.2.2.2 □ayo□er □acilities

□ it□in t□e 25□year planning period□Caltrans proposes initiating t□o train operations from t□e middle of t□e □an □oa□□in Corridor□eit□er from Merced or □resno. □□e o□ecti□e □o□ld □e to start a train early in t□e morning t□at □o□ld □ead nort□ to □acramento and so□t□ to □a□ersfield. □□is □o□ld allo□ mid□ro□te passengers to reac□ t□e □ay □rea□or □a□ersfield□at t□e start of t□e □or□ day. □□e train □o□ld ret□rn to t□e layo□er facility at t□e end of t□e day.

□□e ne□ layo□er facility □o□ld incl□de a storage yard□lig□t r□nning maintenance and repair area□s□pport s□ops□parts storage□mec□anical and electrical rooms□and administrati□e offices. □□c□ a facility □o□ld red□ce t□e need to r□n □dead□ead□trains □i.e.□trains □it□o□t passengers□□ □□ic□ □ill red□ce t□e cost of operation and impro□e t□e □tili□ation of train cre□s. □□e facility □ill □e designed and □□ilt to accommodate planned and f□t□re ser□ice re□□irements.

Descriptions of t□e potential layo□er locations are as follo□s:

- □resno □ayo□er □acility □lternati□e □□ee □ig□re 1□14□for proposed layo□er location:
  □□is □lternati□e □o□ld incl□de t□e de□elopment of a layo□er facility located in t□e City of □resno t□at □o□ld e□tend along t□e e□isting train trac□s from □□lare □treet in t□e nort□ to □ al□er □□en□e in t□e so□t□. □□e layo□er facility □o□ld □e located ad□acent to t□e e□isting □resno □mtra□ California station. □□is site is constrained □y its small si□e and a□ility to meet t□e layo□er o□ecti□e.

- Merced □ayo□er □acility □lternati□e □□ee □ig□re 1□15□ for proposed layo□er facility location:
  □□is □lternati□e □o□ld incl□de t□e de□elopment of a layo□er facility located in t□e City of Merced t□at □o□ld e□tend along t□e e□isting train trac□s from

□ □treet in t□e nort□ to 6t□ □□en□e in t□e so□t□. □□e layo□er facility □o□ld □e located ad□acent to t□e e□isting Merced □mtra□ California station.

1.□ □lternati□es

CE□□ and its g□idelines re□□ire an e□al□ation of alternati□es to t□e proposed Pro□ect. □ection 15126 of t□e CE□□ G□idelines indicates t□at t□e □disc□ssion of alternati□es s□all foc□s on alternati□es capa□le of eliminating any significant ad□erse en□ironmental effects or red□cing t□em to a le□el of not significant□ □ □ne of t□e alternati□es t□at m□st □e e□al□ated is a □no pro□ect/no c□ange alternati□e□regardless of □□et□er it is a feasi□le alternati□e to t□e proposed Pro□ect□ i.e.□ □o□ld meet t□e Pro□ect o□□ecti□es or re□□irements. □nder t□e □o Pro□ect alternati□e□t□e en□ironmental impacts t□at □o□ld occ□r if t□e proposed Pro□ect is not appro□ed and implemented are identified.

□EP□ and its g□idelines □a□e similar re□□irements regarding alternati□es analysis. Part 1502 of t□e Co□ncil on En□ironmental □□ality □CE□□ □eg□lations re□□ires t□at agencies □rigoro□sly e□plore and o□□ecti□ely e□al□ate all reasona□le alternati□es□and for alternati□es □□ic□ □ere eliminated from detailed st□dy□□riefly disc□ss t□e reasons for t□eir □a□ing □een eliminated□and □de□ote s□□stantial treatment to eac□ alternati□e considered in detail incl□ding t□e proposed action so t□at re□ie□ers may e□al□ate t□eir comparati□e merits□□□ec. 1502.14□.

□□e alternati□es descri□ed □elo□ are designed to satisfy t□e initial □tate re□□irements and in t□e f□t□re t□e □ederal alternati□es analysis reg□lations.

1.□.1 □lternati□e □1□ No Project □lternati□e

□□e □o Pro□ect alternati□e is t□e □aseline for comparison of t□e alternati□es□as descri□ed □elo□. □nder t□e □o Pro□ect alternati□e□t□e e□isting rail system □o□ld not □e e□panded along any of t□e segments incl□ded in t□e proposed Pro□ect.[1] □□e □o Pro□ect alternati□e □o□ld not meet t□e Pro□ect p□rpose and need □eca□se it □o□ld lac□ t□e facilities descri□ed as necessary elements of t□e proposed Pro□ect t□at □o□ld accommodate e□isting and f□t□re passenger rail demand and pro□ected increases in riders□ip t□ro□g□ 2035. □n addition□ t□e □o Pro□ect alternati□e □as t□e potential to ca□se increased □e□ic□lar tra□el and congestion on road□ays d□e to lac□ of ade□□ate passenger rail capacity along t□e □an □oa□□in Corridor□and □o□ld not □elp ac□ie□e t□e goals of state and local transportation plans.

1.□.2 □lternati□e □2□ Propose□ Project □ith a □econ□ary □e□ment □rom □resno to □isalia (□an □oa□□in □alley □ail □ □□□□)

□□is alternati□e incl□des all facilities and components descri□ed a□o□e in □ection 1.2 □proposed Pro□ect□. □n addition□t□is alternati□e □o□ld incl□de t□e de□elopment of a secondary rail segment t□at □o□ld e□tend from □resno to Visalia. □ne to t□o additional trains are proposed for t□e □resno to Visalia segment. □□e □an □oa□□in Corridor □trategic Plan originally en□isioned ser□ice to Porter□ille□□□t no trains are c□rrently □eing operated to Porter□ille□nor are t□e trac□s □eing maintained for ser□ice. □□erefore□t□e e□tension of passenger train ser□ice to Porter□ille is not considered to □e a □ia□le alternati□e□and it □ill not □e gi□en f□rt□er consideration in t□is doc□ment.

[1] □mplementation of t□e □o Pro□ect alternati□e □o□ld not precl□de pre□io□sly appro□ed pro□ects from □eing de□eloped. □ail pro□ects □it□in t□e □an □oa□□in Corridor t□at □a□e □een appro□ed prior to t□e certification and appro□al of t□e proposed Pro□ect co□ld □e de□eloped □nder t□e □o Pro□ect alternati□e.

1.□.□ □lternati□e □□□ Propose□ Project □ith a □econ□ary □e□ment □rom □a□ers□iel□ to □os □n□eles (UP an□ □C□□□)

□□is alternati□e incl□des all facilities and components descri□ed a□o□e in □ection 1.2 □proposed Pro□ect□. □n addition□t□is alternati□e □o□ld incl□de t□e de□elopment of a passenger rail segment t□at □o□ld e□tend from □a□ersfield to □os □ngeles t□ro□g□ □ancaster□ a distance of appro□imately 120 miles. □one of t□e e□isting rail alignments from t□e □an □oa□□in Valley t□at connect t□ese t□o locations c□rrently carry passengers. □n alignment o□ned and operated □y t□e □P□□ is c□rrently in operation □et□een □a□ersfield and □ancaster. □□is alignment passes t□ro□g□ □e□ac□api and Mo□a□e to □ancaster. □rom □ancaster to □os □ngeles□a □an □oa□□in passenger train □o□ld □tili□e t□e □ntelope Valley □□□di□ision railroad trac□s o□ned □y t□e □o□t□ern California □egional □ail □□t□ority □□C□□□□.

□□e e□isting □P□□ trac□ segment from □a□ersfield to Mo□a□e is dedicated solely to freig□t ser□ice□and is not designed for passenger rail. □□is is one of t□e □□siest single trac□ freig□t lines in t□e □estern □nited □tates. □□e segment from Mo□a□e to □ancaster is also dedicated solely to freig□t ser□ice. □□e □P□□ and □□□□ s□are t□e capacity o□er t□is ro□te and do not allo□ passenger train access o□er t□e □e□ac□api Pass d□e to t□e com□ination of □ea□y freig□t tonnage□t□e fre□□ency of trains□and trac□ geometry t□at re□□ires slo□ operating speeds. □ccasionally□t□e □P□□ □ill re□ro□te passenger trains o□er t□e pass□ □□t t□is is a rare occ□rrence and only implemented □□en maintenance or repairs are re□□ired on t□e normal ro□te. □□□s□it is possi□le for passenger trains to □tili□e t□e □a□ersfield to □ancaster trac□ segment. □ote t□at □nder c□rrent operating conditions□t□e □an □oa□□in Corridor □mtra□ operations terminate in □a□ersfield and t□e final segment of tra□el□□a□ersfield to so□t□ern California□is pro□ided □y □mtra□ □□ses.

□□is alternati□e proposes to de□elop t□e infrastr□ct□re necessary to ena□le t□e e□isting □P□□ alignment to carry passenger trains. □nfrastr□ct□re impro□ements □o□ld □e re□□ired to satisfy □P rail capacity re□□irements. □□e a□ility to operate o□er t□is segment □o□ld ena□le passen□ gers to ride t□e train contin□o□sly from nort□ern California to □os □ngeles □nion □tation□ eliminating t□e need for □□s ser□ice for t□is segment of t□e trip on one train. □□is alternati□e □o□ld also red□ce t□e total reliance on t□e e□tensi□e □□s connections c□rrently operating □et□een □a□ersfield and t□e so□t□ern California cities.

1.□.4 □lternati□e □4□ Propose□ Project □N□□ □rac□ □li□nment □rom Port Chica□o to □ichmon□

□□is alternati□e incl□des all facilities and components descri□ed a□o□e in □ection 1.3.2 □proposed pro□ect□. □n addition□t□is alternati□e □o□ld incl□de t□e de□elopment of a passenger rail segment t□at □o□ld e□tend along t□e □□□□ trac□s □et□een Port C□icago and □ic□mond. □□e e□isting □□□□ trac□ □et□een □ic□mond and Port C□icago is dedicated solely to freig□t trains and is not designed for passenger rail operations. □□e c□rrent □mtra□ passenger trains follo□ t□e □P□□ alignment from Port C□icago along t□e □an □rancisco □ay from Martine□ to □a□land. □nder t□is alternati□e□t□e □mtra□ passenger trains co□ld also operate on t□e □□□□ o□ned rig□ts□of□□ay as an alternati□e or in an emergency.

□□is alternati□e proposes to de□elop infrastr□ct□re necessary to ena□le t□e e□isting □□□□ alignment to carry passenger trains. □nfrastr□ct□re impro□ements □o□ld □e re□□ired to satisfy □□□□ rail capacity re□□irements. □□is alternati□e □o□ld red□ce t□e total reliance on t□e □P□□ trac□for t□e final segment from Port C□icago into □a□land.

1.4 Permits an□ □ppro□als Nee□e□

□□e follo□ing permits□re□ie□s□and appro□als □o□ld li□ely □e re□□ired for □ario□s elements of t□e proposed pro□ect constr□ction:

□able 1.4.1
P□□MI□□ □N□ □PP□O□□□□

□□ency	Permit/□ppro□al
Corps of Engineers	404 Permit
□egional □ ater □oard	401
Department of □is□ and □ ildlife	□tream□ed □lteration □greement
Department of □is□ and □ ildlife	CE□□ □ncidental □a□e Permit
□.□. □is□ and □ ildlife □er□ice	□E□□ □ncidental □a□e Permit
□ocal □risdictions	Encroac□ment Permits
□ocal □risdictions	□and □se Entitlements

Chapter 2. □t□□y Metho□s

□□is c□apter presents t□e met□ods □sed to identify □iological reso□rces in t□e pro□ect region. □n addition□t□is c□apter pro□ides an o□er□ie□ of t□e □ario□s reg□latory re□□irements□definitions of terms □sed□□ac□gro□nd re□ie□ cond□cted□field s□r□eys□post□field data processing□personnel and s□r□ey dates□ and coordination efforts □it□ agency and professional contacts. □t also s□mmari□es t□e st□dy limitations and □o□ t□ey may infl□ence t□e res□lts presented in t□is report.

□eca□se t□is is a program le□el doc□ment □it□ indi□id□al facilities impro□ements e□pected to occ□r o□er t□e ne□t 22 years□only c□rsory le□el s□r□eys □ere cond□cted t□ro□g□o□t t□e pro□ect □□□. □efore cond□cting field s□r□eys□e□isting □ac□gro□nd information □as re□ie□ed to identify t□e locations of □□risdictional □aters□special□stat□s plant and □ildlife species□special□stat□s plant comm□nities□nat□ral lands□and federally designated or proposed critical □a□itat □nits recorded or potentially occ□rring in t□e proposed infrastr□ct□re impro□ement areas. □□is section s□mmari□es t□e □ac□gro□nd information t□at □as re□ie□ed.

2.1 □e□□latory □e□□irements

2.1.1 □e□eral

2.1.1.1 □e□eral □ailroa□ □□ministration

□n accordance □it□ t□e □ederal □ailroad □afety □ct of 19□0□e□isting railroad road□eds compose a □one of federal preeminence □it□in □□ic□ federal la□ ta□es precedence o□er any state or local la□s/policies. □□e specific delineation of t□is □one e□tends o□t□ard from t□e center of t□e railroad road□ed to and incl□ding drainage ditc□es and spoil □an□s on eit□er side of t□e road□ed.

2.1.1.2 Clean Water □ct

□□e p□rpose of t□e Clean □ ater □ct □C□ □□□19□□□is to □restore and maintain t□e c□emical□ p□ysical□and □iological integrity of t□e nation□s □aters.□□ection 404 of t□e C□ □ pro□i□its t□e disc□arge of dredged or fill material into □□aters of t□e □nited □tates□□it□o□t a permit from t□e □nited □tates □rmy Corps of Engineers □□□□CE□. □□e definition of □aters of t□e □nited □tates incl□des ri□ers□streams□est□aries□t□e territorial seas□ponds□la□es□and □etlands. □ etlands are defined as t□ose areas □t□at are in□ndated or sat□rated □y s□rface or gro□nd □ater at a fre□□ency and d□ration s□fficient to s□pport□and t□at □nder normal circ□mstances do s□pport□a pre□alence of □egetation typically adapted for life in sat□rated soil conditions□ □33 Code of □ederal □eg□lations □C□□□32□.3 □□□. □□e □.□. En□ironmental Protection □gency □EP□□also □as a□t□ority o□er □etlands and may o□erride a □□□CE permit. □□□stantial impacts to □etlands may re□□ire an indi□id□al permit. Pro□ects t□at only minimally affect □etlands may meet t□e conditions of one of t□e e□isting □ation□ide Permits. □ □ ater □□ality Certification or □ai□er p□rs□ant to □ection 401 of t□e C□ □ is re□□ired for □ection 404 permit actions□in California t□is certification or □ai□er is iss□ed □y t□e □□ □C□.

2.1.1.□ □ection 10 o□the □i□ers an□ Harbors □ct

□ection 10 of t□e □i□ers and □ar□ors □ct of 1□99 re□□ires a□t□ori□ation from t□e □□□CE for t□e constr□ction of any str□ct□re in or o□er any na□iga□le □aters of t□e □.□.

2.1.1.4 □n□an□ere□ □pecies □ct

□□e □ederal Endangered □pecies □ct □□E□□□□19□3□protects plants and □ildlife t□at are listed □y t□e □nited □tates □is□ and □ ildlife □er□ice □□□□ □□and t□e □ational Marine □is□eries □er□ice □□M□□□as endangered or t□reatened. □ection 9 of □E□□ □□□□pro□i□its t□e ta□ing of endangered □ildlife□□□ere ta□ing is defined as any effort to □□arass□□arm□p□rs□e□□□nt□s□oot□ □o□nd□□ill□trap□capt□re□collect□or attempt to engage in s□c□ cond□ct□□50 C□□ 1□.3□. □or plants□t□is stat□te go□erns remo□ing□possessing□malicio□sly damaging□or destroying any endangered plant on federal land and remo□ing□c□tting□digging □p□damaging□or destroying any endangered plant on non□federal land in □no□ing □iolation of state la□ □16 □nited □tates Code □□□C□153□□. □nder □ection □ of □E□□□federal agencies are re□□ired to cons□lt □it□ t□e □□□□ □ if t□eir actions□ incl□ding permit appro□als or f□nding□ co□ld ad□ersely affect an endangered species □incl□ding plants□ or its critical □a□itat. □□ro□g□ cons□ltation and t□e iss□ance of a □iological opinion□t□e □□□□ □ may iss□e an incidental ta□e statement allo□ing ta□e of t□e species t□at is incidental to an ot□er□ise a□t□ori□ed acti□ity□pro□ided t□e action □ill not □eopardi□e t□e contin□ed e□istence of t□e species. □E□□ specifies t□at t□e □□□□ □ designate □a□itat for a species at t□e time of its listing in □□ic□ are fo□nd t□e p□ysical or □iological feat□res □essential to t□e conser□ation of t□e species□□or □□ic□ may re□□ire □special Management consideration or protection...□□16 □□C □ 1533□a□3□2□16 □□C □ 1532□a□□. □□is designated Critical □a□itat is t□en afforded t□e same protection □nder t□e □E□□ as indi□id□als of t□e species itself□re□□iring iss□ance of an □ncidental □a□e Permit prior to any acti□ity t□at res□lts in □t□e destr□ction or ad□erse modification of □a□itat .... determined .... to □e critical□□16 □□C □1536□a□2□□.

□nteragency Cons□ltation and □iological □ssessments

□ection □ of E□□ pro□ides a means for a□t□ori□ing t□e □ta□e□of t□reatened or endangered species □y federal agencies□ and applies to actions t□at are cond□cted□permitted□or f□nded □y a federal agency. □□e stat□te re□□ires federal agencies to cons□lt □it□ t□e □□□□ □ or □M□□□as appropriate□to ens□re t□at actions t□ey a□t□ori□e□f□nd□or carry o□t are not li□ely to □eopardi□e t□e contin□ed e□istence of t□reatened or endangered species or res□lt in t□e destr□ction or ad□erse modification of critical □a□itat for t□ese species. □f a proposed pro□ect □may affect□a listed species or destroy or modify critical □a□itat□t□e lead agency is re□□ired to prepare a □iological assessment e□al□ating t□e nat□re and se□erity of t□e potential effect.

□a□itat Conser□ation Plans

□ection 10 of t□e federal E□□ re□□ires t□e ac□□isition of an □ncidental □a□e Permit □□P□ from t□e □□□□ □ □y non□federal lando□ners for acti□ities t□at mig□t incidentally □arm □or □ta□e□□endangered or t□reatened □ildlife on t□eir land. □o o□tain a permit□an applicant m□st de□elop a □a□itat Conser□ation Plan t□at is designed to offset any □armf□l impacts t□e proposed acti□ity mig□t □a□e on t□e species.

2.1.1.□ □ish an□ Wil□li□e Coor□ination □ct

□□e □is□ and □ ildlife Coordination □ct □16 □.□.C. □ections 661 to 66□e et se□.□applies to any federal pro□ect □□ere any □ody of □ater is impo□nded□ di□erted□ deepened□ or ot□er□ise modified. Pro□ect proponents are re□□ired to cons□lt □it□ t□e □□□□ □ and t□e appropriate state □ildlife agency.

2.1.1.□ Ma□n□son□□te□ens □ishery Conser□ation an□ Mana□ement □ct

□□e Magn□son□□te□ens □is□ery Conser□ation and Management □ct □16 □.□.C. □ection 1□01 et se□. □re□□ires all federal agencies to cons□lt □it□ t□e □M□□ on all actions or proposed actions □permitted□f□nded□or □nderta□en □y t□e agency□t□at may ad□ersely affect fis□ □a□itats. □t also re□□ires cooperation among □M□□□t□e co□ncils□fis□ing participants□and federal and state agencies to protect□conser□e□and en□ance essential fis□ □a□itat□□□ic□ is defined as t□ose □aters and s□□strates needed □y fis□ for spa□ning□□reeding□feeding□and gro□t□ to mat□rity.

2.1.1.□ □al□ an□ □ol□en □a□le Protection □ct

□□e □ald and Golden Eagle Protection □ct □□□e Eagle □ct□ □1940□□amended in 1962□ □as originally implemented for t□e protection of □ald eagles □□aliaeet□s le□cocep□al□s. □n 1962□ Congress amended t□e Eagle □ct to co□er golden eagles □□□□ila c□rysaetos□□a mo□e t□at □as partially an attempt to strengt□en protection of □ald eagles□since t□e latter □ere often □illed □y people mista□ing t□em for golden eagles. □□is act ma□es it illegal to import□e□port□ta□e □molest or dist□r□□□sell□p□rc□ase□or □arter any □ald eagle or golden eagle or part t□ereof. □□e golden eagle□□o□e□er□is accorded some□□at lig□ter protection □nder t□e Eagle □ct t□an t□at of t□e □ald eagle.

2.1.1.□ Mi□ratory □ir□ □reaty □ct

□□e Migratory □ird □reaty □ct □M□□□□ □191□□ implements international treaties □et□een t□e □nited □tates and ot□er nations created to protect migratory □irds□any of t□eir parts□eggs□and nests from acti□ities□s□c□ as □□nting□p□rs□ing□capt□ring□□illing□selling□and s□ipping□□nless e□pressly a□t□ori□ed in t□e reg□lations or □y permit. □s a□t□ori□ed □y t□e M□□□□t□e □□□□ □ iss□es permits to □□alified applicants for t□e follo□ing types of acti□ities: falconry□ raptor propagation□scientific collecting□special p□rposes □re□a□ilitation□ed□cation□migratory game □ird propagation□and sal□age□□ta□e of depredating □irds□ta□idermy□and □aterfo□l sale and disposal. □□e reg□lations go□erning migratory □ird permits can □e fo□nd in 50 C□□ Part 13 General Permit Proced□res and 50 C□□ part 21 Migratory □ird Permits. □□e □tate of California □as incorporated t□e protection of □irds of prey in □ections 3□00□3513□and 3503.5 of t□e California □is□and Game Code □C□GC□.

2.1.1.□ □□ec□ti□e Or□ers (□O)

2.1.1.□.1 In□asi□e □pecies□ □□ec□ti□e Or□er 1□112 (1□□□)

□ss□ed on □e□r□ary 3□1999□promotes t□e pre□ention and introd□ction of in□asi□e species and pro□ides for t□eir control and minimi□es t□e economic□ecological□and □□man □ealt□ impacts t□at in□asi□e species ca□se t□ro□g□ t□e creation of t□e □n□asi□e □pecies Co□ncil and □n□asi□e □pecies Management Plan.

2.1.1.□.2 Protection o□Wetlan□s□ □□ec□ti□e Or□er 11□□0 (1□□□)

□ss□ed on May 24□19□□□□elps a□oid t□e long□term and s□ort□term ad□erse impacts associated □it□ destroying or modifying □etlands and a□oiding direct or indirect s□pport of ne□ constr□ction in □etlands □□en t□ere is a practica□le alternati□e.

2.1.1.□.□ Mi□ratory □ir□□ □O 1□1□□ (2001)

□ss□ed on □an□ary 10□2001□promotes t□e conser□ation of migratory □irds and t□eir □a□itats and directs federal agencies to implement t□e Migratory □ird □reaty □ct. Protection and En□ancement of En□ironmental □□ality□ E□ 11514 □19□0a□□iss□ed on Marc□ 5□19□0□s□pports t□e p□rpose and policies of t□e □ational En□ironmental Policy □ct □□EP□□and directs federal agencies to ta□e meas□res to meet national en□ironmental goals.

Migratory Bird Treaty Reform Act: □□e Migratory □ird □reaty □eform □ct □Di□ision E□□itle □□ □ection 143 of t□e Consolidated □ppropriations □ct□ 2005□ P□ 10□□44□□ amends t□e Migratory □ird □reaty □ct □16 □.□.C. □ections □03 to □12□s□c□ t□at nonnati□e □irds or □irds t□at □a□e □een introd□ced □y □□mans to t□e □nited □tates or its territories are e□cl□ded from protection □nder t□e □ct. □t defines a nati□e migratory □ird as a species present in t□e □nited □tates and its territories as a res□lt of nat□ral □iological or ecological processes. □□is list e□cl□ded t□o additional species commonly o□ser□ed in t□e □nited □tates□t□e roc□ pigeon □*Columba livia*□and domestic goose □*Anser domesticus*□.

2.1.2 □tate

2.1.2.1 Cali□ornia □ish an□ □ame Co□e (C□□C)

2.1.2.1.1 □ections 1□00 thro□□h 1□0□ o□the C□□C

□□is section re□□ires t□at a □tream□ed □lteration □pplication □e s□□mitted to t□e CD□□ for □any acti□ity t□at may s□□stantially di□ert or o□str□ct t□e nat□ral flo□ or s□□stantially c□ange t□e □ed□c□annel□or □an□ of any ri□er□stream□or la□e.□□□e CD□□ re□ie□s t□e proposed actions and□if necessary□s□□mits to t□e applicant a proposal for meas□res to protect affected fis□ and □ildlife reso□rces. □□e final proposal t□at is m□t□ally agreed □pon □y t□e Department and t□e applicant is t□e □tream□ed □lteration □greement. □ften□pro□ects t□at re□□ire a □tream□ed □lteration □greement also re□□ire a permit from t□e □□□CE □nder □ection 404 of t□e C□ □. □n t□ese instances□ t□e conditions of t□e □ection 404 permit and t□e □tream□ed □lteration □greement may o□erlap.

2.1.2.1.2 Cali□ornia □n□an□ere□ □pecies □ct

□□e California Endangered □pecies □ct □CE□□□□□ections 2050 to 20□5□esta□lis□es t□e policy of t□e state to conser□e□protect□restore□and en□ance t□reatened or endangered species and t□eir □a□itats □y protecting □all nati□e species of fis□es□amp□i□ians□reptiles□□irds□mammals□ in□erte□rates□and plants□and t□eir □a□itats□t□reatened □it□ e□tinction and t□ose e□periencing a significant decline □□ic□□if not □alted□□o□ld lead to a t□reatened or endangered designation.□ □nimal species are listed □y t□e CD□□ as t□reatened or endangered□and plants are listed as rare□t□reatened□or endangered. □o□e□er□only t□ose plant species listed as t□reatened or endangered rece□i□e protection □nder t□e California E□□.

CE□□ mandates t□at state agencies do not appro□e a pro□ect t□at □o□ld □eopardi□e t□e contin□ed e□istence of t□ese species if reasona□le and pr□dent alternati□es are a□aila□le t□at □o□ld a□oid a □eopardy finding. □□ere are no state agency cons□ltation proced□res □nder t□e California E□□. □or pro□ects t□at □o□ld affect a species t□at is federally and state listed□ compliance □it□ E□□ satisfies t□e California E□□ if t□e California Department of □is□ and □ ildlife □CD□□ □determines t□at t□e federal incidental ta□e a□t□ori□ation is consistent □it□ t□e California E□□ □nder □ection 20□0.1. □or pro□ects t□at □o□ld res□lt in ta□e of a species t□at is

state listed only□t□e pro□ect sponsor m□st apply for a ta□e permit□in accordance □it□ □ection 20□1□□.

2.1.2.1.□ □□lly Protecte□ □pecies

□o□r sections of t□e California □is□ and Game Code □C□GC□list 3□ f□lly protected species □C□GC □ections 3511□4□00□5050□and 5515□. □□ese sections pro□i□it ta□e or possession □at any time□of t□e species listed□□it□ fe□ e□ceptions□and state t□at □no pro□ision of t□is code or any ot□er la□ □ill □e constr□ed to a□t□ori□e t□e iss□ance of permits or licenses to □ta□e□t□e species□□and t□at no pre□io□sly iss□ed permits or licenses for ta□e of t□e species □s□all □a□e any force or effect□for a□t□ori□ing ta□e or possession.

2.1.2.1.4 □ir□ Nestin□ Protections

□ird nesting protections □□ections 3503□3503.5□3511□and 3513□in t□e C□GC incl□de t□e follo□ing:

- □ection 3503 pro□i□its t□e ta□e□possession□or needless destr□ction of t□e nest or eggs of any □ird.
- □ection 3503.5 pro□i□its t□e ta□e□possession□or needless destr□ction of any nests□ eggs□or □irds in t□e orders □alconiformes □me□ □orld □□lt□res□□a□□s□eagles□ospreys□ and falcons□among ot□ers□□or □trigiformes □o□ls□.
- □ection 3511 pro□i□its t□e ta□e or possession of f□lly protected □irds.
- □ection 3513 pro□i□its t□e ta□e or possession of any migratory nongame □ird or part t□ereof□as designated in t□e M□□□. □o a□oid □iolation of t□e ta□e pro□isions□it is generally re□□ired t□at pro□ect□related dist□r□ance at acti□e nesting territories □e red□ced or eliminated d□ring t□e nesting cycle.

2.1.2.1.□ Nati□e Plant Protection □ct

□□e □ati□e Plant Protect □ct □□PP□□□19□□□□C□GC □ections 1900□1913□□as created □it□ t□e intent to □preser□e□protect□and en□ance rare and endangered plants in t□is □tate.□□□e □PP□ is administered □y CD□□ . □□e □is□ and □ ildlife Commission □as t□e a□t□ority to designate nati□e plants as endangered or rare and to protect endangered and rare plants from ta□e. CE□□ □C□GC 2050□2116□pro□ided f□rt□er protection for rare and endangered plant species□□□t t□e □PP□ remains part of t□e □is□ and Game Code.

2.1.2.1.□ Nat□ral Comm□nities Conser□ation Plannin□ □ct

□□is act □as enacted to enco□rage □road□□ased planning to pro□ide for effecti□e protection and conser□ation of t□e state□s □ildlife reso□rces □□ile contin□ing to allo□ appropriate de□elopment and gro□t□ □C□GC □ections 2□00 to 2□35□. □at□ral Comm□nity Conser□ation Plans □□CCP□ may □e implemented□ □□ic□ identify meas□res necessary to conser□e and manage nat□ral □iological di□ersity □it□in t□e planning area□□□ile allo□ing compati□le and appropriate economic de□elopment□gro□t□□and ot□er □□man □ses.

2.1.2.1.□ *Senate Concurrent Resolution No. 17 – Oak Woodlands*

□tate □enate Conc□rrent □esol□tion □o. 1□ is legislation t□at re□□ests state agencies □a□ing land □se planning d□ties and responsi□ilities to assess and determine t□e effects of t□eir decisions or actions □it□in any oa□ □oodlands containing □l□e□Engleman□Valley□or Coast □i□e

□a□. □□e meas□re re□□ests t□ose state agencies to preser□e and protect nati□e oa□ □oodlands to t□e ma□im□m e□tent feasi□le or pro□ide replacement plantings □□ere designated oa□ species are remo□ed from oa□ □oodlands. □□e mitigation meas□res□as descri□ed a□o□e□□ill ens□re t□at impacts to oa□ □oodlands are less t□an significant.

2.1.□ □ocal

General□□pecific□or □□ral Comm□nity Plans or M□nicipal Codes for eac□ local □risdiction t□ro□g□ □□ic□ t□e Pro□ect passes □ere re□ie□ed for reg□lations pertaining to □iological reso□rces. Most of t□e local □risdictions □a□e fe□ reg□lations relating to □iological reso□rces d□e to t□e lo□□density pop□lation nat□re of t□e land. □ocal reg□lations are listed □elo□:

2.1.□.1 □ern Co□nty

2.1.□.1.1 Oa□ □ree Conser□ation Or□inance

General Plan Map Code 1.10.10 of t□e □ern Co□nty General Plan protects oa□ □oodlands and large indi□id□al oa□s. □a□ □oodlands are c□aracteri□ed □y canopy co□er □y oa□ trees of at least ten percent □10□ □□as determined from □aseline aerial p□otograp□y or □y site s□r□ey performed □y a licensed or certified ar□orist or □otanist.

2.2 □t□□ies □e□□ire□

Prior to □eginning t□e reconnaissance le□el field s□r□eys□a□aila□le information □as re□ie□ed from reso□rce management plans and ot□er rele□ant doc□ments to determine locations and types of □iological reso□rces t□at □a□e t□e potential to e□ist □it□in and ad□acent to t□e □□□.

□□e 2013 California □at□ral Di□ersity Data□ase □CD□□ □2013□□□.□. □is□ and □ ildlife □er□ice Co□nty lists □□□□□ □□2013□□California □ati□e Plant □ociety Electronic □n□entory of □are and Endangered Plants of California□ and □ational □ etlands □n□entory □□□□□ □□2013□ □ere □□eried for occ□rrence of special stat□s species and □a□itats □it□in t□e □an □oa□□in □ail Corridor. CD□□ □ios data□ase □as also □□eried for general □a□itat types and potential feat□res s□□□ect to en□ironmental reg□lations □e.g.□Clean □ ater □ct □C□ □□□Porter□Cologne □ ater □□ality Control □ct □Porter□Cologne□and California Department of □is□ and □ ildlife□s □is□ and Game Code 1600 et se□. □risdictional feat□res□t□at may e□ist □it□in or ad□acent to t□e □□□. □reas potentially s□spected of □eing special a□□atic reso□rces □ere doc□mented d□ring field s□r□eys

□dditionally□st□dies cond□cted for pre□io□sly cond□cted facility impro□ements along t□e □an □oa□□in □ail Corridor □y Caltrans D□□ □ere re□ie□ed. □□ese st□dies incl□de □ic□mond □ail Connector □2013□□toc□ton to Escalon □2013□□Merced to □e Grande □2011□□Port C□icago to □a□ley □200□□□and Positi□e □rain Control □2010□. □inally□ot□er st□dies incl□ding t□e □ig□ □peed □ail E□□ and □erc□les □tation E□□ □ere re□ie□ed to determine areas □it□ □no□n sensiti□e reso□rces.

□n addition to t□e aforementioned literat□re re□ie□s□reconnaissance□□ased field s□r□eys of t□e □□□ □ere performed to assess general and dominant □egetation types□□a□itat types□and t□e potential for special stat□s □ildlife and plant species to occ□r □it□in t□e pro□ect areas. Comm□nity types □ere □ased on o□ser□ed dominant □egetation composition and density. Vegetation classifications of plant comm□nities in t□e □□□ □ere deri□ed from t□e criteria and definitions of □olland □19□6□.

2.□ Personnel an□ □□r□ey □ates

D□ring Marc□ 2-5□2009□□om Dodson & □ssociates □□D□□and Caltrans personnel cond□cted a field reconnaissance of t□e t□ree alignments located in st□dy area. □□o days □ere spent dri□ing as m□c□ of t□e alignments t□at co□ld □e reac□ed □y □e□icle. □dditional site re□ie□s □ere cond□cted □y □D□ and C□M □EC□ personnel d□ring t□e de□elopment of t□e pro□ect in 2011 and 2012.

□□e gro□nd reconnaissance consisted of locating as many sites from t□e ED□ data□ase searc□ and dri□ing eac□ of t□e proposed facility impro□ement alignments t□at □ere not located in completely de□eloped and □r□ani□ed areas. □□e p□rpose of t□e s□r□ey □as to identify any sites of concern and to generally c□aracteri□e t□e □iological reso□rces occ□rring along t□e e□isting railroad rig□t□of□□ays.

2.4 □imitations □hat May In□l□ence □es□lts

□e□eral limitations t□at may infl□ence t□e res□lts of t□e st□dies presented in t□is report □ere identified. □□ese limitations are □eyond Caltrans D□□□□□□□ and □P□□□s control and are associated □it□ permission to enter pri□ate property and p□ysical access limitation. □e□eral areas □ill re□□ire f□t□re access □ia a □ig□□rail □e□icle. □nce t□ese f□t□re de□elopment areas are designed and a □□□ can □e esta□lis□ed□foc□sed s□r□eys and □ig□□rail access □ill □e re□□ired.

□dditionally t□e programmatic nat□re of t□e pro□ect □it□ facilities □eing proposed o□er t□e ne□t 22 years does not □arrant foc□sed s□r□eys for eac□ of t□e proposed locations. □ypically□ □iological s□r□eys are □alid for one year. □ny foc□sed □iological s□r□eys cond□cted □o□ld need to □e redone once a specific facility is designed and t□e second tier le□el en□ironmental process is initiated. Estimations and ass□mptions regarding t□e potential for □risdictional □aters and special□stat□s species □ere □ased on assessments from pre□io□s pro□ects□ and e□isting reso□rce information. □n some instances t□ese assessments are □ased solely on aerial p□otograp□y□ □□ic□ pro□ides an ade□□ate le□el of detail for a programmatic en□ironmental doc□ment.

Chapter 3. □es□lts□ □n□ironmental □ettin□

□□is c□apter descri□es t□e en□ironmental setting identified in t□e □ario□s assessment areas for □iological reso□rces. □t descri□es t□e location and orientation of t□e proposed facilities□areas and t□eir e□isting p□ysical and □iological c□aracteristics□incl□ding t□e topograp□y□climate□ □ydrology□soils□and □iological conditions □i.e.□□ildlife and □egetation comm□nities present□. □□e e□act limits of t□e □ario□s st□dy areas are □n□no□n at t□is time. □eca□se t□is doc□ment is a program le□el doc□ment□t□e assessment areas are descri□ed in general and □road terms.

□.1 □escriptions o□the □□istin□ □iolo□ical an□ Physical Con□itions o□the □□□

□.1.1 □t□□y □rea

□□e st□dy areas tra□erse a ma□ority of t□e California□s Central Valley. □□e Central Valley is a large flat □alley t□at dominates t□e central portion of t□e □tate of California. □t is 40 to 60 miles □ide and stretc□es appro□imately 450 miles from nort□□nort□□est to so□t□□so□t□east□inland from and parallel to t□e Pacific □cean coast.

□□e proposed facilities trend in an o□erall so□t□east to nort□□est direction for appro□imately 30□ miles □et□een □a□ersfield and □ic□mond□and nort□ for appro□imately 41 miles □et□een □toc□ton and □acramento. □□e assessment areas cross a n□m□er of ma□or ri□ers□canals□ agric□lt□ral ditc□es□smaller cree□s□and ep□emeral drainages. □□e st□dy areas are primarily composed of agric□lt□ral lands□ □r□an and r□ral comm□nities□and scattered fragments of □nde□eloped nat□ral □a□itat. □□is st□dy area is considered t□e □an □oa□□in □ail Corridor of California. □n general□t□e st□dy areas parallel t□e e□isting □□□□ □ail□ay and □P□□ rig□ts□of□ □ay.

□□e st□dy areas incl□de portions of □ern□□□lare□□ings□□resno□Madera□Merced□□tanisla□s□ □an □oa□□in□□acramento□and Contra Costa co□nties. □□e assessment areas occ□r in t□e □icinity of t□e cities of □a□ersfield□□resno and □acramento□and it passes t□ro□g□ or near m□ltiple cities and smaller r□ral comm□nities incl□ding:

□□after	Denair	□a□ley
□ asco	□□g□son	□ntioc□
Corcoran	Empire	Pitts□□rg
□anford	Modesto	Martine□
□resno	□i□er□an□	Port Costa
Madera	Escalon	Croc□et
□e Grand	□toc□ton	□odeo
Planada	□odi	□erc□les
Merced	Galt	Pinole
□t□ater	El□Gro□e	□ic□mond
□ inton	□acramento	□ay□ie□□Montal□in
□toc□ton		

□.1.2 Physical Con□itions

□□e nort□ern Central Valley □as a □ot Mediterranean climate□t□e more so□t□erly parts in rain□ s□ado□ □ones are dry eno□g□ to □e Mediterranean steppe or e□en lo□□latit□de desert. □t is □ot and dry d□ring t□e s□mmer and cool and damp in □inter□□□en fre□□ent gro□nd fog □no□n regionally as □□□le fog□can o□sc□re □ision. □□e nort□ern □alf of t□e Central Valley recei□es greater precipitation t□an t□e semi□desert so□t□ern □alf. □rost occ□rs at times in t□e fall mont□s□ □□t sno□ □ill occ□r only occasionally.

□□o ma□or ri□er systems drain and define t□e t□o parts of t□e Central Valley. □□e □acramento □i□er□along □it□ its tri□□taries t□e □eat□er □i□er and □merican □i□er□flo□s so□t□□ards t□ro□g□ t□e □acramento Valley for a□o□t 44□ miles in t□e □acramento Valley□t□e □an □oa□□in □i□er flo□s ro□g□ly nort□□est for 365 miles□ pic□ing □p tri□□taries s□c□ as t□e Merced □i□er□ □□ol□mne □i□er□□tanisla□s □i□er and Mo□el□mne □i□er. □□e □acramento and □an □oa□□in ri□er systems drain t□eir respecti□e □alleys and meet to form t□e □acramento□□an □oa□□in delta□a large e□panse of interconnected canals□stream □eds□slo□g□s□mars□es and peat islands□□ltimately flo□ing to t□e Pacific □y □ay of □an □rancisco □ay. □□e □acramento□□an □oa□□in Delta is a comple□ net□or□ of mars□y c□annels□irrigation c□annels□and slo□g□s t□at □ind aro□nd islands mainly □sed for agric□lt□re. □ltimately t□e fres□□ater of t□e ri□ers merges □it□ tide□ater of t□e Pacific □cean in □□is□n □ay□and □an Pa□lo □ay□□□ic□ ser□es as t□e □pper□most portion of t□e □an □rancisco □ay.

□□e Pro□ect alignments also tra□erse t□e central coastal region of California □it□in t□e □acramento and □an □oa□□in □i□er Delta□t□e □□is□n □ay□□an □rancisco □ay□and t□e □an □rancisco Penins□la. □□e □an □rancisco □ay □rea is a □ea□ily □r□ani□ed and de□eloped region. □□e landscape is composed of rolling □ills□□road all□□ial □alleys□t□e Delta□and □an □rancisco □ay.

□□e climate range in t□e Central Valley is □ot and dry d□ring t□e s□mmer and cool and damp in □inter. □n t□e so□t□ern Central Valley daytime temperat□res approac□ 100□□□and common □eat □a□es mig□t □ring temperat□res e□ceeding 115□□ □it□ a yearly rainfall of 6.49 inc□es. □o t□e nort□ern Central Valley □it□ a yearly rainfall of 20 inc□es and a□erage s□mmer temperat□res □et□een 56□□ and 91□□□and a□erage □inter temperat□res ranging □et□een 35□□ and 64□□. □□e climate in t□e Delta and t□e □ay area is coastal and moderate□□it□ yearly rainfall a□eraging 19.6 inc□es. □□erage s□mmer temperat□res range □et□een 54□□ and □3□□□□ile a□erage □inter temperat□res range □et□een 41□□ and 56□□.

Co□nty general soil maps □□oil Conser□ation □er□ice 19□□□identify n□mero□s soil associations □distincti□e patterns of soils in defined proportions□in t□e co□nties □□ere t□e proposed facilities □ill □e constr□cted. □nce a specific pro□ect element is designed or proposed a more specific soil map □o□ld □e prepared for t□at facility.

□.1.2.1 □opo□raphy an□ □oils

□□e ma□ority of trac□ t□ro□g□ t□e Central Valley and into t□e □an □rancisco □ay area is c□aracteri□ed □y □ery flat topograp□y. □□e ele□ation at □a□ersfield is appro□imately 405 feet a□erage mean sea le□el □amsl□ t□r□ □toc□ton □□ic□ is appro□imately 5 feet amsl□ and to □acramento □□ic□ is appro□imately 41 feet amsl. □□e portions of t□e pro□ect □et□een □toc□ton and □a□land remain □et□een 5 and 10 feet amsl along t□e entire rig□t of □ay.

□□e follo□ing list s□mmari□es t□e general soil types identified in t□e □icinities of t□e proposed facilities incl□ding t□e □oice□□eyes association□□□ic□ consists of saline m□c□s and silty clays in salt□ater mars□es and tidal flats. Most of t□e soils in t□e in□entory area formed from all□□ial□ sedimentary□and meta□sedimentary so□rces and □a□e □een formed in concert □it□ t□e comple□ geologic □istory of t□e area. Many areas on t□e lo□er terraces □a□e □een □r□ani□ed and/or altered to prod□ce crops.

□able □.1.1
□OI□ □YP□□

Map □nit □ame	Map □nit □ame
□□□□□C□ □□□M□0 □□ 2 □ □□□PE□	□□C□M□□E □□□□□ C□□□ □□□M
□□□□□C□ □□□M□2 □□ 9 □ □□□PE□	□ □□E□
C□P□□ C□□□□0 □□ 2 □ □□□PE□	□□□□□C□ □□□M□2 □□ 9 □ □□□PE□
C□P□□ C□□□□2 □□ 9 □ □□□PE□	□□E□□□ □□D C□□□ □□□M
C□E□□ □□□E C□□□	C□P□□ C□□□□0 □□ 2 □ □□□PE□
DE□□□□□ □M□ □□□D□0 □□ 2□	C□P□□ C□□□□2 □□ 9 □ □□□PE□
D□□□□□ C□□□□15 □□ 30 □ □□□PE□	C□E□□ □□□E C□□□
E□E□E□ □□□D□ □□□M□0 □□ 2□	DE□□□□□□D□2 □□ 9 □ □□□PE□
G□□□ C□□□□0 □□ 2□	□□□CE M□C□
G□□□□□□□□□ □□□D C□MP□E□□0 □□ 2□	M□□C□□E C□□□
□□□□E□□EC□ □□□□□ C□□□□0 □□ 2□	P□□□□G□□VE□
□□□C□□ □□□D□ □□□M□0 □□ 2□.	□□□C□□ C□□□ □□□M□0 □□ 2 □ □□□PE□
□□C□□□□E C□□□□0 □□ 2□.	□□□C□□ C□□□ □□□M□2 □□ 9 □ □□□PE□
□□C□□□□E□□□□□□ □□□D C□MP□E□□0 □□ 2□	□□□C□□ C□□□ □□□M□9 □□ 15 □ □□□PE□
□□□CE M□C□	□□□C□□□□ C□□□□0 □□ 2□
M□DE□□ □□□D□ □□□M□0 □□ 2□.	□□C□M□□E □□□□□ C□□□ □□□M
M□DE□□□□□M□ C□MP□E□□0 □□ 2□.	□□□□□ □□□D
M□□□EC□ □□□E □□□D□ □□□M□0 □□ 2□.	VE□□□□□ □□□E □□□D□ □□□M□0 □□ 2□
□M□□□□□□ C□□□	□ □□E□
P□PE□ □□□M□ □□□D	□□M□□□ □□□□□ C□□□ □□□M□0 □□ 2 □ □□□PE□
□□□C□□ C□□□ □□□M□0 □□ 2 □ □□□PE□	□□M□□□ □□□□□ C□□□ □□□M□2 □□ 5 □ □□□PE□
□□□C□□ C□□□ □□□M□2 □□ 9 □ □□□PE□	□□C□M□□E □□□□□ C□□□ □□□M

□.1.2.2 □iolo□ical an□ Physical Con□itions o□the □t□□y □reas

□□is section descri□es t□e e□isting p□ysical and □iological conditions of t□e st□dy areas. □□e descriptions are general in nat□re□and specific reso□rces are addressed in more detail in C□apter 4□□es□lts: □iological □eso□rces□Disc□ssion of □mpacts□and Mitigation.

□reas □it□ nat□ral □egetation and □etlands are most pre□alent in t□e central t□ird of t□e proposed alignment. □ati□e plants are □ncommon in t□e Pro□ect area and are generally limited to t□e ditc□es□slo□g□s□and mars□es □ordering t□e proposed trac□ alignments. □□e lac□ of nati□e □egetation along t□e ma□ority of t□e alignment is a res□lt of a □istory of ind□strial de□elopment ad□acent to t□e trac□□and maintenance dist□r□ance of t□e e□isting railroad trac□s.

□.2 □e□ional Habitat an□ □an□ Use in the □ssessment □reas

□□is section descri□es t□e general □iological conditions in and aro□nd t□e assessment areas□ □it□ partic□lar emp□asis on t□e □ildlife □a□itats. Most of t□e disc□ssion foc□ses specifically on t□e □a□itats ad□acent to and □it□in t□e railroad rig□t□of□□ays along t□e areas proposed for do□□le/triple trac□ing or facility constr□ction or impro□ement. □□e rational for t□is approac□ is □a□itat conditions are partic□larly rele□ant to □ildlife presence and □se.

□□e assessment areas are located in t□e Great Central Valley and t□e Central □ estern California s□□regions of t□e California □loristic Pro□ince □i.e.□a geograp□ic area□made of si□ regions□ defined □y t□e contin□ity of its □egetational□topograp□ic□geologic□and climatic feat□res□of t□ese t□o s□□regions □□ic□man 1993□. □i□e ot□er Mediterranean□type ecosystems□t□e California □loristic Pro□ince is disting□is□ed more □y t□e endemism of its plants t□an its animals. □f nearly 3□500 species of □asc□lar plants in t□e □otspot□more t□an 2□120 □61 percent□are fo□nd no□□ere else in t□e □orld. □ro□nd 52 plant genera are also endemic. □□e □ig□ le□els of plant species endemism are d□e to its □aried topograp□y□climate □ones□geology and soils.

□□erall□t□e st□dy areas are □ig□ly dist□r□ed and fragmented □eca□se of □istoric man□made c□anges to t□e landscape□incl□ding □r□an□agric□lt□ral□ind□strial□railroad□and □ig□□ays/road de□elopment. □□is ma□es sense □□en one reali□es t□at t□e e□isting rail corridors □a□e □een in place for more t□an 100 years and t□ese corridors originally ind□ced man□made de□elopment on ad□acent land. □n a fe□ areas nati□e □egetation and □□ality □ildlife □a□itat remain relati□ely □ndist□r□ed. □□e ma□ority of land in t□e st□dy areas is acti□ely □eing □sed for agric□lt□re. Parcels □□ose agric□lt□ral □se co□ld not □e determined to specific C□ □□ □ildlife □a□itat types □e.g.□dryland grain crops□irrigated grain crops□irrigated □ayfield□irrigated ro□ and field crops□ □ere designated □nder t□e □m□rella designation of cropland. □r□an areas are t□e second greatest land □se□incl□ding large cities s□c□ as □a□ersfield□□resno□□toc□ton□□acramento□and □a□land as □ell as m□ltiple smaller cities s□c□ as □□after□Madera□Escalon□□odi□□ntioc□□and □erc□les. □n t□ese areas nati□e □egetation is a□sent or □ig□ly dist□r□ed□and t□e more typical □egetation consists of a □ariety of planted landscape trees s□c□ as e□calypt□s □*Eucalyptus* spp.□ and m□l□erry □*Morus* spp.□□and ot□er nonnati□e or ornamental □egetation.

□□e proposed Pro□ect□s □□□s tra□erse some areas of relati□ely □ndist□r□ed and in some cases preser□ed nati□e □ildlife □a□itats s□c□ as t□e Cons□mnes Preser□e□a predominantly □etland preser□e t□at occ□rs □et□een □odi and □acramento□and t□e coastal salt mars□ region of t□e □an □rancisco □ay Delta□a coastal intertidal □etland t□at occ□rs □et□een Port C□icago and □a□land.

□□e follo□ing ta□le identifies t□e □a□itat types and land □ses identified □it□in t□e □□□s of t□e proposed pro□ect.

□able □.2.1
Wl□□□l□□ H□□l□□□ □YP□□□□□N□ U□□□□□N□ □YPIC□□ □□□□□□□l□□

Wil□li□e Habitat □ype/ □an□ Use □ype	□ypical □e□etation
□ree□□ominate□ Habitats	
Valley □a□□ oodland □V□□ □	Valley oa□□□ild oats□□rome species□California □lac□□erry□ fiddlenec□□filaree
Valley □oot□ill □iparian □V□□□	□remont cotton□ood□□estern sycamore□□alley oa□□□□ite alder□ California □lac□□erry□elder□erry□poison oa□□□□tton □□s□□ □illo□s□r□s□es□m□g□ort□poison □emloc□□stinging nettle
□hr□b/Herbaceo□s□□ominate□ Habitats	
□l□ali Desert □cr□□ □□□C□	Cattle salt□□s□□spinescale salt□□s□□iodine □□s□□□□s□ seep□eed□golden □□s□□goldfields□tar□eed□saltgrass
□nn□al Grassland □□G□□	□ ild oats□□rome species□□arley□ann□al fesc□es□California oatgrass□□airgrass□s□eet □ernal grass
Past□re □P□□□	Grasses
□□□atic Habitats	
□i□erine □□□V□	□n□egetated□r□s□es
□ac□strine □□□C□	□n□egetated□□illo□s□r□s□es
□res□ Emergent □ etland □□E□ □	Cattail□□□Ir□s□
□alt□ater Mars□	Eel grass□cord grass□pic□le □eed
□ort□ern Vernal Pool	
□ist□rbe□ Habitats	
Dryland Grain Crops □DG□□	□ □eat
□rrigated Grain Crops □G□□	□ □eat
□rrigated □ayfield □□□□□	□lfalfa
□rrigated □o□ and □ield Crops □□□□□	□nions
Decid□o□s □rc□ard □D□□□	□lmonds□apricots
E□ergreen □rc□ard □E□□□	Citr□s
Vineyards □V□□□	Grapes
□r□an □□□□□	□n□egetated pa□ement□grass la□ns□ornamental trees□□edges
Non□□e□etate□ Habitats	
□arren □□□□□	□n□egetated□roc□□gra□el□soil
□□□□/□P□□ □r□an	□n□egetated pa□ement□grass la□ns□ornamental trees□and □edges along t□e rail□ay rig□t□of□□ay
HCP/Preser□e □an□s/ □esi□nate□ Critical Habitat	
□an □oa□□in Co□nty M□lti□□pecies □a□itat Conser□ation and □pen □pace Plan □□□M□CP□ □o□em□er 14□2000	□an □oa□□in Co□nty□s past and f□t□re □2001□2051□gro□t□ □as affected and □ill contin□e to affect 9□ special stat□s plant□fis□ and □ildlife species in 52 □egetati□e comm□nities scattered t□ro□g□o□t □an □oa□□in Co□nty□s 1□400 s□□are miles and 900□000 acres□□□ic□ incl□de 43□ of t□e □acramento□□an □oa□□in Delta□s Primary □one.
East Contra Costa Co□nty □a□itat Conser□ation Plan □ECCC□CP□and □at□ral Comm□nity Conser□ation Plan □cto□er 2006	□□e □CP/□CCP in□entory area is located in t□e eastern portion of Contra Costa Co□nty□California and co□ers appro□imately one□t□ird of t□e Co□nty□or 1□4□01□ acres. □□is Plan addresses 2□ listed and non□listed species □it□in East Contra Costa Co□nty e□cl□ding □ntioc□. □ntioc□ did not participate in t□e plan.

Wil□li□e Habitat □ype/ □an□ Use □ype	□ypical □e□etation
Metropolitan □a□ersfield □a□itat Conser□ation Plan□□pril 2010	□CP co□ered 20 species occ□rring □it□in t□e metropolitan □a□ersfield area□t□e plan area □as gro□n in t□is area t□ro□g□ 2010□and sets aside open space and □a□itat □loc□s for t□e co□ered species. □ □□is plan may □e e□pired for t□e p□rpose of gaining co□erage for a ta□e of t□e co□ered species.
□o□t□ □acramento □a□itat Conser□ation Plan □planning stage□	□□e □.□. □is□ and □ ildlife □er□ice □□er□ice□and □acramento Co□nty anno□nced a □otice of □ntent □□ □ □□to prepare a □oint En□ironmental □mpact □tatement/ En□ironmental □mpact □eport □E□/E□□□for t□e proposed □o□t□ □acramento □a□itat Conser□ation Plan □□CP□. □□e □er□ice and t□e □CP permit□ applicants intend to □or□toget□er to preser□e endangered species and to streamline t□e e□isting de□elopment□permitting process. □o do t□at□a □a□itat conser□ation plan □ill □e prepared for a 3□4□000□acre area of so□t□ □acramento Co□nty□California. □□e □CP is □eing prepared to preser□e nat□ral lands in □acramento Co□nty and protect □a□itat for 30 special□stat□s plant and animal species□incl□ding se□en federally listed species.
□colo□ical □eser□es	
□emitropic Ecological □eser□e and □ern □ational □ ildlife □ef□ge	□ern Co□nty
□llens□ort□ Ecological □eser□e Pi□ley □ational □ ildlife □ef□ge	□□lare and □ern Co□nties
□l□ali □in□ Ecological □eser□e	□resno Co□nty
□erman Ecological □eser□e	□resno Co□nty
□an □oa□□in □i□er Ecological □eser□e	□resno Co□nty
Consomnes Ecological □eser□e	□acramento Co□nty
□l□any M□dflats Ecological □eser□e	□lameda Co□nty
Gri□□ly □sland □ ildlife □rea	□olano Co□nty
Point Edit□ □ ildlife □rea	Contra Costa Co□nty
Do□ C□emical Mitigation □ite	Contra Costa Co□nty
□esi□nate□ Critical Habitat □ithin Pro□imity to Propose□ Project	
Vernal Pool □adpole □□rimp	12.3 □M from Pro□ect □□□
Vernal Pool □airy □□rimp	□d□acent to Pro□ect □□□
□airy □rc□tt Grass	4 □M from Pro□ect □□□
□an □oa□□in □rc□tt Grass	11.3 □M from Pro□ect □□□
□lender □rc□tt Grass	9.5 □M from Pro□ect □□□
Green□s □rictoria	5.5 □M from Pro□ect □□□
□oo□er□s □p□rge	15 □M from Pro□ect □□□
□acramento □□ls Clo□er	9.5 □M from Pro□ect □□□
□les□y □□ls Clo□er	4.□ □M from Pro□ect □□□
California Condor	32 □M from Pro□ect □□□
California □iger □alamander	14.2 □M from Pro□ect □□□
Delta □melt	Pro□ect □□□ occ□rs □it□in Designated Critical □a□itat

Wil□li□e Habitat □ype/ □an□ Use □ype	□ypical □e□etation
Conser□ation □an□s	
□llens□ orth Conser□ation □an□ Credits: □ □an □oa□□in Valley □itfo□ □er□ice □rea Co□nties: Portions of □□lare□□ern and □ings	□ ildlands□□nc. Contact Person: □□lie Maddo□ 3□55 □t□erton □d □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com □otal □cres: 514.29
□i□ □ □n Conser□ation □an□ Credits: □ California □ed□legged □rog □er□ice □rea Co□nties: □ll or portions of □lpine□□madar□ □□tte□Cala□eras□Col□sa□El Dorado□□resno□ Glenn□□nyo□□ern□□ings□□assen□Madera□ Mariposa□Merced□Modoc□Mono□□e□ada□ Placer□Pl□mas□□acramento□□an □enito□ □an □oa□□in□□□asta□□ierra□□is□iyo□□ □tanisla□s□□□tter□□e□ama □rinity□□□lare□ □□ol□mne□□□□a.	□ ester□elt Ecological □er□ices Contact Person: □ra□is □emmen 600 □ort□ Mar□et □l□d□□te 3 □acramento□C□ 95□34 Email: t□emmen□ □ester□elt.com P□one: □916□646□3644 □□□.□esmitigation.com □otal □cres: 46.□□
□□r□e □anch Conser□ation □an□ Credits: □ California □iger □alamander. C□ □iger □alamander □er□ice □rea Co□nties: Portions of Col□sa□□□tter□□acramento□□madar□□an □oa□□in□Contra Costa□□olano and □olo. Vernal Pool Ecosystem Preser□ation □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp □ Conser□ancy fairy s□rimp Vernal Pool Ecosystems □er□ice □rea Co□nties: Portions of □olano□□olo□Col□sa□□□tter□□□tte and Glenn.	□ ester□elt Ecological □er□ices Contact Person: □ra□is □emmen 600 □ort□ Mar□et □l□d□□te 3 □acramento□C□ 95□34 Email: t□emmen□ □ester□elt.com P□one: □916□646□3644 □□□.□esmitigation.com □otal □cres: 962
Clay □tation Conser□ation □an□ EC□ □P 2260 Do□glas □o□le□ard□□□ite 160 □ose□ille□C□ 95661 P□one: □916□□□2□9100 Credits: Vernal Pool Ecosystem Creation □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp □□□e □an□is also appro□ed to sell Corps of Engineers □etlands mitigation credits.	□otal □cres: 405 □er□ice □rea Co□nties: Portions of □madar□El Dorado□Placer□ □acramento□□an □oa□□in and □□tter.

Wil□li□e Habitat □ype/ □an□ Use □ype	□ypical □e□etation
□ea□man Cree□ Conser□ation □an□ □ ildlands□nc. Contact Person: □□lie Maddo□ 3□55 □t□erton □d □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com Credits: □ California □iger □alamander □ □an □oa□□in □it □o□ Vernal Pool Ecosystem Preser□ation □ Conser□ancy □airy □□rimp □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp □egion: □an □oa□□in Valley	□otal □cres: 6□4 □it □o□ □er□ice □rea Co□nties: Portions of □resno□□ings□ Mariposa□Madera□Merced□□tanisla□s and □□lare. C□ □iger □alamander □er□ice □rea Co□nties: Portions of □lameda□□mador□Cala□eras□Contra Costa□Madera□Mariposa□ Merced□□an □oa□□in□□tanisla□s and □□ol□mne. □er□ice area map coming soon. Vernal Pool □pecies □er□ice □rea Co□nties: Portions of □resno□ □ern□□ings□Madera□Merced□□an □oa□□in□□tanisla□s□□□lare.
□rayer □anch Conser□ation □an□ □an □oa□□in Valley Conser□ancy P.□. □o□□32 Merced□C□ 95341 □209□□23□92□3 □□VC□ □ig□alley.net Credits: □ California □iger □alamander □ □an □oa□□in □it □o□ Vernal Pool Ecosystem Preser□ation □ Greene□s □□ctoria □ □an □oa□□in □rc□tt Grass □ □□cc□lent □□l□s Clo□er □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp □□□e area of infl□ence for t□e □ernal pool ser□ice area is □ased on t□e □o□t□ern □ierra □oot□ills Vernal Pool □egion	□otal □cres: 254 C□ □iger □alamander □er□ice □rea Co□nties: Portions of □lameda□□mador□Cala□eras□Contra Costa□Madera□Mariposa□ Merced□□an □oa□□in□□tanisla□s and □□ol□mne. □an □oa□□in □it □o□ □er□ice □rea Co□nties: Portions of □resno□ □ings□Madera□Merced□Mariposa□□tanisla□s and □□lare. Vernal Pool Ecosystems □er□ice □rea Co□nties: Portions of Cala□eras□□resno□Madera□Mariposa□Merced□□an □oa□□in□ □tanisla□s□□□ol□mne and □□lare. □er□ice □rea Map □461 □□ PD□□
□lsie □ri□ley M□lti□□pecies Conser□ation □an□ □ etlands □eso□rces □□C Ed □lynn 3030 □ridge□ay □216 □a□salito□C□ 94965 P□one: □415□2□9□0250 □a□: □415□2□9□0253 1022 flynn□ s□cglo□al.net Credits: □ California □iger □alamander Vernal Pool Ecosystem Creation □ Conser□ancy □airy □□rimp □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp Vernal Pool Ecosystem Preser□ation □ Conser□ancy □airy □□rimp □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp □□□e □an□is also a□t□ori□ed □y t□e □.□. Corps of Engineers to sell □etlands mitigation credits. □t is also a□t□ori□ed □y t□e California	□otal □cres: 1□00 □er□ice □rea Co□nties□: □olano□□apa□□olo□□ estern □acramento□□acramento□□ort□ern □an □oa□□in□Eastern Contra Costa□nort□eastern □lameda□portions of Placer□Glenn□ Col□sa□□□tter□El Dorado□and □mador. □□er□ice areas for t□e □ario□s species do not necessarily incl□de all of t□ese co□nties.

Wil□li□e Habitat □ype/ □an□ Use □ype	□ypical □e□etation
Department of □is□ & □ ildlife to sell □□rro□ing o□l□California tiger salamander and □□ainson□s □a□□foraging credits.	
□it□□eral□ □anch Conser□ation □an□ □ane □amily Partners□ip □r□st □1 P.□. □o□□50 Clements□C□ 9522□ P□one: □209□4□3□0030 Credits: □ California □iger □alamander Vernal Pool Ecosystem Preser□ation □ Vernal pool fairy s□rimp □egion: □an □oa□□in Valley	□otal □cres: □0□ C□ □iger □alamander □er□ice □rea Co□nties: Portions of □mador□Cala□eras□El Dorado□Merced□□an □oa□□in□ □acramento □tanisla□s and □□ol□mne. Vernal Pool Ecosystems □er□ice □rea Co□nties: Portions of □mador□Cala□eras□El Dorado□□an □oa□□in□□acramento and □tanisla□s.
□rench Camp Conser□ation □an□ 5□□ □i□iera Circle □ar□sp□r Ca. 94939 □ffice: 415□924□2541 □a□: 415□924□10□4 Cell: 415□309□0646 Email: darryl□ delta□a□itatllc.com Credits: □ Valley Elder□erry □ong□orn □eetle	□otal □cres: 1□□ □er□ice □rea Co□nties: □ll or portions of □e□ama□Glenn□□□tte□ Col□sa□□□tter□□□□a□□e□ada□Placer□□olo□□apa□□acramento□ El Dorado□□olano□□madar□Contra Costa□□an □oa□□in□ Cala□eras□□lameda□□tanisla□s□□□ol□mne□Merced□Mariposa□ Madera□□resno□□an □enito□□ings□□□lare□□ern□□an □□is □□ispo.
□ill □anch Conser□ation □an□ Contact Person: □ari □a□□ins 3445 □merican □i□er Dr.□□□ite □ □acramento□C□ 95□64 P□one: □916□9□4□33□3 □a□: □916□9□4□3390 Email: □□a□□ins□ conser□ation□reso□rces.com □□□.conser□ation□reso□rces.com Credits: Vernal Pool Ecosystem Preser□ation □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp □egion: East Central □acramento/□an □oa□□in Valley	1□10 □cres □er□ice □rea Co□nties: Portions of □□□a□□□tter□□e□ada□Placer□ □acramento□El Dorado□□madar□Cala□eras and □an □oa□□in.
□reat □alley Conser□ation □an□ at □lynn □anch □ ildlands□□nc. Contact Person: □□lie Maddo□ 3□55 □t□erton □d □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com Credits: □ California □iger □alamander □ □an □oa□□in □it □o□ Vernal Pool Ecosystem Preser□ation □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp □egion: □an □oa□□in Valley	□otal □cres: 106□ C□ □iger □alamander □er□ice □rea Co□nties: Portions of □lameda□□madar□Cala□eras□Contra Costa□Madera□Mariposa□ Merced□□an □oa□□in□□tanisla□s and □□ol□mne. □an □oa□□in □it □o□ □er□ice □rea Co□nties: Portions of □resno□ □ings□Mariposa□Madera□Merced□□tanisla□s and □□lare. Vernal Pool Ecosystems □er□ice □rea Co□nties: Portions of Cala□eras□□resno□Madera□Mariposa□Merced□□an □oa□□in□ □tanisla□s□□□ol□mne and □□lare.

Wil□li□e Habitat □ype/ □an□ Use □ype	□ypical □e□etation
Haera Conser□ation □an□ Contact Person: □□lie Maddo□ □ ildlands□□nc. 3□55 □t□erton □oad □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com Credits: □ □an □oa□□in Valley □itfo□ □□□is □an□is also a□t□ori□ed □y t□e California Dept. of □is□ & □ ildlife to sell □an □oa□□in □it fo□and □□rro□ing o□l credits.	□otal □cres: 299 □er□ice □rea Co□nties: Portions of Contra Costa□□lameda□□an □oa□□in and □tanisla□s.
□enne□y □able Miti□ation □an□ P.□. □o□2 □□eals□C□ 93645 P□one: □559□□6□3339 □a□: same Email: topping□ netptc.net Credits: Vernal Pool Ecosystem Preser□ation □ □□cc□lent □□l□s Clo□er □ Vernal pool fairy s□rimp □egion: □an □oa□□in Valley	□otal □cres: 600 □er□ice □rea Co□nties: Portions of □resno□Madera□Mariposa□ Merced□□tanisla□s and □□ol□mne.
□ern Water □an□ (Conser□ation □an□) □ern □ ater □oard □□t□ority 33141 East □erdo □ig□□ay P.□. □o□ □060□ □a□ersfield□C□ 933□0 P□one: □661□399□□□35 □a□: □661□399□9□51 □dministrator: C□eryl □arding Email: c□arding□ □□□.org Credits: □ □l□nt□nosed leopard li□ard □ □an □oa□□in Valley □itfo□ □ □ipton □angaroo rat	□otal □cres: 326□ □er□ice □rea Co□nties: Portions of □ern□□ings and □□lare.
□reyenha□en Hills Conser□ation □an□ □ ildlands□□nc. Contact Person: □□lie Maddo□ 3□55 □t□erton □d □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com Credits: □ □an □oa□□in Valley □itfo□ □egion: □an □oa□□in Valley	□otal □cres: 1295 □er□ice □rea Co□nties: Portions of □resno□□ern and □ings.

Wil□li□e Habitat □ype/ □an□ Use □ype	□ypical □e□etation
□a□□na Cree□ Conser□ation □an□ □a□□na Cree□ Conser□ation □an□ 3600 □merican □i□er Dri□e□□□ite 105 □acramento□C□ 95□64 P□one: □916□9□4□33□3 Credits: □ Valley Elder□erry □ong□orn □eetle	□otal □cres: □□0 □er□ice □rea Co□nties: □□tter□Placer□El Dorado□□olo□ □acramento□□olano□□an □oa□□in□□madorCala□eras.
□a□□na □errace □ast Conser□ation □an□ □ ildlands□□nc. Contact Person: □□lie Maddo□ 3□55 □t□erton □d □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com Credits: Vernal Pool Ecosystem Preser□ation □ Vernal pool fairy s□rimp	□otal □cres: 200 □er□ice □rea Co□nties: Portions of □□□a□□□tter□□e□ada□Placer□ El Dorado□□acramento□□mador□□an □oa□□in□Cala□eras.
Mo□ntain Ho□se Conser□ation □an□ 15□6 Catalina Co□rt □i□ermore□C□ 94550 P□one: □925□44□2344 Email: □o□□ □C□ands.com Credits: □ California red legged frog □ California tiger salamander □ □an □oa□□in □it fo□ □ Vernal pool fairy s□rimp □ □□rro□ing o□l □ □□ainson□s □a□□	□otal acres: 145 California □ed □egged □rog □er□ice □rea: Co□nties or portions of □lameda□□□tte□Col□sa□Contra Costa□Glenn□□a□e□Marin□ Merced□□apa□□e□ada□Placer□□acramento□□an □rancisco□ □an □oa□□in□□an Mateo□□anta Clara□□□asta□□tanisla□s□ □olano□□onoma□□□tter□□olo□□e□ama and □□□a. California □iger □alamander □er□ice □rea: Co□nties or portions of □lameda□Contra Costa□□an □oa□□in□□tanisla□s□Madera□ Mariposa□Merced□Cala□eras and □□ol□mne. □□e nort□ern □order of t□is □□ is □tate □ig□□ay 4. □an □oa□□in □it □o□ □er□ice □rea: Co□nties or portions of □lameda□Contra Costa□□an □oa□□in and □tanisla□s. □ arning: t□e □an□may not □e s□ita□le for all impacts to □it fo□and t□eir □a□itat □it□in t□e designated area. Vernal Pool Ecosystems □er□ice □rea: Co□nties or portions of □lameda□Contra Costa□□anta Clara and □an □oa□□in□e□cl□ding t□e 5 □ltamont □ills Core □reas.
Noonan □anch Conser□ation □an□ 4630 □ estamerica Dri□e□□□ite □ □airfield□C□ 94534 P□one: □□0□□□64□6550 or 3□6□9404 □a□: □□0□□□63□□329 Email: cst□mp□ m□□□yranc□.com □□□.m□□□yranc□.com Credits: □ California □iger □alamander □ Contra Costa Goldfields	□otal □cres: 190 C□□ □er□ice □rea Co□nties: □ll or portions of □olano□□olo□□□tter□Col□sa□Contra Costa□□an □oa□□in□□madorPlacer and □acramento Co□nties. Contra Costa goldfields □er□ice □rea Co□nties: □olano Co□nty.

Wil□li□e Habitat □ype/ □an□ Use □ype	□ypical □e□etation
North □□is□n Miti□ation □an□ □ ildlands□nc. Contact Person: □□lie Maddo□ 3□55 □t□erton □d □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com Credits: □ California □iger □alamander Vernal Pool Ecosystem □ Vernal pool fairy s□rimp □ Vernal Pool tadpole s□rimp Vernal Pool Ecosystem Preser□ation □ □an □oa□□in □rc□tt grass □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp □ Contra costa goldfields □□□is □an□is also a□t□ori□ed □y t□e □.□. □rmy Corps of Engineers to sell □etland credits and □y t□e California Department of □is□ & □ ildlife to sell California tiger salamander credits	□otal □cres: 609 C□ □iger □alamander □er□ice □rea Co□nties: Col□sa□□□tter□ □□□a□Placer□El Dorado□□olo□□acramento□□an □oa□□in. Vernal Pool Ecosystems □er□ice □rea Co□nties: Col□sa□□olano□ □□tter□□olo.
Ohlone Preser□e Conser□ation □an□ 15□6 Catalina Co□rt □i□ermore□C□ 94550 P□one: □925□44□2344 Email: ro□.fletc□er□ s□cglo□al.net Credits: □ □lameda □ □ipsna□e □ California □iger □alamander □ California □ed□□egged □rog	□otal □cres: 640 □lameda □□ipsna□e □er□ice □rea Co□nties: □□e entire range of t□e species incl□ding portions of □lameda□Contra Costa□□anta Clara and □an □oa□□in. California red□legged frog □er□ice □rea Co□nties: □ll or portions of □lameda□Contra Costa□Marin□□apa□□anta Clara□□an □oa□□in and □an Mateo. California tiger salamander □er□ice □rea Co□nties: □ll or portions of □lameda□Contra Costa□Merced□□anta Clara□□an □oa□□in□ □an Mateo□□an □enito and □tanisla□s.
□i□er □anch Conser□ation □an□ 3□55 □t□erton □oad □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com Credits: □ Valley Elder□erry □ong□orn □eetle □Contact □acramento □is□ & □ ildlife □ffice □an□ing Coordinator at □916□414□6556 for information concerning VE□□ credits	□otal □cres: 1□□ □er□ice □rea Co□nties: □ll or portions of □e□ama□Glenn□□□tte□ Col□sa□□□tter□□□□a□□e□ada□Placer□□olo□□apa□□acramento□ El Dorado□□olano□□mador□Contra Costa□□an □oa□□in□ Cala□eras□□lameda□□tanisla□s□□□ol□mne□Merced□Mariposa□ Madera□□resno□□an □enito□□ings□□□lare□□ern□□an □□is □□ispo.
□an□ Cree□ Conser□ation □an□ □ ildlands□nc. Contact Person: □□lie Maddo□ 3□55 □t□erton □oad □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com	□otal □cres: 49□ California □iger □alamander □er□ice □rea Co□nties: Portions of Cala□eras□□resno□□ings and □□lare. □an □oa□□in □it □o□ □er□ice □rea Co□nties: Portions of □resno□ □ings□Madera□Merced□Mariposa□□tanisla□s and □□lare Vernal Pool □pecies Preser□ation □er□ice □rea Co□nties: Portions of □resno□Madera□Mariposa□Merced□□an □oa□□in□ □tanisla□s□□□ol□mne and □□lare.

Wil□li□e Habitat □ype/ □an□ Use □ype	□ypical □e□etation
Credits: □ California □iger □alamander □ □an □oa□□in □it □o□ Vernal Pool Ecosystem Preser□ation	
□oa□ Hill □anch Miti□ation □an□ 3□55 □t□erton □d □oc□lin□C□ 95□65 P□one: □916□435□3555 □a□: 435□3556 □□□.□ildlandsinc.com Credits: Vernal Pool Ecosystem Creation Vernal Pool Ecosystem Preser□ation □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp	□otal □cres: 1664 □er□ice □rea Co□nties: Portions of Placer□□□tter□□acramento□ El Dorado□□mador□□an □oa□□in□□□□a□□e□ada□and Cala□eras.
□an □lec□ □anch Miti□ation □an□ □ ester□elt Ecological □er□ices 600 □ort□ Mar□et □l□d□□te 3 □acramento□C□ 95□34 P□one: □916□646□3644 Cell: □916□99□□□□16 □□□.□esmitigation.com Credits: Vernal Pool Ecosystem Creation □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp Vernal Pool Ecosystem Preser□ation □ Vernal pool fairy s□rimp □□□e □an□is also appro□ed to sell Corps of Engineers □etlands mitigation credits. □□e □an□ is also appro□ed □y t□e California Department of □is□ & □ ildlife to sell □□ainson□s □a□□ foraging credits.	□otal □cres: □□5
□ieira□□an□y M□sh □oa□ Conser□ation □an□ 5□43 □ort□ □ta□ □treet Merced□C□ 9534□ P□one: □209□3□3□3029 Credits: □ California □iger □alamander □ □an □oa□□in □it □o□ Vernal Pool Ecosystem Preser□ation □ Conser□ancy fairy s□rimp □ Vernal pool fairy s□rimp □ Vernal pool tadpole s□rimp	□otal □cres: 333 C□ □iger □alamander □er□ice □rea Co□nties: Portions of □lameda□Cala□eras□□resno□Madera□Mariposa□Merced□ □tanisla□s and □□ol□mne. □an □oa□□in □it □o□ □er□ice □rea Co□nties: Portions of □resno□ □ings□Madera□Mariposa□Merced□□tanisla□s and □□lare. Vernal Pool Ecosystems □er□ice □rea Co□nties: Portions of □resno□Merced□Madera and □tanisla□s.

□.2.1 □e□ional Habitat

- **□ree□□ominate□ Habitats**

□□o tree□dominated □a□itats □ere identified in t□e □□□: □alley oa□ □oodland and □alley foot□ill riparian.

1. Valley Oak Woodland

Valley oa□ □oodland □V□□ □in t□e □□□ □as located along t□e floodplain of t□e □ings □i□er and associated slo□g□s and side c□annels □in t□e □anford □ est □ypass □lignment alternati□es in t□is area□. □□is □a□itat is c□aracteri□ed □y □ell□spaced stands of mat□re □alley oa□ □*Quercus lobata*□ □it□ little or no s□□canopy□ and a □ell□de□eloped □er□aceo□s layer. Dominant □er□aceo□s species incl□de □rome□ann□al fesc□es □*Vulpia* spp.□□ oats □*Avena* spp.□□ and □arleys. □t□er □er□aceo□s plants incl□ding□filaree□miner□s lett□ce□pric□ly o□tong□e □*Picris echioides*□□ and spiny so□ t□istle □*Sonchus asper*□ may □e present. □n t□e □□□□ □alley oa□ □oodland may intergrade □it□ □alley foot□ill riparian □egetation□or a□r□ptly transition to de□eloped areas s□c□ as cropland or orc□ard.

Valley oa□ □oodland pro□ides food□co□er□nesting sites□and dispersal □a□itat for a □ide □ariety of □ildlife. □□e large oa□ trees present in t□is □a□itat pro□ide nesting opport□nities for many □irds of prey□incl□ding □□ainson□s □a□□. □ypical □ildlife species o□ser□ed in t□is □egetation comm□nity d□ring t□e □ildlife □a□itat assessment incl□ded California gro□nd s□□irrel□ □estern fence li□ard □*Sceloporous occidentalis*□□ □estern scr□□ □ay □*Aphelocoma californica*□□California □□ail□nort□ern flic□er □*Colaptes auratus*□□ nort□ern moc□ing□ird □*Mimus polyglottos*□□ mo□rning do□e □*Zenaida macroura*□□□merican □estrel □*Falco sparverius*□□and red□tailed □a□□ □*Buteo jamaicensis*□.

2. Valley Foothill Riparian

Valley foot□ill riparian □V□□□in t□e □□□ □as located along t□e riparian corridors and associated floodplains or terraces of t□e □ings □i□er□Cross Cree□□□le □i□er□Poso Cree□□and □ern □i□er□and along t□eir associated slo□g□s and side c□annels. □□ese areas □ere c□aracteri□ed □y a dominance of tall trees□incl□ding □remont cotton□ood□□estern sycamore □*Platanus racemosa*□□and □alley oa□. □□□canopy trees incl□ded □□ite alder □*Alnus rhombifolia*□and as□ □*Fraxinus* sp.□. □nderstory s□r□□s and □er□aceo□s species typically incl□ded California □lac□□erry □*Rubus ursinus*□□elder□erry□poison oa□ □*Toxicodendron diversilobum*□□ □□tton □□s□ □*Cephalanthus occidentalis*□□ □illo□s □*Salix* spp.□ r□s□es □*Juncus* spp.□□m□g□ort □*Artemisia douglasiana)*□poison □emloc□ □*Conium maculatum*□□and stinging nettle □*Urtica dioica* ssp*. holosericea*□. □n t□e □□□ t□ere is generally an a□r□pt transition to non□□alley foot□ill riparian □egetation□s□c□ as cropland or orc□ard□a□ay from t□e riparian corridor□ res□lting in narro□ □ands of □egetation restricted □y t□e □ordering agric□lt□ral land.

Valley foot□ill riparian □a□itat pro□ides food□□ater□migration and dispersal corridors□and escape□ nesting□and t□ermal co□er for an a□□ndance of □ildlife. Protected insects li□e t□e □alley elder□erry long□orn □eetle are nati□e to t□ese □a□itats □CD□G 19□□□. □ypical □ildlife species o□ser□ed in t□is □egetation comm□nity d□ring t□e □ildlife □a□itat assessment incl□ded cottontail □*Sylvilagus* sp.□□ raccoon □*Procyon lotor*□□ □estern fence li□ard□Pacific treefrog □*Pseudacris regilla*□□ □estern toad □*Bufo boreas*□□ □estern scr□□ □ay□California □□ail□yello□□r□mped □ar□ler □*Dendroica coronata*□□ nort□ern moc□ing□ird□□o□se sparro□ □*Passer domesticus*□□and red□tailed □a□□. □e□eral special□ stat□s plant comm□nities o□erlap □it□ t□is □a□itat type□incl□ding □alley oa□ □oodland□□remont cotton□ood forest□Goodding□s □illo□ t□ic□ets□and red □illo□ t□ic□ets.

- **□hr□b/Herbaceo□s□□ominate□ Habitats**

□ne s□r□□□dominated □a□itat □as identified in t□e □□□: □l□ali desert scr□□.

1. Alkali Desert Scrub

□l□ali desert scr□□ □egetation in t□e □□□ □as c□aracteri□ed □y mem□ers of t□e c□enopod □C□enopodacea□family□dominated □y s□r□□lands □it□ □nderstory co□er of □er□s and for□s□and □y □ernally in□ndated or sat□rated areas lac□ing a s□r□□ layer □□ernal pools□. Vernal pools are micro□topograp□ic depressions t□at are often □ne□□ally distri□□□ted in ann□al grasslands. Vernal pools are typically dry for t□e ma□ority of t□e year and are only in□ndated or sat□rated d□ring t□e

spring. □□ese □ernal pool areas □ere c□aracteri□ed □y □er□s and for□s interspersed □it□ □arren□□ernally in□ndated□or sat□rated al□ali patc□es. Primary plant species o□ser□ed d□ring t□e □ario□s s□r□eys incl□ded spinescale salt□□s□ □*Atriplex spinifera*□□cattle salt□□s□ □*Atriplex polycarpa*□□iodine □□s□ □*Allenrolfea occidentalis*□□golden□□s□ □*Isocoma acradenia*□□and □□s□ seep□eed □*Suaeda moquinii*□. □□e di□ersity and presence of s□cc□lents and cacti in t□is □egetation comm□nity is relati□ely lo□ to a□sent.

□ypical □er□aceo□s species incl□ded al□ali □eat□ □*Frankenia salina)*□goldfields □*Lasthenia* spp.□□ Men□ie□s fiddlenec□ □*Amsinckia menziesii)*□al□ali □eed □*Cressa truxillensis)*□fesc□e □*Vulpia* spp.□□ pepper□eed □*Lepidium* spp.□□ common tar□eed □*Hemizonia pungens),* saltgrass □*Distichlis spicata),* □romes □*Bromus* spp.□□and □arley □*Hordeum* spp.□. □ota□ly□cacti □ere a□sent from t□is □a□itat. □n t□e □□□□t□is □a□itat □as concentrated in t□e □icinity of □llens□ort□ □□□lare Co□nty□and in relati□ely □ndist□r□ed areas. □□erall□al□ali desert scr□□ pro□ides t□e □est e□ample of nati□e □a□itat for special□stat□s species and special□stat□s plant comm□nities fo□nd in t□e □□□. □istorically□t□is □as pro□a□ly a □ery e□tensi□e □a□itat type in t□e □□□□□□t its e□tent □as □een □astly red□ced□li□ely d□e to agric□lt□ral or □r□an con□ersion. Portions of t□is □a□itat type remain on p□□lic lands□conser□ation lands□and indi□id□al parcels t□at □a□e not □een de□eloped.

□l□ali desert scr□□ s□pports a □ide □ariety of □ildlife species□incl□ding special□stat□s species s□c□ as t□e □l□nt□nosed leopard li□ard □*Gambelia sila*□□t□e □an □oa□□in □it fo□□and t□e □ipton □angaroo rat □*Dipodomys nitratoides nitratoides*□. Many □ildlife species fo□nd in t□is □a□itat type are □□rro□ers or □□rro□□dependent species□ s□c□ as □estern □□rro□ing o□ls □*Athene cunicularia*□□□estern spadefoot toad □*Spea hammondii*□□□adgers □*Taxidea taxus*□□fo□es □*Vulpes* sp.□□coyote □*Canis latrans*□□California gro□nd s□□irrel □*Spermophilus beecheyi*□□and a □ariety of □angaroo rat □*Dipodomys* spp.□species. □eptiles fo□nd in t□is □a□itat incl□de t□e □estern rattlesna□e □*Crotalus oreganus*□□side□□lotc□ed li□ards □*Uta stansburiana*□□and coast □orned li□ards *(Phrynosoma coronatum blainvillii*□. □orned lar□s □*Eremophila alpestris*□□meado□lar□s □*Sturnella* spp.□□and □□rro□ing o□ls may □reed □ere□and many raptors may □se t□ese areas for foraging □CD□G 19□□.

□ ildlife o□ser□ed in t□is □a□itat d□ring s□r□eys incl□ded coyote□□□rro□ing o□ls□ra□ens □*Corvus corax*□□red□tailed □a□□logger□ead s□ri□e □*Lanius ludovicianus*□□□estern □ing□ird □*Tyrannus verticalis*□□sa□anna□ sparro□ □*Passerculus sandwichensis*□□□orned lar□□□estern meado□lar□ □*Sturnella neglecta*□□side□□lotc□ed li□ard□ and coast □orned li□ard□ □ ildlife o□ser□ed in association □it□ a□□atic feat□res incl□ded □lac□nec□ed stilt □*Himantopus mexicanus*□□ cinnamon teal □*Anas cyanoptera*□□great □□ite egret □*Ardea alba*□□□estern spadefoot toad□ Pacific treefrog□tiger □eetles□and □ernal pool □ranc□iopods.

□pecial□stat□s plant comm□nities identified □it□in t□e □□□ incl□de iodine □□s□ scr□□□spinescale scr□□□salt grass flats□al□ali golden□□s□ scr□□□al□ali goldfield flo□er fields□and □□s□ seep□eed scr□□.

2. Annual Grassland

□n t□e □□□□ann□al grasslands are typically c□aracteri□ed □y nonnati□e ann□al grass species. Dominant species incl□de se□eral species of □rome□ann□al fesc□es□oats□and □arleys. □ati□e species may □e present □□t in lo□er densities□incl□ding goldfields□o□ls clo□er □*Castilleja* spp.□□ tar□eed□ pepper□eed□ saltgrass□ fiddlenec□ □*Amsinckia menziesii*□□ and popcorn flo□er □*Plagiobothrys* spp.□. □n occasion□s□r□□ species□incl□ding salt□□s□ □*Atriplex* spp.□□iodine □□s□□ □□s□ seep□eed□and golden□□s□□may occ□r at □ery lo□ percent co□er □generally less t□an 2□ □. □nn□al grasslands in t□e □□□ □a□e typically e□perienced some le□el of dist□r□ance in t□e past

t□at □as associated □it□ t□e □ario□s agric□lt□re practices□ro□ cropping□or gra□ing. □lt□o□g□ t□ese areas typically □a□e a □istory of dist□r□ance□t□ey contin□e to pro□ide s□ita□le □a□itat for a n□m□er of special□stat□s plant and □ildlife species. □i□e t□e al□ali desert scr□□ □a□itats□ann□al grasslands t□at appear to □a□e e□perienced lo□er le□els of dist□r□ance often e□□i□it □ernally in□ndated or sat□rated areas □□ernal pools□.

Many □ildlife species are □no□n to □se ann□al or perennial grasslands for foraging□□□t some re□□ire special □a□itat c□aracteristics s□c□ as cliffs□ca□es□ponds□or □a□itats □it□ □oody plants for □reeding□resting□and escape co□er. D□e to t□e scarcity of □oody □egetation□grasslands often s□pport a □ariety of □□rro□ing animals. □ypical species o□ser□ed d□ring t□e field s□r□eys in grassland □a□itats incl□de □lac□tailed □ac□ra□□it □*Lepus californicus*□□ California gro□nd s□□irrel□□otta□s poc□et gop□er □*Thamnomys bottae*□□coyote□sa□anna□ sparro□□□□rro□ing o□l□ □orned lar□□ □estern meado□lar□□ t□r□ey □□lt□re □*Cathartes aura*□□ nort□ern □arrier □*Circus cyaneus*□□□merican □estrel □*Falco sparverius*□□and □estern fence li□ard.

3. *Pasture*

Past□res in t□e □□□ are acti□ely gra□ed fields associated □it□ pri□ate property. Generally t□ese areas are c□aracteri□ed □y a mi□ of ann□al grasses s□c□ as □romes□□arley□oats□and ann□al fesc□es □it□ ot□er □er□aceo□s species. □□ese past□re grasses are eit□er gra□ed lo□ to t□e gro□nd or may gro□ □nc□ec□ed□depending on t□e fre□□ency of gra□ing. □ypically□t□ese areas □ere acti□ely gra□ed □y cattle and □orses □□t not irrigated. □□ese areas pro□ide some □a□itat for special□stat□s □ildlife species and □ery little □a□itat for special□stat□s plant species □eca□se of t□e □ig□ le□el of dist□r□ance. □ ildlife o□ser□ed in t□is □a□itat type incl□ded California gro□nd s□□irrel□ □lac□tailed □ac□ra□□it□ □o□se sparro□□ □merican cro□ □*Corvus brachyrhynchos*□□ □merican goldfinc□ □*Carduelis tristis*□□mo□rning do□e □*Zenaida macroura*□□□estern scr□□ □ay□and □estern fence li□ard.

- **□□□atic Habitats**

□i□e a□□atic □a□itats □ere identified in t□e □□□: ri□erine□lac□strine and emergent □etlands□and salt □ater mars□es:

1. *Riverine*

□i□erine □a□itat in t□e □□□ consists of open□□ater areas in canals and irrigation ditc□es□and open□□ater areas in t□e flo□ c□annel of ri□ers□s□c□ as t□e ma□or ri□ers incl□ding □ings □i□er□ □ern □i□er□□an □oa□□in □i□er□Merced □i□er□Mo□el□mne □i□er□Cons□mnes □i□er□and cree□s□ s□c□ as t□e □□le□Cross□Poso□Cotton□ood□□□ens□Miles□□ag□na□□ ildcat□and □an Pa□lo. D□e to e□tensi□e □ater di□ersion for agric□lt□ral p□rposes□ri□erine □a□itats in t□e □□□ do not e□□i□it nat□ral flo□ regimes and may □e dry t□ro□g□o□t a gi□en year. □n t□ese areas □egetation □as eit□er a□sent or sparse along sandy □ottoms d□e to □ater□le□el fl□ct□ations□ □e□icle dist□r□ance□or maintenance acti□ities in an irrigation canal or ditc□. □ypical □egetation□□□en present□ □as dominated □y □eedy species s□c□ as m□stards □□rassicaceae□ and grasses. □ ildlife species o□ser□ed in ri□erine □a□itats d□ring t□e □ario□s field s□r□eys incl□ded □□lfrog □*Rana catesbeiana*□□mos□□ito fis□□carp□dragonflies□red s□amp crayfis□ □*Procambarus clarkii*□□ and □sian clam □*Corbicula fluminea*□.

2. *Lacustrine*

□ac□strine □a□itat in t□e □□□ is limited to man□made □asins □sed for □ater storage and gro□nd□ater rec□arge. □□ese □asins range in si□e from less t□an 1□000 s□□are feet to □□ndreds of acres. □□ese □asins typically □a□e eart□en □erms and little or no emergent □egetation. □□ere are no nat□ral permanent la□es in t□e □□□. □ne large □asin o□ser□ed □as partially □ordered □y a narro□ □and of □illo□s and ot□er riparian □egetation□and s□pported

large colonies of nesting □irds□s□c□ as cormorants and egrets. □t□er small □asins □ad little or no sign of □se □y □ildlife. Many of t□e smaller □asins □ere s□rro□nded □y fences□limiting □ildlife access.

□ased on t□e agric□lt□ral practices o□ser□ed d□ring t□e □ario□s field s□r□eys□lac□strine □a□itats are reg□larly e□posed to a □ariety of agric□lt□re □ses and li□ely incl□de □ea□y loads of poll□tants s□c□ as fertili□ers□pesticides□rodenticides□and ot□er to□ic c□emicals. □s □it□ ri□erine areas□ □asins □sed for □ater storage and gro□nd□ater rec□arge are s□□ect to fl□ct□ations in □ater le□el□depending on t□e needs of t□e lando□ner□and may □e dry d□ring portions of t□e year.

□lt□o□g□ lac□strine □a□itats in t□e □□□ are man□made and controlled□t□ey pro□ide important □a□itat for many □ildlife species. □□e larger detention □asins o□ser□ed □ere □sed □y a □ariety of □ater □irds□incl□ding □merican coot□do□□le□crested cormorant□egrets□lar□s gre□e□and se□eral species of d□c□. □arge floc□s of s□allo□s □ere o□ser□ed feeding o□er t□ese feat□res. □ ildlife o□ser□ations at small detention □asins □ere limited and incl□ded □□lfrogs□mos□□ito fis□□ egrets□mallards□c□rle□□and red □inged □lac□□ird.

3. Fresh Water Emergent Wetlands

□res□ □ater emergent □etlands are c□aracteri□ed □y □□lr□s□ and cattail stands. □□ey are typically dominated □y erect□rooted□□er□aceo□s □ydrop□ytic plant species adapted to gro□ing in conditions of prolonged in□ndation. □res□ □ater emergent □etlands in t□e □□□ □ere o□ser□ed along ri□ers□ cree□s□ and small patc□es associated □it□ man□made str□ct□res□ incl□ding detention □asins□gro□nd□ater rec□arge reser□oirs□and irrigation and drainage ditc□es. □ften t□ese areas are seasonally flooded □etlands t□at s□pport ponded or sat□rated soil conditions d□ring □inter and spring and are dry t□ro□g□t□e s□mmer and fall □ntil t□e first s□□stantial rainfall.

□□e □egetation is composed of □etland generalists□ s□c□ as □yssop loosestrife □yt□r□m □yssopifolia□□coc□le□□r □□ant□i□m spp.□□and □talian ryegrass □□oli□m m□ltiflor□m□t□at typically occ□r in fre□□ently dist□r□ed sites□s□c□ as along streams. □ypical species in t□ese areas also incl□de □illo□s □□ali□ sp.□□r□s□es□□□lr□s□es □□cirp□s sp.□□cattails □□yp□a spp.□□and doc□s □□□me□ spp.□. □ypical species o□ser□ed in association □it□ t□is □a□itat type d□ring t□e field s□r□eys incl□de red□□inged □lac□□ird □□gelai□s p□oenice□s□□mars□ □ren □Cistot□or□s pal□stris□□ great □□ite egret□great □l□e □eron □□rdea □erodias□□□□lfrog □□ana cates□eiana□□and Pacific treefrog.

4. Saltwater Marsh

Coastal salt mars□es de□elop along t□e intertidal s□ores of □ays and est□aries. Est□aries occ□r □□ere a ri□er meets t□e sea□and t□e □ater is some□□at □rac□is□. □n general□salt mars□es along t□e nort□ern California coast □a□e a relati□ely lo□ salinity □eca□se of s□□stantial ri□er r□noff□ □□ereas t□ose along t□e so□t□ern coast□□□ere t□ere are fe□er ri□ers and less r□noff□are of □ig□er salinity. □an □rancisco □ay contains t□e largest and one of t□e most comple□ salt mars□ systems in t□e state. □alt mars□ plants are adapted to a □ars□□semi□a□□atic en□ironment and saline soils.

□pecies di□ersity is lo□. □to□t stems□ small lea□es□ and p□ysiological adaptations for salt e□cretion and gas e□c□ange c□aracteri□e t□e in□a□itants of t□e salt mars□□□□ic□ are mostly grasses and lo□ perennial □er□s. □□e tangle of mars□ plant roots and stems □elps to sta□ili□e t□e m□ddy □ottom□as □ell as to trap de□ris and dissol□ed n□trients □it□ eac□ tidal cycle. □pecies composition and □onation in t□e salt mars□ are go□erned □y salinity gradients in com□ination □it□ t□e amo□nt of intertidal e□pos□re. Eelgrass □*Zostera marina*□occ□pies t□e lo□est or most marine □one. □t cannot tolerate a fres□□ater en□ironment or intertidal conditions t□at □o□ld e□pose its

roots to air. Cordgrass (*Spartina foliosa*) occ□rs in t□e marine□to□terrestrial transition □one□ c□aracteri□ed □y lo□er salinity and periodic e□pos□re to t□e air. □□ore□ard□□□ere conditions are e□en drier□pic□le□eeds (*Salicornia sps*)□are dominant. □□e □pper □one□□□ere tidal in□ndation is rare□is c□aracteri□ed □y□mars□ □a□mea *(Jaumea carnosa)*□□□s□y s□oregrass (*Monanthochloe littoralis*)□□and arro□grass (*Triglochin maritime*). □t□er common salt mars□ species incl□de □alt grass (Distic□lis spicata)□□□ranconia □□ran□enia salina)□□and □eep □eed □□□aeda californica□. □□e endangered salt mars□ □ird□s □ea□ (Cordylant□□s maritim□s)□also occ□rs in t□e □pper □one. □□is □a□itat is also □no□n to s□pport t□e endangered salt□ater □ar□est mo□se □□eit□rodontomys ri□inentris□.

5. Northern Vernal Pool

□□is □ernal pool classification encompasses nort□ern □ardpan □ernal pools and nort□ern claypan □ernal pools fo□nd on terraces and □asin rims from central □an □oa□□in Valley nort□ to □□asta Co□nty. Vegetation is of a lo□□amp□i□io□s□□er□aceo□s comm□nity dominated □y ann□al □er□s and grasses. Germination and gro□t□ □egin □it□ □inter rains. □ising spring temperat□res e□aporate t□e pools□lea□ing □ands of □egetation t□at colorf□lly encircle t□e pool □□olland 19□6□. Vernal pools are dominated □y perennial □□nc□grasses in genera s□c□ as □rom□s□Melica□ □assella□Poa□Calamagrostis□and □est□ca. **□his habitat type is not present □ithin the project □□□.**

□.2.2 □an□ Uses

□ine land □se types □ere identified in t□e □□□: cropland□dryland grain crops□irrigated grain crops□irrigated □ayfield□irrigated ro□ and field crops□decid□o□s orc□ard□e□ergreen orc□ard□ □ineyard□and □r□an. □□ese land □ses c□aracteri□e t□e o□er□□elming ma□ority of ad□acent lands in t□e □□□.

- **Croplan□**

Croplands □ere segregated into dryland grain crops□irrigated grain crops□irrigated □ayfield□or irrigated ro□ and field. □□e rational for t□is is different types of croplands are acti□e d□ring □ario□s seasons□and s□pport □ario□s species□□ot□ as year ro□nd residents and □y migratory and transient species. □□is □a□itat type is □ery dist□r□ed and is c□aracteri□ed □y little to no nati□e □egetation□pesticide and □er□icide □se□and management.

1. Dryland Grain Crops

Dryland grain crop in t□e □□□ is c□aracteri□ed □y non□irrigated fields of □□eat (*Triticum* spp.□. □ □eat is an ann□al species and is □s□ally planted □y drilling in ro□s t□at prod□ce solid stands□ forming 100□ co□er at mat□rity in good stands. □n many areas of t□e state a dryland crop is gro□n one year□and t□en t□e land may □e fallo□ed □not planted□for one or more years. □f t□e land is fallo□ed□a com□ination of dropped grain and □ol□nteer nati□e or nat□rali□ed □er□aceo□s species may gro□.

Many species of rodents and □irds □a□e adapted to t□is type of cropland□and may □e controlled □y fencing□trapping□and poisoning to pre□ent e□cessi□e crop losses. □a□□s□o□ls□and ot□er predators feed on t□e rodents in t□ese areas. Dryland grain crops may pro□ide s□ort□term co□er and foraging□and longer□term mo□ement corridors for □ildlife.

2. Irrigated Grain Crops

□rrigated grain crops in t□e □□□ are c□aracteri□ed □y irrigated fields predominantly of □□eat. □s □it□ dryland grain crops□□□eat is □s□ally managed in a crop□rotation system and gro□n in ro□s. □□e primary difference □et□een areas of irrigated grain crops and dryland grain crops is t□e

presence of □ater□ □□ic□ res□lts in more ro□□st fields generally □it□ greater co□er of t□e partic□lar crop. □ome fields may form 100□ co□er□□□ile ot□ers may □a□e significant □are areas □et□een ro□s.

D□e to t□e □ea□y dist□r□ance from agric□lt□re management acti□ities□irrigated grain crops do not typically pro□ide s□ita□le □a□itat for special□stat□s plant species□alt□o□g□ t□ese areas may ser□e in place of fres□□ater □etlands for a □ariety of associated a□□atic □a□itat□dependent □ildlife□incl□ding s□ore□irds□□ading □irds□and g□lls. □□e a□aila□ility of irrigation □ater d□ring t□e s□mmer mont□s may pro□ide □enefits to □ildlife species as a so□rce of □ater □CD□G 19□□□.

3. Irrigated Hayfield

□rrigated □ayfield in t□e □□□ incl□des alfalfa □*Medicago sativa*□ fields and grass □ayfields. Generally□alfalfa fields are maintained □nplo□ed for appro□imately 3 years or more and are t□en follo□ed □y a cereal grain crop□□ege ta□les□potatoes□or tomatoes for 1 to 4 years □efore □eing planted to alfalfa again. Most □ay fields in t□e □armer parts of California are monoc□lt□res of alfalfa. Designation of a □ayfield as irrigated □ayfield depends more on management of t□e site t□an on plant composition. E□cept for t□e 2□to 6□mont□ initial gro□ing period□depending on climate and soil□t□is □a□itat is dense□□it□ nearly 100□ co□er. Plo□ing may occ□r ann□ally□□□t is □s□ally less often. □n t□e □an □oa□□in Valley□alfalfa field gro□t□ □egins d□ring □e□r□ary□and □ar□esting occ□rs si□to eig□t times per season.

□rrigated □ayfields pro□ide seasonal forage and ref□gia for □lac□□irds□deer□do□es□egrets□ fo□es□garter sna□es□gop□ers□gop□er sna□es□□a□□s□□ing sna□es□o□ls□sand□ill cranes □*Grus canadensis*□□□oles□□aterfo□l□and ot□ers. □o□e□er□□□ere □ar□esting is constant□reprod□ction □al□es for gro□nd□nesting □ildlife species are red□ced to □ero. □f rotational cropland is ad□acent□ t□is □a□itat can pro□ide co□er d□ring seasonal dis□ing and planting on t□e rotated fields. □lfalfa fields are a preferred foraging □a□itat for t□e □□ainson□s □a□□□a state□listed□t□reatened raptor species □CD□G 19□□□.

4. Irrigated Row and Field Crops

□rrigated ro□ and field crops in t□e □□□ incl□de root □ege ta□les □s□c□ as onions□or cotton. Most crops are gro□n in ro□s□alt□o□g□ t□e str□ct□re of t□ese areas is □aria□le. □ome crops may form 100□ co□er □□ile ot□ers may □a□e □are areas.

□n general□t□ese crops □a□e eliminated all aspects of nat□ral □a□itat for nati□e □ildlife species□ and are managed to minimi□e crop depredation □y □ildlife t□ro□g□ fencing□trapping□and poisoning. □ □ere s□c□ controls are less stringent□t□is □a□itat may s□pport pop□lations of rodents s□c□ as California gro□nd s□□irrel and ra□□its. □□is □a□itat may also s□pport rodent predators □incl□ding sna□es□ □a□□s□ fo□□ and coyote□□ deer el□□ raccoon□ opossum □*Didelphimorphia* sp.□□ insects□and a □ide □ariety of □irds and □ats□□ot□ fr□it□eating and insecti□oro□s □CD□G 19□□□.

5. Deciduous Orchard

Decid□o□s orc□ards in t□e □□□ incl□de ro□s of almonds □*Prunus dulcis*□□apricot trees □*Prunus armeniaca*□□and pistac□ios □*Pistacia vera*□. □□e ma□ority of decid□o□s orc□ards o□ser□ed d□ring t□e field s□r□eys □ad little or no □nderstory □egetation. Generally□t□ese areas are □ea□ily managed □it□ fertili□ers□pesticides□□er□icides□and ot□er mec□anical means to control t□e □nderstory □egetation. □s a res□lt t□ese areas do not pro□ide s□ita□le □a□itat for special□stat□s plant species.

Decid□o□s orc□ards □□ere □ildlife is not strictly or intensely controlled may pro□ide some □a□itat □al□e. □ ildlife s□c□ as deer and ra□□its may □ro□se on t□e trees or □ines□s□□irrels and □irds feed on fr□it or n□ts. □ome □ildlife □e.g.□mo□rning do□e and California □□ail□ □se t□e □a□itat for co□er and nesting sites. □n many orc□ards□nest □o□es □ad □een installed along t□e orc□ard perimeters to attract raptors s□c□ as □arn o□ls and □merican □estrels t□at feed on rodents and ot□er crop pests. □imilarly□rodent control meas□res in t□e □ay of □ait □o□es and poison traps □ere reg□larly o□ser□ed. □n t□e □□□ nearly all decid□o□s orc□ards are irrigated eit□er □y flood□drip□or spray irrigation systems t□at may pro□ide □ater for □ildlife d□ring t□e dry mont□s.

□ypical □ildlife species o□ser□ed d□ring s□r□eys in decid□o□s orc□ards incl□de t□e California gro□nd s□□irrel□ □ottas□ poc□et gop□er□ □merican cro□□ E□ropean starling□ □o□se finc□□ sparro□s□and □rgentine ants.

6. Evergreen Orchard

E□ergreen orc□ards in t□e □□□ are typically c□aracteri□ed □y citr□s species s□c□ as oranges □*Citrus aurantium*□ or lemons □*Citrus limon*□. □□ese are □s□ally lo□□ □□s□y trees □it□ a maintained open □nderstory to facilitate □ar□est. □□e □nderstory is □s□ally composed of lo□□ gro□ing grasses□leg□mes□and ot□er □er□aceo□s plants□ □□t may □e managed to pre□ent □nderstory gro□t□ totally or partially□s□c□ as along tree ro□s □CD□G 19□□□.

□enefits to □ildlife are similar to t□ose descri□ed for t□e decid□o□s orc□ard e□cept t□at e□ergreen orc□ards generally do not pro□ide t□e food for □ildlife t□at many of t□e decid□o□s fr□it and n□t trees pro□ide. □o□e□er□e□ergreen orc□ards may pro□ide □eneficial s□elter d□ring inclement □eat□er in □inter or in □ot s□mmer periods. □s descri□ed for decid□o□s orc□ards□ nest □o□es □ad □een installed along t□e perimeters of many orc□ards to attract raptors t□at feed on common agric□lt□ral pests□and rodent control de□ices s□c□ as □ait □o□es and poison traps □ere reg□larly o□ser□ed. □n t□e □□□ nearly all e□ergreen orc□ards are irrigated eit□er □y flood□ drip□or spray irrigation systems t□at may pro□ide □ater for □ildlife d□ring t□e dry mont□s.

7. Vineyard

Vineyards in t□e □□□ are typically c□aracteri□ed □y grapes planted in ro□s□□s□ally s□pported on □ood and □ire trellises. Vines are normally intert□ined in t□e ro□s □□t open □et□een ro□s. □reas □nder t□e □ines are □s□ally sprayed □it□ □er□icides to pre□ent t□e gro□t□ of □er□aceo□s plants. □et□een t□e ro□s of □ines□grasses□and ot□er □er□aceo□s plants may □e planted or allo□ed to gro□ as a co□er crop to control erosion □CD□G 19□□□.

□enefits to □ildlife are generally similar to t□ose descri□ed for decid□o□s orc□ards. □o□e□er□ deer and ra□□its are □no□n to □ro□se on t□e □ines□and s□□irrels and □irds are □no□n to feed on t□e fr□it. Vineyards can □e especially □eneficial as co□er to □ildlife d□ring □ot s□mmer periods□□□t □eca□se t□e □ines are decid□o□s and relati□ely s□ort compared to orc□ard trees□ t□ey do not pro□ide significant co□er d□ring cold and □et □inter mont□s. Many □ildlife species act as □iological control agents □y feeding on □eed seeds and insect pests □CD□G 19□□□. □ ildlife mo□ement and migration is limited in □ineyards. □intert□ined □ines and t□e □ood and □ire trellises restrict t□e mo□ement of larger mammals in all □□t one linear direction□depending on t□e direction of t□e ro□s. □n addition□t□e tig□t ro□s of trellises are a deterrent to raptors t□at drop do□n on t□eir prey from a□o□e. □s descri□ed for decid□o□s orc□ards□nest □o□es □ad □een installed along t□e perimeters of many □ineyards to attract raptors t□at feed on common agric□lt□ral pests □e.g.□rodents□.

8. Urban

□r□an areas in t□e □□□ incl□de m□nicipalities□ind□strial□residential□and agric□lt□ral str□ct□res □e.g.□feedlots and po□ltry farms□□and ad□acent dedicated areas s□c□ as yards□roads and□road s□o□lders□□ig□□ays□par□ing lots□and stoc□piles. □n □r□an m□nicipalities□t□e ma□ority of land is co□ered □y imper□io□s materials□□egetated areas incl□de landscape plantings and s□ade trees along roads and □□ildings. □pecies ric□ness and di□ersity are e□tremely lo□ in □r□an centers□ □□t adapti□e nati□e and nonnati□e □ildlife species li□e t□e roc□ do□e □*Columba livia*□□□o□se sparro□□ and starling □a□e acclimated to t□ese areas □CD□G 19□□□. □ it□in □r□an areas□ mapped □etland feat□res s□c□ as ditc□es and seasonal □etlands are present.

□n t□e □icinity of to□ns and cities□t□e e□tent of □r□an areas □as delineated □ased on t□e □r□ani□ed area and □r□an cl□ster □o□ndaries identified d□ring t□e 2000 □.□. Cens□s. D□ring t□e field s□r□eys□□iologists o□ser□ed a n□m□er of □ildlife species t□at □a□e adapted and □ecome acclimated to □r□an areas□incl□ding t□e California gro□nd s□□irrel□□otta□s poc□et gop□er□ □lac□tailed □ac□ra□□it□long□tailed □easel□□o□se sparro□□ □merican cro□□ mo□rning do□e□ □estern scr□□ □ay□and □estern fence li□ard. □n □a□ersfield□special□stat□s species li□e t□e □an □oa□□in □it fo□□a□e also □ecome acclimated to de□eloped □r□an areas □CD□G 2013□.

9. BNSF/UPRR Urban

□□e □□□□ □ail□ay rig□t□of□□ay tra□els along t□e lengt□ of t□e Central Valley in a nort□□so□t□ direction□e□tending nort□ from □a□ersfield t□ro□g□ □resno□Merced□and □toc□ton. □or m□c□ of t□e alignment t□ro□g□ t□e Central Valley□it parallels □□ 43□□anta □e □oad□or some ot□er ma□or road. □n general□t□e □□□□ □ail□ay rig□t□of□□ay is 100 feet in □idt□□and t□e rail trac□s are set on an em□an□ment t□at is a minim□m of 5 feet a□o□e t□e s□rro□nding grade. □□e em□an□ment is constr□cted of compacted soil and imported gra□el fill □termed □allast□. □□mero□s c□l□erts □isect t□e □ase of t□e □erms for drainage p□rposes. Crossings of larger drainages e□ist as freestanding □ridges. Most road crossings of t□e □□□□ □ail□ay rig□t□of□□ay consist of at□grade crossings t□at allo□ □e□icles to dri□e o□er t□e □erms and trac□s.

□□e □P□□ □ail□ay rig□t□of□□ay tra□els generally along □tate □o□te 99 corridor □et□een □toc□ton and □acramento□and follo□s t□e coast line □et□een Port C□icago and □a□land. □n general□t□e □P□□ rig□t□of□□ay is 100 feet in □idt□□and t□e rail trac□s are also set on an em□an□ment t□at is a minim□m of 5 feet a□o□e t□e s□rro□nding grade. □□e em□an□ment is constr□cted of compacted soil and imported gra□el fills. □□mero□s c□l□erts □isect t□e □ase of t□e □erms for drainage p□rposes. Crossings of larger drainages e□ist as freestanding □ridges. Most road crossings of t□e □P□□ rig□t□of□□ay consist of at□grade crossings t□at allo□ □e□icles to dri□e o□er t□e □erms and trac□s.

- **HCP/Preser□e □an□s an□ □esi□nate□ Critical Habitat (□CH)**

□□□□ Proposed □acilities and □impro□ements:

- Do□□le □rac□ G□ernsey □MP 960.3□to □anford □MP 96□.4□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.1 miles of ne□ railroad □ig□fill □e constr□cted.

  □□is segment occ□rs appro□imately 15 □M □esterly from DC□ for □ernal pools fairy s□rimp and California tiger salamander. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□is DC□□indirect effects are not li□ely.

- Con□ert Gregg □iding to do□□le trac□ □et□een MP100□.9 and MP1013.9: □□is fi□e mile siding □pgrade □ill not re□□ire any additional str□ct□res or fill for railroad □ed. □□e trac□ □ill □e replaced □it□ mainline trac□□and on trac□signals may need to □e □pgraded.

  □□is segment occ□rs appro□imately 11 □M nort□□east from DC□ for □airy orc□tt grass and □an □oa□□in orc□tt grass. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□is DC□□ indirect effects are not li□ely.

- Do□□le □rac□ □eGrand □MP1041.5□to Planada □MP 104□.3□: □□is segment □ill re□□ire t□e constr□ction of appro□imately 5.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□.

  □□is segment occ□rs appro□imately .6 □M □esterly □at MP1042□from DC□ for Green□s t□ctoria. □□ere □ill □e no direct impacts to t□is DC□. □o□e□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is in close pro□imity to t□is DC□□potential for indirect effects s□o□ld □e minimi□ed □y implementing t□e proposed mitigation meas□res in □ection 4.

- Do□□le □rac□ Mile Post □110□.0□to □ aln□t □MP 1116.9□: □□is do□□le trac□ segment □ill re□□ire t□e constr□ction of appro□imately 9.9 miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment occ□rs □it□in t□e □toc□ton to Escalon pro□ect area.

  □□is segment occ□rs appro□imately 13.5 □M □esterly from DC□ for □ernal pools fairy s□rimp and California tiger salamander□and 1□ □M east of DC□ for Delta smelt. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□is DC□□indirect effects are not li□ely.

- □pgrade and E□tend Pitts□□rg □iding: □□e e□isting Pitts□□rg □iding □MP 1152.□ to MP 1154.1□□ill □e □pgraded to mainline trac□. □□is □pgrade □ill not res□lt in any additional railroad □ed or e□pand t□e footprint of t□e e□isting railroad. □□e Pitts□□rg □iding □ill □e e□tended 2.□ miles from MP 1154.1 to MP 1156.9.

  □□is segment occ□rs appro□imately .5 □M □esterly □at MP 1042□from DC□ for Delta smelt. □□ere □ill □e no direct impacts to t□is DC□. □o□e□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is in close pro□imity to t□is DC□□potential for indirect effects s□o□ld □e minimi□ed □y implementing t□e proposed mitigation meas□res in □ection 4.

- Constr□ct a Drill □rac□ at t□e Cane□o □iding: □□e Cane□o □iding occ□rs □et□een MP 9□1.2 and MP 9□3.1. □□e constr□ction of a drill trac□ in □et□een t□ese miles posts □ill re□□ire t□e constr□ction of ne□ railroad □ed ad□acent to t□e e□isting railroad trac□s.

  □□is segment occ□rs appro□imately 25 □M □esterly from DC□ for □ernal pools fairy s□rimp and California tiger salamander□and 1□ □M east of DC□ for Delta smelt. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□is DC□□indirect effects are not li□ely.

- Do□□le □rac□ □astro □MP □91.1□ to □□after □MP 905.4□: □□is do□□le trac□ segment incl□des t□e constr□ction of 14.3 miles of ne□ railroad □ig□fill □e constr□cted.

□□is segment is completely □r□ani□ed and does not s□pport any nat□ral en□ironments. □dditionally t□e closest DC□ occ□rs appro□imately 35 □M to t□e east in t□e □e□ac□api Mo□ntains for California Condor. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□is DC□□indirect effects are not li□ely.

- Do□□le □rac□ □ngiola □MP 942.1□to Corcoran □MP 950.9□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.□ miles of ne□ railroad □ig□fill □e constr□cted.

  □□is segment occ□rs appro□imately 1.6 □M □esterly □at MP 1042□from DC□ for □ernal pools fairy s□rimp. □□ere □ill □e no direct impacts to t□is DC□. □o□e□er□ d□e to t□e fact t□at t□e Pro□ect□s □□□ is in close pro□imity to t□is DC□□potential for indirect effects s□o□ld □e minimi□ed □y implementing t□e proposed mitigation meas□res in □ection 4.

- Do□□le □rac□ □igarden □MP 1005.0□ to MP 100□.6: □□is segment □ill re□□ire t□e constr□ction of appro□imately 3.6 miles of ne□ trac□ ad□acent to t□e e□isting trac□.

  □□is segment is completely □r□ani□ed and does not s□pport any nat□ral en□ironments. □dditionally t□ere is no DC□ in pro□imity to t□is segment. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to a DC□□indirect effects are not li□ely.

- Do□□le □rac□ MP 1013.9 to Madera □MP 1019.6□: □□is do□□le trac□ segment incl□des t□e constr□ction of 5.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□.

  □□is segment occ□rs appro□imately 9 □M so□t□ of DC□ for Green□s t□ctoria□and 5.5 □M form DC□ for □airy orc□tt grass. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□ese DC□ areas□indirect effects are not li□ely.

- Do□□le □rac□ Planada □MP 104□.3□to Merced □MP 1056.1□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.□ miles of ne□ railroad □ig□fill □e constr□cted.

  □□is segment occ□rs appro□imately 5.5 □M so□t□ of DC□ for Green□s t□ctoria□and 12.3 □M nort□ of DC□ for □ernal pool tadpole s□rimp. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□ese DC□ areas□indirect effects are not li□ely.

- Do□□le □rac□ Escalon □MP 1100.9□to D□ffy □MP 1109.6□: □□is do□□le trac□ segment □ill re□□ire t□e constr□ction of appro□imately □.□ miles of ne□ trac□ ad□acent to t□e e□isting trac□. □□is segment occ□rs □it□in t□e □toc□ton to Escalon pro□ect area.

  □□is segment occ□rs appro□imately 14 □M so□t□□est from DC□ for California tiger salamander. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□is DC□□indirect effects are not li□ely.

- Do□□le □rac□ Pitts□□rg □MP 1155.□□to Port C□icago □MP 1164.0□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.2 miles of ne□ railroad □ig□fill □e constr□cted.

□□is segment occ□rs □it□in DC□ for Delta smelt. D□e to t□e fact t□at t□e Pro□ect□s □□□ is in DC□□an analysis to determine if primary constit□ent elements for t□is DC□ □a□e t□e potential to □e ad□ersely modified □y t□e Pro□ect constr□ction or operations a □a□itat assessment for primary constit□ent elements s□all □e cond□cted once t□e facility is designed.

- Do□□le □rac□ □na □MP □9□.□□ to □□after □MP 905.4□: □□is do□□le trac□ segment incl□des t□e constr□ction of □.□ miles of ne□ railroad □ig□□fill □e constr□cted ad□acent to t□e e□isting trac□.

  □□is segment occ□rs appro□imately 32 □M □esterly from DC□ for California Condor□and □ □M nort□ of DC□ for □ernal pools fairy s□rimp. □□ere □ill □e no direct impacts to eit□er DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to eit□er DC□□indirect effects are not li□ely.

- Do□□le □rac□ Elmo □MP 919.2□ to □andrini □MP 924.6□: □□is do□□le trac□ segment incl□des t□e constr□ction of 5.4 miles of ne□ railroad □ig□□fill □e constr□cted ad□acent to t□e e□isting trac□.

  □□is segment occ□rs appro□imately 14 □M so□t□ from DC□ for □ernal pools fairy s□rimp. □□ere □ill □e no direct impacts to t□is DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□is DC□□indirect effects are not li□ely.

- Do□□le □rac□ □llens□ort□ □MP 932.3□ to Corcoran □MP 950.9□: □□is do□□le trac□ segment incl□des t□e constr□ction of 1□.6 miles of ne□ railroad □ig□□fill □e constr□cted.

  □□is segment occ□rs immediately ad□acent to DC□ on t□e east side of t□e □□□□ □□□ for □ernal pools fairy s□rimp. □□ere □ill □e no direct impacts to t□is DC□. □o□e□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is in close pro□imity to t□is DC□□ potential for indirect effects s□o□ld □e minimi□ed □y implementing t□e proposed mitigation meas□res in □ection 4.

- □□e Do□□le □rac□ □l□□r □MP 1062.9□to □allico □MP 10□2.6□segment □ill do□□le trac□ segment incl□des t□e constr□ction of 9.□ miles of ne□ railroad □ig□□fill □e constr□cted.

  □□is segment occ□rs appro□imately 4 □M so□t□ of DC□ for Green□s t□ctoria□and 15 □M nort□ form DC□ for □oo□er□s sp□rge. □□ere □ill □e no direct impacts to eit□er DC□. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to t□ese DC□ areas□indirect effects are not li□ely.

- Proposed □tations and □ayo□er □acilities

  □□ese proposed facilities are sit□ated in □r□ani□ed and de□eloped areas□and do not s□pport any nat□ral en□ironments. □dditionally t□ere is no DC□ in pro□imity to any of t□ese facilities t□at co□ld □e eit□er directly or indirectly impacted □y t□e constr□ction and operations of t□ese facilities. □□erefore□t□ere □ill □e no impacts to any DC□ as a res□lt of proposed stations or layo□er facilities.

Union Paci□ic □ailroa□ □acility Impro□ements

- □□e □P□□ □iles and □racy □□□di□isions □o□ld □e impro□ed □it□ a t□ird main trac□ □eginning at □□ellmo□nd on t□e □est □MP 5.20□and ending at Martine□on t□e east □MP 32.00□.

  □□is segment occ□rs □it□in DC□ for Delta smelt. D□e to t□e fact t□at t□e Pro□ects □□□ is in DC□□once t□e facility is designed□an analysis to determine if primary constit□ent elements for t□is DC□ □a□e t□e potential to □e ad□ersely modified □y t□e Pro□ect constr□ction or operations s□all □e cond□cted.

- □ do□□le trac□ □o□ld □e added on t□e □racy □□□di□ision from Martine□at MP 36 to Port C□icago at MP 41.3.

  □□is segment occ□rs □it□in DC□ for Delta smelt. D□e to t□e fact t□at t□e Pro□ects □□□ is in DC□□once t□e facility is designed□an analysis to determine if primary constit□ent elements for t□is DC□ □a□e t□e potential to □e ad□ersely modified □y t□e Pro□ect constr□ction or operations s□all □e cond□cted.

- □P □resno □□□di□ision trac□ □ill □e constr□ction along t□e entire 43.61 miles of t□e □resno □□□di□ision. □□e proposed pro□ect □o□ld eit□er install a ne□ second trac□ or □pgrade an e□isting siding to □main line trac□□stat□s if appro□ed.

  □□is segment occ□rs appro□imately □ □M □MP65□east from DC□ for Delta smelt□ 5 □M □est form DC□ for fles□y o□ls clo□er□9.5 □M □MP5□ □est of DC□ for □acramento o□ls clo□er□and 9.5 □M □MP46□from DC□ for slender orc□tt grass. □□ere □ill □e no direct impacts to any of t□ese DC□s. □□rt□er□d□e to t□e fact t□at t□e Pro□ect□s □□□ is not in close pro□imity to DC□□indirect effects are not li□ely.

□.□ □e□ional □pecial □tat□s □pecies an□ Habitats o□Concern

□pecial stat□s species are plants or animals t□at are legally protected □nder t□e federal E□□□ t□e California E□□□or ot□er reg□lations□as □ell as species considered s□fficiently rare □y t□e scientific comm□nity to □□alify for s□c□ listing. □pecial□stat□s species incl□de t□e follo□ing:

- □pecies listed or proposed for listing as t□reatened or endangered □nder t□e federal E□□ □50 C□□ 1□.12 □listed plants□□50 C□□ 1□.11 □listed animals□□and □ario□s notices in t□e *Federal Register* □proposed species□.

- □pecies t□at are candidates for possi□le f□t□re listing as t□reatened or endangered □nder t□e federal E□□ □□6 □ed. □eg. 663□0□□cto□er 26□2011□.

- □pecies listed or proposed for listing □y t□e □tate of California as t□reatened or endangered □nder t□e California E□□ □14 California Code of □eg□lations □C.C.□.□ 6□0.5□.

- □pecies t□at meet t□e definitions of □rare□ or □endangered□ □nder t□e California En□ironmental □□ality □ct □CE□□ G□idelines □ections 153□0 and 15125□.

- Plants presumed by the California Native Plant Society (CNPS) to be extinct in California (List 1) (CNPS 2012).
- Plants considered by the CNPS to be rare, threatened, or endangered in California (List 1 and 2 CNPS 2012).
- Plants listed by CNPS as plants about which more information is needed to determine their status (List 3 CNPS 2012) and which may be included as special-status species on the basis of local significance or recent biological information.
- Plants listed by CNPS as plants of limited distribution or infrequent throughout a broader area in California (List 4 CNPS 2012) these plants are not rare from a statewide perspective but are uncommon enough that they are recommended for inclusion in environmental documents.
- Plant species listed as rare under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.).
- Animal species of special concern to the CDFW (CDFG 2011).
- Bird species of conservation concern as identified by USFWS in *Birds of Conservation Concern 2008* (USFWS 2008).
- Animals that are fully protected in California (California Fish and Game Code Sections 3511 (birds) 4700 (mammals) 5050 (amphibians and reptiles) and 5515 (fish) (CDFG 2011).

3.3.1 Special-Status Plant and Animal Species Potentially Occur Along or Within the Project Assessment Areas

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Acipenser medirostris green sturgeon	None / SSC	Spawns at temperatures of 8-14 Celsius preferring large cobble substrate but can use anywhere from clean sand to bedrock.	Suitable habitat occurs within the proposed project within the San Francisco Bay/Delta area along the proposed BPWS 3rd track area between Port Chicago and Vallejo
Actinemys marmorata Western pond turtle	SSC / SSC	In aquatic fresh or brackish permanent or intermittent water bodies such as creeks and ponds.	This species occurs in the segment of the BNSF between Valley and Vallejo This species was observed at the Dow Chemical Wetlands.
Adela oplerella Opler's longhorn moth	FE / SE	Opler's longhorn moth is recorded from 18 sites extending along the west side of the San Francisco Bay from 5 miles south east of Vacaville in Marin County south to the Gilroy area of Santa Clara County and from the Vallejo area on the inner Coast Ranges. Habitat for Opler's longhorn moth consists of serpentine grassland (Federal Register 50CFR17).	Suitable habitat for this species is not present within the project site.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Agelaius tricolor Tricolored Blackbird	SSC/ SSC	Common locally throughout central California. Nests and seeks cover in emergent wetland vegetation specifically cattails and tules. Nesting area must be large enough to support a minimum colony of 50 pairs as they are a highly colonial species. Forages on ground in croplands grassy fields flooded land and edges of ponds (CDFG 2000).	Suitable nesting habitat occurs within the cattail/tule habitat within Refugio Creek adjacent to the project site and in the Chelsea Mitigation area.
Ambystoma californiense California tiger salamander	FE / ST	This species utilizes temporary rain pools and permanent waters of the grasslands and open woodlands of low hills and valleys.	Suitable habitat is most likely lacking in the Planning Area for this species as a result of the intensive agricultural and urban uses. There is no suitable habitat within the project (). Therefore the proposed project will not affect this species. This species is covered in the ECCCHCP.
Amphispiza belli belli Bell's sage sparrow	SSC/ SSC	Nests in dense stands of chemise in chaparral.	No suitable habitat occurs within the proposed ().
Amsinkia grandiflora Large-flowered fiddleneck	FE / CE	Occurs on valley and foothill grasslands and in open oak woodlands on light soils	No suitable habitat occurs within the project area of (). With the exception of wetlands areas the area of potential effect is highly disturbed. Additionally this species was not observed during any of the field surveys therefore the probability of this species occurring within the () is very small. This species is covered the ECCCHCP.
Amsinckia lunaris Bent-flowered fiddleneck	SSC/ SSC	Occurs in the inner northern coast ranges eastern central portion of Central Valley and San Francisco Bay Area. Habitat consists of grassland coastal scrub and open woodland elevations 3500 meters. Blooms March to June (CNPS 2000).	Suitable habitat for this species does not occur within the project site.
Andrena blennospermatis Blennosperma vernal pool andrenid bee	SSC/ SSC	Known occurrences in Contra Costa Sonoma Solano Yolo Sacramento San Joaquin El Dorado and Placer Counties. Habitat consists of vernal areas near vernal pools containing yellow carpet (*Blennosperma sp.*). Forages exclusively on flowering yellow carpet. This species excavates nests in soil in adjacent vernal areas (Thorp 2000).	Yellow carpet is absent from the project and the () is composed of substrate such as gravel compacted soil or heavily disturbed soil which does not provide suitable nesting habitat for this species.
Anniella pulchra pulchra Silvery legless lizard	SSC/ SSC	Prefers sandy or loose loamy soils under sparse vegetation with high moisture content.	No suitable habitat occurs within the proposed ().

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Anthicus antiochensis Antioch Dunes ant-like beetle	[illegible] / [illegible]	Known only from the Antioch Dunes.	The [illegible] does not include the Antioch Dunes. Therefore no suitable habitat occurs within the proposed [illegible]. This species is covered the ECCC HCP.
Anthicus sacramento Sacramento ant-like beetle	[illegible] / [illegible]	Restricted to sand dune areas.	The [illegible] does not include the Antioch Dunes. Therefore no suitable habitat occurs within the proposed [illegible].
Antrozous pallidus Pallid bat	[illegible] / [illegible]C	Found in deserts, grasslands, shrublands, woodlands, and forests. It is most common in open dry habitats with rocky areas for roosting. Feeds mainly in open areas on beetles and other large insects, often landing on ground to catch prey. Roosts in caves, rock crevices, and buildings. Roosts must be sufficient to protect this species from high temperatures. Pallid bat is extremely sensitive to disturbance of roosting sites (CDFG 199[illegible]).	Large culverts that pass under the railroad provide potential habitat for this species.
Apodemia mormo langei Langer's metalmark	FE / [illegible]	Occurs in the stabilized dunes along the San Joaquin River. It is endemic to the Antioch Dunes	The [illegible] does not include the Antioch Dunes. Therefore no suitable habitat occurs within the proposed [illegible].
Archoplites interruptus Sacramento Perch	[illegible]C / [illegible]	Warm water habitat in the San Joaquin River	Suitable habitat occurs within the proposed project [illegible] within the San Francisco Bay/Delta area along the proposed HP[illegible] 3rd track area between Stockton to and Oakland.
Arclea herodia Great blue heron	None / [illegible]C	Common near the shores of open water and in wetlands over most of North and Central America as well as the West Indies and the Galapagos Islands. It is a rare vagrant to Europe, with records from Spain, the Azores and England.	This species was observed within the [illegible].
Arctostaphylos auriculata Mt. Diablo Manzanita/Pallid Manzanita	None / None	Chaparral	No suitable habitat occurs within the [illegible]. Further, this species has not observed with the [illegible] during any of the field surveys.
Arctostaphylos hookeri ssp. *Montana* Mt. Tamalpais Manzanita	[illegible] / [illegible]	Known occurrences only in Marin County. Habitat consists of chaparral and valley and foothill grassland with serpentine and rocky soil, elevations 160 to 560 meters. Blooms February to April (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project site.
Arctostaphylos pallida pallid manzanita	[illegible] / FE	Known occurrences in Alameda and Contra Costa Counties. Habitat consists of broadleafed upland forest, closed cone coniferous forest, chaparral, chismontane woodland, coastal scrub, siliceous sandy or gravelly, elevations 155 to 465 meters. Blooms from December to March (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project site.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Ardea alba great egret nesting	-/-	Feeds and rests in fresh and saline emergent wetlands along the margins of estuaries lakes and slow moving streams on mudflats and salt ponds and in irrigated croplands and pastures. Nests and roosts in large trees that were removed 2009.	Suitable foraging habitat occurs within and adjacent to the project site. No suitable rookery habitat occurs within the project site. Another rookery habitat does exist in the Chelsea Mitigation area. This species was observed adjacent to the project during field surveys.
Asio flammeus short eared owl	-/ SC	This species wints in open grasslands dunes freshwater and saltwater marshes and other open country. The species nests on the ground in a grass lined depression that is often concealed in weeds or weneat shrubs. The species typically wints for small mammals during the late afternoon onwards through the night.	Suitable habitat occurs within the proposed project within the San Francisco Bay/Delta area along the proposed BP 3rd trac area between Port Chicago and Bayland This species is covered under the ECCC CP (Contra Costa County 200). The project area contains open grassland and salt marshes that represent potential nesting and foraging habitat for the species. Probability of occurrence within the is moderate.
Aster lentus Bisn Mars aster	None / None	This perennial herbaceous member of the sunflower family occurs in brackish and salt marsh habitats of the eastern Bay Area. The plants are characterized by white to purple ray flowers.	Suitable habitat occurs within the proposed project within the San Francisco Bay/Delta area along the proposed BP 3rd trac area between Port Chicago and Bayland.
Astragalus tener var. *tener* Walali mil etc	None / None	Walali playa in valley and foothill grassland and in vernal pools.	According to CDD this species may have been extirpated from the .
Astragalus tener var. *tener* alkali mil etc	-/-	Known occurrences in Alameda Contra Costa Merced Monterey Napa San Benito Santa Clara San Francisco San Joaquin Solano Sonoma Stanislaus and Yolo Counties. Found in alkali playas valley and foothill grassland in adobe clay and vernal pools at elevations from 1 to 60 meters. Blooms from March to June (CNPS 200).	Suitable habitat for this species does not occur within the project site. Pool and puddle features within the project site are distributed are on fill substrate and do not support typical vernal pool vegetation.
Athene cunicularia burrowing owl	-/ SC	In arid open fields and along berms where ground squirrel burrows occur.	Burrowing owl was observed during the field surveys. Further suitable habitat occurs within the proposed project throughout the entire project alignment.
Atriplex joaquiniana San Joaquin saltbush	-/ SC	Found in chenopod scrub alkali meadow and valley and foothill grassland.	Suitable habitat occurs within the proposed project within the Bakersfield to Stockton segment.
Atriplex minuscule lesser saltscale	-/-	Found in chenopod scrub alkali meadow and valley and foothill grassland.	No suitable habitat occurs within the proposed .

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Balsamorhiza macrolepis var. *macrolepis* Big-scale Balsamroot	[illegible] / [illegible]	Occurs in Sacramento Valley, Sierra Nevada foothills, and San Francisco Bay Area. Habitat consists of chaparral, cismontane woodland, and open grassy slopes and valleys, sometimes in serpentine soil, elevations 90 to 1400 meters. Blooms from March to June (CNPS 2001).	Suitable habitat for this species does not occur within the Project [illegible].
Blennosperma bakeri Sonoma sunshine	SE / SE	Known occurrences only in Sonoma County. Found in wetland areas in grassland and in vernal pools, elevations 10 to 110 meters. Blooms from March to May (CNPS 2001).	Suitable habitat for this species does not occur within the Project [illegible]. Pool and puddle features within the project site are disturbed, are on fill substrate, and do not support typical vernal pool vegetation.
Blepharizonia plumosa ssp. *plumosa* Big tarplant	None / None	Known occurrences in Alameda, Contra Costa, Western Monterey, San Benito, San Joaquin, San Luis Obispo, Solano, and Stanislaus counties. Found in dry valley and foothill grassland, elevations 30 to 505 meters. Blooms from July to October (CNPS 2001).	This species is known to occur in the vicinity of the proposed project. There is suitable habitat adjacent to the [illegible]. The likelihood of this species being impacted by this project is low to moderate.
Branchinecta conservatio Conservancy fairy shrimp	Endangered / None	This species is endemic to grasslands of the northern 2/3 of the central valley and is found in large, turbid pools.	No suitable habitat occurs within the proposed Project [illegible].
Branchinecta longiantenna Longhorned fairy shrimp	Endangered / None	Inhabits seasonally ponded grassland vernal pools and is endemic to the eastern margin of the central coast mountains.	No suitable habitat occurs within the proposed Project [illegible].
Branchinecta lynchi Vernal pool fairy shrimp	Threatened / None	Found in vernal pools and small pond habitat.	Suitable habitat is unlikely within the proposed Project [illegible]. Once a project footprint and design is available, focused surveys should be conducted to determine if suitable habitat exists within the [illegible]PE.
Branchinecta mesovallensis Mid-valley fairy shrimp	[illegible]C / None	This species is endemic to grasslands of the northern 2/3 of the central valley and is found in large, turbid pools.	Suitable habitat is unlikely within the proposed Project [illegible]. Once a project footprint and design is available, focused surveys should be conducted to determine if suitable habitat exists within the [illegible]PE.
Branta hutchinsii leucopareia Cackling [illegible] Canada goose	[illegible]D / [illegible]	Winters in the Sacramento and northern San Joaquin Valleys. Roosts on ponds or open ground. Often found on marshes, grassland, or agricultural fields [illegible] (Ratcliffe 2009).	Suitable habitat for this species is not present within the project [illegible].
Buteo regalis Ferruginous hawk	None / [illegible]C	Inhabits open grasslands, sage, [illegible] flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats.	There are roosting and nesting sites adjacent to the proposed project.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Buteo swainsoni Swainson's Hawk	None/ None	Typical habitat of the Swainson's Hawk is open desert, sparse shrub lands, grassland, or cropland containing scattered large trees or small groves. In California's Central Valley, the nests are typically at the edge of a narrow band of riparian vegetation, in isolated oak woodland, and in lone trees, roadside trees, or farmyard trees, as well as in adjacent urban residential areas (England et al. 1995). Forages in grasslands, suitable grain or alfalfa fields, or livestock pastures adjacent to nesting habitat. Nests on large trees in open areas (CDFG 2006).	Suitable habitat for this species does not occur within the project area.
California macrophylla round-leaved filaree	None/ None	Found in California's Central Coast and Central Valley, southern California, Baja California, and in Oregon. Habitat consists of cismontane woodland and valley and foothill grassland with clay soils, elevations 15 to 1,200 meters. Blooms from March to May (CNPS 2001).	Suitable habitat for this species does not occur within the project area.
Calochortus pulchellus Mt. Diablo fairy lantern	None/ None	Known occurrences in Contra Costa and Solano Counties. Habitat consists of chaparral, woodland and grassland, often in adobe soil, elevations 30 to 340 meters. Blooms from April to June (CNPS 2001).	Suitable habitat for this species does not occur within the project area.
Calochortus tiburonensis Tiburon mariposa lily	None / None	Known occurrences only in Marin county. Habitat consists of valley and foothill grassland with serpentine soil, elevations 50 to 150 meters. Blooms from March to June (CNPS 2001).	Suitable habitat for this species does not occur within the project area.
Calystegia purpurata ssp. *saxicola* coastal bluff morning glory	None/ None	Known occurrences in Mendocino, Marin, and Sonoma counties. Habitat consists of coastal dunes, coastal scrub, elevation 15 to 105 meters. Blooms from May to August (CNPS 2001).	Suitable habitat for this species does not occur within the project area.
Castilleja affinis ssp. *neglecta* Tiburon paintbrush	None E / None	Known occurrences in Marin, Napa, and Santa Clara Counties. None from six occurrences. Found in serpentine valley and foothill grasslands at elevations from 60 to 400 meters. Blooms from April to June (CNPS 2001).	Suitable habitat for this species does not occur within the project area.
Ceanothus purpureus holly-leaved ceanothus	None/ None	Known occurrences within Napa, Solano, and Sonoma Counties. This species is known to occur within chaparral habitats, elevations from 120 to 640 meters. Blooms from February to June (CNPS 2001).	Suitable habitat for this species does not occur within the project area.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Centromadia parryi ssp. *congdonii* Congdon's tarplant	[illegible]/ [illegible]	Known occurrences in Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, and Solano counties. Found in alkaline valley and foothill grassland, elevations from 1 to 230 meters. Blooms from May to November (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project [illegible].
Centromadia parryi ssp. *parryi* pappose tarplant	[illegible]/ [illegible]	Occurs in the southern Sacramento Valley, southern Inner Coast Ranges, and San Francisco Bay Area. Habitat consists of coastal grassland and alkaline grassland or marsh, elevations from 2 to 420 meters. Blooms from May to November (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project [illegible].
Charadrius alexandrinus nivosus Western snowy plover	[illegible] / [illegible]C	The Western snowy plover in general nests, feeds, and takes cover on sandy or gravelly beaches along the coast, on estuarine salt ponds, alkali lakes, and at the Salton Sea. On the Pacific coast, it nests on barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt evaporation ponds. In California, most of the breeding activity occurs on dune-backed beaches, barrier beaches, and salt evaporation ponds and it infrequently occurs on bluff-backed beaches.	No suitable habitat occurs within the proposed [illegible].
Charadrius montanus mountain plover	Proposed [illegible]reatened / [illegible]C	Found in short grass plains, low rolling grassy hills, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms.	This species was not observed during any of the field surveys. There is no suitable habitat within the railroad alignment. There are [illegible] plowed agriculture fields adjacent to the railroad right-of-way. Although it is unlikely the proposed project will affect this species, construction staging areas should be checked prior to construction to insure no nests are disturbed.
Cicuta maculate var. *bolanderi* Bolander's water-hemlock, *bolanderi*	[illegible]/ [illegible]	Known occurrences in Contra Costa, Los Angeles, Marin, Sacramento, Santa Barbara, San Luis Obispo, and Solano counties. Current distribution in the San Francisco Estuary is limited to the Suisun Bay. Habitat consists of coastal marshes and swamps with fresh or brackish water, elevations from 0 to 200 meters. Blooms from July to September (Goals Project 2000, CNPS 200[illegible]).	The project [illegible] is outside the known range for this species.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Circus cyaneus northern harrier	none/ none SC	Permanent residents of the northeastern plateau and coastal areas and are less common residents of the Central Valley. Habitat consists of coastal scrub, Great Basin grassland, marshes and swamp, coastal and freshwater, riparian scrub, valley and foothill grassland, and wetlands. Nests on the ground, usually in tall, dense clumps of vegetation, either alone or in loose colonies. Occurs from annual grassland up to lodgepole pine and alpine meadow habitats, as high as 3000 meters (CDFG 2000).	Marginal nesting habitat occurs in the upper margins of marshes on Hercules Point, adjacent to the project site. Suitable nesting habitat is present in the Chelsea Mitigation site.
Cirsium andrewsii franciscan thistle	none/ none	Known populations in Contra Costa, Marin, San Francisco, and San Mateo counties. Habitat consists of broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub/mesic, sometimes with serpentine soils, elevations 0 to 135 meters. Blooms from March to July (CNPS 2000).	Suitable habitat for this species does not occur within the project site.
Cirsium crassicaule slough thistle	None / None	Grows in Chenopod scrub, marshes, swamps and riparian scrub. Endemic to the San Joaquin Valley.	No suitable habitat occurs within the proposed Project site. Further, none was observed during the field visit. Therefore the proposed project is not likely to affect this species.
Coelus gracillis San Joaquin dune beetle	SC/ None	The species occurs in the dune habitat.	No suitable habitat occurs within the proposed Project site.
Cordylanthus maritimus ssp. *palustris* Point Reyes bird's beak	none/ none	Known populations in Alameda, Sacramento, Solano, Marin, Santa Clara, San Mateo and Sonoma counties. Habitat consists of marshes and swamps (coastal salt), elevations 0 to 10 meters. Blooms from June to October (CNPS 2000).	Suitable habitat for this species occurs within the tidal marsh habitat within the project site.
Cordylanthus mollis ssp. *mollis* soft bird's beak	FE / SE	Known populations in Contra Costa, Marin, Napa, Sacramento, Solano, and Sonoma counties. Habitat consists of coastal salt marshes and swamps, elevations 0 to 3 meters. Blooms July to November (CNPS 2000).	Suitable habitat for this species occurs within the tidal marsh habitat within the project site. Critical habitat for this species occurs approximately 3 miles southwest on the Point Pinole shoreline.
Cordylanthus palmatus palmate-bracted bird's beak	FE / FE	Grows in chenopod scrub, alkaline valley and foothill grasslands usually on alkaline pescadero silty clay.	No suitable habitat occurs within the proposed Project site.
Danaus plexippus monarch butterfly	none/ none	Monarch butterflies winter in central Mexico in coastal Monterey pine-Monterey cypress-eucalyptus and fir forest. This species migrates to the United States and Canada during spring/summer. Caterpillars feed almost exclusively on milkweed (*Asclepias* sp.) (Lane 1999).	While this species may use the project site for dispersal and collection of nectar, the host plant for this species was not detected within the project site during field surveys. Suitable reproductive habitat does not occur within the site.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Delphinium californicum ssp. interius Interior California larkspur or Hospital Canyon larkspur	None / None	Found in openings and canyons of cismontane woodland and chaparral and in wet meadows.	No suitable habitat occurs within the proposed Project.
Delphinum gysophilum ssp. gypsophilum gypsum loving larkspur	None / None	Grows in chenopod scrub and alkaline and foothill grassland.	No suitable habitat occurs within the proposed Project.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	Threatened / None	This beetle is associated with elderberry trees (Sambucus spp.) in California's Central Valley during its entire life cycle. The adults emerge from pupation inside the wood of these trees in the spring as their flowers begin to open. The adults eat the elderberry foliage until about June when they mate. Upon hatching the larvae they begin to tunnel into the tree where they will spend 1-2 years eating the interior wood which is their sole food source.	No elderberry plants were observed within the proposed Project. Therefore the probability of this species being affected by this project is very low. However, because elderberry plants could grow within the Project over the next 20 years once a project footprint and design are available a focused survey should be conducted to determine if any elderberry have occupied this area.
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	[illegible] / [illegible]	Prefers arid or semi-arid habitats with short grasses and open patches of bare ground. Highly adapted to arid conditions and rarely needs to drink water [illegible] at [illegible] 2009.	Habitat for this species is not present within the project Project.
Dipodomys heermanni dixoni Merced kangaroo rat	None / None	Lives in grassland and savanna communities with fine deep well drained soil for burrowing.	No suitable habitat occurs within the proposed Project Project.
Dirca occidentalis Western leatherwood	[illegible] / [illegible]	Known occurrences in Alameda Contra Costa Marin Santa Clara San Mateo and Sonoma counties. Habitat consists of broadleafed upland forest closed cone coniferous forest chaparral cismontane woodland North Coast coniferous forest riparian forest riparian woodland with mesic soils elevations 50 to 395 meters. Blooms from January to March (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project Project.
Downingia pusilla dwarf downingia	[illegible] / [illegible]	Known populations from Fresno Merced Mariposa Napa Placer Sacramento San Joaquin Solano Sonoma Stanislaus Tehama and Yolo counties. Habitat consists of valley and foothill grassland mesic vernal pools elevation 1 to 445 meters. Blooms from March to May (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project Project. Pool and puddle features within the project [illegible] are distributed are on fill substrate and do not support typical vernal pool vegetation.
Efferia antiochi Antioch Efferian robberfly	[illegible]C / None	Known only from the Antioch Dunes and Fresno	No suitable habitat occurs within the [illegible]. Therefore the proposed project will not impact this species.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Egretta thula snowy egret nesting	□□/ □□	Rookery sites occur near marsh/tidal flats, lakes, rivers/streams and wet meadows. Prefers shallow water for foraging including salt marsh pools, tidal channels, shallow bays, grassy ponds and marshes and flooded rice fields (Watershed 2009).	Suitable foraging habitat occurs within and adjacent to the project area. However no suitable rookery habitat occurs within the project site. This species was observed adjacent to the project site during field surveys.
Elanus leucurus White-tailed Kite	□□C/ None	This species inhabits areas of tall dense grasses, shrubs, farmlands and open country. The species mainly feeds on rodents and insects. Nests are typically built in tall trees near a water source. These birds forage in grasslands and grain fields adjacent to [illegible] alignment.	General individuals of this species were observed near the grassland berms around the perimeter of the Pittsburg Standard Oil Converter Station site during the survey and foraging behavior was observed. Suitable nesting habitat occurs within the willow riparian habitat within the project area. Species frequently occurs in the Chelsea Mitigation area and suitable nesting habitat is present as well.
Empidonax trailii little willow flycatcher	None / Endangered	Found in extensive thickets of low dense willows on the edge of wet meadows, ponds or backwaters.	Suitable habitat occurs within the proposed Project area. Once a project footprint and design is available, focused surveys should be conducted to determine if suitable habitat exists within the APE.
Eriogonum luteolum var. *caninum* Diablo buckwheat	□□/ □□	Known occurrences in Alameda, Colusa, Lake, Marin, Napa, Santa Clara, San Mateo, Solano and Sonoma Counties. Found in areas with serpentine soil. Found in chaparral, coastal prairie, and valley and foothill grassland at elevations from 10 to 500 meters. Blooms from June to September (CNPS 200).	Suitable habitat for this species does not occur within the project area.
Eriogonum truncatum Mt. Diablo buckwheat	None / None	The species is only known to live on Mount Diablo in Contra Costa County, California.	The proposed project does not occur within close proximity to the only known location. Further, this species was not observed during any of the field surveys, and the probability of occurrence is zero.
Erodium macrophyllum Round-leafed filaree	None / None	This annual herbaceous member of the geranium family (Geraniaceae) is known to occur in woodlands and grasslands, often on clay. The species is characterized by having undivided basal, usually lobed leaves with white petals that are sometimes tinged red to purple.	The species was historically known from the Antioch Dunes, approximately 2.3 miles east of the project area. Suitable habitat is unlikely within the proposed Project area. Once a project foot print and design is available, focused surveys should be conducted to determine if suitable habitat exists within the [illegible]

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Eryngium racemosum delta button celery / coyote thistle	None / Endangered	Found on seasonally inundated clay based floodplains.	Possible extirpated from this study's focal area according to the CDDB.
Erysimum capitatum ssp *angustatum* Contra Costa wallflower	Endangered / Endangered	Occurs on stabilized dunes near Antioch along the San Joaquin River.	No suitable habitat occurs within the project area. Therefore the proposed project will not impact this species.
Eschscholzia rhombipetala Diamond-petaled California Poppy	2C / None	This species occurs very rarely on alkaline clay soils in open grasslands and fallow fields and is an annual member of the poppy family (Papaveraceae). The species is characterized by having a barrel shaped receptacle with no rim and small yellow petals less than 1.5 centimeter. This species was presumed extinct until being rediscovered in 1992 on the Carrizo Plain. The occurrence from the Antioch Dunes 2.3 miles east of the Project area is considered extirpated.	There is no suitable habitat within the proposed project area.
Eucyclogobius newberryi tidewater goby	FE / SSC	Habitat consist of semi-closed estuaries or lagoons of small coastal streams that are low in salinity ranges from San Diego to Humboldt County. Tidewater gobies are rare in San Francisco Bay but nearby populations are located in coastal Gregorio Creek and Pescadero Creek in San Mateo County. In 19[illegible]0 tidewater goby were found at the mouth of Novato Creek of San Pablo Bay [illegible] wetlands and water resources Inc 200[illegible]	While this species may have historically occurred within the project vicinity it has not been detected since the 1950s and is not expected to occur within the project area.
Eumops perotis californicus Greater western mastiff bat	2C / SSC	Uncommon resident that typically uses crevices in cliffs big buildings trees and tunnels for roosting.	Suitable habitat occurs within the proposed Project area between Walley and Walland and also between Stockton and Sacramento. Once a project footprint and design is available focused surveys should be conducted to determine if suitable habitat exists within the area [illegible] PE.
Falco peregrinus anatum American peregrine falcon	FD / DFP	Active nesting sites known along the coast north of Santa Barbara and other mountains in northern California. Breeds mostly in woodland forest and coastal habitats. Breeds near water on big cliffs or banks and will nest on man-made structures [illegible] at re-[illegible]e 2009.	No nesting or foraging habitat for this species is present within the project area. Suitable foraging habitat for this species occurs in San Pablo Bay but does not occur within the project area.
Fritillaria agrestis stinkbells	None / None	Occurs in valley and foothill grasslands and oak woodlands on clay flats	Suitable habitat is unlikely within the proposed Project area. Once a project foot print and design is available focused surveys should be conducted to determine if suitable habitat exists within the area

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Fritillaria liliacea fragrant fritillary	□□/ □□	Known populations in Alameda, Contra Costa, Monterey, Marin, San Benito, Santa Clara, San Francisco, San Mateo, Solano, and Sonoma counties. Habitat consists of cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland, often in serpentine soils, elevations 3 to 410 meters. Blooms from February to April (CNPS 2001).	Suitable habitat for this species does not occur within the project area. Pool and puddle features within the project area are distributed are on fill substrate, and do not support typical vernal pool vegetation.
Geothlypis trichas sinuosa saltmarsh common yellowthroat	□□/ □□	Breeding range bounded by Tomales Bay on the northwest, Carquinez Strait on the east, and Santa Cruz County to southwest. occurrences in the Bay Area during migration and winter. Occurs in salt marshes. Nests just above ground or over water in thick herbaceous vegetation, often at base of shrubs or sapling, sometimes higher in weeds or shrubs up to about 1 meter (CDFG 2001).	Suitable habitat for this species occurs within the tidal marsh habitat within the project area and in the Chelsea Mitigation area.
Haliaeetus leucocephalus Bald eagle	FD / SE	Found near ocean shorelines, lakes, reservoirs, river systems, and coastal wetlands. Usually less than 2 km to water that offers foraging opportunities. Suitable foraging habitat consists of large bodies of water or rivers with abundant fish and adjacent perching sites such as snags or large trees (CDFG 1999).	Suitable habitat for this species does not occur within the project area.
Helianthella castanea Diablo helianthella	□□/ □□	Known occurrences from Alameda, Contra Costa, Marin, San Diego, San Francisco, and San Mateo counties. Habitat consists of closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub/rocky, elevations 15 to 490 meters. Blooms from March to July (CNPS 2001).	Suitable habitat for this species does not occur within the project area.
Helminthoglypta nickliniana bridgesi Bridges coast range shoulderband	□□/ □□	In habitats open hillsides of Alameda and Contra Costa counties. Habitat consists of rock piles and under grass in grass areas that were were 2009 and under tall weeds.	Suitable habitat for this species does not occur within the project area.
Hemizonia congesta ssp. congesta pale yellow hayfield tarplant	□□/ □□	Known occurrences from Mendocino, Marin, and San Francisco counties. Habitat consists of valley and foothill grassland and sometimes roadsides, elevations 20 to 560 meters. Blooms from April to November (CNPS 2001).	Suitable habitat for this species does not occur within the project area.
Hesperolinon congestum Marin western flax	□□ / □□	Known occurrences from Marin, San Francisco, and San Mateo counties. Habitat consists of chaparral and valley and foothill grassland with serpentine soils, elevations 5 to 300 meters. Blooms from April to July (CNPS 2001).	Suitable habitat for this species does not occur within the project area.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Hibiscus lasiocarpus California hibiscus	None / None	Occurs on freshwater riverbanks and low pest islands in sloughs.	Suitable habitat occurs within the proposed Project Area. Once a project footprint and design is available focused surveys should be conducted to determine if suitable habitat exists within the Area.
Hoita strobilina Loma Prieta hoita	None/ None	Known occurrences in Alameda, Contra Costa, Santa Clara, and Santa Cruz counties. Habitat consists of chaparral, cismontane woodland, and riparian woodland, usually with serpentinite, mesic soils. Elevations 30 to 460 meters. Blooms from May to October (CNPS 2009).	Suitable habitat for this species does not occur within the project Area.
Holocarpha macradenia Santa Cruz tarplant	FT / SE	Known occurrences in Alameda, Contra Costa, Monterey, Marin, Santa Cruz, and Sonoma counties. Habitat consists of coastal prairie, coastal scrub, and valley and foothill grassland, often in sandy clay soils, elevations 10 to 220 meters. Blooms from June to October (CNPS 2009).	Suitable habitat for this species does not occur within the project Area.
Hydroprogne caspia Caspian tern	None/ None	Breeds in scattered colonies along the coast and prefers sandy or pebbly shores of lakes and large rivers and along the coast (Watbreeder 2009).	Suitable habitat for this species does not occur within the project Area, due to site high distribance.
Hypomesus transpacificus Delta smelt	FT / SE	Delta smelt are tolerant of a wide salinity range. They have been collected from estuarine waters up to 14 ppt (parts per thousand salinity). For a large part of their one-year life span, delta smelt live along the freshwater edge of the mixing zone (salt-water/freshwater interface where the salinity is approximately 2 ppt. Shortly before spawning, adults migrate upstream from the brackish water habitat associated with the mixing zone and disperse into river channels and tidally influenced backwater sloughs. They spawn in shallow freshwater or slightly brackish water upstream of the mixing zone. Most spawning happens in tidally influenced backwater sloughs and channel edge waters. Although spawning has not been observed in the wild, the eggs are thought to attach to substrates such as cattails, tules, tree roots and submerged branches. Delta smelt are found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties (Wang 1995).	This species may occur within San Pablo Bay. Refugio Creek does not represent suitable habitat for this species. Delta smelt generally occur in open surface waters and shoal areas (Wang 1996c) and do not associate strongly with structure (Wang 2009). The majority of their one-year life span, delta smelt in these areas within the Western Delta and Suisun Bay characterized by salinities of approximately 2 ppt. During periods of high river flow into the estuary, delta smelt distribution can transiently extend as far west as the Napa River and San Pablo Bay (Wang 2009). However, because free-swimming life stages of delta smelt mainly occupy offshore waters (Wang 2009), delta smelt are unlikely to occur in the Action Area.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Idiostatus middlekaufi Middle Canyon shield-back katydid	None / None	Known only from the Santiago Hills and Fresno	No suitable habitat occurs within the project area. Therefore the proposed project will not impact this species.
Lampetra ayresi River lamprey	SSC / CDFG	Occurs in coastal streams from San Francisco Bay to Alaska (Moyle 2002). Adults migrate back into freshwater through San Pablo Bay during the fall and spawn from April to June in small tributary streams (Wang 1986, CDM and the Bay Institute of San Francisco 2000). Francisco and San Pablo Bays serve as migration corridors for anadromous fish species as they migrate to and from the ocean and upstream spawning grounds in rivers and streams.	This species may occur within San Pablo Bay. Refugio Creek does not represent suitable habitat for this species.
Lampetra hubbsi Kern brook lamprey	None / None	Open freshwater rivers.	Potential habitat for this species occurs within [illegible]. Once a project foot print and design is available focused surveys should be conducted to determine if suitable habitat exists within the [illegible]
Lampetra tridentate Pacific lamprey	None / None	Open marine waters.	No suitable habitat occurs within the proposed [illegible].
Lasiurus cinereus Hoary bat	[illegible] / [illegible]	Prefers open habitats or habitat mosaics with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Preferred sites are hidden from above with few branches below and have ground cover of low reflectivity. Females and young tend to roost at higher sites in trees. Needs primarily on moths and requires water (Waters 2009).	While only large trees within the willow riparian habitat type on site may provide potential habitat for this species.
Lasthenia conjugens Contra Costa goldfields	FE / [illegible]	Occurs on the Northern Central and North Coast San Francisco Bay and southern Sacramento Valley. Habitat consists of vernal pools woodland grassland and alkaline playas generally in wet areas elevations 0 to 400 meters. Blooms from March to June (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project site. Pool and puddle features within the project [illegible] are disturbed are on fill substrate and do not support typical vernal pool vegetation.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Laterallus jamaicensis coturniculus California black rail	[illegible]/ [illegible]	In coastal California during breeding season presently found at Bodega Bay Tomales Bay Novolinas Lagoon San Francisco Bay estuary and Morro Bay. Overwhelming majority of birds in n. San Francisco Bay San Pablo Bay at relatively few sites. Occurs irregularly south to Baja California. Inland in small numbers in Salton Trough and on lower Colorado River from Bill Williams River historically to Laguna Dam. Nests in high portions of salt marshes shallow freshwater marshes wet meadows and flooded grassy vegetation. Uses sites with shallower water than other North American rails. Most breeding areas vegetated by fine stemmed emergent plants rushes grasses or sedges. Sites used in coastal California characterized by taller vegetation greater coverage and height of alkali heat *Frankenia grandifolia* Natureserve 2009.	Marginal habitat for this species occurs within the tidal marsh habitats within the project [illegible]. However these habitats are likely too small and patchy to support a breeding population. The Chelsea Mitigation site provides marginal habitat for the species However the species has been documented in the picklweed tidal marsh near this area.
Lathyrus jepsonii var. *jepsonii*	[illegible]/ [illegible]	Documented occurrences within Alameda Contra Costa Solano Sacramento Napa Santa Clara and San Joaquin counties. Current distribution is in [illegible] Marsh and tidal brackish marshes along Napa River Petaluma Slough. Habitat consists of marshes and swamps freshwater and brackish. Found at elevations below 100 feet. Blooms from May to September Goals Project 2000 CNPS 200[illegible].	Suitable habitat for this species does not occur within the project [illegible].
Legenere limosa False eyes looking glass	[illegible]/ [illegible]	Known occurrences in Lake Napa Placer Sacramento Yolo Stanislaus and Tehama counties. Habitat consists of vernal pools elevation 1 to [illegible]0 meters. Blooms from April to June CNPS 200[illegible].	Suitable habitat for this species does not occur within the project [illegible]. Pool and puddle features within the project site are disturbed are on fill substrate and do not support typical vernal pool vegetation.
Lepidurus packardi Vernal pool tadpole shrimp	Endangered / None	Vernal Pool small pond habitat	Potential habitat for this species occurs between Bakersfield and Sacramento. Once a project footprint and design is available focused surveys should be conducted to determine if suitable habitat exists within the [illegible].
Lilaeopsis masonii Mason's lilaeopsis	[illegible]/ [illegible]	Grows in muddy or silty soil formed through river deposition or erosion in freshwater and brackish marshes and riparian scrub.	Potential habitat for this species occurs between Valley and Upland. Once a project footprint and design is available focused surveys should be conducted to determine if suitable habitat exists within the [illegible].

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Limosella subulata Delta Mudwort	None / None	This perennial herbaceous member of the figwort family (Scrophulariaceae) occurs in saltwater marshes and along shorelines.	The species is known from the immediate Project vicinity along the shores and sloughs adjacent of the Delta. Once a project footprint and design is available focused surveys should be conducted to determine if suitable habitat exists within the [illegible].
Limnanthes vinculans Sebastopol meadowfoam	FE / CE	Known occurrences in Napa and Sonoma counties. Found in meadows seeps valley and foothill grassland and vernal pools usually in vernally mesic areas elevations 15 to 305 meters. Blooms from April to May (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project [illegible]. Pool and puddle features within the project site are disturbed are on fill substrate and do not support typical vernal pool vegetation.
Lytta molesta molestan blister beetle	None / None	Common in dry vernal pools.	Potential habitat for this species occurs between Bakersfield and Sacramento. Once a project footprint and design is available focused surveys should be conducted to determine if suitable habitat exists within the [illegible].
Masticophis flagellum ruddocki San Joaquin whipsnake	None / [illegible]C	Found in San Joaquin Valley in open dry valley grassland and saltbush scrub with little or no tree cover. Needs mammal burrows for refuge and oviposition sites.	This species was not observed during any of the field surveys and due to the distances along the railroad right of way the probability of occurrence is low.
Masticophis lateralis euryxanthus Alameda whipsnake	[illegible] / [illegible]	Occurs within the inner Coast Range in western and central Contra Costa and Alameda counties. Habitats include herbaceous grassland chaparral/scrub land and rocky canyons with waterco[illegible]rses [illegible] 2005[illegible].	Suitable habitat for this species is not present within the project [illegible].
Meconella oregano Oregon meconella	[illegible] / [illegible]	Known occurrences in Contra Costa and Santa Clara counties and in Oregon and Washington. Habitat consists of coastal prairie and coastal scrub elevations 250 to 620 meters. Blooms from March to April (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project [illegible].
Melospiza melodia maxillaries Suisun song sparrow	[illegible] / [illegible]C	Occurs in brackish estuarine marshes at or near sea level in Suisun Bay from the vicinity of the confluence of the Sacramento and San Joaquin rivers west to the Carquinez Straits (CDFG 200[illegible]).	The project [illegible] is not within the range of this species.
Melospiza melodia pusillula Alameda song sparrow	[illegible] / [illegible]C	Known to occur in areas bordering southern and eastern fringes of San Francisco Bay. Commonly found in saltmarsh[illegible] brackish marsh[illegible] and fringe areas[illegible] where marsh vegetation is limited to edges of dikes landfills or other margins of high ground bordering salt or brackish water areas (CDFG 200[illegible]).	The project [illegible] is not within the range of this species[illegible] however it is known to nest in areas adjacent to the Celsea Mitigation area.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Melospiza melodia samuelis San Pablo song sparrow	[illegible]/ [illegible]C	Distributed in marshes around San Pablo Bay continuously from Gallinas Creek in the West along the northern San Pablo Bayshore and through out the extensive marshes along the Petaluma [illegible]onoma and Napa rivers. Commonly found in saltmarsh [illegible]rackish marsh [illegible]salt marsh [illegible]altered [illegible]rackish marsh [illegible]altered [illegible] and fringe areas [illegible]ere marsh vegetation is limited to edges of dikes landfills or other margins of high ground bordering salt or brackish water areas (CDFG 200[illegible]).	Suitable habitat for this species occurs within the project [illegible]. This species was observed within the project site during field surveys.
Microtus californicus sanpabloensis San Pablo vole	[illegible]/ [illegible]C	All known occurrences are in Contra Costa County in the salt marshes of San Pablo creek [illegible]on the south shore of San Pablo Bay. Habitat consists of grassy habitats associated with salt marshes (CDFG 199[illegible]).	Limited habitat for this species occurs within the coastal tidal marsh habitat within the project [illegible].
Monardella villosa ssp. *globosa* robust monardella	[illegible]/ [illegible]	Occurs within the outer North Coast Ranges and San Francisco Bay Area. Habitat consists of oak woodland chaparral coastal scrub grassland and openings in woodland and chaparral elevations 100 to 915 meters. Blooms from June to July (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project [illegible].
Myotis ciliolabrum [illegible]s[illegible]lat[illegible]s small-footed myotis bat	None / None	This species ranges across the Western half of North America from British Columbia [illegible]lberta and Saskatchewan in Canada through out most of the United States West of the 100th Meridian and into central Mexico. They occur in deserts chaparral riparian zones and Western coniferous forest it is most common above pinyon [illegible]niper forest.	Potential habitat for this species occurs along the project [illegible]. Once a project foot print and design are available focused surveys should be conducted to determine if suitable habitat exists within the [illegible].
Myotis evotis long-eared myotis bat	None / None	Prefers coniferous forests but is found in all [illegible]s [illegible]oodland and forest habitat from sea level to 9000 feet. Nursery roosts are located in buildings crevices spaces under bark and snags. Caves are used primarily as night roosts.	No suitable habitat occurs within the proposed Project [illegible].
Myotis thysanodes fringed myotis bat	None / None	Prefers pinyon [illegible]niper [illegible]alley and foothill hardwood and hardwood conifer habitat but is found in a wide variety of habitats.	No suitable habitat occurs within the proposed Project [illegible].
Myotis volans long-legged myotis bat	None / None	Trees are used as day roosts while caves and mines are used as night roosts.	No suitable habitat occurs within the proposed Project [illegible].
Myotis yumanensis [illegible]ma myotis bat	None / None	Found in open forests and woodlands with water bodies for foraging.	Potential habitat for this species occurs between Stockton and Sacramento. Once a project footprint and design is available focused surveys should be conducted to determine if suitable habitat exists within the [illegible].

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Neotoma fuscipes riparia San Joaquin Valley Woodrat	Endangered / SSC	Found in riparian areas with a mix of grass and trees. Nesting sites are located in trees snags and logs.	Potential habitat for this species occurs between Hanley and Haland and between Bakersfield and Sacramento. Once a project footprint and design is available focused surveys should be conducted to determine if suitable habitat exists within the [illegible].
Nycticorax nycticorax Black crowned night heron nesting	[illegible]/ [illegible]	Nearlong residents in lowlands and foothills throughout most of California including the Salton Sea and Colorado River areas. Habitat consists of marshes and swamps riparian forest riparian woodlands and wetlands. Colonial nester usually in trees occasionally in tule patches. Rookery sites located adjacent to foraging areas [illegible] at Reference 2009.	Suitable foraging habitat occurs within and adjacent to the project [illegible] however no nesting habitat occurs within the project [illegible].
Nyctinomops macrotis Big free tailed bat	[illegible]/ SSC	This species is rare in California and probably does not breed in California. Prefers rugged rocky terrain. Found up to 2500 meters in New Mexico southern Arizona and Texas. Roosts in buildings caves and occasionally in holes in trees. Also roosts in crevices in big cliffs or rock outcrop CDFG 199[illegible]	Suitable habitat for this species is not present within the project [illegible].
Oncorhynchus kisutch Central Valley steelhead	Endangered / SSC	Coho spend approximately the first half of their life cycle rearing and feeding in streams and small freshwater tributaries. Spawning habitat is small streams with stable gravel substrates. The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean.	No suitable habitat occurs within the proposed Project [illegible].
Oncorhynchus tshawytscha winter run chinook salmon	Candidate / SSC	Open water river habitat.	Potential habitat for this species occurs between Hanley and Haland. Once a project foot print and design is available focused surveys should be conducted to determine if suitable habitat exists within the PE
Oncorhynchus tshawytscha Central Valley fall/late fall run Chinook salmon	[illegible]/ SSC	Chinook salmon spawn in rivers and streams with cool clear water and suitable substrate. The Central Valley fall and late fall run Chinook salmon ESU includes all naturally spawned populations of fall and late fall run Chinook salmon in the Sacramento and San Joaquin River basins and their tributaries east of Carquinez Strait in California [illegible] Fisheries Website 2009. The San Francisco and San Pablo Bays serve as migration corridors for anadromous fish species as they migrate to and from the ocean and upstream spawning grounds in rivers and streams.	This species may occur within San Pablo Bay. Refugio Creek does not represent suitable habitat for this species.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Pandion haliaetus osprey	[illegible] / [illegible]	Breeds from Cascade Ranges south to lake habitat and along the North Coast Ranges south to Marin County. Associated strictly with large fish-bearing waters primarily in ponderosa pine throughout mixed conifer habitats. Uses large trees snags and dead-topped trees in open forest habitats for cover and nesting. Requires open clear waters for foraging such as rivers lakes reservoirs bays estuaries and surf zones [illegible] at reference 2009.	Suitable foraging habitat occurs within and adjacent to the project [illegible] However no nesting habitat occurs within the project site and Chelsea Mitigation area. An osprey was observed adjacent to the project site during field surveys and is frequently observed in the Chelsea Mitigation area.
Pelecanus occidentalis californicus California brown pelican	FE / SD	Occurs in estuarine marine subtidal and marine pelagic waters along the California coast. Nests on coastal islands of small to moderate size [illegible] afford immunity from attack by ground dwelling predators. Usually rests on water or inaccessible rocks either offshore or on mainland [illegible] also uses mudflats sandy beaches [illegible] harbors and jetties [illegible] 200 [illegible].	The project [illegible] is not within the breeding range of this species. Suitable foraging habitat for this species occurs in the deeper parts of the San Pablo Bay [illegible] but does not occur within or adjacent to the project [illegible].
Pentachaeta bellidiflora Bryan's pentachaeta	FE / SE	Known occurrences in Marin Santa Cruz and San Mateo counties. Habitat consists of cismontane woodland and valley and foothill grassland often with serpentine soils elevations 35 to 620 meters. Blooms from March to May (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project [illegible].
Perognathus inornatus San Joaquin pocket mouse	None / None	Requires friable soils in grasslands and the oak savannas.	No suitable habitat occurs within the proposed Project [illegible].
Phalacrocorax auritus double-crested cormorant (nesting)	[illegible] / [illegible]	Resides along the coast of California and on inland lakes in fresh salt and estuarine waters. Colonial nester on coastal cliffs offshore islands and along large margins in the interior of the state. Prefers water less than 9 meters deep with rocky or gravel bottom. Roosts beside water on offshore rocks islands steep cliffs dead branches of trees [illegible] harbors jetties or transmission lines. Perching sites must be barren of vegetation [illegible] at reference 2009.	Suitable foraging habitat occurs within and adjacent to the project [illegible] However no nesting habitat occurs within the project [illegible]. This species was observed during field surveys.
Phrynosoma coronatum frontale California horned lizard	None / [illegible]C	Most common along sandy washes with scattered low [illegible] shrubs. Needs abundant supply of ants and other insects.	Potential habitat for this species occurs between Bakersfield and Sacramento. Once a project footprint and design is available focused surveys should be conducted to determine if suitable habitat exists within the [illegible].

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Plagiobothrys glaber hairless popcornflower	[illegible] / [illegible]	Known from population occurrences in Alameda, Merced, Marin, San Benito, and Santa Clara counties. Presumed extinct. Habitat consists of meadows and seeps, alkaline, marshes and swamps (coastal salt, elevations 15 to 1[illegible]0 meters. Blooms from March to May (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project [illegible].
Plecotus townsendii townsendii pacific western big-eared bat	[illegible]C / [illegible]C	Found throughout California most abundantly in mesic habitats. Feeds in caves, mines, tunnels, buildings or other human made structures for roosting. Roosting sites the most limiting resource (Weimer et al. 1990).	Potential habitat for this species occurs between Gilroy and Hayland and between Stockton and Sacramento. Once a project footprint and design is available, focused surveys should be conducted to determine if suitable habitat exists within the APE.
Plegadis chihi white-faced flycatcher	None / [illegible]C	Nests in dense tule thickets in shallow freshwater marshes.	No suitable habitat occurs within the proposed Project [illegible].
Pogonichthys macrolepidotus Sacramento splittail	[illegible] / [illegible]C	Slow-moving sections of rivers and sloughs, flooded vegetation. This species inhabits the Sacramento-San Joaquin river system and the Delta, including the Suisun northern reaches of the San Francisco Estuary (California State Coastal Conservancy and [illegible] 2003).	This species may occur within San Pablo Bay. Refugio Creek does not represent suitable habitat for this species.
Polygonum marinense Marin knotweed	[illegible] / [illegible]	Known occurrences in Marin, Napa, Solano, and Sonoma counties. Habitat consists of marshes and swamps (coastal salt or brackish, elevations 0 to 10 meters. Blooms from April to October (CNPS 200[illegible]).	The project [illegible] is outside the known range for this species.
Rallus longirostris obsoletus California clapper rail	SE / SE	Occurs in coastal wetlands and brackish areas around San Francisco Bay. In saline emergent wetlands, nests mostly in lower zones, where cordgrass is abundant and tidal sloughs are nearby. Builds a platform concealed by a canopy of woven cordgrass stems or pickleweed and gumweed. Also uses dead drift vegetation as platform. In fresh or brackish water, builds nest in dense cattail or bulrush. Forages in higher marsh vegetation along vegetation and mudflat interface and along tidal creeks [illegible] 2009d).	Marginal habitat for this species occurs within the tidal marsh habitats within the project [illegible] and Chelsea Mitigation area. However these habitats are likely too small and patchy to support a breeding population.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Rana aurora draytonii California red-legged frog	Threatened / SSC	Requires dense sedge or emergent riparian vegetation closely associated with deep, still and slow moving water. Requires 11 to 20 weeks of permanent water for larval development.	The closest known occurrence is more than 10 miles away. This species has the potential to occur between Oakley and Oakland (*Dow Chemical Wetlands*) and between Stockton and Sacramento. Once a project footprint and design is available, focused surveys should be conducted to determine if suitable habitat exists within the PPE.
Rana boylii foothill yellow-legged frog	None / SSC	Found in partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats. Needs some cobble-sized substrate for egg-laying and at least 15 weeks of water.	No suitable habitat occurs within the proposed Project Area.
Reithrodontomys raviventris salt-marsh harvest mouse	FE / SE	Only found in the saline emergent wetlands of San Francisco Bay and its tributaries. Critically dependent on dense cover and their preferred habitat is pickleweed (*Salicornia virginica*). Seldom found in cordgrass or alkali bulrush. Occur in marshes with an upper zone of peripheral halophytes (salt-tolerant plants) vegetation to the higher tides and may even spend a considerable portion of their lives there. Mice also move into the adjoining grasslands during the highest winter tides (> 200 cm).	Marginal habitat for this species occurs within the coastal tidal marsh habitat within the project area. However the tidal marsh habitat within the PPE is too small and isolated to support a viable population.
Sagittaria sanfordii Delta sagittaria	None / None	Grows in standing or slow moving fresh water ponds, marshes and ditches.	Potential habitat for this species occurs between Oakley and Oakland and between Stockton and Sacramento. Once a project footprint and design is available, focused surveys should be conducted to determine if suitable habitat exists within the PPE.
Scaphiopus hammondii Western spadefoot toad	None / DFG protected	This species utilizes temporary rain pools or slow moving permanent waters for breeding. Non-breeding habitat consists of open vegetation characterized by short grasses.	Potential habitat for this species occurs between Oakley and Oakland and between Stockton and Sacramento. Once a project footprint and design is available, focused surveys should be conducted to determine if suitable habitat exists within the PPE.
Senecio aphanactis chaparral ragwort	[illegible] / [illegible]	Occurs in coastal counties in California from the Bay Area to San Diego. Habitat consists of chaparral, cismontane woodland, coastal scrub, with alkaline soil, elevations 15 to 600 meters. Blooms from January to April (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project area.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Sorex ornatus sinuosus Suisun shrew	□/ □C	Occurs in tidal marshes of the northern shores of San Pablo and Suisun Bays. Occurs in herbaceous wetlands and tidal marshes in dense low lying cover of salicornia (CDFG 1990).	The project site is not within the range of this species. The Carquinez strait serves as a dispersal barrier from known records of this species.
Sorex vagrans halicoetes salt marsh wandering shrew	□/ □C	Occurs in salt marshes of the southern arm of San Francisco Bay. Prefers a low dense cover of salicornia (CDFG 1990).	Marginal habitat for this species occurs within the tidal marsh habitat within the project site.
Speyeria callippe callippe Callippe silverspot butterfly	FE / □	This endangered subspecies occurs in only two grasslands spots in the San Francisco Bay Area near Vallejo and on San Bruno Mountain. Its native region is now extensively developed and heavily populated leaving the butterfly endangered. The larvae eat one species of plant only the yellow pansy or violet (Viola pedunculata). The female adults lay their eggs on the plant or nearby and the larvae overwinter nearby in a silken pocket. In the spring they feed on the yellow pansy molt four times and then pupate for two weeks in a nest of leaves which they glue together with silk. Restricted to the northern coastal scrub of the San Francisco peninsula. Host plant for this species is *Viola pedunculata*. Most adults found on east facing slopes. Males congregate on hilltops in search of females (Arnold 1983).	The project site is outside the known range for this species. The host plant for this species has not detected during any of the surveys. Habitat for this species is not present within the site.
Speyeria zerene myrtleae Myrtle's silverspot butterfly	FE / □	Occurs from Sonoma County south to San Francisco County. Occurs in coastal terrace prairie coastal bluff scrub and adjacent grassland habitats within three miles of the coast elevation 0 to 250 meters (Arnold 1983).	Suitable habitat for this species is not present within the project site.
Spirinchus thaleichthys longfin smelt	□/ □	This species occupies waters ranging from almost pure seawater to areas of pure freshwater. They tend to inhabit the middle to lower portion of the water column. They spawn in freshwater in the upper part of Suisun Bay and the lower and middle Delta. Except when spawning longfin smelt are most abundant in Suisun and San Pablo Bays (Moyle 2002).	This species may occur within San Pablo Bay. Refugio Creek does not represent suitable habitat for this species.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Sternula antillarum browni California least tern	FE / SE	This species can be found on large rivers and estuaries. However it is strictly on the coast in some regions in California. Breeding colonies are located along the coast from southern California to San Francisco Bay. Occur along marine and estuarine shores where small fish are abundant. Nest in loose colonies on the ground relatively free of human or predatory disturbance (Unitt 2004).	Suitable habitat for this species does not occur within the project [illegible] due to a high level of disturbance.
Streptanthus albidus ssp. *peramoenus* most beautiful jewel flower	None / None	Known occurrences in Alameda, Contra Costa, Monterey, Santa Clara, and San Benito Counties. Chaparral, mixed montane woodland, valley and foothill grassland (often in serpentinite soil). Elevations 110 to 1000 meters. Blooms March to June (CNPS 2001).	Suitable habitat for this species does not occur within the project [illegible].
Streptanthus niger Tiburon jewel flower	FE / SE	Known occurrences only from Marin County. Habitat consists of valley and foothill grassland with serpentine soils. Elevations 30 to 150 meters. Blooms from May to June (CNPS 2001).	Suitable habitat for this species does not occur within the project [illegible].
Strix occidentalis caurina northern spotted owl	[illegible] / None	Resides in dense old growth multi-layered mixed conifer/redwood and Douglas-fir habitats from sea level up to approximately 2,300 meters. In southern California nearly always associated with oak and oak/conifer habitats (Unitt 2004; 2009e).	Suitable habitat for this species does not occur within the project [illegible].
Suaeda californica California seablite	FE / None	Suaeda californica grows in a restricted area within the intertidal zone of salt marshes. It is threatened by anything that alters the hydrology of the area such as changes in sedimentation, including dredging, erosion, and recreation. It requires a porous substrate high in nitrogen. Nitrogen may come from decaying plant matter and bird droppings. Invasive plant species such as introduced ice plant threaten remaining occurrences and reintroductions. Known populations in Alameda, Santa Clara, San Francisco, and San Benito counties. Presumed extinct in San Francisco Estuary. Habitat consists of coastal salt marsh and coastal strand, elevations 0 to 15 meters. Blooms from July to October (Goals Project 2000; CNPS 2001).	Suitable habitat for this species does not occur within the project [illegible].
Sylvilagus bachmani riparius riparian brush rabbit	Endangered / Endangered	In habits dense thickets of wild rose, willows and blackberries in riparian areas of the San Joaquin River in Stanislaus County.	The only known extant population is in the Caswell Memorial State Park located 4 miles southwest of Lipon, California

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Symphyotrichum lentum Suisun Marsh aster	[illegible] / [illegible]	Known occurrences in Contra Costa, Napa, Sacramento, San Joaquin, and Solano counties. Habitat consists of marshes and swamps, tracks, and freshwater, elevations 0 to 3 meters. Blooms from May to November (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project [illegible].
Syncaris pacifica California freshwater shrimp	FE / SE	Occurs in coastal streams up to 300 feet above sea level in Napa, Marin, and Sonoma counties. Found in low gradient, perennial coastal streams. Streams typically 1-3 feet deep, with exposed live roots along undercut banks. Streams also contain overhanging debris or stream vegetation (200[illegible]).	The project [illegible] is not within the known range of this species, nor is Jefferson Cree connected to a watershed with a known California freshwater shrimp population.
Taxidea taxus American badger	[illegible] / SSC	Suitable habitat for this species occurs in the drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Badgers are generally associated with treeless regions, prairies, parklands, and cold desert areas (CDFG 199[illegible]).	Suitable habitat for this species does not occur within the project [illegible].
Thamnophis gigas giant garter snake	[illegible] / [illegible]	The giant garter snake is endemic to the San Joaquin and Sacramento Valley floors. Counties include Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Madera, Merced, Sacramento, San Joaquin, Solano, Sutter, Yolo, and Yuba. In addition its agricultural wetlands and other waterways such as irrigation and drainage canals, slow-moving ponds, small lakes, low gradient streams, and adjacent uplands. The species requires adequate water during its active season (early spring through mid-fall) to provide food and cover, emergent herbaceous wetland vegetation for foraging and cover, grassy banks	Suitable habitat for this species is not likely to be present within the [illegible]. present within the project [illegible] occurrences of GGS have not been reported within 5 miles of the [illegible] alignment throughout the range of this species.
Trifolium amoenum showy rancheria clover	FE / [illegible]	Known occurrences in the San Francisco Bay Area and southern North Coast Range. Habitat consists of grassland and coastal bluff scrub, sometimes in serpentine soil, elevations 5 to 415 meters. Blooms from April to June (CNPS 200[illegible]).	Suitable habitat for this species does not occur within the project [illegible].
Trifolium depauperatum var. *hydrophilum* saline clover	[illegible] / [illegible]	Known populations in Alameda, Monterey, Napa, San Benito, Santa Clara, San Luis Obispo, San Mateo, Solano, and Sonoma counties. Occurs in marshes and swamps, mesic/alkaline areas in valley and foothill grassland, and in vernal pools, elevations 0 to 300 meters. Blooms from April to June (CNPS 200[illegible]).	The project [illegible] is outside the known range for this species.

Scientific Name Common Name	Status Federal / State	Typical Habitat	Occurrence Potential
Triquetrella californica coastal triquetrella	[illegible]/ [illegible]	Known populations in Contra Costa, Mendocino, San Diego, and San Francisco counties. Habitats consist of coastal bluff scrub and coastal scrub/soil elevations 10 to 100 meters. This species in a non-flowering moss.	Suitable habitat for this species does not occur within the project [illegible].
Tryonia imitator Mimic tryonia (California brackish water snail)	[illegible]/ [illegible]	This species is found only in permanently submerged areas in a variety of sediment types and is able to withstand a wide range of salinities (CDFG 2009). Known occurrences in Alameda, Los Angeles, Marin, Monterey, Orange, San Diego, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Sonoma, and Ventura counties.	Salt marsh habitat within the project site could provide potential habitat for this species.
Tuctoria greenei Greene's tuctoria	Endangered / Rare	Grows in vernal pools and valley and foothill grasslands.	According to the CDFG it has been extirpated from this study's focal area.
Viburnum ellipticum oval-leaved viburnum	[illegible]/ [illegible]	Known populations in Contra Costa, Fresno, El Dorado, Glenn, Humboldt, Mendocino, Napa, Plumas, and Sonoma counties. Deciduous shrub found in chaparral, cismontane woodland, and lower montane coniferous forest, elevations 215 to 1,400 meters. Blooms from May to June (CNPS 2001).	Suitable habitat for this species does not occur within the project [illegible].
Vulpes macrotis mutica San Joaquin kit fox	Endangered / Threatened	Annual grasslands or grassy open areas with sparse land vegetation. This species requires loose sandy soils for burrowing and a suitable prey base.	Potential habitat for this species occurs between Bakersfield and Stockton. Once a project footprint and design is available, focused surveys should be conducted to determine if suitable habitat exists within the [illegible].
Xanthocephalus xanthocephalus yellow-headed blackbird	[illegible]/ [illegible]C	Nests in fresh water marshes, typically with vegetation such as cattails, tules, and bulrushes with 2 to 4 foot deep water below. During the winter months, often forages in open fields, cultivated fields, and pastures (CDFG 2001).	This species is likely locally extirpated. The last record of this species in the vicinity of the site is over 100 years old.

[illegible].[illegible].2 Natural Communities of Special Concern

Special-status plant communities are plant communities that are of limited distribution statewide or within a county or region, and that are often vulnerable to the environmental impacts of projects (CDFG 2009a). The list of special-status plant communities in California is currently maintained by the CDFG in their *Vegetation Classification and Mapping Program List of California Terrestrial Natural Communities Recognized by the CNDDB* (CDFG 2003). This list was updated by CDFG in September 2013.

These communities are described based on a vegetation classification system developed by Sawyer and Keeler-Wolf [illegible] as published in the first edition of the *Manual of California*

Vegetation □□a□yer and □eeler□□ olf 1995□. □□e □egetation classification system □as e□panded on in t□e second edition□□□ic□ □as p□□lis□ed in 2009 □□a□yer et al. 2009□. □pecial□stat□s plant comm□nities incl□de t□ose comm□nities t□at are ran□ed as □1□□2□or □3 □ased on rarity. □□e rarity ran□ing of special□stat□s plant comm□nities is □ased on □at□re□er□e□s □eritage Program met□odology:

- □1: □e□er t□an 6 □ia□le occ□rrences and/or □p to 1□2□0 acres state□ide.
- □2: 6 to 20 □ia□le occ□rrences and/or more t□an 1□2□0 to 6□400 acres state□ide.
- □3: 21 to 100 □ia□le occ□rrences and/or more t□an 6□400 to 32□000 acres state□ide.

□ometimes t□e rarity ran□ing is modified □y an additional t□reat ran□ing:

- 0.1: Very t□reatened.
- 0.2: □□reatened.
- 0.3: □o c□rrent t□reat □no□n.

□ome nat□ral comm□nities □ere incl□ded as special□stat□s plant comm□nities □□en t□ey □ere determined□□y □est professional □□dgment□to □e □ncommon in t□e region and/or pro□ided potential □a□itat for special□stat□s plant species.

Seasonal riverine □ater□ays occ□r as discrete feat□res t□ro□g□o□t t□e □□□ and incl□de □ings □i□er Comple□□M□ssel □lo□g□□□a□□lo□g□□Cross Cree□□□□le □i□er□Deer Cree□□Poso Cree□□ □ern □i□er□Merced □i□er□□an □oa□□in □i□er□Mariposa Cree□□Mo□el□mne □i□er□Cons□mnes □i□er□and ot□er named and □nnamed □ater□ays. Many of t□ese feat□res originate in t□e □ierra □e□ada □□ere t□eir □ydrology is less affected □y □ater de□elopment pro□ects. □lt□o□g□ t□eir □ydrology is affected □y □ater storage and □ydroelectric de□elopment in t□e □ead□aters□t□e □pper reac□es of t□ese streams are less affected □y □ater de□elopment pro□ects t□an t□e reac□es in t□e □□□. □y t□e time t□ese feat□res reac□ t□e □□□□t□ey are □ig□ly manip□lated for m□nicipal and agric□lt□ral p□rposes□and m□c□ of t□eir s□rface □ater and gro□nd□ater □as □een di□erted□p□mped□or capt□red. □n t□e □□□□t□ese reso□rces are often seasonally dry.

□an□s and floodplains of seasonal ri□erine feat□res in t□e □□□ □a□e largely □een c□anneli□ed□ and ad□acent riparian □egetation □as □een remo□ed□e□cept □□ere le□ees protect t□e □pper floodplain. □n general□t□e stream□eds are □n□egetated and are composed primarily of sandy or gra□elly s□□strate. □or t□ese reasons□seasonal ri□erine feat□res are in fair to good ecological condition d□e to landscape positions t□at □a□e connecti□ity □pstream and do□nstream. □□ey f□nction □it□ altered and nat□ral □ydrological regimes□pro□ide some □iological reso□rces to plants and □ildlife□and are p□ysically altered□□□ic□red□ces t□eir nat□ral c□aracteristics.

Seasonal wetlands in t□e □□□ occ□r in dist□r□ed □a□itats. □□ese dist□r□ed □a□itats incl□de fallo□ agric□lt□ral areas□drainage ditc□es along t□e □□□□ rig□t□of□□ay□retention/detention □asins□acti□e agric□lt□ral fields□and roadside ditc□es.

□easonal □etlands in t□e □□□ are fo□nd □□ere t□e soils □a□e s□fficient clay content or s□fficient compaction to allo□ □ater to pond. □ypical □egetation incl□des □roadleaf cattail □*Typha latifolia*□□ field □orsetail □*Equisetum arvense*□□ □arley □*Hordeum* spp.□□ saltgrass □*Distichlis spicata*□□ meado□ □arley □*Hordeum brachyantherum*□□ □□s□ seep□eed □*Sueda moquinii*□□ast□ma□eed □*Conyza bonariensis*□□ *Chenopodium* sp.□s□mmer Cypr□s □*Kochia scoparia*□□ and fi□e□oo□ □assia □*Bassia hyssopifolia*□. □n t□e most□manip□lated areas□in□ndation is □ydrologically controlled □y p□mps□□eirs□and/or storm drain systems. □n less□manip□lated systems□nat□ral in□ndation or sat□ration occ□rs d□ring t□e □inter and springs seasons and t□e seasonal

□etlands are dry d□ring t□e s□mmer and fall. □lt□o□g□ s□aring a similar □ydrologic regime□ seasonal □etlands are disting□is□ed from □ernal pool □etlands □y t□eir lac□ of t□e distincti□e floristic components and □y t□e a□sence of a distincti□e claypan or □ardpan. □□e Co□ardin classification for seasonal □etlands is Pal□strine emergent non□persistent.

□easonal □etlands □ere identified □it□in t□e □□□□ and □P□□ rig□ts□of□□ay and □ario□s roadside ditc□es t□ro□g□o□t t□e □□□. □□e ma□ority of t□e seasonal □etlands present in t□e □□□ are fo□nd □it□in t□e □□□□ and □P□□ rig□ts□of□□ay. □□ese □etlands appear to pond s□allo□ □ater seasonally and to s□pport □er□aceo□s □ydrop□ytic □egetation. □r□an retention/detention □asins □ere o□ser□ed to contain □ydric □egetation□s□c□ as r□s□es □*Juncus* sp.□and □roadleaf cattail□and appear to collect r□noff or irrigation □ater seasonally □it□in t□e eart□en □asin. □n general□seasonal □etlands are in relati□ely fair ecological condition d□e to a poor landscape position□ f□nction □it□ altered and nat□ral □ydrological regimes□ pro□ide some □iological reso□rces to plants and □ildlife□ and are p□ysically altered□ □□ic□ red□ces t□eir nat□ral c□aracteristics.
Vernal pools typically occ□r as a res□lt of t□e saline□sodic soils. □□e dispersed clay particles allo□ □ater to pond long eno□g□ for □ydric □egetation to germinate. □t□er prominent □ydric □egetation fo□nd □it□in □ernal pools incl□ded al□ali □eed □*Cressa truxillensis*□□ pepper□eed □*Lepidium* spp.□□common tar□eed□saltgrass□and al□ali □eat□ □*Frankenia salina*□. □pland areas s□rro□nding t□e □ernal pools □ere dominated □y Men□ie□s fiddlenec□ □*Amsinckia menziesii*□□ □romes □*Bromus* spp.□□□arley□and fo□tail □*Vulpia* spp.□. □□e Co□ardin classification for □ernal pools is pal□strine emergent non□persistent.

□oil sat□ration□ponding□prominent sediment deposits□and □iotic cr□st □ere t□e most common □ydrology indicators of t□e □ernal pool reso□rces. □oils in t□ese areas e□□i□ited p□ greater t□an □□□□ic□ mas□ed redo□imorp□ic feat□res t□at may □a□e □een present.

□n t□e ***iodine bush scrub*** alliance □*Allenrolfea occidentalis* □□r□□land □lliance□□ iodine □□s□ scr□□ is t□e dominant species □greater t□an 2□ a□sol□te co□er□ or co□dominant species □no ot□er species □as greater or e□□al co□er□ in t□e s□r□□ canopy □□a□yer et al. 2009□. □□is alliance □as a state rarity ran□ing of □3□and stands occ□rring □it□ □□s□ seep□eed □*Suaeda moquinii*□are considered □ery rare in t□e Central Valley □□a□yer et al. 2009□. □odine □□s□ scr□□ □as □een recorded ad□acent to t□e □□□□ rig□t□of□□ay in t□e □icinity of □llens□ort□ □□□lare Co□nty□.

□□is alliance typically occ□rred in t□e slig□tly ele□ated areas s□rro□nding □ernal pools and □as dominated □y iodine □□s□ □it□ minor components of □□s□ seep□eed□ al□ali □eat□□ and spinescale. □□e □er□aceo□s layer □as dominated □y a com□ination of al□ali goldfields □*Lasthenia chrysantha*□□ s□ining peppergrass □*Lepidium nitidum*□□ □□rclo□er □*Medicago* sp.□□ and/or red □rome □*Bromus madritensis*□. □□ese stands □ere identified □□ere t□ere □as a □istory of dist□r□ance □□t □□ere t□ere □as no dist□r□ance in t□e recent past□as e□idenced □y t□e mat□rity of t□e o□ser□ed s□r□□ species. □□ese areas incl□ded fallo□ fields□ potentially a□andoned irrigation reser□oirs□and t□e sides of roads or rail□ays. □□ese areas typically contained a □ig□ percentage of nonnati□e ann□als□s□c□ as □romes or □arleys□along □it□ t□e nati□e species.

Alkali goldenbush scrub □*Isocoma acradenia* □□r□□land □lliance□ is not identified in t□e *Manual of California Vegetation*□2nd Edition □□a□yer et al. 2009□□□□t is similar in distri□□tion and composition to iodine □□s□ scr□□. □lt□o□g□ al□ali golden□□s□ scr□□ is not descri□ed in t□e *Manual of California Vegetation*□2nd Edition□ its occ□rrence □as distinct from t□e ad□acent alliances□and its distri□□tion is □ery limited t□ro□g□o□t t□e range. □or t□ese reasons it □as mapped □y CD□□ and considered □ere of a rarity e□□al to t□at of iodine □□s□ scr□□. □ypically□

t□ese alliances occ□r toget□er. □l□ali golden□□s□ scr□□ □as also mapped □y CD□□ □□en al□ali golden□□s□ □as present in a stand at 5□ or greater a□sol□te co□er□□it□ 1□ or less co□er of ot□er s□r□□ species s□c□ as spinescale or iodine □□s□.

□□is plant comm□nity □as □een identified in one location□near t□e to□n of □llens□ort□ □□□lare Co□nty□□along t□e □□□□ □ail□ay rig□t□of□□ay. □□is stand of al□ali golden□□s□ scr□□ occ□rred ad□acent to iodine □□s□ scr□□ and □as moderately dist□r□ed from railroad maintenance acti□ities. □□e dominant species in t□is alliance is al□ali golden□□s□ scr□□□ t□o□g□ small components of iodine □□s□ scr□□□ spinescale scr□□□ and □□s□ seep□eed □ere sometimes present. Common species in t□e □er□aceo□s layer incl□ded goldfields□tar□eed□fiddlenec□□ peppergrass □*Lepidium* spp.□□and ann□al grasses s□c□ as □romes and □arleys.

□n t□e ***bush seepweed scrub*** alliance □*Suaeda moquinii* □□r□□land □lliance□□□□s□ seep□eed scr□□ is eit□er t□e dominant species □greater t□an 2□ a□sol□te co□er in t□e s□r□□ canopy□or co□ dominant species □no ot□er species □as greater or e□□al co□er in t□e s□r□□ canopy□□□a□yer et al. 2009□. □□is alliance □as a state rarity ran□ing of □3.2□and is considered □ery rare in t□e Central Valley □□a□yer et al. 2009□. □□is Comm□nity □as □een identified □it□in or ad□acent to t□e □□□□ rig□t□of□□ay near t□e comm□nities of Corcoran □□ings Co□nty□□Pi□ley □□□lare Co□nty□□ □llens□ort□ □□□lare Co□nty□□and □anford □□ings Co□nty□.

□n t□e ***saltgrass flats*** alliance □*Distichlis spicata* □er□aceo□s □lliance□□saltgrass is eit□er t□e dominant species □greater t□an 50□ relati□e co□er □it□ □ig□er co□er t□an any ot□er grass species□or co□dominant species □greater t□an 30□ relati□e co□er□□it□ pic□le□eed □*Salicornia* spp.□□□a□yer et al. 2009□. □lt□o□g□ t□is alliance □as a state rarity ran□ing of □4□it is considered □ncommon t□ro□g□o□t t□e range □eca□se its e□tent of t□e range □as □een greatly red□ced t□ro□g□ land con□ersion. □□is alliance pro□ides s□ita□le □a□itat for se□eral special□stat□s plant species. □□is alliance □as identified □it□in t□e □□□□ □□□ near Corcoran□ Pi□ley□ and □llens□ort□. □□is alliance □as most commonly identified in dist□r□ed areas in s□allo□ depressions □□ere □ater □o□ld seasonally pond. □□mero□s occ□rrences of t□is alliance □ere fo□nd along t□e □□□□ rail□ay rig□t□of□□ay□irrigation canals□and □it□in fallo□ fields. □oils □ere generally saline in t□ese areas. □ypical species in t□is alliance incl□ded saltgrass□□romes□and □arleys.

□n t□e ***Fremont cottonwood forest*** alliance □*Populus fremontii* □orest □lliance□□ □remont cotton□ood is t□e dominant species in t□e tree layer □greater t□an 50□ relati□e co□er or greater t□an 5□ a□sol□te co□er in t□e tree layer□or co□dominant species □greater t□an 30□ relati□e co□er in t□e tree layer□□it□ □illo□s □□a□yer et al. 2009□. □□is alliance □as a state rarity ran□ing of □3.2. □□is alliance □as □een identified □it□in t□e □□□□ □□□ in □resno□□an □oa□□in□and □acramento co□nties.

□.□.□ □pecial □tat□s Plant □pecies

□pecial□stat□s species are plants t□at are legally protected □nder t□e federal E□□□t□e California E□□□ or ot□er reg□lations□as □ell as species considered s□fficiently rare □y t□e scientific comm□nity to □□alify for s□c□ listing. □pecial□stat□s species incl□de t□e follo□ing:

- □pecies listed or proposed for listing as t□reatened or endangered □nder t□e federal E□□ □50 C□□ 1□.12 □listed plants□□□50 C□□ 1□.11 □listed animals□□and □ario□s notices in t□e *Federal Register* □proposed species□.
- □pecies t□at are candidates for possi□le f□t□re listing as t□reatened or endangered □nder t□e federal E□□ □□6 □ed. □eg. 663□0□□cto□er 26□2011□.

- □pecies listed or proposed for listing □y t□e □tate of California as t□reatened or endangered □nder t□e California E□□ □14 California Code of □eg□lations □C.C.□.□ 6□0.5□.
- □pecies t□at meet t□e definitions of □rare□ or □endangered□ □nder t□e California En□ironmental □□ality □ct □CE□□ G□idelines □ections 153□0 and 15125□.
- Plants pres□med □y t□e California □ati□e Plant □ociety □C□P□□ to □e □e□tinct in California□□□ists 1□□C□P□ 2012□.
- Plants considered □y t□e C□P□ to □e □rare□t□reatened□or endangered in California□ □□ists 1□ and 2□C□P□ 2012□.
- Plants listed □y C□P□ as plants a□o□t □□ic□ more information is needed to determine t□eir stat□s □□ist 3□C□P□ 2012□□and □□ic□ may □e incl□ded as special□stat□s species on t□e □asis of local significance or recent □iological information.
- Plants listed □y C□P□ as plants of limited distri□□tion or infre□□ent t□ro□g□o□t a □roader area in California □□ist 4□C□P□ 2012□□t□ese plants are not □rare□from a state□ide perspecti□e □□t are □ncommon eno□g□ t□at t□ey are recommended for incl□sion in en□ironmental doc□ments.
- Plant species listed as rare □nder t□e California □ati□e Plant Protection □ct □California □is□ and Game Code 1900□et se□.□

□fter a □ac□gro□nd re□ie□□56 special□stat□s plant species □ere e□al□ated for t□eir potential to occ□r in t□e □□□. □□ese special□stat□s plant species incl□de □ federally and state listed species□3 federally listed species□2 state listed species□and an additional 43 special□stat□s species t□at □a□e □een listed □y t□e C□P□. □□ree o□t of fi□e of t□e federally□listed plant species □a□e designated critical □a□itat □it□in portions of □resno□Madera□□□lare□and □an □oa□□in co□nties.

□f t□e 56 special□stat□s plant species e□al□ated□30 species □ere r□led o□t □ased on t□e lac□ of s□ita□le □a□itat□local or regional e□tirpations□and/or □eca□se t□e □□□ lies o□tside of t□e □no□n geograp□ic or ele□ation range of t□ese species.

Bakersfield smallscale □*Atriplex tularensis*□is a state□endangered and C□P□ □ist 1□.1 species in t□e c□enopod family □C□enopodiaceae□. □□is species is incl□ded in t□e □□□□ □ *Recovery Plan for Upland Species of the San Joaquin Valley, California* □□□□ □ 199□□. □□is ann□al □er□□ □□ic□ □looms from □□ne to □cto□er□is most fre□□ently fo□nd at ele□ations □et□een 300 and 315 feet□alt□o□g□ it □as □een reported as □ig□ as 655 feet □C□P□ 2010□. □t is typically fo□nd on t□e s□□al□aline margins of al□ali sin□s in grasslands or scr□□□s□r□□lands. □pecies co□occ□rring □it□ □a□ersfield smallscale may incl□de al□ali □eat□□iodine □□s□□pic□le□eed□scratc□grass □*Muhlenbergia asperifolia*□□and saltgrass.

□lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

California jewel-flower □*Caulanthus californicus*□is a federally endangered□state□endangered□ C□P□ □ist 1□.1 species in t□e m□stard family □□rassicaceae□. □□is species is incl□ded in t□e □□□□ □ *Recovery Plan for Upland Species of the San Joaquin Valley, California* □□□□ □ 199□□. California □e□el□flo□er□an ann□al □er□ t□at generally □looms □et□een □e□r□ary and May□is generally associated □it□ desert scr□□□ann□al or perennial grasslands□and □□niper and □□niper□pinyon □oodland □et□een 240 and 2□950 feet. □istorically□t□is species may also □a□e □een associated □it□ al□ali desert scr□□.

□pecies t□at may co□occ□r □it□ California □e□el□flo□er incl□de ann□al fesc□es□clo□ers □*Trifolium* spp.□□red maids □*Calandrinia ciliata*□□and goldfields. C□rrently□California □e□el□flo□er is □no□n to occ□r in □resno□□an □□is □□ispo□and □anta □ar□ara co□nties. □istorically□t□is species also occ□rred in □ings□□□lare□and □ern co□nties. □lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.. □□ita□le □a□itat may □e present in □resno□□ings□□□lare□and □ern co□nties in areas □□ere permission to enter □as not granted. □□is species □as t□e potential to occ□r in t□ese areas

Hoover's spurge □*Chamaesyce hooveri*□is a federally t□reatened and C□P□ □ist 1□.2 species in t□e sp□rge family □E□p□or□iaceae□. □□is species is incl□ded in t□e *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* □□□□□ □ 2005a□. □oo□er□s sp□rge is an ann□al □er□ t□at □looms □et□een May and □cto□er□depending on location and □ydrologic conditions. □□is species is an o□ligate □etland plant□ □□t □ill not gro□ in standing □ater □□le□ander and □c□lising 199□□.

□oo□er□s sp□rge may □e fo□nd at ele□ations from □0 to 130 feet in □ardpan or claypan □ernal pools. □cc□pied □ernal pools range in si□e from 0.4□ acre to 600 acres□□it□ t□e species occ□rring along t□e margins of t□e deepest section of dried pools. □n t□e □an □oa□□in Valley t□is species is typically fo□nd in soils t□at are ne□tral to saline□al□aline □it□ clay to sandy loam te□t□res. □□e t□o most common associates of □oo□er□s sp□rge are Greene□s t□ctoria and □airy □rc□tt grass □*Orcuttia pilosa*□□alt□o□g□ t□ese species occ□r in different locations in t□e □ernal pool. □oo□er□s sp□rge is primarily t□reatened □y t□e con□ersion of s□ita□le □a□itat to agric□lt□re and □y c□anges in □ydrology from near□y agric□lt□ral acti□ities. Competition □it□ in□asi□e species and destr□ction from gra□ing cattle are also t□reatening t□is species □□□□□ □ 2005a□. C□rrently t□is species is □elie□ed to occ□r in □e□ama□□□tte□□□lare□□tanisla□s□Glenn□and Merced co□nties. □f t□e 26 occ□rrences t□at are pres□med e□tant□t□e ma□ority of t□ese occ□rrences □a□e not □een confirmed since t□e late 19□0s□none occ□r □it□in 10 miles of t□e trac□alignments □CD□□ 2013□.

□lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

□□e ***Kern mallow*** □*Eremalche kernensis*□is a federally endangered and C□P□ □ist 1□.1 species in t□e mallo□ family □Mal□aceae□. □□is species is incl□ded in t□e □□□□ □ *Recovery Plan for Upland Species of the San Joaquin Valley, California* □□□□□ □ 199□□. □ern mallo□ typically □looms □et□een Marc□ and May□and is □s□ally fo□nd in grasslands or in areas dominated □y al□ali scr□□ at ele□ations □et□een 300 and 900 feet□alt□o□g□ it □as □een reported as □ig□ as 3□2□0 feet □C□P□ 2010□.

□ern mallo□ is generally fo□nd on al□aline sandy loam or clay loam soils in areas dominated □y ot□er □er□aceo□s species □less t□an 25□ s□r□□ co□er□. □ssociated species typically incl□de fo□tail □rome□red□stemmed filaree□□oolly goldfields □*Lasthenia minor*□□and □□ite □ierran layia (*Layia pentachaeta* ssp. *albida*□. □□r□□s commonly associated □it□ t□is species incl□de spinescale salt□□s□ and cattle salt□□s□ □*Atriplex polycarpa*□. □ern mallo□ is t□reatened □y t□e con□ersion of s□ita□le □a□itat into ot□er land □ses. Petrole□m interests□incl□ding oil e□ploration□ pipeline maintenance□and □tility corridor maintenance□□a□e also □een cited as leading to t□e fragmentation of e□isting pop□lations. Conser□ation efforts for t□is species □a□e foc□sed on

preser□ing its remaining □a□itat and on increasing t□e amo□nt of researc□ t□at is applied to st□dying its demograp□y □□□□□ □ 199□□.

□ne occ□rrence of □ern mallo□ is reported □it□in 10 miles of t□e □□□ □CD□G 2012□. □□e e□act location of t□is occ□rrence is □n□no□n□□o□e□er□t□e C□DD□ places it appro□imately 5 miles nort□□est of Delano along □□ 43. □□is occ□rrence □as located in a saline □alley grassland comm□nity and is pres□med e□tant□alt□o□g□it □as last o□ser□ed in 1962.

□lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

San Joaquin woollythread □*Monolopia congdonii*□is a federally endangered and C□P□ □ist 1□.2 species in t□e composite family □□steraceae□. □□is species is incl□ded in t□e □□□□ □ *Recovery Plan for Upland Species of the San Joaquin Valley, California* □□□□□ □ 199□□. □□is ann□al □er□is generally fo□nd in ne□tral to s□□□al□aline soils of sand to sandy loam te□t□re□in al□ali s□r□□ or grasslands at ele□ations □et□een 200 and 2□600 feet. □t typically flo□ers □et□een late □e□r□ary and early □pril□depending on precipitation le□els □□□□□ □ 199□□.

□pecies t□at may co□occ□r □it□ □an □oa□□in □oollyt□reads incl□de red □rome□red□stemmed filaree□goldfields□Mediterranean grass □*Schismus* spp.□□and fesc□e □*Vulpia myuros*□. C□rrently t□is species is □no□n to occ□r in □an □□is □□ispo□□ern□□ings□□resno□□an □enito□and □anta □ar□ara co□nties. □istorically□t□is species □as also □no□n to occ□r in □□lare Co□nty. □□e primary t□reat to t□e □an □oa□□in □oollyt□read is □a□itat destr□ction res□lting from agric□lt□ral and □r□an de□elopment. Conser□ation efforts □a□e foc□sed on preser□ing t□e remaining pop□lations and on f□nding demograp□ic st□dies and monitoring programs □□□□□ □ 199□□. □il acti□ity□gra□ing □y s□eep□□e□icle traffic□□r□an de□elopment□and agric□lt□ral con□ersion are contin□ed t□reats to t□is species □CD□G 2012□.

□□ita□le □a□itat for t□e □an □oa□□in □oollyt□read occ□rs primarily in □ern Co□nty□in areas □it□ al□ali desert scr□□ and ann□al grasslands□□□ic□ are c□aracteri□ed □y goldfields□fiddlenec□□red □rome□red□stemmed filaree□Mediterranean grass□and mo□se□tail fesc□e.

□lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Horn's milk-vetch □*Astragalus hornii* □ar. *hornii*□is a C□P□ □ist 1□.1 species in t□e pea family □□a□aceae□. □t is an ann□al □er□ t□at □looms from May to □cto□er and is typically fo□nd at ele□ations ranging from 200 feet to 2□□90 feet in la□e margins and al□aline soils. □orn□s mil□□ □etc□ is generally associated □it□ al□ali playa□meado□s□and seeps. C□rrently t□is species is □no□n to occ□r in □nyo□□□lare□□ern□□an □ernardino□and □e□ada co□nties. □n t□e early 1900s□ t□is species □as t□e foc□s of intentional eradication d□e to its to□icity to s□eep. □ince t□en□ □a□itat loss res□lting from de□elopmental press□re contin□es to □e t□e primary t□reat to t□is species □C□P□ 2010□.

□cc□rrences of □orn□s mil□□□etc□ are reported □it□in 10 miles of t□e □□□□one of □□ic□ is near □a□ersfield. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Heartscale (*Atriplex cordulata*) is a CNPS List 1B.1 species in the chenopod family (Chenopodiaceae). It is an annual herb that blooms from April to October and is typically found at elevations ranging from 0 feet to 1,000 feet in sandy saline or alkaline soils. Heartscale is generally found in chenopod scrub or grassland communities characterized by shrubs such as alkali heath, iodine bush, bush seepweed, saltbush and forbs and grass species such as tarweed saltgrass barley and other annual *Atriplex* species. Currently this species is known to occur in Alameda, Butte, Colusa, Fresno, Merced, San Joaquin, San Luis Obispo, Solano, Stanislaus, Tulare and Yolo counties. This species is primarily threatened by loss of suitable habitat to agricultural and urban development competition with invasive species and trampling.

Populations have been identified near the Buttonwillow railway right of way in the Willenson Ort region in disturbed areas that were mapped as annual grasslands and alkali desert scrub or that were within vernal pools. Characteristic species in these areas include alkali heath, iodine bush, seepweed, saltgrass, goldfields, annual grasses such as bromes and barley, and tarweed. Once a facility has been designed within the known range of this species, focused botanical surveys should be conducted at a time when the species can best be observed.

Lost Hills crownscale (*Atriplex coronata* var. *vallicola*) is a CNPS List 1B.2 species in the chenopod family (Chenopodiaceae). It is an annual herb that blooms from April to August and is typically found at elevations ranging from 0 to 1,000 feet in powdery alkaline soils that are vernally moist. Lost Hills crownscale is generally found in alkali desert scrub, vernal pools, and annual and perennial grassland areas characterized by alkali heath, iodine bush, saltgrass, brome, and other annual and perennial *Atriplex* species. Currently this species is known to occur in Fresno, Kings, Kern, Merced, and San Luis Obispo counties. This species is primarily threatened by grazing, agricultural conversion, competition with invasive species, and energy development.

Lost Hills crownscale has been identified in close proximity to Willenson Ort. Once a facility has been designed within the known range of this species, focused botanical surveys should be conducted at a time when the species can best be observed.

Brittlescale (*Atriplex depressa*) is a CNPS List 1B.2 species in the chenopod family (Chenopodiaceae). This annual herb blooms from April to October and is typically found at elevations ranging from sea level to 1,050 feet in vernal pools in clay and alkaline soils. Brittlescale is generally found in scrub or grassland communities characterized by shrubs such as alkali heath and bush seepweed, and by forbs and grasses such as tarweed, saltgrass, goldfields, and barley. Currently this species is known to occur in Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Merced, Solano, Stanislaus, Tulare, and Yolo counties. This species is primarily threatened by grazing and trampling.

The CNDDB reports two occurrences of brittlescale within 10 miles of Laton and Hanford. Once a facility has been designed within the known range of this species, focused botanical surveys should be conducted at a time when the species can best be observed

Earlimart orache (*Atriplex erecticaulis*) is a CNPS List 1B.2 species in the chenopod family (Chenopodiaceae). It is an annual herb that blooms from August to September and is typically found at elevations ranging from 131 to 320 feet. Earlimart orache is generally associated with annual and perennial grasslands. Currently this species is known to occur in Kings, Tulare, and Kern counties. This species is primarily threatened by off-road vehicles. The Jepson Manual does not recognize the nomenclature of *A. erecticaulis* and instead designates this species as a variation of *A. cordulata* var. *erecticaulis*.

□i□teen occ□rrences of Earlimart orac□e are identified to occ□r □it□in 10 miles of t□e □□□. □ne occ□rrence is in t□e □icinity of □llens□ort□ along t□e □□□□ nort□ of □ asco. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Lesser saltscale □*Atriplex minuscula*□ is a C□P□ □ist 1□.1 species in t□e c□enopod family □C□enopodiaceae□. □□is species is incl□ded in t□e □□□□ □ *Recovery Plan for Upland Species of the San Joaquin Valley, California* □□□□□ □ 199□□. □t is an ann□al □er□ t□at □looms from May to □cto□er and is typically fo□nd at ele□ations ranging from 50 to 660 feet□in sandy□al□aline soils. □esser saltscale is generally associated □it□ al□aline playas□grasslands□and c□enopod scr□□ comm□nities. C□rrently t□is species is □no□n to occ□r in □□tte□□resno□□ern□Madera□ Merced□□tanisla□s□and □□lare co□nties. □□is species is primarily t□reatened □y loss of □a□itat d□e to agric□lt□ral con□ersion and □r□an de□elopment. Most of t□e □istorical occ□rrences of t□is species □a□e □een e□tirpated.

□lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Vernal pool smallscale □*Atriplex persistens*□ is a C□P□ □ist 1□.2 species in t□e c□enopod family □C□enopodiaceae□. □□is species is incl□ded in t□e *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* □□□□□ □ 2005a□. □□is ann□al □er□ □looms from □□ne to □cto□er and is typically fo□nd in al□aline soils at ele□ations ranging from 30 feet to 3□0 feet. Vernal pool smallscale is generally associated □it□ large□ al□aline □ernal pools and commonly occ□rs □it□ al□ali □eed□ □yssop□lea□ed □assia □*Bassia hyssopifolia*□□ al□ali □eat□□ tar□eed□and saltgrass. □t also co□occ□rs □it□ □oo□er□s sp□rge. □istorically□t□is species □as only □no□n from Merced□□□lare□and □tanisla□s co□nties. □□enty□se□en ne□ pop□lations of □ernal pool smallscale □ere o□ser□ed □et□een 1990 and 2005 □□□□□ □ 2005a□. C□rrently t□is species is □no□n to occ□r in Glenn□Madera□Merced□□olano□□tanisla□s□and □□lare co□nties. □□is species is primarily t□reatened □y loss of □a□itat d□e to agric□lt□re and flood control practices.

□lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Subtle orache □*Atriplex subtilis*□ is a C□P□ □ist 1□.2 species in t□e c□enopod family □C□enopodiaceae□. □t is an ann□al □er□ t□at □looms from □□ne to □□g□st and is typically fo□nd at ele□ations ranging from 130 feet to 330 feet. □□□tle orac□e is generally associated □it□ □alley and foot□ill grassland. C□rrently t□is species is □no□n to occ□r in □□tte□□resno□□ings□□ern□ Madera□Merced□and □□lare co□nties. □□is species is t□reatened □y loss of □a□itat d□e to agric□lt□ral con□ersion.

□□e C□DD□ reports 10 occ□rrences of s□□tle orac□e □it□in 10 miles of t□e □□□. □□e closest occ□rrence to t□e □pecial□□tat□s Plant □t□dy □rea □□cc□rrence 6□is appro□imately 1.□ miles □est of t□e to□n of Corcoran. □□□tle orac□e □as last o□ser□ed in t□is location in 1994□and t□is pop□lation is pres□med e□tant □CD□□ 2013□. □lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Round-leaved filaree (*California macrophylla*) is a CNPS List 1B.1 species in the geranium family (Geraniaceae). It is an annual herb that blooms from March to May and is typically found in clay soils at elevations ranging from 49 feet to 3,593 feet. Round-leaved filaree is generally associated with blue oak and valley oak woodlands, juniper communities, and annual and perennial grasslands. This species may also be found in disturbed places. Currently this species is known to occur throughout the Central Valley and coastal areas of California. This species is primarily threatened by urbanization, habitat alteration, vehicles, pipeline construction, feral pigs, competition with invasive species, and grazing (CNPS 2010).

Suitable habitat for round-leaved filaree occurs in the BSA in areas with annual grasslands and valley foothill riparian. Once a facility has been designed within the known range of this species, focused botanical surveys should be conducted at a time when the species can best be observed.

Alkali mariposa lily (*Calochortus striatus*) is a CNPS List 1B.2 species in the lily family (Liliaceae). It is a perennial bulb that blooms between April and June and is typically found at elevations from 300 feet to 5,230 feet in alkaline meadows and ephemeral basins. Currently this species is known to occur in Kern, Los Angeles, San Bernardino, Solano, and Nevada counties. Common associates of alkali mariposa lily include saltbush, sink, seepweed, and honey mesquite (*Prosopis glandulosa*). This species is primarily threatened by the conversion of suitable habitat for urban development, road construction, and changes in the water table due to hydrologic diversions. Conservation efforts have focused on preserving the known extant populations.

The CNDDB identifies one presumed extant occurrence of alkali mariposa lily reported within 10 miles of the BSA. One occurs approximately 2 miles east of the BSA near Ellensport. The occurrence was observed in 199. Once a facility has been designed within the known range of this species, focused botanical surveys should be conducted at a time when the species can best be observed.

Slough thistle (*Cirsium crassicaule*) is a CNPS List 1B.1 species in the composite (Asteraceae) family. It is an annual or perennial herb that is generally found in alkali desert scrub, marshes and swamps, and riparian scrub communities in sloughs and along riverbanks areas at elevations from 10 feet to 32 feet. Slough thistle typically blooms between May and August and it is currently known from Kings, Kern, and San Joaquin counties. Threats to the species include agricultural and hydrological conversion of suitable habitat and competition with invasive species.

Suitable habitat for slough thistle occurs in the BSA in Kings, Solano, Kern counties in areas of alkali desert scrub or fresh emergent wetland, valley foothill riparian, riverine, lacustrine, or annual grassland. Although it is unlikely this species will occur within the proposed Project, once a facility has been designed within the known range of this species, focused botanical surveys should be conducted at a time when the species can best be observed.

Recurved larkspur (*Delphinium recurvatum*) is a CNPS 1B.2 listed species. It is endemic to California and its historical range is primarily in the Central Valley. This species generally blooms from March through May. Recurved larkspur is typically found at elevations ranging from 0 feet to 4,400 feet in alkaline grasslands or scrub areas characterized by a sparse cover of saltbush or other shrubs in the chenopod family (Chenopodiaceae). Wildflower reaches a maximum height of about 1.6 feet. The deeply lobed leaves are mainly basal and those located farther up the dark purple stem are much smaller. The flowers are often blue with sepals and lower petals that are darker than the upper petals. The sepals are usually curved back, the trait that gives the plant its name. Currently this species is known from Alameda, Butte, Contra

Costa□Col□sa□□resno□Glenn□□ings□□□lare□□ern□Madera□Merced□Monterey□□an □oa□□in□ □an □□is □□ispo□and □olano co□nties □CD□□ 2013□. □a□itat loss d□e to agric□lt□ral and □r□an de□elopment and to cattle gra□ing and trampling is t□e largest t□reat to t□is species □C□P□ 2010□.

□□is species □as identified in close pro□imity to t□e □□□ near t□e □□□□ □□□ in t□e □icinity of □llens□ort□. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Hoover's woolly-star □*Eriastrum hooveri*□ is a C□P□ □ist 4.2 species in t□e p□lo□ family □Polemoniaceae□. □t □as pre□io□sly listed as t□reatened □y □□□□ □□□□t □as delisted in 2003. □t is descri□ed in t□e *Recovery Plan for the Upland Species of the San Joaquin Valley, California* □□□□□ □ 199□□. □□is ann□al □er□ typically □looms □et□een Marc□ and □□ne. □t is fo□nd at ele□ations □et□een 165 feet and 3□000 feet□generally in c□enopod scr□□□ann□al and perennial grasslands□and □oodlands c□aracteri□ed □y pinyon □*Pinus monophylla*□and □niper □*Juniperus* spp.□on sparsely □egetated□al□aline all□□ial fans or sandy soils. □istorically□t□is species □as □no□n from □resno□□ern□□anta □ar□ara□and □an □□is □□ispo co□nties. □t is c□rrently □no□n from □resno□□ings□□ern□and □os □ngeles co□nties □C□P□ 2010□CD□□ 2013□. □oss of □a□itat d□e to residential□agric□lt□ral□and energy de□elopment□as □ell as d□e to gra□ing is t□e primary t□reat to t□is species □□□□□ □ 199□□C□P□ 2010□.

□□ere are no □no□ localities in pro□imity to t□e Pro□ect □□□□□o□e□er□s□ita□le □a□itat for □oo□er□s □oolly□star occ□rs in areas □it□ al□ali desert scr□□ and ann□al grasslands dominated □y □romes and □arley. □lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed pro□ect □□□□ once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Spiny-sepaled button-celery □*Eryngium spinosepalum*□ is a C□P□ □ist 1□.2 species in t□e parsley family □□piaceae□. □t is an ann□al or perennial □er□t□at is generally fo□nd in □ernal pools in ann□al and perennial grasslands□in clay soils□at ele□ations from 260 feet to 1□300 feet. □piny□ sepaled □□tton□celery may □loom from □pril to May□and it is c□rrently and □istorically □no□n from □resno□ Madera□ Merced□ □tanisla□s□ □□lare□ and □□ol□mne co□nties □C□P□ 2010□CD□□ 2013□. □□reats to t□is species incl□de agric□lt□ral and □r□an de□elopment□ gra□ing□ road maintenance□and □ydrological alteration.

□□ita□le □a□itat for spiny□sepaled □□tton□celery occ□rs in t□e □□□ in □□lare and □resno Co□nties in areas □it□ al□ali desert scr□□ and ann□al grasslands containing □ernal pools. □lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

California satintail □*Imperata brevifolia*□ is a C□P□ □ist 2.1 species in t□e grass family □Poaceae□. □t is a r□i□omato□s grass t□at is generally fo□nd in c□aparral□coastal scr□□□riparian scr□□□ desert scr□□□ meado□s□ and al□ali seeps at ele□ations from 0 feet to 1□500 feet. California satintail typically □looms from May to □eptem□er. □□is species is □no□n from □□tte□ □resno□□mperial□□nyo□□ern□□a□e□□os □ngeles□□range□□i□erside□□an □ernardino□□e□ama□ □□lare□and Vent□ra co□nties □C□P□ 2010□. Many of t□e collections of t□is species are old□ □o□e□er□and records from □□tte□□e□ama□and □a□e co□nties may represent escapees of t□is species from ornamental plantings □C□P□ 2010□. □□is species is t□reatened □y □r□an de□elopment and agric□lt□ral con□ersion of s□ita□le □a□itat□and □as mista□enly classified as a no□io□s □eed in California from 1960 to 2004 □C□P□ 2010□.

□□is species □as □een reported in t□e □□□ □it□ a general location in t□e □icinity of □resno and □a□ersfield. Marginally s□ita□le □a□itat for t□is species may e□ist in areas □it□ ann□al grasslands and al□ali desert scr□□. □rrigation ditc□es and riparian corridors may also pro□ide some □a□itat□ alt□o□g□ t□ese areas are typically □ery dist□r□ed in t□e □□□. □lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□ foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Coulter's goldfields □*Lasthenia glabrata* ssp. *coulteri*□ is a C□P□ □ist 1□.1 species in t□e composite family □□steraceae□. □□is ann□al □er□ is generally fo□nd at ele□ations □et□een 0 and 4□600 feet in al□ali playa□coastal salt mars□es□and □ernal pools in al□aline grasslands. Co□lter□s goldfields typically □loom □et□een □e□r□ary and □□ne. □istorically□t□is species □as □no□n from Col□sa□□ern□□os □ngeles□Merced□□range□□i□erside□□anta □ar□ara□□an □ernardino□□an Diego□□an □□is □□ispo□Vent□ra□and possi□ly □□lare co□nties□and from □anta □osa □sland. C□rrently it is □no□n from Col□sa□Merced□□range□□i□erside□□anta □ar□ara□□an Diego□□an □□is □□ispo□Vent□ra□and possi□ly □ern and □□lare co□nties□and from □anta □osa □sland □C□P□ 2010□.

□□ita□le □a□itat for Co□lter□s goldfields occ□rs in t□e □□□ in areas t□at □ere □□ere al□ali desert scr□□ and ann□al grassland □□ere □ernal pools occ□r. □ closely related species□yello□□ rayed goldfields □*Lasthenia glabrata* ssp. *glabrata*□□□as identified□□□t t□is s□□species is not considered a special□stat□s species. □lt□o□g□ it is □nli□ely t□is species □ill occ□r □it□in t□e proposed Pro□ect □□□□once a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Little mouse tail □*Myosurus minimus* ssp. *apus*□ is a C□P□ □ist 3.1 species in t□e □□tterc□p family □□an□nc□laceae□. □t is an ann□al □er□ t□at □looms from Marc□ to □□ne□and is typically fo□nd at ele□ations ranging from 65 feet to 3□000 feet. □ittle mo□se tail is generally fo□nd in al□aline □ernal pools in □alley grassland or coastal sage scr□□□or in al□aline mars□es □□□□□ □ 2005a□. □istorically□t□is species □as □no□n from □lameda□□resno□Merced□□an □enito□□an □□is □□ispo□to □tanisla□s co□nties□and from one site along t□e □order of Col□sa and Glenn co□nties. C□rrently t□e distri□□tion of t□is species is □ncertain □□□□□ □ 2005a□. □□e C□P□ lists t□is species as occ□rring in □lameda□Contra Costa□Col□sa□□a□e□Merced□□i□erside□□an □ernardino□□an Diego□□olano□□□lare□and □olo co□nties. □□e C□P□ also lists it as occ□rring in □regon and □a□a California □C□P□ 2010□. □n contrast□t□e C□DD□ lists t□is species as c□rrently occ□rring in □an Diego and □i□erside co□nties □CD□□ 2013□.

□ittle mo□se tail is primarily t□reatened □y t□e loss of □ernal pools to agric□lt□ral and □r□an de□elopment□off□road □e□icle □se□gra□ing□and competition □it□ in□asi□e species □□□□□ □ 2005a□. □e□eral pop□lations of t□is species □a□e □een o□ser□ed □it□in a large □ernal pool comple□ near t□e to□n of □llens□ort□. □□e greatest concentration of t□is species typically occ□rred in □ernal pools□al□ali desert scr□□□and ann□al grasslands. □o□e□er□t□ere □ere also pop□lations recorded in a reser□oir t□at is periodically filled □it□ □ater □in□ndated d□ring t□e late□season s□r□eys □□t not d□ring t□e early□or mid□season s□r□eys□and in dist□r□ed areas along t□e □□□□ □ail□ay rig□t□of□□ay. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□foc□sed □otanical s□r□eys s□o□ld □e cond□cted at a time □□en t□e species can □est □e o□ser□ed.

Mud nama (*Nama stenocarpum*) is a CNPS List 2.2 species in the borage family (Boraginaceae). It is an annual herb that blooms from January to July and is typically found in marshes and shallow freshwater marshes and intermittently wet areas from 16 to 1,640 feet. This species is currently known from Kings County.

One CNDDB occurrence of mud nama is reported within 10 miles of the KNWR. This occurrence was reported in 1999 west of Guernsey in a flood control channel that is within 1 mile of the Hanford. Suitable habitat for mud nama exists in the KNWR in areas that are riverine or seasonal wetlands. Once a facility has been designed within the known range of this species focused botanical surveys should be conducted at a time when the species can best be observed.

Kings gold (*Tropidocarpum californicum*) is a CNPS List 1B.1 species in the mustard family (Brassicaceae). It is an annual herb that blooms in March and is typically found around the 215 foot elevation. Kings gold is generally associated with chenopod scrub. Currently this species is known to occur in Kings and Kern counties. The species is primarily threatened by development (CNPS 2010). Once a facility has been designed within the known range of this species focused botanical surveys should be conducted at a time when the species can best be observed.

Soft Bird's-beak (*Cordylanthus mollis* ssp. *mollis*) Soft birds beak is found predominantly in the high marsh upper reaches of salt grass pickleweed marshes at or near the limits of tidal action. It is associated with pickleweed (*Salicornia virginica*), salt grass (*Distichlis spicata*), fleshy jaumea (*Jaumea carnosa*), alkali heath (*Frankenia salina*), and arrow grass (*Troglochin maritima*). It is a hemiparasite whose typical host plants include salt grass and pickleweed. Historically soft birds beak ranged from the Petaluma River near the City of Novato in Marin County in the west to the mouth of the Sacramento River in Sacramento County in the east. The species is currently restricted to widely scattered populations in Napa, Solano and Contra Costa Counties from Point Pinole and Bagan Slough marsh through the Carquinez Strait to Suisun Bay (USFWS 2009). This species blooms from July to November (CNPS 2010). Critical habitat has designated by USFWS for soft birds beak on April 12, 2006 (Federal Register 72:18451). Critical habitat for this species occurs approximately three miles south west of the project alignment on the Point Pinole shoreline.

Suitable habitat for this species occurs within the tidal marsh habitat within the project KNWR. Once a facility has been designed within the known range of this species focused botanical surveys should be conducted at a time when the species can best be observed.

Point Reyes Bird's-beak (*Cordylanthus maritimus* ssp. *palustris*). Habitat consists of coastal salt marshes and shallows at elevations ranging from 0 to 10 meters. Known populations of Point Reyes birds beak occur in Alameda, Westmoldt, Marin, Santa Clara, San Mateo and Sonoma counties. This species blooms from June to October (CNPS 2010).

No occurrences of this species are recorded in CNDDB within five miles of the project KNWR however one occurrence is recorded within ten miles. This record is from 1906 and is west of Berkeley along the Emeryville/Berkeley shoreline approximately 9.5 miles south of the project site. Records from 1990 indicate that this occurrence has been extirpated.

While suitable habitat for this species occurs within the tidal marsh habitat within the project site the species is not expected to occur within the KNWR. Once a facility has been designed within the known range of this species focused botanical surveys should be conducted at a time when the species can best be observed.

Mason's Liliaeopsis (*Lilaeopsis masonii*): Mason's liliaeopsis was listed by CDFW as rare in November 1979. Mason's liliaeopsis is known to occur in Alameda, Contra Costa, Napa, Sacramento, San Joaquin and Solano counties. Its habitat consists of marshes and swamps, tidal or freshwater and riparian scrub at elevations ranging from 0 to 33 feet. Mason's liliaeopsis blooms from April to November (CNPS 2010). No critical habitat has been designated for this species.

Three occurrences of Mason's liliaeopsis are recorded in CNDDB within ten miles of the project site. The closest record is from 1995 and is at the southeast tip of Mare Island Naval Reservation, approximately three miles north of the project site; there three clumps of plants were observed. Another record is from 1995 and is on the east side of Mare Island Naval Shipyard, approximately four miles north of the site; there another three clumps of plants were observed. A third record is from 2004 and is on the shoreline of Carquinez Straight at the West end of E Street, Benicia, approximately 6.5 miles east of the site.
While suitable habitat for this species occurs within the tidal marsh habitat within the project area, the species is not expected to occur in the project site. Once a facility has been designed within the known range of this species, focused botanical surveys should be conducted at a time when the species can best be observed.

3.3.4 Special-Status Wildlife Species

Special-status species are animals that are legally protected under the federal ESA, the California ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Special-status species include the following:

- Species listed or proposed for listing as threatened or endangered under the federal ESA (50 CFR 17.12 (listed plants), 50 CFR 17.11 (listed animals), and various notices in the *Federal Register* (proposed species).

- Species that are candidates for possible future listing as threatened or endangered under the federal ESA (16 Fed. Reg. 6630, October 26, 2011).

- Species listed or proposed for listing by the State of California as threatened or endangered under the California ESA (14 California Code of Regulations (C.C.R.) 670.5).

- Species that meet the definitions of "rare" or "endangered" under the California Environmental Quality Act (CEQA Guidelines Sections 15380 and 15125).

- Animal species of special concern to the CDFW (CDFG 2011).

- Bird species of conservation concern as identified by USFWS in *Birds of Conservation Concern 2008* (USFWS 2008).

  Animals that are fully protected in California (California Fish and Game Code Sections 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fish) (CDFG 2011).

3.3.4.1 Invertebrates

Vernal pool fairy shrimp (*Branchinecta lynchi*) is federally listed as threatened. This species occurs in grasslands from Oregon south to Riverside County California. Vernal pool fairy shrimp occupies a variety of different vernal pool habitats from small clear sandstone rock pools to large turbid alkaline grassland valley floor pools. Although the species has been collected from large vernal pools including pools that exceed 25 acres it tends to occur in small scales or vernal pools in ungrazed grasslands (Eriksen and Belk 1999). It is most frequently found in pools measuring less than 0.05 acre. Vernal pool fairy shrimp is a filter feeder typically taking microscopic algae bacteria and diatoms [illegible] 1994).

A review of the CNDDB (CDFW 2013) and the [illegible] Recovery Plan for this species [illegible] 2005a) showed that the entire [illegible] occurs in the known geographic range of the species. The portions for the project that occur between with the Central Valley fall within the San Joaquin Valley Vernal Pool Region identified in the Recovery Plan [illegible] 2005a). Portions of the [illegible] run parallel to and in some portions within 1000 feet of areas with vernal pool complexes near Willensport. Near the town of Willensport the [illegible] is within 250 feet of Critical Habitat Unit 2[illegible]Critical Habitat Unit 2). However the project does not overlap these critical habitat units nor does it overlap the Pixley core area.

Once a facility has been designed within the known range of this species habitat assessment surveys should be conducted to determine if focused surveys are warranted.

Vernal pool tadpole shrimp *(Lepidurus packardi)* is federally listed as endangered. While vernal pool tadpole shrimp are endemic to California's Central Valley the majority of the populations are in the Sacramento Valley. This species is found mainly in the northern and eastern portions of the Central Valley in vernal pools and scales containing highly turbid water often in ungrazed grasslands. These seasonal pools contain old alluvial soils underlain by hardpan or occur in sandstone depressions. Water in the pools has very low alkalinity and conductivity. Vernal pool tadpole shrimp are known to prey on fairy shrimp and although it has not been documented vernal pool tadpole shrimp likely preys on vernal pool fairy shrimp when they co-occur (Eriksen and Belk 1999). Vernal pool tadpole shrimp feeds on small invertebrates amphibian eggs and some vegetation [illegible] 1994).

A review of the CNDDB (CDFW 2013) and [illegible] Recovery Plan for this species [illegible] 2005a) confirmed that the entire [illegible] occurs in the known geographic range of the species. Once a facility has been designed within the known range of this species habitat assessment surveys should be conducted to determine if focused surveys are warranted.

Valley long-horned elderberry beetle *(Desmocerus californicus dimorphus)***.** Although the [illegible] is currently considering a proposal to delist the species valley elderberry longhorn beetle is federally listed as threatened. It has only been found in association with elderberry shrubs (Sambucus spp. [illegible]) are often found in or close to riparian habitats along the Central Valley's rivers and their tributaries. Beetles remain hidden in the stems and trunks of elderberry shrubs as larvae and pupae for 1 to 2 years. Adults emerge from the shrubs from mid March through June at about the same time that the elderberry shrub produces flowers (Barr 1991 [illegible] 1994 [illegible] 2006). Elderberry shrubs often occur in clumps that consist of several stems attached to a main trunk. Stems and trunks must be equal to or greater than 1 inch in diameter to provide suitable habitat for the beetles [illegible] 1999).

About 400 species of longhorn beetles are found in California all are herbivorous and are frequently associated with a particular plant host. The valley elderberry longhorn beetle is associated with three species of elderberry (Sambucus). It deposits eggs in cracks and crevices

of t□e □ar□ of li□ing elder□erry □□s□es□□it□ t□e eggs □atc□ing soon after. □□e lar□ae □ore into t□e pit□ of larger stems and roots and□□□en ready to p□pate□open □oles t□ro□g□ t□e □ar□. □□e life cycle pro□a□ly encompasses t□o years. □d□lts emerge a□o□t t□e same time t□e elder□erry □looms□ as early as mid□Marc□□ and may li□e □ntil mid□□□ne.

□□e □alley elder□erry long□orn □eetle in□a□its elder□erry t□ic□ets in moist oa□ □oodlands along t□e □an□s of streams and ri□ers. □□e □ost plant sometimes s□ffers from f□ngal attac□ at t□e emergence □oles □ored □y t□e □eetle□e□ent□ally □ea□ening or □illing t□e plant. □□is □eetle is endemic to t□e □an□s of t□e □acramento□ □merican□ and □an □oa□□in □i□ers and t□eir tri□□taries in t□e Central Valley of California. □□e □eetle□s ma□or pop□lation center is along t□e □merican □i□er. □emnant pop□lations of t□is long□orn □eetle are fo□nd in t□e fe□ stands of nat□ral ri□erside □riparian□□oodlands t□at remain in t□e Central Valley. □s of 19□□□t□e □eetle □as □no□n from 10 localities in fi□e co□nties: Merced□□acramento□□an □oa□□in□□tanisla□s□ and □olo. □acramento Co□nty s□pports t□e largest concentrations of t□e □eetle.

□nce a facility □as □een designed □it□in t□e □no□n range of t□is species□t□e stat□s of t□e listing s□o□ld □e re□ie□ed and foc□sed elder□erry s□r□eys may □e □arranted.

□.□.4.2 □eptiles an□ □mphibians

Blunt-nosed leopard lizard *(Gambelia sila)* is federally and state listed as endangered□and is a California f□lly protected species. □t is restricted in range to t□e □an □oa□□in Valley□at ele□ations from t□e Central Valley floor □p to 2□600 feet in t□e s□rro□nding foot□ills □Germano and □ illiams 1992□□te□□ins 2003□□□□□ □ 19□5□. □□e □l□nt□nosed leopard li□ard occ□rs in al□ali sin□ scr□□□salt□□s□ scr□□□*Ephedra* scr□□□and grasslands □sparse□□often in areas □it□ al□aline or saline soils □Montan□cci 1965□□te□□ins 2003□. □ as□es and dirt road corridors may □e important in ot□er□ise poor □a□itat □e.g.□t□ic□grass □a□itat□□□ arric□et al. 199□□. □n general□ t□is species is a□sent from areas of steep slope□dense □egetation□and seasonal flooding □Montan□cci 1965□.

□d□lts are acti□e d□ring t□e □reeding season □et□een □pril and □□ly□and typically lay □et□een t□o and si□ eggs in mid□□□ne or □□ly. □□□eniles □atc□ from late □□ly to □□g□st□□□t rarely in □eptem□er□ and may remain acti□e typically t□ro□g□ □cto□er □Montan□cci 1965□ □te□□ins 2003□. □ □ile dormant d□ring non□□reeding seasons and at nig□t□t□e □l□nt□nosed leopard li□ard in□a□its small mammal □□rro□s of species s□c□ as California gro□nd s□□irrels and □angaroo rats □*Dipodomys* spp.□ □o□e□er□in areas of lo□ mammal □□rro□ density t□ey can constr□ct t□eir o□n s□allo□ □□rro□s □□□□□ □ 199□□. □□e diet of □l□nt□nosed leopard li□ard consists of art□ropods and small li□ards □□□□□ □ 19□5□Germano and □ illiams 1992□□te□□ins 2003□.

□□ita□le □a□itat for t□e □l□nt□nosed leopard li□ard □a□itat co□ld potentially □e present in t□e □□□s □□ere s□ita□le □□rro□s for ref□gia e□ist in t□e follo□ing C□ □□ □ildlife □a□itat types: al□ali desert scr□□□ann□al grassland□and □arren. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Giant garter snake *(Thamnophis gigas)* prefers fres□□ater mars□ and lo□□gradient streams □□t □as adapted to irrigation ditc□es and drainage canals. □□is species re□□ires □ater t□ro□g□o□t its acti□e season □early spring t□ro□g□ mid□fall□□it□ emergent □egetation s□c□ as□cattails and □□lr□s□es. □t is □ig□ly a□□atic□acti□e d□ring daylig□t and at nig□t in □ot □eat□er. □ecreti□e and diffic□lt to approac□□t□is sna□e □ill □□ic□ly drop into t□e □ater from its □as□ing site and di□e to t□e □ottom □efore t□e o□ser□er can get close. □□is □e□a□ior pro□a□ly deri□es from t□e □a□itat of

t□is sna□e□□□ic□ is often open and treeless□and t□e presence of many air□orne predators s□c□ as egrets□□erons□and □a□□s.

□□e Giant garter sna□e emerges from o□er□intering sites in Marc□□□as□s on □egetation near □ater in spring□and □tili□es animal □□rro□s and □egetation piles d□ring □otter □eat□er. □ome sna□es remain acti□e □ntil □cto□er□□□t e□ent□ally o□er□inter in animal □□rro□s. □o□nd primarily in mars□es□slo□g□s□drainage canals□and irrigation ditc□es□especially aro□nd rice fields□and occasionally in slo□□mo□ing cree□s. □□e species prefers locations □it□ □egetation close to t□e □ater for □as□ing□from sea le□el to 400 ft. □122m□.

□□is species is co□ered □nder t□e □an □oa□□in Co□nty M□□CP□and co□erage □nder t□is plan □ill li□ely □e re□□ired for any proposed facilities t□at □ill □a□e impacts to riparian and □etland □a□itats along t□e alignment in t□e nort□ern □an □oa□□in Valley.

California tiger salamander *(Ambystoma californiense)* is federally and state listed as a t□reatened species. California tiger salamander is distri□□ted t□ro□g□o□t t□e Central Valley and central Coast □ange□from Col□sa Co□nty so□t□ to □an □□is □□ispo and □ern co□nties□and from sea le□el to 3□460 feet in ele□ation. □t in□a□its lo□land grasslands□oa□ sa□anna□□and mi□ed □oodland □a□itats□and re□□ires □ernal pools□seasonal ponds□or semi□permanent calm □aters t□at □old □ater for a minim□m of 3 to 4 mont□s in d□ration for □reeding and lar□al mat□ration. □□e salamanders □egin migrating to □reeding sites follo□ing t□e onset of a□t□mn rains□typically in □o□em□er □□□stin and □□affer 1992□. Eggs are laid singly or in small cl□sters on t□e pond □ottom□or are attac□ed to strands of □egetation □□torer 1925□□arry and □□affer 1994□□ennings and □ayes 1994□. Metamorp□osis occ□rs a minim□m of 10 □ee□s follo□ing □atc□ing□and yo□ng migrate en masse in late spring or early s□mmer to □pland ref□gia □a□itat □□ea□er 19□1□ □ennings and □ayes 1994□ □te□□ins 2003□. □d□lts □a□e □een doc□mented tra□eling distances □p to 1.3 miles from □reeding sites □□ren□am and □□affer 2005□to ad□acent □pland □a□itat □□ere t□ey occ□py t□e □□rro□s of small mammals s□c□ as California gro□nd s□□irrels □□permop□il□s □eec□eyi□ and □otta□s poc□et gop□er □□□amnomys □ottae□ □□torer 1925□□arry and □□affer 1994□□te□□ins 2003□.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases confirmed t□at t□e □no□n geograp□ic range of California tiger salamander o□erlaps t□e □□□ nort□ of t□e to□n of Corcoran. □□is ro□g□ly corresponds □it□ t□e □istorical range of t□e species in t□e Central Valley □□ere records and □erified sig□tings from □resno and □□lare co□nties s□ggest t□e species may still □e e□tant □□ennings and □ayes 1994□. □n t□e □an □oa□□in Valley□t□e so□t□eastern□most e□tent of t□e species□□no□n range occ□rs in t□e □icinity of t□e to□n of Corcoran

Western spadefoot *(Scaphiopus hammondii)* is a California species of special concern. □□is amp□i□ian occ□rs in t□e central and so□t□ern parts of t□e Coast □ange□t□e Central Valley□and t□e foot□ills of t□e □ierra □e□ada □□te□□ins 19□5□. □□e □estern spadefoot toad primarily in□a□its grasslands□fre□□enting □as□es□floodplains of ri□ers□all□□ial fans□playas□and al□ali flats. □o□e□er□t□is species also ranges into t□e foot□ills and mo□ntain □alleys □p to 3□000 feet. □t prefers areas of open □egetation and s□ort grasses □□ere t□e soil is sandy or gra□elly □□te□□ins 19□5□. □reeding □a□itat consists of seasonally in□ndated pools or occasionally lo□□ gradient seasonal streams □□ennings and □ayes 1994□. Pools □□ere t□is species is □no□n to reprod□ce s□ccessf□lly lac□ introd□ced fis□es□□□llfrogs□and crayfis□. □ estern spadefoot toads are strictly noct□rnal. D□ring t□e day and d□ring long□dry periods t□ey □ide in deep□almost □ertical □□rro□s □□te□□ins 19□2□. □□□eniles □ide in drying m□d crac□s and □nder □oards and ot□er s□rface o□ects□□□ic□ can incl□de decomposing co□ d□ng □□ eintra□□ 19□0□. □reeding

occ□rs in late □inter or spring□and lar□al de□elopment is completed in 3 to 11 □ee□s□depending on food a□aila□ility and □ater temperat□re □□ennings and □ayes 1994□.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases confirmed t□at t□e entire □□□ occ□rs in t□e □no□n geograp□ic range of □estern spadefoot toad. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Western pond turtle *(Clemmys marmorata)* is a California species of special concern. □ estern pond t□rtles are □a□itat generalists and are typically fo□nd in slo□□mo□ing ri□ers □e.g.□in o□□o□s□□ ep□emeral and perennial streams□ la□es□ ponds□ reser□oirs□ permanent and ep□emeral □etlands□stoc□ ponds□se□age treatment plants□mars□es□□ernal pools□fres□□ater and □rac□is□ est□aries□and man□made or modified □ater □odies□s□c□ as drainage ditc□es and ornamental par□ponds □□olland 1994□□□s□ir□2002□.

□ estern pond t□rtles prefer a□□atic □a□itat □it□ ref□gia□s□c□ as □nderc□t □an□s□s□□merged □egetation□roc□s□logs□and m□d □an□s □□olland 1994□. Despite t□eir name□□estern pond t□rtles reg□larly □se terrestrial □a□itats t□ro□g□o□t t□e year□especially for nesting □females□and mate□see□ing □males□□o□er□intering□and o□erland dispersal □□eese 1996□□eese and □ els□ 199□□□olland 1994□. □□ey ta□e ad□antage of m□d □an□s□roc□s□logs□root □ads□and ot□er opport□nistic □as□ing sites □□olland 1994□□as□ 1999□. □emales □ill range as far as 1□300 feet from a □aterco□rse to find s□ita□le nesting □a□itat □□olland 1994□. Preferred nest sites are c□aracteristically e□ca□ated in areas □it□ sparse □egetation of s□ort grasses or for□s□in □ard□ pac□ed clay or silt soils□and along so□t□□or □est□facing slopes □□at□□□n et al. 1992□□olland 1994□□eese and □ els□ 199□□.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases confirmed t□at t□e entire □□□ occ□rs in t□e □no□n geograp□ic range of t□e □estern pond t□rtle. □lt□o□g□ t□is species □as not o□ser□ed d□ring field s□r□ey efforts□s□ita□le a□□atic □a□itat is present for t□is species in permanent and seasonally in□ndated □ater □odies□ incl□ding detention □asins□ reser□oirs□irrigation canals and ditc□es□ri□ers□and cree□s. □f present□□estern pond t□rtles may nest □p to 1□300 feet from a□□atic □a□itat in ad□acent □plands in loose□sandy soils to □ard□ pac□ed gro□nd □it□ little□to□no □egetati□e co□er. Potential □estern pond t□rtle a□□atic and nesting □a□itat in t□e core and a□□iliary □□□s co□ld □e present in t□ese □egetation comm□nities: ann□al grassland□al□ali desert scr□□□fres□ emergent □etlands□lac□strine□ri□erine□past□re□and □alley foot□ill riparian. □ it□in t□e □□□□t□ese □ildlife □a□itat types □□ere t□is species is most li□ely to occ□r are largely concentrated in t□e □icinity of ma□or riparian corridors and ot□er □ater □odies. □□e a□ility for □estern pond t□rtles to persist in □ater □odies in t□e □an □oa□□in Valley is dependent on t□e a□aila□ility of permanent □ater□t□e presence of predators s□c□ as largemo□t□ □ass and □□llfrogs□and access to □ndist□r□ed nesting gro□nds. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□ □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Silvery legless lizard *(Anniella pulchra pulchra)* is a California species of special concern. □t is fo□nd from t□e so□t□ so□t□ern edge of California□s □an □oa□□in □i□er in Contra Costa Co□nty so□t□ t□ro□g□ t□e Coast □ange□□rans□erse □ange□and Penins□lar □ange to □a□a California □orte□Me□ico. □□e species is fo□nd on t□e □an □oa□□in Valley floor and in t□e so□t□ □ierra foot□ills □□ennings and □ayes 1994□ □te□□ins 2003□. □□e sil□ery legless li□ard is typically restricted to moist□loose□m□lc□y□sandy soils □□□rt 1931□Gorman 195□□□□□n□2004□s□c□ as sand□loam□or □□m□s □□te□□ins 2003□typically in □ndist□r□ed□loose soils □it□ a □ig□ fraction of sand in t□e soil and mat□re leaf litter □□□□n□2004□. □□ey are commonly fo□nd in □as□es□t□e

□ase of slopes□and in t□e □icinity of streams. □□eir preferred □a□itats incl□de coastal d□nes and oa□ □oodlands □Miller 1944□□ □eac□es□ desert scr□□□ c□aparral□ pine□oa□ □oodland□ and streamside gro□t□ of sycamores□cotton□oods□and oa□s □□te□□ins 2003□.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□confirmed t□at t□e entire □□□ occ□rs in t□e □no□n geograp□ic range of sil□ery legless li□ard. □□ita□le sandy soils are present for t□is species along many of t□e ri□ers and cree□s □it□in t□e □□□ in riparian corridors and ad□acent □plands. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□ and foc□sed s□r□eys are □arranted.

San Joaquin Whipsnake *(Masticophis flagellum ruddocki)* is a California species of special concern. □ts □no□n range is limited to California and e□tends from □r□□c□le □Col□sa Co□nty□in t□e □acramento Valley so□t□ to t□e Grape□ine □□ern Co□nty□□and to t□e □est into t□e so□t□ern Coast □ange at ele□ations from 66 feet to 2□953 feet. Very little is □no□n of t□is species□life □istory. □an □oa□□in □□ipsna□es are □elie□ed to in□a□it t□e □□rro□s of any n□m□er of small mammal species in open□dry □egetation □it□ little to no tree co□er in s□c□ □a□itats as □alley grassland and salt□□s□ scr□□ associations. □fter emerging in □pril and early May□t□e sna□e □ecomes acti□e in late morning □p □ntil temperat□res □ecome e□cessi□e□at □□ic□ point t□ey adapt □y emerging in t□e early morning and later in t□e e□enings. □an □oa□□in □□ipsna□es are □elie□ed to mate in May and deposit eggs in □□ne and □□ly. □y □□g□st□indi□id□als □egin to retreat to o□er□intering sites in response to a diminis□ing prey □ase and t□e coming cold. Prey items incl□de li□ards □incl□ding □l□nt□nosed leopard li□ards□□estern □□iptails□and side□□lotc□ed li□ards□□eggs and yo□ng from □ird and mammal nests□carrion□and □elson□s antelope s□□irrels □□ennings and □ayes 1994□.

Potential □an □oa□□in □□ipsna□e □a□itat in t□e Pro□ect □□□ in t□e follo□ing C□ □□ □ildlife □a□itat types: al□ali desert scr□□□ann□al grassland□past□re□and □alley foot□ill riparian. □ it□in t□e □□□□t□ese □ildlife □a□itat types are largely concentrated in t□e □icinity of ma□or riparian corridors. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Coast Horned Lizard *(Phrynosoma coronatum frontale)* is a California species of special concern. □t is spottily distri□□ted from □ennett in □□asta Co□nty so□t□□ard along t□e edges of t□e □acramento Valley and portions of t□e so□t□ern Coast □ange□□an □oa□□in Valley□and □ierra □e□ada foot□ills to nort□ern □os □ngeles□□anta □ar□ara□and Vent□ra co□nties at ele□ations ranging from near sea le□el to 6□500 feet. □lt□o□g□ coast □orned li□ards prefer sandy loam areas and al□ali flats□t□ey can also in□a□it e□posed gra□elly sandy s□□strates □egetated □it□ scattered s□r□□s or ann□al grassland□or clearings in riparian □oodlands □□ennings and □ayes 1994□.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□confirmed t□at t□e entire □□□ occ□rs in t□e □no□n geograp□ic range of t□is species. □□ita□le □a□itat may □e present for t□is species □it□in t□e □□□. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□ and foc□sed s□r□eys are □arranted.

California red-legged frog *(Rana aurora draytonii)* is a □ederally□listed as □□reatened□ California □pecies of □pecial Concern. California red□legged frogs □C□□□□ occ□r from □a□a California□Me□ico□nort□ to t□e □icinity of □edding inland□and at least to Point □eyes□California □□ennings and □ayes□ 1994□. □ort□ern red□legged frog □*Rana aurora aurora*□□ □□ic□ is a

California □pecies of □pecial Concern□occ□rs nort□ of t□e C□□□ range in nort□ern California and t□e species are largely geograp□ically isolated. □□e C□□□ occ□rs from sea le□el to ele□ations of 1□500 meters □5□200 feet□□ occ□pying a fairly distinct □a□itat□com□ining □ot□ specific a□□atic and riparian components. □□□atic □a□itat consists of lo□□gradient fres□□ater □odies□incl□ding ponds□mars□es□sag ponds□d□ne ponds□stoc□ ponds□lagoons□seeps□ springs□and □ac□□aters □it□in streams and cree□s. □ □ile C□□□ can occ□r in eit□er ep□emeral or perennial streams or ponds□pop□lations generally cannot □e maintained in ep□emeral streams in □□ic□ s□rface □ater disappears □efore metamorp□osis □□□ly to □eptem□er□d□ring most years. □t□dies □a□e indicated t□at t□is species cannot in□a□it □ater □odies t□at e□ceed □0□□□especially if t□ere are no cool□deep portions □□□□□ □ 2002□. □□e ad□lts re□□ire dense□ s□r□□□y or emergent riparian □egetation closely associated □it□ deep □greater t□an 2 1/3□foot deep□still or slo□ mo□ing □ater□□□t frogs □a□e □een o□ser□ed in s□allo□ sections of streams and ponds t□at are de□oid of □egetati□e co□er. □□e largest densities of C□□□ are associated □it□ deep□□ater pools □it□ dense stands of o□er□anging □illo□s □*Salix sp.*□and an intermi□ed fringe of cattails □*Typha latifolia*□. □ ell□□egetated terrestrial areas □it□in t□e riparian corridor may pro□ide important s□eltering □a□itat d□ring □inter. □lso□t□e species is □no□n to □tili□e □ell□ □egetated riparian □ones for foraging □a□itat and facilitating dispersal. D□ring s□mmer□C□□□ often disperse from t□eir □reeding □a□itat to forage and see□ s□mmer □a□itat if □ater is not a□aila□le □□□□□ □□2002□. □□is □a□itat may incl□de s□elter □nder □o□lders□roc□s□logs□ ind□strial de□ris□agric□lt□ral drains□□ater tro□g□s□small mammal □□rro□s□incised streamed c□annels□or areas □it□ moist leaf litter □□ennings and □ayes 1994□□□□□ □ 1996□□2002□. C□□□ may □se t□ese □pland □a□itats □p to appro□imately 200 feet from s□ita□le a□□atic □a□itat □□□□□ □ 2002□□□□□ □ 200□a□. C□□□ □a□e also □een fo□nd □p to 100 feet from □ater in ad□acent dense riparian □egetation.

□□e decline of t□e red□legged frog is attri□□ta□le to a □ariety of factors. □arge□scale commercial □ar□esting of red□legged frogs led to se□ere depletions of pop□lations at t□e t□rn of t□e cent□ry □□ennings and □ayes 19□5 as cited in □ennings and □ayes 1994□. □□□se□□ently□e□otic a□□atic predators s□c□ as □□llfrogs □*Rana catesbeiana*□□ crayfis□ □*Procambarus clarki*□□ and □ario□s species of fis□ □ecame esta□lis□ed and contri□□ted to t□e contin□ed decline of t□e species □□ayes and □ennings 19□6 as cited in □ennings and □ayes 1994□. □a□itat alterations s□c□ as con□ersion of land to agric□lt□ral and commercial □ses□reser□oir constr□ction□off□road □e□icle □se□and a□□si□e land□□se practices □i.e.□li□estoc□ gra□ing□t□reaten t□e remaining pop□lations □□a□ffman et al. 19□3□□a□ffman and □r□eger 19□4□□o□n and □□c□□o□se 19□6□as cited in □ennings and □ayes 1994□.

□□e pro□ect site is not located □it□in □□□□ □□designated critical □a□itat for t□e C□□□. □□e closest critical □a□itat for C□□□ is located appro□imately □ miles so□t□east of t□e pro□ect area □Contra Costa Co□nty□and appro□imately □ miles nort□east of t□e pro□ect area □□olano Co□nty□. Gi□en t□at t□is □a□itat is located □ell o□tside t□e pro□ect area □incl□ding across t□e Car□□ine□ □trait□a nat□ral □arrier□□ impacts on C□□□ critical □a□itat is not disc□ssed f□rt□er in t□is doc□ment.

□eca□se t□ere is no s□ita□le □a□itats □it□in t□e pro□ect □□□□C□□□ is not e□pected to occ□r in t□e pro□ect □□□. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□ □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat □as de□eloped□and foc□sed s□r□eys are □arranted.

□.□.4.□ Mammals

Kangaroo Rat-Fresno *(Dipodomys Nitratoides Exilis).* □□is species is a sil□en□f□rred □angaroo rat □it□ large □ead and □ig eyes li□e ot□er □angaroo rats. □t □as a □□ite □ip stripe and a dar□ patc□ across its nose. □ts □ody is □□ff□colored □it□ a □□ite □nderside. □□is coloration disting□is□es it from ot□er □angaroo rats. □ead and □ody meas□re a□o□t 10 cm. □ail is 12.2□ 15.2 cm.

□resno □angaroo rats li□e in t□e al□ali mars□ plant area of □resno Co□nty□California. □□rro□s are located in slig□tly ele□ated gro□nd□a□o□e t□e seasonal flood□aters le□el. Presently t□is species appears to □e limited to t□e □l□ali □in□ Ecological □eser□e and t□e □erman Ecological □eser□e□ □ot□ in □resno Co□nty□California. □lteration of nat□ral □a□itat for farmland and past□re□farm crops in replacement of its food plants□and possi□le predation □y domesticated animals □cats□are all reasons for t□is species□decline.

□□ere is no al□ali mars□ □a□itat □it□ t□e □PE for t□is pro□ect and t□e proposed pro□ect site is o□tside of any □no□n locations for t□is species. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if foc□sed s□r□eys are □arranted.

Kangaroo rat-Merced *(Dipodomys heermanni dixoni).* □□is species is a sil□en□f□rred □angaroo rat □it□ large □ead and □ig eyes li□e ot□er □angaroo rats. □t □as a □□ite □ip stripe and a dar□ patc□ across its nose. □ts □ody is □□ff□colored □it□ a □□ite □nderside. □□is coloration disting□is□es it from ot□er □angaroo rats. □ead and □ody meas□re a□o□t 10 cm. □ail is 12.2□ 15.2 cm. Merced □angaroo rats li□e in grassland and sa□anna comm□nities □it□ fine□deep□ □ell□drained soil for □□rro□ing in Merced Co□nty□California.

□lteration of nat□ral □a□itat for farmland and past□re□farm crops replacing its food plants□and possi□le predation □y domesticated animals □cats□□ are all reasons for t□is species□decline. □lt□o□g□ □ere is no s□ita□le □a□itat □it□ t□e □PE for t□is pro□ect□and t□e proposed pro□ect site is o□tside of any □no□n locations for t□is species. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if foc□sed s□r□eys are □arranted.

Tipton kangaroo rat *(Dipodomys nitratoides nitratoides)* is federally and state listed as endangered. □□e range of □ipton □angaroo rat encompasses t□e so□t□ □an □oa□□in Valley so□t□ of t□e □ings □i□er□and generally along t□e □□ 43 and □□ 99 corridors □□□□□ □ 2010□□. □mportant □egetation comm□nities for □ipton □angaroo rat incl□de □alley sin□ scr□□ and □alley salt□□s□ scr□□. M□c□ of t□e occ□pied □a□itats □a□e sparsely scattered □oody s□r□□s and a gro□ndco□er of ann□al grasses and for□s. □lt□o□g□ it is not □ncommon for occ□pied □a□itat to □ecome seasonally flooded□terrain t□at is not s□□□ect to flooding is important for pop□lation persistence. □ipton □angaroo rat reprod□ction □egins in □inter and pea□s in late Marc□ and early □pril. □ipton □angaroo rat feeds mostly on seeds□□it□ small amo□nts of green □er□aceo□s □egetation and insects □□en a□aila□le □□□□□ □ 199□□.

□istorically□□ipton □angaroo rats ranged t□ro□g□o□t m□c□ of t□e so□t□ern □an □oa□□in Valley from □ings Co□nty to central □ern Co□nty□primarily on t□e floor of t□e □□lare □a□e □asin □□□□□ □ 199□□. □ re□ie□ of t□e C□DD□ □CD□□ 2013□□t□e *Recovery Plan for Upland Species of the San Joaquin Valley* □□□□□ □ 199□□□and *Tipton Kangaroo Rat (*Dipodomys nitratoides nitratoides*) 5-Year Review: Summary and Evaluation* □□□□□ □ 2010□□ confirmed t□at t□e portions of t□e □□□ alignments □it□in □□lare and □ern co□nties occ□r in t□e □no□n geograp□ic range of □ipton □angaroo rat. □□e □□□ does not intersect or f□rt□er isolate t□e separate reco□ery □nits□nor does it isolate Pi□ley from □llens□ort□. □angaroo rat incl□ding acti□e

□angaroo rat□si□ed □□rro□s and fres□ly e□ca□ated soils□fres□ scat□and fres□ trac□s □ere o□ser□ed □it□in t□e □□□ in t□e □□□□ □□□ □in t□e □icinity of □llens□ort□□and o□tside of t□e □□□ in t□e □icinity of t□e □llens□ort□. Potential □ipton □angaroo rat □a□itat co□ld □e present in t□e □□□s in t□e follo□ing □a□itat types: al□ali desert scr□□□ann□al grassland□ □arren□and past□re. □ it□in t□e □□□□t□ese □ildlife □a□itat types □□ere t□is species is most li□ely to occ□r are largely concentrated in t□e □icinity of □llens□ort□. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if foc□sed s□r□eys are □arranted.

□□l□□ra poc□et mo□se □*Chaetodipus californicus femoralis*□□a s□□species of t□e California poc□et mo□se □*C. californicus*□□is a California species of special concern. California poc□et mo□se occ□rs in c□aparral □and occasionally desert grassland□ comm□nities in t□e □ierra □e□ada□Coast□□rans□erse□and Penins□lar ranges of so□t□ern California and nort□ern □a□ California□Me□ico. □□e distri□□tion of *C.c. femoralis* spans t□e □nited □tates□Me□ico □order□ and D□l□□ra poc□et mo□se is predominantly fo□nd in □an Diego Co□nty□ □it□ scattered occ□rrences in t□e □an □oa□□in Valley.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases confirmed t□at t□e □□□□ □□□ in t□e □icinity of □llens□ort□□occ□r in t□e □no□n geograp□ic range of t□e D□l□□ra poc□et mo□se. □lt□o□g□ t□is species □as not o□ser□ed□small mammal acti□ity t□at incl□ded □□rro□s□fres□ly e□ca□ated soils□fres□ scat□and fres□ trac□s □ere o□ser□ed □it□in t□e □□□ in t□e □icinity of t□e □llens□ort□. □□e small mammal acti□ity co□ld indicate t□at D□l□□ra poc□et mo□se or ot□er small mammals □incl□ding ot□er special□stat□s small mammal species□ are present in t□e area. Potential D□l□□ra poc□et mo□se □a□itat in t□e core and a□□iliary □□□s co□ld □e present in t□o C□ □□ □ildlife □a□itat types: ann□al grassland and al□ali desert scr□□. □ it□in t□e □□□□t□ese □ildlife □a□itat types □□ere t□is species is most li□ely to occ□r are largely concentrated in t□e □icinity of □llens□ort□. □a□le 5□15 s□mmari□es t□e total acreage of □a□itats t□at may pro□ide s□ita□le foraging □a□itat for t□is species. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Tulare grasshopper mouse *(Onychomys torridus tularensis) i*s a California species of special concern. □□e species □istorically ranged in s□r□□lands and grasslands from Merced Co□nty so□t□ t□ro□g□o□t t□e □an □oa□□in Valley □□□□□ □ 199□□C□□ □tanisla□s 2006□. □ts decline is attri□□ted mainly to □a□itat loss□degradation□and fragmentation. □□lare grass□opper mice are also □no□n to occ□r at present in □estern □ern Co□nty. □□ey feed primarily on smaller mammals and insects□nest in gro□nd □□rro□s□and in□a□it arid grassland and s□r□□land comm□nities.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 19□□□2005□data□ases and of t□e *Recovery Plan for Upland Species of the San Joaquin Valley* □□□□□ □ 199□□confirmed t□at t□e □□□ occ□rs in t□e □no□n geograp□ic range of □□lare grass□opper mo□se. □ it□in t□e □□□□t□e □ildlife □a□itat types □□ere t□is species is most li□ely to occ□r are largely concentrated in t□e □icinity of ma□or riparian corridors and in t□e □icinity of □anford□Corcoran□Pi□ley□□llens□ort□□ and □est of □a□ersfield.

American badger *(Taxidea taxus)* is a California species of special concern. □merican □adgers are fossorial mammals t□at in□a□it open grasslands and generally treeless regions. □□ey □□rro□ in fria□le soils in □a□itats □it□ drier open s□r□□land□open forests□grasslands□sa□anna□□ desert□and □er□aceo□s □a□itats □□arsen 19□□□CD□G 2005□. □adgers typically occ□py □ome ranges of □et□een 2 acres in □inter to □50 acres in s□mmer□and e□ca□ate □□rro□s for dens□

escape□and predation □foraging□. □adgers are carni□oro□s and feed on mammals s□c□ as gro□nd s□□irrels □*Spermophilus* spp.□□ poc□et gop□ers □*Thamnomys* spp.□□ and □ac□ra□□its □*Lepus* spp.□□as □ell as reptiles□insects□amp□i□ians□and carrion.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases confirmed t□at most of t□e pro□ect occ□rs in t□e □no□n geograp□ic range of □merican □adger in □a□itat dominated □y nonnati□e grassland and salt□□s□ scr□□ □CD□□ 2013□. □merican □adgers □a□e also □een confirmed present □it□in t□e □o□ndaries of t□e □llens□ort□.

Potential □merican □adger □a□itat co□ld □e present in t□e □□□s in t□e follo□ing □a□itat types: al□ali desert scr□□□ann□al grassland□□arren□past□re□and □alley foot□ill riparian. □ it□in t□e □□□□ t□ese □a□itat types occ□r are largely concentrated in t□e □icinity of ma□or riparian corridors. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Special-Status Bat Species. □o□r special□stat□s □at species□all California species of special concern□are □no□n to occ□r or □a□e t□e potential to occ□r in t□e Pro□ect □□□: pallid □at □*Antrozous pallidus*□□□o□nsend□s □ig□eared □at □*Corynorhinus townsendii*□□□estern mastiff □at □*Eumops perotis californicus*□□and □estern red □at □*Lasiurus blossevillii*□□CD□G 2005□2012a□.

Pallid □ats in□a□it lo□□ele□ation □6□000 feet□□roc□y□arid deserts□canyon lands□s□r□□steppe grasslands□□arst formations□and □ig□er□ele□ation conifero□s forests □greater t□an □□000 feet□. Pallid □ats roost alone□in small gro□ps □2 to 20 □ats□□ or gregario□sly □greater t□an 100 indi□id□als□. Day and nig□t roosts are typically sit□ated in cre□ices in roc□y o□tcrops□cliffs□ ca□es□mines□trees s□c□ as t□e □ole ca□ities of oa□s□and in or on □ario□s □□man str□ct□res□ incl□ding □ridges and □arns. Pallid □ats typically mate □et□een □cto□er and □e□r□ary□and t□ey may ta□e □p to □ mont□s to rear a p□p. □□ey forage o□er open s□r□□steppe grasslands□oa□ sa□anna□ grasslands□open Ponderosa pine forests□tal□s slopes□gra□el roads□la□a flo□s□fr□it orc□ards□and □ineyards □□□er□in and □am□aldini 2005□.

□o□nsend□s □ig□eared □ats in□a□it a □ide □ariety of □a□itat types ranging from sea le□el to 10□□00 feet incl□ding conifero□s forests□deserts□nati□e prairies□riparian comm□nities□acti□e agric□lt□ral areas□and coastal □ones. Pop□lations are strongly correlated □it□ t□e presence of ca□es or ca□e□li□e roosting □a□itat□incl□ding man□made str□ct□res. □□is species □as □een reported to □se □□ildings□□ridges□roc□cre□ices□and □ollo□ trees as roost sites. Colonies range in si□e from a fe□ indi□id□als to se□eral □□ndred animals. □o□nsend□s □ig□eared □ats typically mate □et□een □cto□er and □e□r□ary□and t□ey may ta□e □p to □ mont□s to rear a p□p. □oraging associations incl□de edge □a□itats along streams□ad□acent to and in a □ariety of □ooded □a□itats □□□er□in and Piaggio 2005□.

□□e □estern mastiff □at is typically present only □□ere t□ere are significant roc□ feat□res offering s□ita□le roosting □a□itat. □□ey also roost in □□man constr□ctions□incl□ding □□ildings and □ridges. □□e species is fo□nd in a □ariety of □a□itats□incl□ding desert scr□□□c□aparral□oa□ □oodland□and t□e ponderosa pine □elt□and □ig□□ele□ation meado□s of mi□ed conifer forests. □oosts are generally □ig□ a□o□e t□e gro□nd and may n□m□er from a fe□ do□en to se□eral □□ndred animals. □ estern mastiff □ats □egin mating in t□e late □inter or early spring□and t□ey may ta□e □p □ mont□s to rear a p□p. □n California□□estern mastiff □ats are most fre□□ently enco□ntered in □road open areas. □ts foraging □a□itat incl□des dry desert □as□es□floodplains□ c□aparral□oa□ □oodland□open ponderosa pine forest□grassland□and agric□lt□ral areas □□olster 2005□□iders 2005□.

□ estern red □ats primarily in□a□it edge □a□itats ad□acent to streams□open fields□orc□ards□and occasionally □r□an areas. □□ey commonly roost in trees and s□r□□s and less fre□□ently in ca□es. □ □ile roosting is generally solitary□t□ey may migrate and forage in gro□ps. □ estern red □ats typically □egin mating in late s□mmer or early fall□and t□ey may ta□e □p eig□t mont□s to rear a p□p. □ estern red □ats often forage aro□nd □rig□t lig□t so□rces. □□ey also forage in areas t□at coincide □it□ roost □a□itats □□olster 2005□.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases confirmed t□at t□e pro□ect occ□rs in t□e □no□n geograp□ic range of special□stat□s □at species. □lt□o□g□ special□ stat□s □at species □ere not o□ser□ed d□ring field s□r□ey efforts□s□ita□le □reeding□foraging□and roosting □a□itat may □e present t□ro□g□o□t t□e Pro□ect□s □□□s in a n□m□er of s□ita□le □a□itats. □ it□in t□e □□□□t□ese □ildlife □a□itat types □□ere t□ese species are most li□ely to occ□r may □e concentrated near ma□or riparian corridors□□□t co□ld □e scattered t□ro□g□o□t t□e Pro□ect □□ere s□ita□le roost sites and foraging □a□itat coincide □it□ proposed facilities impro□ement areas. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□ □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys or specific minimi□ation meas□res are □arranted.

Nelson's Antelope squirrel *(Ammospermophilus nelsoni).* □elson□s □□ □an □oa□□in□antelope s□□irrel is state listed as t□reatened. □□e □istorical distri□□tion of t□is species incl□ded m□c□ of t□e □alley floor. □□e c□rrent distri□□tion occ□rs primarily in □ern Co□nty. □□e species is often fo□nd in t□e same locations as t□e giant □angaroo rat□and antelope s□□irrels are □no□n to □se giant □angaroo rat □□rro□s. □ypical □a□itat is flat to gently sloping terrain in grassland and salt□□s□ scr□□. □□e s□□irrels need □idely scattered s□r□□s□for□s□and grasses in □ro□en terrain □it□ g□llies and □as□es. □□ey typically a□oid al□aline and seasonally flooded areas. □□eir □reeding period coincides □it□ t□e period of t□e year □□en green □egetation is present□typically late □inter t□ro□g□ early spring. □o□ng are □orn □et□een Marc□ and □pril and □eaned □y t□e end of May □□□□□ □ 199□□.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases and t□e *Recovery Plan for Upland Species of the San Joaquin Valley* □□□□□ □ 199□□confirmed t□at t□e species □as t□e potential to occ□r from appro□imately t□e to□n of □llens□ort□ so□t□ to □a□ersfield in t□e □□□. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□ □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Ringtail *(Bassariscus astutus)* is a California f□lly protected species. □t ranges t□ro□g□o□t California□□it□ t□e ma□ority of distri□□tion data aggregated in t□e Coast □ange and t□e □estern □ierra □e□ada. □ingtails typically in□a□it forest and s□r□□land □a□itats in close association □it□ roc□y areas and riparian corridors at lo□ to middle ele□ations. □ingtails are noct□rnal□sleeping in t□eir dens d□ring t□e day. □s omni□ores□t□ey forage on a □ariety of items□incl□ding art□ropods□fr□its□ □erries□mammals□reptiles□ □irds□and eggs□depending on t□e season. □ingtails den in roc□ cre□ices□□o□lder piles□□ndergro□nd□and in tree ca□ities. □reeding occ□rs in late Marc□□and □its are □orn in May or □□ne □□ell□omini 19□0□□rloff 19□0□.

□ re□ie□ of t□e C□ □□ data□ase □CD□G 2005□confirmed t□at t□e □no□n geograp□ic range of ringtail does not o□erlap t□e alternati□e alignments. □o□e□er□recently□a ringtail □as detected in t□e □ern □i□er corridor in □a□ersfield □□nder Mo□a□□ □□en□e □ridge□. □lt□o□g□ t□is location is o□tside any proposed impro□ements□t□e most □pdated □nderstanding of t□is species □a□itat re□□irements and locations s□o□ld □e re□ie□ed once a facility □as □een designed.

San Joaquin kit fox *(Vulpes macrotis mutica)* is primarily noct□rnal□□ecoming acti□e near s□nset and foraging t□ro□g□o□t t□e nig□t. □t feeds on rodents and ot□er small animals□incl□ding □lac□tailed □ares□desert cottontails□mice□□angaroo rats□s□□irrels□□irds□and li□ards. □□e □an □oa□□in □it fo□satisfies its moist□re re□□irements from prey and does not depend on fres□□ater so□rces.

□□e □an □oa□□in □it fo□forages in California prairie and □onoran grasslands in t□e □icinity of fres□□ater mars□es and al□ali sin□s□□□ere t□ere is a dense gro□nd co□er of tall grasses and □an □oa□□in salt□□s□. □easonal flooding in s□c□ □a□itats is normal. □oils are deep□□ea□y loams t□at s□pport mi□t□res of nati□e perennial and introd□ced grasses. P□pping dens are □□ilt in more loosely te□t□red soils at ele□ations □et□een 110 and 900 meters □350 and 2□950 ft□.

□ormerly□t□is □it fo□□as relati□ely common in t□e semi□arid □an □oa□□in Valley□California□in a range t□at e□tended in t□e nort□ from a□o□e Modesto □□an □oa□□in and □tanisla□s co□nties□to near □a□ersfield □□ern Co□nty□in t□e so□t□. □y 1930 t□e □it fo□□ad □een eliminated from t□e nort□ern portion of its range and □as fo□nd in declining n□m□ers from Merced □Merced Co□nty□□ □eading so□t□ along t□e Coastal □ange t□ro□g□ □resno and □an □enito co□nties. Pop□lations s□r□i□ed in □ings□□an □□is □□ispo□and □ern co□nties mostly □est of □nterstate □ig□□ay 5.

□□e □it fo□ is no□ □no□n to occ□r along t□e □est side of t□e □an □oa□□in Valley in Merced Co□nty□and in □ern and □an □□is □□ispo and □ern co□nties. □solated indi□id□als or small □reeding pop□lations □a□e □een fo□nd near □ □ite □i□er so□t□ of Porter□ille □□□lare Co□nty□and in t□ree co□nties o□tside t□e original range of t□e species: Monterey□□anta □ar□ara□and □anta Clara.

□□ere are no □no□n pop□lations □it□in t□e □icinity of t□e proposed pro□ect.

San Pablo vole *(Microtus californicus sanpabloensis) i*s a CD□G species of special concern. □a□itat for t□is species consists of grassy □a□itats associated □it□ salt mars□es. □□is species differs from t□e California □ole □*Microtus californicus*□ in range and distinct p□ysical c□aracteristics. □ll □no□n occ□rrences of □an Pa□lo □ole are in Contra Costa Co□nty□in t□e salt mars□es of □an Pa□lo cree□□on t□e so□t□ s□ore of □an Pa□lo □ay.

□e□eral records of t□is species are reported in C□DD□ along t□e s□oreline □est of Point Pinole. □o□r occ□rrences are reported □it□in fi□e miles of t□e pro□ect site. □□e closest occ□rrence is from 19□6 and is at Giant □alt Mars□□east of t□e □P□□□on t□e □est side of Point Pinole□and anot□er record is from 199□ and is in Point Pinole □egional Par□. □t□er records are occ□r appro□imately 0.5 miles so□t□ of Giant □alt Mars□ and at t□e nort□ end of □an Pa□lo Cree□ Mars□.

□□ita□le □a□itat for t□is species occ□rs □it□in t□e tidal mars□ □a□itat □it□in t□e proposed □P□□ triple trac□areas □et□een Port C□icago and □a□land. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Salt-marsh wandering shrew *(Sorex vagrans halicoetes)* is a CD□G species of special concern and occ□rs in salt mars□es of t□e so□t□ arm of □an □rancisco □ay. □t prefers a lo□□ dense co□er of pic□le□eed and scattered de□ris□s□c□ as drift□ood□interspersed □it□in its □a□itat.

□□o occ□rrences are recorded □y C□DD□ □it□in ten miles of t□e pro□ect site. □□e closest occ□rrence is from 1950 and is □it□in Giant Mars□□□o□e□er□s□r□eys cond□cted at t□is site in 19□6 did not detect any salt□mars□ □andering s□re□s. □not□er occ□rrence is from 1959 and is □it□in □an Pa□lo Cree□ □alt Mars□□and s□□se□□ent s□r□eys cond□cted at t□is site in 19□5 did not detect any salt□mars□ □andering s□re□s.

□□ita□le □a□itat for t□is species occ□rs □it□in t□e tidal mars□ □a□itat □it□in t□e proposed □P□□ triple trac□areas □et□een Port C□icago and □a□land. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Salt marsh harvest mouse *(Reithrodontomys raviventris).* □ederally□listed as Endangered□ □tate □isted as Endangered and □□lly Protected. □□e salt mars□ □ar□est mo□se □as listed as an endangered species □nder t□e □ederal Endangered □pecies □ct □y t□e □□□□ □ on □cto□er 13□19□0 □□ederal □egister 35:1604□□ and as endangered □nder t□e California Endangered □pecies □ct □y t□e CD□G on □□ne 2□□19□1.

□□e species is endemic to tidal and □rac□is□ mars□ □a□itats of t□e □an □rancisco □ay region. □alt mars□ □ar□est mice are primarily fo□nd in t□e salt mars□es along t□e nort□ern □an Pa□lo □ay□s□rro□nding t□e □□is□n □ay□and along t□e so□t□ern □an □rancisco □ay □□□□□ □ 19□4□ Goals Pro□ect 2000□. □□e salt mars□ □ar□est mo□se is critically dependent on dense co□er and its preferred □a□itat is pic□le□eed. □n mars□es □it□ an □pper □one of □alop□ytes□it □ses t□is □egetation to escape □ig□ tides□and may also mo□e into ad□oining grasslands d□ring t□e □ig□est □inter tides. □□e □est type of pic□le□eed association for t□e species □as: 100 percent co□er□ co□er dept□ of 30 to 50 centimeters at s□mmer ma□im□m□□ig□ percentage co□er of pic□le□eed □at least 60 percent□□ and additional □alop□ytes□s□c□ as fat □en □*Atriplex patula*□ and al□ali □eat□ □*Frankenia salina*□. □□e amo□nt of salt grass□□rass □□ttons □*Cotula coronopifolia*□□al□ali □□Ir□s□ □*Bolboschoenus maritimus*□□or ot□er *Scirpus* or *Typha* species s□o□ld □e lo□ □□□□□ □ 19□4□.

□□e □alt Mars□ □ar□est Mo□se and California Clapper □ail □eco□ery Plan □□□□□ □ 19□4□lists fi□e principal reasons for t□e decline of t□e salt mars□ □ar□est mo□se: □a□itat loss□ fragmentation of t□e remaining mars□es□□idespread loss of t□e □ig□ mars□ □one as a res□lt of □ac□filling□land s□□sidence□and □egetational c□ange. □t f□rt□ermore points o□t t□at small mars□es separated □y open land or di□es □a□e □ery lo□ immigration□and t□at □ery fe□ areas are li□ely to □e recoloni□ed. Critical □a□itat □as not □een designated for salt mars□ □ar□est mo□se.

□mall patc□es of pic□le□eed tidal mars□ occ□r on or ad□acent to t□e Pro□ect □□□. □□ita□le □a□itat for t□is species occ□rs □it□in t□e tidal mars□ □a□itat □it□in t□e proposed □P□□ triple trac□areas □et□een Port C□icago and □a□land. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

□.□.4.4 □ir□s

American peregrine falcon □*Falco peregrinus anatum*□ □as □een federally delisted□ □□t remains state listed as endangered and is a California f□lly protected species. □nce □elie□ed to □se open □a□itats primarily□peregrines also in□a□it forests and□increasingly□cities. □□ey nest on a □ariety of nat□ral and man□made sites. □ests□□□ic□ are □s□ally a scrape or a depression□ may □e located on cliffs□ledges□ □an□s□d□nes□mo□nds□trees□ □ridges□or tall □□ildings.

Peregrines typically □reed from early Marc□ t□ro□g□ late □□g□st. D□ring t□e non□□reeding season□peregrines in□a□it riparian areas and coastal and inland □etlands. □□ey prey primarily on □irds as large as d□c□s □□t □ill occasionally eat small mammals□reptiles□and insects □Peeters and Peeters 2005□.

□nce a partic□lar facility □as □een designed and a pro□ect □PE □as □een de□eloped□a preliminary □a□itat assessment for all raptor species s□o□ld □e performed as part of t□e field s□r□ey efforts. □rees t□at co□ld pro□ide nesting □a□itat for □a□□s and ot□er raptors□incl□ding □□ite□tailed □ites□are located t□ro□g□o□t t□e pro□ect. Pre□constr□ction nesting s□r□ey s□o□ld □e cond□cted□and all □egetation remo□al s□o□ld □e cond□cted o□tside t□e □reeding areas

Bald eagle □*Haliaeetus leucocephalus*□□as □een federally delisted□□□t remains state listed as endangered and is a California f□lly protected species. □or nesting□□ald eagles prefer large□old gro□t□ trees or snags in remote locations near □ater□or dominant li□e trees s□c□ as pines□ □s□ally □it□ open foliage□50 feet to 200 feet a□o□e t□e gro□nd □□ere t□ey □□ild stic□platform nests. □ald eagles typically □egin □reeding in □e□r□ary□and ad□lts □ill a□andon nests in response to □□man acti□ity in t□e □icinity □Peeters and Peeters 2005□.□□e □reeding range of t□e □ald eagle incl□des most of t□e continent□□□t t□ey no□ nest mainly in □las□a□Canada□t□e Pacific □ort□□est states□t□e Great □a□es states□□lorida□and t□e C□esapea□e □ay. □n California□ t□e □reeding range is increasing and e□panding□□reeding territories are fo□nd in t□e nort□ern part of t□e state and some are scattered in so□t□ern California. Most of California□s □reeding □ald eagles remain near t□eir nest areas all year. □maller gro□ps of □intering eagles occ□r t□ro□g□o□t t□e state near reser□oirs and typically in close pro□imity to large concentrations of o□er□intering migratory □aterfo□l. □ intering eagles forage on fis□□ □aterfo□l□mammals□and a □ariety of carrion. □□ey re□□ire large □odies of □ater or ri□ers for □□nting □eca□se t□ey s□oop from □□nting perc□es□s□c□ as tall snags□to snatc□ prey from t□e □ater □Peeters and Peeters 2005□.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases confirmed t□at t□e □intering range of t□e □ald eagle incl□des t□e entire □an □oa□□in Valley□and t□e entire □□□ is in t□e □inter range of t□e □ald eagle. □o occ□rrences of t□is species □a□e □een reported to t□e C□DD□ □it□in 10 miles of t□e Pro□ect □CD□□ 2013□. □eca□se t□is species □as t□e potential to forage t□ro□g□o□t t□e Central Valley□it is not li□ely t□at any of t□e facilities □ill affect t□e foraging potential for t□is species. □o□e□er non□□reeding roosting sites may □e affected. □□erefore□ once a facility □as □een designed□a □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if t□ere are any potential roosting sites t□at may □e impacted □y t□e proposed facility constr□ction.

Ferruginous hawk *(Buteo regalis)*, ***Swainson's hawk*** *(Buteo swainsoni)*, ***red-tailed hawk*** *(Buteo. jamaicensis)*, ***short-eared owl*** *(Asio flammeus)*, ***long-eared owl*** *(Asio otus), and* ***northern harrier*** *(Circus cyaneus).* □ll of t□ese species preferred □a□itats are located in t□e arid and semiarid grassland regions of □ort□ □merica. □□e co□ntryside is open□le□el□or rolling prairies□foot□ills or middle ele□ation platea□s largely de□oid of trees□and c□lti□ated s□elter□elts or riparian corridors. □oc□y o□tcrops□s□allo□ canyons□and g□llies may c□aracteri□e some □a□itats. □□ese □a□□s a□oid □ig□ ele□ations□forest interiors□narro□ canyons□and cliff areas.

□□ainson□s □a□□and □err□gino□s □a□□□*B. regalis*□compete for territory□and defend territories against eac□ ot□er. □n many areas of t□e plains t□ese t□ree □a□□ species nest in t□e same general area and e□ploit m□c□ t□e same prey □ase. □lt□o□g□ diets o□erlap greatly□□a□itats may not o□erlap as m□c□. □n □regon□t□e □□ainson□s □a□□ selects nesting trees □a□ing a different config□ration t□an t□ose □sed □y □ed□tailed or □err□gino□s □a□□s. □n so□t□ern □l□erta□different nesting □a□itats □elp red□ce food competition□□it□ t□e □□ainson□s □a□□ fa□oring areas □it□

scattered trees or riparian □orders□□□ile □ed□tailed □a□□s nest in stands of tall trees□and □err□gino□s □a□□s nest on t□e open plains. D□ring t□e □reeding season□t□e preference is for grasslands□sage□and ot□er arid s□r□□ co□ntry. □esting occ□rs in open areas or in trees incl□ding cotton□oods□ □illo□s□ and s□amp oa□s along □ater□ays. C□lti□ated fields and modified grasslands are a□oided d□ring t□e □reeding period. □□e density of □err□gino□s □a□□s in grasslands declines in an in□erse relations□ip to t□e degree of c□lti□ation of t□e grasslands. □o□e□er□□ig□ densities □a□e □een reported in areas □□ere nearly □0 percent of t□e grassland □as □nder c□lti□ation.

□□e □inter □a□itat is similar to t□at □sed d□ring t□e s□mmer. □o□e□er□c□lti□ated areas are not necessarily a□oided□partic□larly □□en t□e crops are not plo□ed □nder after □ar□est. □□e standing st□□□le pro□ides □a□itat for t□e small□mammal prey□□ase needed □y □err□gino□s and ot□er □a□□s. □ne re□□isite of t□e □a□itat is perc□es s□c□ as poles□lone trees□□nolls□roc□y o□tcrops or large □o□lders. □err□gino□s □a□□s nest in trees if t□ey are a□aila□le□incl□ding riparian strips□□□t t□e presence of □ater does not appear to □e critical to t□em.

□ll of t□ese species □a□e t□e potential to forage t□ro□g□o□t t□e Central Valley. □o□e□er□non□ □reeding roosting sites may □e affected □y f□t□re facilities. □□erefore□once a facility □as □een designed□a □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if t□ere are any potential roosting sites t□at may □e impacted □y t□e proposed facility constr□ction.

□□e ***Golden eagle*** □*Aquila chrysaetos*□is a California f□lly protected species□and is protected □nder t□e □ald Eagle Protection □ct□t□e Migratory □ird □reaty □ct□and t□e Migratory □ird □reaty □eform □ct. Golden eagles in□a□it grasslands□sa□anna□s□oa□ and pine □oodlands□and agric□lt□ral fields. □□ey nest on cliffs and in large trees in open areas. Golden eagles e□□i□it strong site fidelity and □ill re□se t□e same nest from year to year. □o□e□er□it is not □ncommon for a □reeding pair to □a□e se□eral alternate nest sites in t□e same territory. □reeding season □egins □et□een □e□r□ary and May□ depending on t□e latit□de. Golden eagles are single□ □rooded. □□ey may ta□e more t□an 6 mont□s to completely rear a single yo□ng. D□ring t□e non□ □reeding season t□ey occ□py open □a□itats in t□e Central Valley□ s□c□ as grasslands□ sa□anna□s□scr□□□and oa□ □oodlands. Else□□ere in California□golden eagles in□a□it t□e region year□ro□nd. Prey consists of small□ to medi□m□si□ed mammals□ incl□ding □lac□tailed □ac□ra□□its□cottontails □*Sylvilagus* spp.□□and California gro□nd s□□irrels □□oc□ert and □teen□off 2002□.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases confirmed t□at t□e □intering range of golden eagle incl□des t□e entire □an □oa□□in Valley□t□erefore□t□e entire □□□ □i.e.□core□a□□iliary□and s□pplemental□occ□rs in t□e □intering range of golden eagle. Golden eagles □a□e also □een confirmed present □it□in t□e □o□ndaries of t□e □llens□ort□ □y CD□□ .

□□e □ig□ly dist□r□ed agric□lt□ral land in t□e □an □oa□□in Valley is not e□pected to pro□ide nesting □a□itat□ □□t li□ely pro□ides s□ita□le foraging □a□itat for t□e species. Golden eagle foraging □a□itat incl□des t□e follo□ing C□ □□ □ildlife □a□itat types: al□ali desert scr□□□ann□al grassland□□arren□fres□ emergent □etlands□irrigated □ayfield□crop□past□re□□r□an□and □alley foot□ill riparian. □□ese □ildlife □a□itat types are present at □ario□s locations t□ro□g□o□t t□e □□□. □eca□se t□is species □as t□e potential to forage t□ro□g□o□t t□e Central Valley□it is not li□ely t□at any of t□e facilities □ill affect t□e foraging potential for t□is species. □o□e□er□non□□reeding roosting sites may □e affected. □□erefore□ once a facility □as □een designed□a □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if t□ere are any potential roosting sites t□at may □e impacted □y t□e proposed facility constr□ction.

White-tailed kite (*Elanus leucurus*) is a California fully protected species. White-tailed kites inhabit open grasslands and savannas. They breed in a variety of habitats, including grasslands, cultivated fields, oak woodlands, and southern areas where prey is abundant. Nests are typically built in trees near a water source and may occur in southern areas adjacent to open habitats with abundant prey. Breeding occurs between February and July, and white-tailed kites may be double-brooded in some years. During the non-breeding season, white-tailed kites may roost communally. This species inhabits California year-round west of the Sierra Nevada and is most commonly seen in the Central Valley and foothills. White-tailed kites prey on small mammals, reptiles, and occasionally on birds (Haicic and Harrison 2005).

A review of the CNDDB (CDFW 2013) and CNHP (CDFG 2005) databases showed that the year-round range of the white-tailed kite includes the entire San Joaquin Valley, therefore the entire project occurs within the year-round range of the species.

Once a particular facility has been designed and a project APE has been developed, a preliminary habitat assessment for all raptor species should be performed as part of the field survey efforts. Trees that could provide nesting habitat for hawks and other raptors, including white-tailed kites, are located throughout the project. Pre-construction nesting survey should be constructed, and all vegetation removal should be conducted outside the breeding areas

California clapper rail (*Rallus longirostris obsoletus*) and ***California black rail*** (*Laterallus jamaicensis coturniculus*). The California Clapper Rail is a federally listed Endangered, a State listed as Endangered, and a State Fully Protected species. The California clapper rail was listed as an endangered species under the Federal Endangered Species Act by the [illegible] on October 13, 1970 (Federal Register 35:1604) and as endangered under the California Endangered Species Act by the CDFG on June 2, 1971. The California black rail was listed as threatened under the California Endangered Species Act by the CDFG on June 2, 1971.

California clapper rails occur within a range of salt and brackish marshes. In south and central San Francisco Bay and along the perimeter of San Pablo Bay, rails typically inhabit salt marshes dominated by pickleweed (*Sarcocornia pacifica*) and Pacific cordgrass (*Spartina foliosa*). Pacific cordgrass dominates the middle marsh zone throughout the south and central Bay (Federal Register 35:1604). Additionally, in the north Bay (Petaluma Marsh, Napa-Sonoma marshes, Suisun Marsh) clapper rails also live in tidal brackish marshes which vary significantly in vegetation structure and composition. Use of brackish marshes by clapper rails is largely restricted to major sloughs and rivers of San Pablo Bay and Suisun Marsh and along Coyote Creek in south San Francisco Bay. Breeding California clapper rails require tidal marshes with the following elements: a well-developed tidal channel system with full tidal influence, cordgrass, and a vegetated upper marsh/upland ecotone. The minimum marsh size likely to be used by clapper rails is estimated at approximately 2.5 acres.

Suitable habitat for this species occurs within the tidal marsh habitat within the proposed APE triple track areas between Port Chicago and Oakland. Once a facility has been designed within the known range of this species, habitat assessment surveys should be conducted to determine if suitable habitat exists, and focused surveys are warranted.

Greater sandhill crane *(Grus canadensis tabida)* is state listed as threatened and is a California fully protected species. Greater sandhill crane inhabit sites with freshwater near grasslands, open wetlands, moist croplands, rice, or corn stubble. Greater sandhill cranes breed in the northern latitudes in Siberia and Canada to northeastern California, migrating

so□t□ to □inter in California□t□e so□t□□estern states□and nort□ern Me□ico. □n □inter□greater sand□ill cranes forage in irrigated past□re and ann□al grasslands in t□e Central Valley□ incl□ding Pi□ley □□ □. Cranes feed on plants□incl□ding grasses□for□s□and especially cereal crops□and small □erte□rates and in□erte□rates.

□□ita□le □a□itat for t□is species occ□rs □it□in t□e Pro□ect □□□. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□ □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

□□r□eys s□o□ld □e cond□cted □□en t□e species is most li□ely to □e detected□mid□□eptem□er t□ro□g□ early Marc□.

Western burrowing owl □*Athene cunicularia*□ is a California species of special concern. □□rro□ing o□ls range t□ro□g□o□t t□e Central Valley□t□e inner and o□ter coastal regions□ portions of t□e □an □rancisco □ay □rea□t□e California coast from so□t□ern California to t□e Me□ican □order and t□e □mperial Valley□and in portions of t□e desert and □ig□□desert □a□itats in so□t□eastern and nort□eastern California. □□ey in□a□it areas □it□ lo□ □egetation in agric□lt□ral fields□grasslands□and desert comm□nities□and also occ□r in □r□an and s□□□r□an areas s□□□ect to reg□lar □□man dist□r□ance. □□rro□ing o□ls re□□ire fossorial mammal □□rro□s□typically t□ose created □y California gro□nd s□□irrels□for escape co□er and nesting. □o□e□er□piles of roc□□ concrete de□ris□and ot□er materials are also □sed in lie□ of □□rro□s. □□e □reeding season occ□rs from □e□r□ary 1 to □□g□st 31□and pea□s □et□een late □pril and □□ly in most years.

□ re□ie□ of t□e C□DD□ □CD□□ 2013□and C□ □□ □CD□G 2005□data□ases confirmed t□at t□e year□ro□nd range of t□e □estern □□rro□ing o□l incl□des t□e entire □an □oa□□in Valley□and t□e entire □□□ occ□rs in t□e □no□n year□ro□nd range of t□e □estern □□rro□ing o□l. □e□enty□se□en occ□rrences of t□is species □a□e □een reported □it□in t□e Pro□ect □□□ in t□e segments □et□een □a□ersfield and □toc□ton.

Potential □□rro□ing o□l □a□itat in t□e core and a□□iliary □□□s is present in t□e follo□ing C□ □□ □ildlife □a□itat types: al□ali desert scr□□□ann□al grassland□□arren□past□re□□r□an□and □alley foot□ill riparian. □□ese □ildlife □a□itat types are present at □ario□s locations t□ro□g□o□t t□e □□□□ □□ere e□en small□r□deral road□side s□o□lder □a□itats or le□ees co□ld □e □sed for nesting or o□er□intering as long as small mammal □□rro□s are present. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□ □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Special-Status Passerine Species. □□el□e special□stat□s passerine □ird species are □no□n to occ□r or □a□e t□e potential to occ□r in t□e Pro□ect □□□: tricolored □lac□□ird□grass□opper sparro□ □*Ammodramus savannarum*□□ oa□ titmo□se □*Baeolophus inornatus*□□ yello□ □ar□ler □*Dendroica petechia brewsteri*□□ yello□□□reasted c□at □*Icteria virens*□□ logger□ead s□ri□e □*Lanius ludovicianus*□□□e□is□s □oodpec□er □*Melanerpes lewis*□□□□ttall□s □oodpec□er □*Picoides nuttallii*□□ □regon □esper sparro□ □*Pooecetes gramineus affinis*□□ p□rple martin □*Progne subis*□□□e Conte□s t□ras□er □*Toxostoma lecontei*□□ and yello□□□eaded □lac□□ird. □□ese species □a□e □een designated as eit□er federal □irds of conser□ation concern or California species of special concern.

□ricolored □lac□□ird□logger□ead s□ri□e□and □□ttall□s □oodpec□er are year□ro□nd residents of t□e □an □oa□□in Valley. □ello□□□eaded □lac□□ird is a s□mmer resident of t□e □an □oa□□in Valley and a year□ro□nd resident near t□e to□n of □llens□ort□. □ello□□□reasted c□at is a s□mmer resident in t□e □icinity of □resno. □regon □esper sparro□ is a □inter resident in t□e □icinity of □resno and □a□ersfield. □e□is□s □oodpec□er is a □inter resident □et□een □resno and

□anford and in t□e □icinity of □a□ersfield. □e Conte□s t□ras□er is a year□ro□nd resident in t□e □icinity of □a□ersfield□ □□ile p□rple martin□ grass□opper sparro□□ and yello□ □ar□ler are s□mmer residents and oa□titmo□se a □inter resident in t□e □icinity of □a□ersfield. □ot□ yello□ □ar□ler and p□rple martin □a□e □een largely e□tirpated from t□e Central Valley and □an □oa□□in Valley regions. Most of t□ese passerine species rely □ea□ily on in□erte□rates s□c□ as spiders□ grass□oppers□and ot□er insects for a prey □ase□□□t t□ey may also forage on seeds and grains. □est sites □ary □it□ species□from gro□nd nests to s□r□□s and trees to ca□ity nests. □□e o□erlap of t□ese passerine species□s□mmer□□inter□and year□ro□nd ranges □it□in t□e □□□ □ill □ary □y season and t□e a□aila□ility of s□ita□le □a□itat. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

Special-Status Wading Bird, Shorebird, and Duck Species. □n addition to t□e greater sand□ill crane□nine special□stat□s □ading □ird□s□ore□ird□and d□c□ species are □no□n to occ□r or □a□e t□e potential to occ□r in Pro□ect □□□: red□ead □*Aythya americana*□□ □estern sno□y plo□er □*Charadrius alexandrinus nivosus*□□ mo□ntain plo□er □*Charadrius montanus*□□ □lac□ tern □*Chlidonias niger*□□ yello□ rail □*Coturnicops noveboracensis*□□ f□l□o□s □□istling d□c□ □*Dendrocygna bicolor*□□ lesser sand□ill crane □*Grus canadensis canadensis*□□ least □ittern □*Ixobrychus exilis*□□ and long□□illed c□rle□ □*Numenius americanus*□. □□ese species are eit□er federal □irds of conser□ation concern or California species of special concern. □lt□o□g□ t□e Pacific coast pop□lation of □estern sno□y plo□er □t□ose indi□id□als □□o nest ad□acent to tidal □aters of t□e Pacific □ean□is federally listed as t□reatened□□estern sno□y plo□ers in t□e □an □oa□□in Valley constit□te a pop□lation t□at nests at inland sites. □□erefore□ □estern sno□y plo□ers nesting in t□e □an □oa□□in Valley □o□ld recei□e protection as a California species of special concern□□□t are not considered part of t□e federally t□reatened Pacific coast pop□lation.

□esser sand□ill crane and long□□illed c□rle□ are □inter residents of t□e □an □oa□□in Valley. □ed□ead is a year□ro□nd resident□□□ile □estern sno□y plo□er□f□l□o□s □□istling d□c□ and least □ittern are s□mmer residents and mo□ntain plo□er is a □inter. □ello□ rail is considered a former □inter resident of t□e □an □oa□□in Valley□little is □no□n a□o□t its □istorical or c□rrent range. □esser sand□ill crane□least □ittern□yello□ rail□□lac□ tern□□estern sno□y plo□er□and mo□ntain plo□er all forage on insects□fis□□and in□erte□rates□□□ile red□ead and f□l□o□s □□istling d□c□ forage on pond □eeds□s□□merged plant matter□and grains. □ong □illed c□rle□ feeds almost e□cl□si□ely on in□erte□rates. □est sites □ary □it□ species□from gro□nd nests on □are soil and lo□□lying □egetation to t□ose □idden in stands of t□les and grasses.

□□ita□le □a□itat for t□ese species occ□rs □it□in t□e Pro□ect □□□. □nce a facility □as □een designed □it□in t□e □no□n range of t□is species□ □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

□.□.4.□ □ish

Kern Brook lamprey *(Lampetra hubbsi)* is a California species of special concern. □□e distri□□tion of t□is species □as not □een □ell doc□mented□□□t it is □elie□ed to □e endemic to t□e east side of t□e □an □oa□□in Valley and to □e fo□nd only in t□e □an □oa□□in □i□er drainage □Moyle et al. 1995□. Pop□lations□□□ic□ are t□inly scattered and isolated from one anot□er□□a□e □een fo□nd in t□e □an □oa□□in □i□er □elo□ □riant Dam□t□e Merced □i□er□t□e □a□ea□ □i□er□ and t□e □ings □i□er a□o□e and □elo□ Pine □lat Dam.

□lt□o□g□ □nli□ely to occ□r in t□e Pro□ect □□□□any proposed □or□ o□er t□e Merced □i□er □as t□e potential to impact t□is species. □□erefore once a facility □as □een

designed o□er t□e Merced □i□er□an □pdated records searc□ and □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys are □arranted.

North American green sturgeon *(Acipenser medirostris).* □□e □o□t□ern DP□ of □ort□ □merican green st□rgeon □as listed as t□reatened □nder t□e □ederal Endangered □pecies □ct on □pril □□2006 □□ederal □egister □1:1□□5□□□and is considered a □tate □pecies of □pecial Concern □y CD□G □2009□.

□□e □o□t□ern DP□ of green st□rgeon incl□des all green st□rgeon pop□lations so□t□ of t□e Eel □i□er□□it□ t□e only □no□n spa□ning pop□lation □eing in t□e □acramento □i□er □□M□□ 2009a□. Green st□rgeon life □istory can □e □ro□en do□n into fo□r main stages: eggs and lar□ae□ □□□eniles□s□□□ad□lts□and se□□ally mat□re ad□lts □□M□□ 2009a□.
□an Pa□lo □ay ser□es as important rearing □a□itat for □□□enile green st□rgeon□as □ell as for o□er□s□mmering s□□□ad□lts and ad□lts □□M□□ 200□□. □t also ser□es as a migration corridor for ad□lts en ro□te to□and from□spa□ning gro□nds in t□e □pper □acramento □i□er □□M□□ 200□□. Primary constit□ent elements □PCEs□ present incl□de food reso□rces □e.g.□*Corophium* spp.□ *Crago franciscorum*□*Macoma* spp.□*Photis california*□*Synidotea laticauda*□□nidentified cra□□and fis□ □Ganssle□1966□□□dept□s□□ater □□ality□and migratory corridors to s□pport □□□enile rearing□ feeding□and migration□and s□□□ad□lt and ad□lt feeding and migration □□M□□ 200□□.

Green st□rgeon enter t□e □an □rancisco Est□ary d□ring t□e spring and remain □ntil a□t□mn□and ad□lts may enter t□e est□ary in late□□e□r□ary. Prey species for □□□enile□s□□□ad□lt□and ad□lt green st□rgeon □it□in □ays and est□aries primarily consist of □ent□ic in□erte□rates and fis□□ incl□ding crangonid s□rimp□callianassid s□rimp□□□rro□ing t□alassinidean s□rimp□amp□ipods□ isopods□clams□annelid □orms□cra□s□sand lances□and anc□o□ies □□M□□ 2009a□. □□□enile green st□rgeon in t□e Delta□relati□ely large n□m□ers of □□□eniles □ere capt□red primarily in s□allo□ □aters □3□□ feet deep□□indicating t□at □□□eniles may re□□ire s□allo□er dept□s for rearing and foraging □□adt□e 1966□. Green st□rgeon co□ld □e present in and ad□acent to t□e intertidal m□dflats in t□e pro□ect site.

Critical □a□itat □as designated for t□e □o□t□ern DP□ of green st□rgeon on □cto□er 9□2009 and incl□des □an □rancisco and □an Pa□lo □ays □□4 □□ 52300□□cto□er 9□2009□. □□ita□le □a□itat for t□is species as □ell as critical □a□itat occ□rs □it□in t□e tidal and non□tidal mars□ □a□itat □it□in t□e proposed □P□□ triple trac□areas □et□een Port C□icago and □a□land. □nce a facility □as □een designed □it□in t□e □no□n range or □it□in Critical □a□itat for t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys or ot□er minimi□ation meas□res are □arranted.

Delta smelt *(Hypomesus transpacificus)* □as listed as t□reatened □nder t□e □ederal Endangered □pecies □ct on Marc□ 5□1993 □□ederal □egister 5□:12□54□□and □as listed as t□reatened □nder t□e California Endangered □pecies □ct in 1993. □n addition□delta smelt □as proposed for listing as endangered □nder t□e California Endangered □pecies □ct □y CD□G on □an□ary 16□2009.

Delta smelt are a e□ry□aline species□nati□e to t□e □acramento□□an □oa□□in est□ary. Delta smelt tolerate □ide□ranging salinities□ □□t rarely occ□r in □aters □it□ salinities greater t□an 10 ppt to 14 ppt □□a□ter *et al.* 1999□. □imilarly□Delta smelt tolerate a □ide□range of □ater temperat□res □Moyle 2002□. Delta smelt feed entirely on □ooplan□ton. □pa□ning occ□rs primarily d□ring □pril t□ro□g□ mid□May □Moyle 2002□in slo□g□s and s□allo□ edge areas in t□e Delta □□ ang 19□6□□□□□ □ 200□□□. □pa□ning also □as □een recorded in □□is□n Mars□ and t□e □apa □i□er □□o□□s et al. 200□□as cited in □□□□ □ 200□□□. C□rrently□yo□ng delta smelt rear

t□ro□g□o□t t□e Delta into □□ne or t□e first □ee□ of □□ly□□□t t□ereafter□distri□□tion s□ifts to t□e □acramento□□an □oa□□in ri□er confl□ence □□ere □ater temperat□res are cooler and □ater transparencies are lo□er □□eyrer et al. 200□□□o□riga et al. 200□□.

Critical □a□itat for Delta smelt □as designated □y □□□□ □ in 1994 □□ederal □egister 59:65256□. Designated critical □a□itat incl□des areas of all □ater □o□nded □y and contained in □□is□n □ay □incl□ding t□e contig□o□s Gri□□ly and □on□er □ays□□t□e lengt□ of Goodyear□□□is□n C□toff□□irst Mallard □□pring □ranc□□□ and Monte□□ma □lo□g□s□ and t□e e□isting contig□o□s □aters contained □it□in t□e Delta. □□e designation does not incl□de □an Pa□lo □ay.

□□ita□le □a□itat for t□is species as □ell as critical □a□itat occ□rs □it□in t□e tidal and non□tidal mars□ and stream □a□itat □it□in t□e Pro□ect □□□ □et□een □toc□ton and t□e □□□0 □ridge □□st □est of Croc□et. □nce a facility □as □een designed □it□in t□e □no□n range or □it□in Critical □a□itat for t□is species□ □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys or ot□er minimi□ation meas□res are □arranted.

River lamprey *(Lampetra fluviatilis)* is a CD□G species of special concern. □□e anadromo□s ri□er lamprey is fo□nd in coastal streams from □an □rancisco □ay to □las□a □Moyle 2002□. □d□lts immigrate into fres□□ater d□ring fall and spa□n from □pril to □□ne in small tri□□tary streams □□ ang 19□6□. □d□lts migrate into fres□□ater t□ro□g□ □an Pa□lo □ay d□ring t□e fall and spa□n in small tri□□tary streams from □pril to □□ne □□ ang 19□6□CDM and t□e □ay □nstit□te of □an □rancisco 2000□. □d□lts li□ely need clean□ gra□elly riffles in permanent streams for spa□ning□□□ile t□e ammocoetes re□□ire sandy □ac□□aters or stream edges in □□ic□ to □□ry t□emsel□es□□□ere □ater □□ality is contin□o□sly □ig□ and □ater temperat□res do not e□ceed □□□□. □□e lengt□ of t□e ammocoete life stage is not □no□n□□□t is pro□a□ly t□ree to fi□e years □Moyle 2002□. □mmocoetes □egin t□eir transformation into ad□lts □□en t□ey are a□o□t 12 cm in total lengt□ □□□□□d□ring t□e s□mmer. □□e process of metamorp□osis may ta□e nine to ten mont□s□ t□e longest □no□n for any lamprey species. □ampreys in t□e final stages of metamorp□osis congregate immediately □pri□er from salt□ater and enter t□e ocean d□ring late spring.

□o critical □a□itat □as □een designated for t□is species. □i□er lamprey □as t□e potential to occ□r in t□e intertidal m□dflats and □ater□ays □it□in t□e proposed □P□□ triple trac□ areas □et□een Port C□icago and □a□land. □nce a facility □as □een designed □it□in t□e □no□n range for t□is species□ □a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys or ot□er minimi□ation meas□res are □arranted.

□**acramento splittail** □*Pogonichthys macrolepidotus)* □as remo□ed from t□e list of t□reatened species □y t□e □□□□ □ on □eptem□er 22□2003□and □□□□ □ did not identify it as a candidate for listing. □□is species is considered □y CD□□ as a species of special concern and informally as a federal species of concern.

□acramento splittail is t□e only e□tant species in a □ni□□e gen□s of large□nati□e minno□s. □t in□a□its t□e □acramento□□an □oa□□in ri□er system and t□e Delta□ incl□ding t□e □rac□is□ nort□ern reac□es of t□e □an □rancisco Est□ary □California □tate Coastal Conser□ancy and □□□□ □ 2003□. □□e species □as □een collected in tidal □aters as saline as 1□ ppt□□□t splittail a□□ndance is greatest in salinity lo□er t□an 10 ppt. □ it□in t□e □an □rancisco Est□ary□it occ□rs primarily in t□e □□is□n □ay area□□□t reac□es nort□ern □an Pa□lo □ay reg□larly in years of □ig□ ri□er disc□arge □California □tate Coastal Conser□ancy and □□□□ □ 2003□. □□ey spa□n in fres□ or nearly fres□□non□saline s□allo□ □aters □it□ s□□merged □egetation. □ it□in t□e □an □rancisco Est□ary t□ey are reported to □e most a□□ndant in small tidal cree□s□partic□larly t□ose □it□

fres□□ater disc□arges or partially s□□merged mars□ □egetation. □oday most ad□lt and □□enile rearing □a□itat appears to □e in t□e tidal □pper est□ary□incl□ding □□is□n □ay□especially in □rac□is□ □ater.

□acramento splittail □as t□e potential to occ□r in t□e Pro□ect □□□ □et□een □acramento and □an Pa□lo □ay. □□ita□le □a□itat for t□is species occ□rs □it□in t□e proposed □□□□and once a facility □as □een designed □it□in t□e □no□n range for t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys or ot□er minimi□ation meas□res are □arranted.

Anadromous Salmonids. □an Pa□lo □ay is □sed primarily as a migration corridor for anadromo□s salmonids. □d□lt C□inoo□ □*Oncorhynchus tshawytscha*□ and Co□o salmon □*Oncorhynchus kisutch*□and steel□ead □*Oncorhynchus mykiss*□migrate t□ro□g□ □an Pa□lo □ay en ro□te from t□e ocean to □pstream spa□ning gro□nds and □□enile salmon and steel□ead migrate □ac□t□ro□g□ □an Pa□lo □ay on t□eir □ay o□t to t□e ocean. □almon and steel□ead r□ns migrating t□ro□g□ □an Pa□lo □ay incl□de t□e □acramento □i□er □inter□r□n Critical □a□itat for t□e Central California Coast E□□□ □□ic□ encompasses accessi□le reac□es of all ri□ers incl□ding est□arine areas and tri□□taries□ □et□een P□nta Gorda and t□e □an □oren□o □i□er incl□si□e□ in California□incl□ding t□o streams entering □an □rancisco □ay: □rroyo Corte Madera Del Presidio and Corte Madera Cree□ □64 □□ 24049□May 5□1999□. □□e pro□ect area incl□des t□e C□inoo□ salmon E□□□Central Valley spring□r□n C□inoo□ salmon E□□□Central Valley fall□/late fall□r□n C□inoo□ salmon E□□□Central Valley steel□ead DP□□Central California Coast steel□ead DP□□and t□e Central California coast Co□o salmon E□□.

□ll t□ree salmonid species □C□inoo□ salmon□ Co□o salmon□ steel□ead□ spa□n in □ario□s locations □it□in t□e □an Pa□lo □ay □aters□ed. □n Marc□ 19□199□□□M□□ listed t□e Central Valley steel□ead DP□ as a t□reatened species □□ederal □egister 63:1334□□. Central Valley steel□ead is not listed □nder t□e California Endangered □pecies □ct. Central Valley steel□ead ad□lts generally lea□e t□e ocean from □□g□st t□ro□g□ □pril □□□s□y *et al.* 1996□□and spa□n from Decem□er t□ro□g□ □pril □□alloc□ *et al.* 1961□McE□an and □ac□son 1996□. □□□enile steel□ead emigrate episodically from natal streams d□ring fall□ □inter□ and spring □ig□ flo□s □□M□□ 2009a□. Emigrating Central Valley steel□ead □se t□e lo□er reac□es of t□e □acramento □i□er and t□e Delta for rearing and as a migration corridor to t□e ocean □□M□□ 2009a□.

□ll t□ree of t□ese species □a□e t□e potential to occ□r in t□e Pro□ect □□□ □et□een □acramento and □an Pa□lo □ay. □□ita□le □a□itat□as □ell as critical □a□itat for t□ese species□occ□rs □it□in t□e proposed □□□□and once a facility □as □een designed □it□in t□e □no□n range for t□ese species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□ and foc□sed s□r□eys or ot□er minimi□ation meas□res are □arranted.

□on□□in smelt □□pirinc□□s t□aleic□t□ys□ □as listed □y CD□G as t□reatened □nder CE□□ on Marc□ 4□2009□□□t is not listed □nder t□e □E□□. □ongfin smelt are e□ry□aline□occ□pying □ario□s areas of t□e □an □rancisco Est□ary t□ro□g□o□t t□eir lifecycle. □□eir life cycle □egins □it□ spa□ning in □□is□n □ay□t□e Delta and lo□er □acramento and □an □oa□□in □i□ers□ follo□ed □y do□nstream transport of t□e lar□ae□□□enile dispersal and migration to marine □aters□and an □pstream spa□ning migration □y yearlings d□ring late fall and □inter. □□e do□nstream e□tent of longfin spa□ning typically is □pper □□is□n □ay □□ ang 19□6□1991□Moyle 2002□□ □o□e□er□some spa□ning may also occ□r at t□e so□t□ern tip of □o□t□ □an □rancisco □ay. □ongfin smelt spa□ning may occ□r as early as □o□em□er t□ro□g□ as late as □□ne□□□t primarily occ□rs from □e□r□ary t□ro□g□ □pril.

□□is species □as t□e potential to occ□r in t□e Pro□ect □□□ □et□een □acramento and □an Pa□lo □ay. □□ita□le □a□itat at for t□is species occ□rs □it□in t□e proposed □□□□and once a facility □as □een designed □it□in t□e □no□n range for t□is species□□a□itat assessment s□r□eys s□o□ld □e cond□cted to determine if s□ita□le □a□itat e□ists□and foc□sed s□r□eys or ot□er minimi□ation meas□res are □arranted.

□.□.4.□ □ssential □ish Habitat an□ □e□ionally Important Commercial an□/or □ecreational □isheries

□e□eral species of fis□ occ□r in □an Pa□lo □ay t□at are managed □nder a federal □is□ery Management Plan and □a□e □een designated Essential □is□ □a□itat □E□□□ □eca□se t□ey pro□ide regionally important commercial fis□eries□ □o□e□er□ t□ey do not ot□er□ise □a□e a special□stat□s designation. □n addition□se□eral species of fis□ and s□ellfis□ occ□rring in □an Pa□lo □ay pro□ide important commercial and/or recreational fis□eries □□t do not □a□e a special□ stat□s designation and are also not managed □nder a □is□ery Management Plan and □a□e no designated E□□. □□ese regionally important commercial and/or recreational fis□eries are listed in □a□le 3.3.1 and disc□ssed □elo□.

□able □.□.1
□□□ION□□□Y IMPO□□□N□ COMM□□CI□□ □N□/O□ □□C□□□□ION□□ □I□H□□I□□

Common Name	□cienti□ic Name	□ishery Mana□ement Plan
□ort□ern □nc□o□y	*Engraulis mordax*	Coastal Pelagic
□tarry □lo□nder	*Platichthys stellatus*	Gro□ndfis□
Englis□ □ole	*Parophrys vetulus*	Gro□ndfis□
□ig □□ate	*Raja binoculatus*	Gro□ndfis□
Pacific □ardine	*Sardinops sagax*	Coastal Pelagic
□piny Dogfis□	*Squalus acanthias*	Gro□ndfis□
□eopard □□ar□	*Triakus semifasciatas*	Gro□ndfis□
□and □ole	*Cynoglossus capensis*	Gro□ndfis□
California □ali□□t	*Paralichthys californicus*	□□
Pacific □ali□□t	*Hippoglossus stenolepis*	□□
Pacific □erring	*Clupea pallasii*	□□
D□ngeness Cra□	*Cancer magister*	□□

Starry flounder *(Platichthys stellatus)* spa□n in s□allo□ □less t□an 45 m deep□□aters near t□e mo□t□s of ri□ers and est□aries d□ring t□e □inter □Goals Pro□ect 2000 as cited in □eclamation 200□□□from □o□em□er to □e□r□ary□pea□ing in Decem□er and □an□ary □□eclamation 200□□. Eggs and lar□ae are pelagic and are carried ins□ore □y c□rrents settling to t□e □ottom□□□ic□ re□□ire lo□ salinity □ater for rearing □□rsi 1999□. □ □ile some spa□ning may occ□r in t□e □an □rancisco Est□ary□most □□□eniles fo□nd in t□e Est□ary are apparently carried in from nears□ore ocean □aters □y strong tidal c□rrents along t□e □ottom □Moyle 2002□. Eggs are fo□nd in poly□aline to e□□aline □aters. □□□eniles are fo□nd in meso□aline to fres□□ater □it□ a preference for sandy and m□ddy s□□strates □□eclamation 200□□. □tarry flo□nder tend to rear for □p to t□o years in est□arine areas □efore mo□ing to s□allo□ coastal marine □aters □□eclamation 200□□□it□ □ig□er salinities □□rsi□. □d□lts mo□e ins□ore d□ring □inter or early spring to spa□n and mo□e offs□ore to deeper □aters d□ring t□e s□mmer and fall □□eclamation 200□□. □d□lts prefer sandy and coarse s□□strates.

□tarry flo□nder distri□□tion tends to s□ift □it□ gro□t□ □□eclamation 200□□. □o□ng □□eniles are commonly fo□nd in fres□ or □rac□is□ □ater of □□is□n □ay□□□is□n Mars□□and t□e Delta□older □□eniles range from □rac□is□ to marine □ater of □□is□n and □an Pa□lo □ays□and ad□lts tend to li□e in s□allo□ marine □aters □it□in and o□tside t□e □an □rancisco □ay □efore ret□rning to est□aries to spa□n □□eclamation 200□□. More specifically□composite □a□itats most important for t□e starry flo□nder are est□arine □for all life stages□□non□roc□y s□elf □for □□eniles and ad□lts□□and neritic □a□itats □for eggs and lar□ae□□as defined □y t□e □MP.

English sole *(Parophrys vetulus)* spa□n o□er soft□□ottom m□d s□□strata at dept□s of 50 to □0 m □P□MC 2005□ from □eptem□er t□ro□g□ □pril □□rsi 1999□□ □□t primarily d□ring □an□ary and □e□r□ary in California □□rsi 1999□. □pecifically□t□e eggs and lar□ae are pelagic□□□ile □□eniles and ad□lts are demersal □P□MC 2005□. □ar□ae are fo□nd primarily in □aters less t□an 200 m deep □P□MC 2005□. □□eniles reside primarily in s□allo□□□ater coastal□ □ay□ and est□arine areas often settling in est□arine and s□allo□ near□s□ore areas. Englis□ sole appear to □se t□e □ay as a n□rsery area□entering as transforming lar□ae or small □□eniles d□ring t□e □inter□ s□mmer of t□eir first year of life and emigrating sometime □et□een t□e end of t□eir first or second s□mmer in t□e □ay. □s t□ey gro□□t□ey mo□e to deeper □aters and contin□e to do so after t□ey emigrate to t□e open coast □P□MC 2005□□rsi 1999□. □n t□e □ort□ pacific□Englis□ sole is an inner□s□elf mes□o□ent□al species □P□MC 2005□. Englis□ sole is an a□□ndant species in □an Pa□lo □ay □from □an □afael □ridge to Car□□ine□ □ridge□. □□e tidal c□rrents of t□e □ay infl□ence t□e distri□□tion of t□is species □P□MC 2005□.

Big skate *(Raja binoculatus)* is a demersal□marine species occ□rring at dept□s ranging from 3 to □00 m □P□MC 2005□□is□□ase 2009□□ □o□e□er t□ey primarily reside in dept□s from 3 to 110 m. □ig s□ate prod□ce large egg cases containing m□ltiple em□ryos□ typically □tili□ing spa□ning □eds at dept□s of 60 □ 65 m □P□MC 2005□. Egg cases are laid year ro□nd□□o□e□er□ some researc□ indicates possi□le seasonal egg laying□. □ig s□ates are relati□ely a□□ndant in nort□ern and central California□ occ□pying t□e inner and o□ter s□elf areas □P□MC 2005□□ partic□larly on soft □ottom. □ittle is □no□n a□o□t t□e mo□ements of □ig s□ates □P□MC 2005□.

Spiny dogfish *(Squalus acanthias)* occ□r from t□e s□rface and intertidal areas to greater dept□s □P□MC 2005□. □piny dogfis□ mate in t□e □inter mont□s on t□e ocean □ottom □et□een □eptem□er and □an□ary □P□MC 2005□. □fter a gestation period ranging from 1□ to 24 mont□s□ ad□lt females occ□py s□allo□ □aters d□ring t□e spring to release t□eir yo□ng in t□e mid□□ater □one □dept□s o□er 165 □ 350 m□□P□MC 2005□. □mall □□eniles are pelagic□□□ile s□□□ad□lts and ad□lts are mostly s□□littoral□□at□yal □□ □□ 1990□P□MC 2005□. □□□ad□lts are fo□nd on m□ddy □ottoms □□en not fo□nd in t□e □ater col□mn □P□MC 2005□. □piny dogfis□ are common in inland seas□s□c□as □an □rancisco □ay □P□MC 2005□and in s□allo□ □ays.

Leopard shark *(Triakus semifasciatas).* □ coastal species□t□e leopard s□ar□ is a□□ndant in nort□ern California □ays and est□aries□commonly occ□rring in littoral □aters □on or near s□ore□ especially t□e □one □et□een t□e □ig□ and lo□ tide mar□s□less t□an 20 m deep □P□MC 2005□. □n t□e □an □rancisco Est□ary□ most leopard s□ar□s are resident □□t some emigrate from t□e est□ary in t□e fall. □□ey occ□py □ario□s □a□itats incl□ding: □1□enclosed□m□ddy □ays□□2□flat□ sandy areas□3□m□dflats□4□sandy and m□ddy □ottoms stre□n □it□ roc□s near roc□y reefs□and □5□□elp □eds □P□MC 2005□. □□is species often enters s□allo□ □ays and intertidal flats d□ring □ig□ tides and retreats on e□□ tides. □lt□o□g□ t□ey are often fo□nd in t□e intertidal □one□t□ey apparently spend little time feeding t□ere □□rsi 1999□. □eopard s□ar□s mate in □pril and May and release t□e p□ps from Marc□ to □□g□st. Est□aries and s□allo□ coastal □aters appear to □e □sed

as p□pping and feeding/rearing gro□nds. □eonate p□ps can □e fo□nd near eel grass □eds□s□c□ as t□ose in □an □rancisco □ay (P□MC 2005□.

Sand sole *(Cynoglossus capensis)* are considered an inner s□elf□o□ter s□elf species. □pa□ning occ□rs in □inter and spring□in s□allo□□nears□ore □aters o□er sandy and m□ddy s□□strata (P□MC 2005□. □nce spa□ning is completed t□ey mo□e so□t□ and offs□ore in t□e s□mmer to feed. Eggs□lar□ae□and small □□eniles are pelagic□and are transported to est□aries and s□allo□ nears□ore □ays □y tidal c□rrents (P□MC 2005□. □lder □□eniles and ad□lts are demersal. □d□lts and □□eniles occ□py dept□s □et□een 1 and 325 m□□□t nearly all occ□r at dept□s s□allo□er t□an 150 m (P□MC 2005□.

Pacific sardine *(Sardinops sagax)* t□ro□g□o□t t□eir range □□t most spa□ning ta□es place off so□t□ern California from □an□ary t□ro□g□ □eptem□er □□rsi 1999□. Pacific sardine spa□n in loosely aggregated sc□ools in t□e □pper 50 m of t□e □ater col□mn□□it□ eggs and lar□ae fo□nd near t□e □ater s□rface (P□MC 199□□. □□e spatial and seasonal distri□□tion of spa□ning is infl□enced □y temperat□re (P□MC 199□□. D□ring periods of □arm □ater□t□e center of sardine spa□ning s□ifts nort□□ard and spa□ning e□tends o□er a longer period of time (P□MC 199□ and references □it□in□. Eggs and lar□ae occ□r nearly e□ery□□ere ad□lts are fo□nds (P□MC199□□. Pacific sardines are pelagic at all life □istory stages (P□MC 199□□.

Pacific sardine are a seasonally migratory species t□at opport□nistically occ□r in □an Pa□lo □ay. D□ring t□e □all Mid□ater □ra□l s□r□eys □et□een 199□ and 2003□CD□G collected only 13 Pacific sardine in □an Pa□lo □ay □et□een mid□□cto□er to early□Decem□er □□D□□ 2009□. □□e species □as occasionally □een fo□nd □it□in □□is□n Mars□ d□ring prono□nced salinity intr□sion e□ents d□ring dro□g□ts and lo□ o□tflo□ periods □□eclamation 200□□.

Northern anchovy *(Engraulis mordax).* □ small s□ort□li□ed fis□ typically fo□nd in sc□ools near t□e □ater s□rface (P□MC 199□□□ nort□ern anc□o□y spa□n d□ring e□ery mont□ of t□e year□ increasing d□ring late □inter and early spring (P□MC 199□□. □t is reported t□at pea□ spa□ning occ□rs from □an□ary t□ro□g□ □pril □□eclamation 200□□. □□e nort□ern anc□o□y is a □roadcast spa□ner and spa□ns in □atc□es eac□ year. Most spa□ning ta□es place in c□annels or □it□in 60 miles of t□e coast in t□e □pper mi□ed layers at nig□t □□eclamation 200□□. Eggs and lar□ae are plan□tonic□generally at dept□s of less t□an 50 m and in t□e same areas as spa□ning ad□lts. □□□eniles and ad□lts are pelagic□and are fo□nd ranging from t□e s□rface to 300 m deep □□eclamation 200□□. □□e □an □rancisco □ay is t□o□g□t to pro□ide fa□ora□le reprod□cti□e □a□itat for t□e anc□o□y □eca□se of a□□ndant food e□ists for □ot□ ad□lts and lar□ae and coastal □p□elling □eeps eggs and lar□ae in prod□cti□e areas □□eclamation 200□□.

□ort□ern anc□o□y are fo□nd year□ro□nd in t□e □an □rancisco □ay area □from □□is□n □ay to □o□t□ □rancisco □ay and occasionally in t□e lo□er Delta□□□eclamation 200□□. □□is species is most a□□ndant do□nstream of t□e Car□□ine□ □trait and o□tside t□e □ay in t□e California C□rrent. □et□een 19□0 and 2004□appro□imately 49□000 nort□ern anc□o□y □a□e □een collected □y CD□□ d□ring fall mid□ater tra□l s□r□eys in t□e pro□ect □icinity □□D□□ 2009□. □ased on t□eir a□□ndance□nort□ern anc□o□y are li□ely an important forage fis□.

California halibut *(Paralichthys californicus)* spa□n in coastal □aters year□ro□nd□□□t in t□e □an □rancisco □ay lar□ae are generally most n□mero□s in t□e fall □CD□□ 2013□. □ot□ eggs and lar□ae are pelagic. □ar□ae settle to t□e □ottom at a□o□t 10 mm □□ and t□e □□enile □ali□□t see□ o□t s□allo□ protected □ater for t□eir first fe□ years of life□mo□ing to deeper □ater □it□ gro□t□. □□enile □ali□□t □ere not common in □an □rancisco □ay prior to t□e El □ino c□rrents of 19□2□ 19□4. □ali□□t n□m□ers □a□e increased s□□stantially in □an □rancisco □ay t□ro□g□ t□e late

19□0s and early 1990s d□e to local recr□itment d□ring t□e n□mero□s □arm □ater years (CD□□ 2013). □ali□□t are no□ an important component of t□e in□□ay and nears□ore recreational fis□ery. □ncreased effort □as □een directed at □ali□□t d□e to declining striped □ass and salmon pop□lations (CD□□ 2013).

Pacific halibut *(Hippoglossus stenolepis)* occ□r at dept□s from 20 to 3□600 feet and prefer deep sandy en□ironments. □pa□ning ta□es place from □o□em□er to □an□ary. □□e eggs and yo□ng drift cas□ally □it□ t□e c□rrents□grad□ally rising to□ard t□e s□rface as de□elopment proceeds. □y early spring□t□e transformation is complete and t□e yo□ng settle to t□e □ottom in s□allo□ □aters. □□e diet of t□e Pacific □ali□□t incl□des fis□es□ cra□s□ clams□ s□□id and ot□er in□erte□rates (CD□□ 2013).

Pacific herring *(Clupea pallasii).* □n California□□erring are fo□nd offs□ore d□ring t□e spring and s□mmer mont□s foraging in t□e open ocean. □eginning as early as □cto□er and contin□ing as late as □pril□sc□ools of ad□lt □erring migrate ins□ore into t□e □an □rancisco Est□ary spa□n (CD□□ 2013). □c□ools first appear in t□e deep □ater c□annels of □ays□□□ere t□ey can stay for □p to t□o □ee□s as t□eir gonads mat□re□prior to mo□ing into s□allo□ areas to spa□n. Most spa□ning areas are c□aracteri□ed as □a□ing red□ced salinity □it□ calm and protected □aters. □pa□ning□s□□strate s□c□ as marine □egetation or roc□y preferred □□t man□made str□ct□res s□c□ as pier pilings and riprap are also fre□□ently □sed spa□ning s□□strates in □an □rancisco □ay (CD□□ 2013).

Dungeness crab *(Cancer magister)* is a □al□a□le sport and commercial species t□at reprod□ces in t□e ocean in □inter and rears in nears□ore coastal areas and est□aries (CD□G 2004). □mall □□enile *C. magister* □5□10 mm carapace □idt□ (C□ □immigrate to □an □rancisco Est□ary d□ring t□e spring□rear for □□10 mont□s□and emigrate to t□e ocean in fall and □inter at a si□e of appro□imately 100 mm C□ (CD□G 2004). Clams□fis□□isopods and amp□ipods are preferred prey items of D□ngeness cra□□and canni□alism is pre□alent among all age gro□ps. Predators on t□e □ario□s life stages of D□ngeness cra□s□especially pelagic lar□ae and small □□eniles□ incl□de octop□ses□larger cra□s and as many as 2□ species of fis□□incl□ding Co□o and C□inoo□ salmon□flatfis□es□lingcod□ca□a□on and □ario□s roc□fis□es □□an□in and □ arner 2001).

□.□.4.□ □ssential □ish Habitat □ssessment (□□H)

□□e Magn□son□□te□ens □is□ery Conser□ation and Management □ct □16 □.□.C 3 □ 1□01□1□□2□ esta□lis□ed regional □is□ery Management Co□ncils and mandated t□at □is□ery Management Plans □□MPs□□e de□eloped to responsi□ly manage e□ploited fis□ and in□erte□rate species in □ederal □aters of t□e □.□. □ □en Congress rea□t□ori□ed t□is □ct in 1996 as t□e □□staina□le □is□eries □ct□se□eral reforms and c□anges □ere made. □ne c□ange □as to c□arge t□e □ational Marine □is□eries □er□ice □□M□□□ □it□ designating and conser□ing Essential □is□ □a□itat □E□□□for species managed □nder e□isting □MPs. □□is is intended to minimi□e□to t□e e□tent practica□le□any ad□erse effects on □a□itat ca□sed □y fis□ing or non□fis□ing acti□ities□and to identify ot□er actions to enco□rage t□e conser□ation and en□ancement of s□c□ □a□itat. E□□ is defined as □t□ose □aters and s□□strate necessary to fis□ for spa□ning□□reeding□feeding or gro□t□ to mat□rity□□16 □.□.C. □1□01□10□. □□e E□□ final r□le s□mmari□ing E□□ reg□lations □50 C□□ Part 600□o□tlines an additional interpretation of t□e E□□ definition as follo□s:

- □ aters□as defined pre□io□sly□incl□de □a□□atic areas and t□eir associated p□ysical□ c□emical□and □iological properties t□at are □sed □y fis□□and may incl□de a□□atic areas □istorically □sed □y fis□ □□ere appropriate.□

- □□□strate incl□des □sediment□ □ard □ottom□ str□ct□res □nderlying t□e □aters□ and associated □iological comm□nities.□

- □ecessary is defined as □t□e □a□itat re□□ired to s□pport a s□staina□le fis□ery and t□e managed species□contri□□tion to a □ealt□y ecosystem.□

- □is□ incl□des □finfis□□moll□s□s□cr□staceans□and all ot□er forms of marine animal and plant life ot□er t□an marine mammals and □irds□□□□ereas □spa□ning□□reeding□feeding or gro□t□ to mat□rity□co□er t□e complete life cycle of t□ose species of interest. □□e Pacific □is□ery Management Co□ncil □P□MC□ is t□e □MC responsi□le for managing fis□eries and □a□itat in t□e marine □aters of California. □□e P□MC □as prod□ced □MPs for mi□ed gro□ps of species t□at incl□de E□□ descriptions. □ it□in t□e E□□ designated for □ario□s species□partic□lar areas termed □a□itat □reas of Partic□lar Concern □□□PC□ are also identified. □□PCs eit□er play important roles in t□e life □istory □e.g.□spa□ning areas□ of federally managed fis□ species or are especially □□lnera□le to degradation from fis□ing or ot□er □□man acti□ities. □n many cases□□□PCs represent areas □□ere detailed information is a□aila□le on t□e str□ct□re and f□nction □it□in t□e larger E□□. □□e P□MC □as prod□ced □MPs for mi□ed gro□ps of fis□ery species t□at occ□r in t□e pro□ect area for at least a portion of t□eir life cycles. □□e follo□ing acco□nts □riefly descri□e t□e E□□□E□□ conser□ation □ones□and □□PCs for t□ese species gro□ps and life stages incl□ding t□e follo□ing:

□nce a facility □as □een designed t□e potential to impact E□□□an □Essential □is□ □a□itat □ssessment□s□o□ld □e prepared □sing t□e g□idelines identified □y □M□□ □*Preparing Essential Fish Habitat Assessments: A Guide for Federal Action Agencies*□Version 1 □e□r□ary 2004.□

Chapter 4. □isc□ssion o□Impacts an□ Miti□ation

4.1 □isc□ssion o□Project Impacts

□□e constr□ction and operation of t□e infrastr□ct□re re□□ired to s□pport t□e □an □oa□□in Corridor □mtra□ California □er□ice pro□ect □proposed pro□ect□may res□lt in direct impacts and indirect impacts on special□stat□s □ildlife species. □□e e□tent and nat□re of impacts on special□ stat□s □ildlife species □aries depending on t□e species □nder consideration□t□eir range□and t□e type and □□ality of s□ita□le □a□itats present.

□n general□permanent and temporary direct impacts on special□stat□s □ildlife species d□ring constr□ction of t□e f□t□re infrastr□ct□re impro□ements incl□de mortality or in□□ry□ and dist□r□ances to s□ita□le □a□itats for special□stat□s □ildlife species□ incl□ding disr□ption or penetration of t□e □nderlying □ardpan soils □in □ernal pool areas□□□ater poll□tion□amp□i□ian □reeding pool dist□r□ance□and reptile□□ird□and mammal □□rro□ or nest dist□r□ance. □□ese □a□itat dist□r□ances □it□in t□e trac□ alignment or at specific facilities □s□c□ as ne□ stations□ co□ld lead to t□e permanent or temporary a□andonment of t□ese □a□itats □y special□stat□s species□a disr□ption in t□e life cycle of t□ese species□or mortality or in□□ry of t□ese species. □eca□se it is diffic□lt to determine t□e n□m□er or e□tent of t□ese □inds of impacts□direct impacts on special□stat□s □ildlife species □ill □e addressed in s□□se□□ent en□ironmental re□ie□ once a specific component of t□e proposed pro□ect □as □een defined for design and implementation.

Permanent and temporary indirect impacts on special□stat□s □ildlife species □o□ld occ□r t□ro□g□ constr□ction of t□e Pro□ect in a n□m□er of □ays depending on t□e species and type of dist□r□ance. Potential indirect impacts incl□de erosion□soil compaction□increased siltation and sedimentation□fract□res in t□e □ardpan soils□alteration of □risdictional □ater □ydrology□d□st aerosoli□ation□□ost plant stress□destr□ction of nati□e □egetation□□a□itat fragmentation□and noise and lig□t poll□tion. □□ese indirect impacts co□ld lead to t□e dist□r□ance of special□stat□s □ildlife species s□c□ as a temporary s□ift in foraging patterns or territories□ ref□gia a□andonment□increased predation□decreased reprod□cti□e s□ccess□and red□ced pop□lation □ia□ility. □eca□se it is diffic□lt to □□antify and meas□re t□ese □inds of impacts□indirect impacts on special□stat□s □ildlife species are descri□ed □□alitati□ely□and □ill □e □□antitati□ely address in s□□se□□ent tiered en□ironmental doc□ments once a specific aspect of t□e pro□ect is proposed for implementation and designed.

Constr□ction of t□e station alternati□es s□o□ld only res□lt in mostly minimal impacts on special□ stat□s □ildlife species□□eca□se only a limited amo□nt of marginal □a□itat for special□stat□s □ildlife species □o□ld □e impacted □y t□is acti□ity. □ll stations □o□ld impact only □arren□□r□an□ or agric□lt□ral areas and t□□s constr□ction □o□ld potentially impact only t□e special□stat□s □ildlife species t□at □se □r□an areas□or t□at are □no□n to □se agric□lt□ral areas □e.g.□special□ stat□s □ird species□special□stat□s mammal species□special□stat□s □at species□.

D□ring operation of t□e train□maintenance acti□ities re□□iring gro□nd dist□r□ance□clearing□or gr□□□ing co□ld ca□se erosion and sedimentation t□at co□ld indirectly affect t□e □ydrology of near□y □risdictional □aters and t□e species t□at depend on t□ese reso□rces. C□emical r□noff from tr□c□s or e□□ipment along t□e railroad rig□t□of□□ay co□ld indirectly degrade s□ita□le □a□itat □sed □y t□ese species t□at are present ad□acent to t□e rail. □f operational maintenance re□□ires □eed a□atement acti□ities□s□c□ as t□e □se of □er□icides□t□ese acti□ities co□ld also contri□□te to c□emical r□noff and poll□tion of ad□acent s□ita□le □a□itats.

□o□e□er□maintenance acti□ities t□at □a□e potential impacts on special□stat□s □ildlife species are limited to t□e railroad rig□t□of□□ay areas t□at are not impro□ed road □ed □it□ □allast and rail and are at t□e same grade le□el as t□e ad□acent □a□itats

Potential impacts on □risdictional □aters□special□stat□s plant comm□nities□protected trees□ special□stat□s plant□and □ildlife species □incl□ding critical □a□itat□ □ill □e analy□ed for eac□ facility impro□ement as design and □PE areas are esta□lis□ed. □nce a partic□lar facility □PE is esta□lis□ed□t□e follo□ing steps □ill □e ta□en d□ring a detailed second□tier e□al□ation to ass□re reso□rce impacts are □□antified□and site specific meas□res are identified. □ □ere none of t□e □iological reso□rce impacts □elo□ □ill occ□r□no f□rt□er □iological reso□rce impact analysis may □e necessary □it□in a second□tier analysis. □□rt□er□□□ere potentially significant impacts may occ□r□□□t specific mitigation o□tlined □elo□ can red□ce s□c□ impacts to a less t□an significant le□el□f□t□re doc□mentation may rely □pon t□e proced□res o□tlined in □ections 15162 and 1516□ of t□e □tate CE□□ G□idelines to determine t□e re□□ired le□el of CE□□ doc□mentation for f□t□re infrastr□ct□re pro□ects. Caltrans □ill perform t□ese analyses at t□e time indi□id□al infrastr□ct□re impro□ements are considered for f□nding.

- Eac□ reso□rce □ill □e e□al□ated for its presence or a□sence□and for t□e presence of □a□itat t□at co□ld s□pport t□e reso□rce or pro□ide □a□itat for t□e reso□rce. □□ita□le □a□itat □as determined □ased on □ac□gro□nd re□ie□ and identification of species□specific life□ □istory re□□irements.

- Potential impacts on special□stat□s □ildlife species □ill □e determined □sing a □a□itat□ □ased approac□ □□ere t□e presence of t□e species □as ass□med in s□ita□le □a□itat. □a□itats in t□e pro□ect footprint and □icinity □ere determined t□ro□g□ a com□ination of □ac□gro□nd re□ie□□ □a□itat mapping d□ring field s□r□eys□ and aerial p□otograp□ interpretation.

- Potential impacts on designated critical □a□itat □ill □e □ased on t□e location of t□e critical □a□itat relati□e to t□e pro□ect footprint and t□e presence of primary constit□ent elements □PCEs□associated □it□ t□e critical □a□itat designation.

□n determining t□e potential direct and indirect impacts associated □it□ constr□ction and operation impacts on □iological reso□rces□ a n□m□er of ass□mptions and limitations are identified:

- Constr□ction and operation impacts □ill □e considered temporary if t□ey can □e f□lly restored to pre□dist□r□ance conditions follo□ing constr□ction. □emporary impacts □o□ld incl□de constr□ction staging areas□constr□ction laydo□n areas□relocation of □ndergro□nd □tilities□and ot□er □or□ space t□at □o□ld not □e occ□pied □y permanent facilities d□ring pro□ect operation.

- □mpacts □ill □e considered permanent □□en t□ey □a□e lasting effects □eyond t□e pro□ect constr□ction period□ or cannot □e f□lly restored follo□ing constr□ction. Permanent impacts □o□ld incl□de ne□ rig□t□of□□ay for ne□ or e□panded at□grade trac□ segments□ ele□ated str□ct□re trac□ segments □e□eryt□ing □nder t□e aerial e□tent of t□e str□ct□re□□ road crossings□electrical s□□stations□facilities for maintenance□of□□ay and stations.

- Certain □risdictional □aters types □□ernal pools□ □ernal s□ales□and □ernal pool and s□ale comple□es□are especially sensiti□e to dist□r□ance□t□erefore□impacts on t□ese

feat□res □ill □e considered permanent regardless of t□e type of acti□ity t□at □o□ld occ□r □eca□se it is □nli□ely t□at t□ese feat□res co□ld □e restored to t□eir pre□pro□ect condition.

4.2 Miti□ation Meas□res

□eca□se t□e pro□ect co□ld res□lt in potentially significant impacts on □iological reso□rces□ mitigation meas□res □ere designed to a□oid or red□ce t□e impacts on t□ese reso□rces. □□e mitigation strategy incl□des a□oidance of impacts on □iological reso□rces to t□e e□tent possi□le: field □erification of sensiti□e reso□rces and filling data gaps□ t□e form□lation of alternati□e designs □minimi□ation and a□oidance□□limiting modifications to access and egress points to facilities □minimi□ation□□designing c□ts and fills to minimi□e t□e area of dist□r□ance□and □□ere necessary□and compensation to offset □na□oida□le impacts to indi□id□al species or sensiti□e □a□itat.

□□e follo□ing mitigation meas□res are re□□ired to red□ce impacts associated □it□ f□t□re □an □oa□□in Corridor □ail □impro□ement program site□specific pro□ects to a less t□an significant le□el. Eac□ sta□e□older implementing specific pro□ect□related specific capital impro□ement pro□ects s□all implement t□e meas□res o□tlined □elo□□as needed□□□en t□e impact □eing mitigated □ill □e ca□sed □y s□c□ pro□ect.

□o red□ce or pre□ent acti□ities t□at may ad□ersely affect sensiti□e species□ t□e follo□ing mitigation meas□res □ill □e incorporated into any specific pro□ects and/or contractor specifications for f□t□re pro□ect□related impacts to protect sensiti□e reso□rces and □a□itat.

4.2-1 ***Where future project-related impacts will affect undisturbed land with native vegetation, site surveys shall be conducted by a qualified biologist/ecologist. If sensitive species are identified as a result of the survey for which mitigation/compensation must be provided in accordance with regulatory requirements, the following subsequent mitigation actions will be taken:***

a. The project proponent shall provide compensation for sensitive habitat acreage lost by acquiring and protecting in perpetuity (through property or mitigation bank credit acquisition) habitat for the sensitive species at a ratio of not less than 1:1 for habitat lost. The property acquisition shall include the presence of at least one animal or plant per animal or plant lost at the development site to compensate for the loss of individual sensitive species.

b. The final mitigation may differ from the above values based on negotiations between the project proponent and USFWS and CDFW for any incidental take permits for listed species. The project proponent shall retain a copy of the incidental take permit as verification that the mitigation of significant biological resource impacts at a project site with sensitive biological resources has been accomplished.

c. Preconstruction botanical surveys for special-status plant communities and special-status plant species will be conducted. in areas that were not previously surveyed because of access or timing issues or project design changes, pre-construction surveys for special-status plant communities and special-status plant species will be conducted before the start of ground-disturbing activities during the appropriate blooming period(s) for the species.

4.2-2 ***Biological Resources Management Plan: During final design, a BRMP will be prepared to assemble the biological resources mitigation measures for each specific infrastructure improvement in the future. The BRMP will include terms and conditions from applicable permits and agreements and make provisions for monitoring assignments, scheduling, and responsibility. The BRMP will also discuss habitat replacement and revegetation, protection during ground-disturbing activities,***

performance (growth) standards, maintenance criteria, and monitoring requirements for temporary and permanent native plant community impacts. The parameters of the BRMP will be formed with the mitigation measures from the project-level EIR/EIS, including terms and conditions as applicable from the USFWS, USACE, SWRCB/RWQCB, and CDFW.

□o red□ce or pre□ent acti□ities t□at may ad□ersely affect ri□ers□stream□eds or □etlands□t□e follo□ing mitigation meas□res □ill □e incorporated into any specific pro□ects and/or contractor specifications for f□t□re pro□ect□related impacts to protect sensiti□e reso□rces and □a□itat.

4.2-3 Prior to discharge of fill or streambed alteration of jurisdictional areas, the project proponent shall obtain regulatory permits from the U.S. Army Corps of Engineers, local Regional Water Quality Control Board and the California Department of Fish and Wildlife. Any future project that must discharge fill into a channel or otherwise alter a streambed shall be minimized to the extent feasible, and any discharge of fill not avoidable shall be mitigated through compensatory mitigation. Mitigation can be provided by restoration of temporary impacts, enhancement of existing resources, or purchasing into any authorized mitigation bank or in-lieu fee program; by selecting a site of comparable acreage near the site and enhancing it with a native riparian habitat or invasive species removal in accordance with a habitat mitigation plan approved by regulatory agencies; or by acquiring sufficient compensating habitat to meet regulatory agency requirements. Typically, regulatory agencies require mitigation for jurisdictional waters without any riparian or wetland habitat to be mitigated at a 1:1 ratio. For loss of any riparian or other wetland areas, the mitigation ratio will begin at 2:1 and the ratio will rise based on the type of habitat, habitat quality, and presence of sensitive or listed plants or animals in the affected area. A Habitat Mitigation and Monitoring Proposal shall be prepared and reviewed and approved by the appropriate regulatory agencies. The project proponent will also obtain permits from the regulatory agencies (U.S. Army Corps of Engineers, Regional Water Quality Control Board, CDFW and any other applicable regulatory agency with jurisdiction over the proposed facility improvement) if any impacts to jurisdictional areas will occur. These agencies can impose greater mitigation requirements in their permits, but Caltrans will utilize the ratios outlined above as the minimum required to offset or compensate for impacts to jurisdictional waters, riparian areas or other wetlands.

4.2-4 Jurisdictional Water Preconstruction Surveys: A jurisdictional water preconstruction survey will be conducted at least six months before the start of ground-disturbing activities to identify and map all jurisdictional waters in the project footprint and if possible within a 250-foot buffer. The purpose of this survey is to confirm the extent of jurisdictional waters in areas where permission to enter was not previously granted and where aerial photograph interpretation was used to estimate the extent of these features. If possible, surveys would be performed during the spring, when plant species are in bloom and hydrological indicators are most readily identifiable. These results would then be used to calculate impact acreages and determine the amount of compensatory mitigation required to offset the loss of wetland functions and values.

□egarding acti□e □ird nests□t□e follo□ing mitigation meas□re □ill □e applied to t□is program.

4.2-5 It is illegal to "take" active bird nests of native birds, and if such nests are present at a project site, no take is allowed. To avoid an illegal take of active bird nests, any grubbing, brushing or tree removal will be conducted outside of the State identified nesting season (nesting season is approximately from February 15 through September 1 of a given calendar year). Alternatively, coordination with the CDFW to conduct nesting bird surveys will be completed, and methodology of surveys will be agreed upon. All nesting bird surveys will be conducted by a qualified biologist prior to initiation of ground disturbance to demonstrate that no bird nests will be disturbed by project construction activities.

□□e follo□ing mitigation can red□ce t□e impact to □□rro□ing o□l to a less t□an significant le□el.

4.2-6 ***Prior to commencement of construction activity in locations that are not fully developed, protocol burrowing owl survey will be conducted using the 2012 survey protocol methodology identified in the "Staff Report on Burrowing Owl Mitigation, State of California, Natural Resources Agency, Department of Fish and Wildlife, March 7, 2012", or the most recent CDFW survey protocol available. Protocol surveys shall be conducted by a qualified biologist to determine if any burrowing owl burrows are located within the potential area of impact. If occupied burrows may be impacted, an impact minimization plan shall be developed and approved by CDFW that will protect the burrow in place or provide for passive relocation to an alternate burrow within the vicinity but outside of the project footprint in accordance with current CDFW guidelines. Active nests must be avoided with a 250-foot buffer until all nestlings have fledged.***

□□e follo□ing mitigation can ens□re consistency □it□ any □CP or M□□CP.

4.2-7 ***Prior to commencement of construction activity on a project facility within a MSHCP/HCP plan area, consistency with that plan, or take authorization through that plan, shall be obtained. Through avoidance, compensation or a comparable mitigation alternative, each project shall be shown to be consistent with a MSHCP/HCP.***

□mplementation of t□e a□o□e meas□res is protecti□e of t□e en□ironment. □□o□ld t□e reg□latory agencies determine an alternati□e□ e□□i□alent mitigation program d□ring ac□□isition of reg□latory permits□s□c□ meas□re s□all □e deemed e□□i□alent to t□e a□o□e meas□res and no additional en□ironmental doc□mentation s□all □e re□□ired to implement a meas□re different t□an o□tlined a□o□e. □ote t□at if impacts cannot □e mitigated or a□oided in t□e manner o□tlined in t□e meas□res a□o□e□t□en s□□se□□ent en□ironmental doc□mentation □o□ld □a□e to □e prepared in accordance □it□ proced□res o□tlined in □ection 15162 of t□e □tate CE□□ G□idelines.

□mplementation of t□e follo□ing mitigation meas□res □ill ens□re t□at pro□ect design and site selection red□ce impacts to sensiti□e □iological reso□rces to t□e e□tent feasi□le.

4.2.8 ***Place primary emphasis on the preservation of large, unbroken blocks of natural open space and wildlife habitat area, and protect the integrity of habitat linkages. As part of this emphasis, incorporate programs for purchase of lands, clustering of development to increase the amount of preserved open space, and assurances that the construction of railroad track and other facilities or infrastructure improvements meet standards identical to the environmental protection policies applicable to the specific facilities improvement***

4.2.9 ***Require facility designs to be planned to protect habitat values and to preserve significant, viable habitat areas and habitat connection in their natural conditions.***

a. ***Within designated habitat areas of rare, threatened or endangered species, prohibit disturbance of protected biotic resources.***

b. ***Within riparian areas and wetlands subject to state or federal regulations, riparian woodlands, oak and walnut woodland, and habitat linkages, require that the vegetative resources which contribute to habitat carrying capacity (vegetative diversity, faunal resting sites, foraging areas, and food sources) are preserved in place or replaced so as not to result in an measurable reduction in the reproductive capacity of sensitive biotic resources.***

c. ***Within habitats of plants listed by the CNDDB or CNPS as "special" or "of concern," require that new facilities not result in a reduction in the number of these plants, if they are present.***

4.2-10 ***Maximize the preservation of individual oak, sycamore and walnut trees within proposed development sites.***

4.2-11 Require the establishment of buffer zones adjacent to areas of preserved biological resources. Such buffer zones shall be of adequate width to protect biological resources from grading and construction activities, as well as from the long-term use of adjacent lands. Permitted land modification activities with preservation and buffer areas are to be limited to those that are consistent with the maintenance of the reproductive capacity of the identified resources. The land uses and design of project facilities adjacent to a vegetative preservation area, as well as activities within the designated buffer area are not to be permitted to disturb natural drainage patterns to the point that vegetative resources receive too much or too little water to permit their ongoing health. In addition, landscape adjacent to areas of preserved biological resources shall be designed so as to avoid invasive species which could negatively impact the value of the preserved resource.

□mplementation of t□e follo□ing mitigation meas□res □ill ens□re t□at pro□ect constr□ction impacts to sensiti□e □iological reso□rces□incl□ding t□e potential effects of in□asi□e species□are red□ced to t□e e□tent feasi□le.

4.2-12 Following construction activities within or adjacent to any natural area, the disturbed areas shall be revegetated using a plant mix of native plant species that are suitable for long term vegetation management at the specific site, which shall be implemented in cooperation with regulatory agencies and with oversight from a qualified biologist. The seeds mix shall be verified to contain the minimum amount of invasive plant species seeds reasonably available for the project area.

4.2-13 Clean Construction Equipment. During construction, equipment will be washed before entering the project footprint to reduce potential indirect impacts from inadvertent introduction of nonnative invasive plant species. Mud and plant materials will be removed from construction equipment when working in native plant communities, near special-status plant communities, or in areas where special-status plant species have been identified.

4.2-14 Contractor Education and Environmental Training.
Personnel who work onsite will attend a Contractor Education and Environmental Training session. The environmental training is likely to be required by the regulatory agencies and will cover general and specific biological information on the special-status plant species, including the distribution of the resources, the recovery efforts, the legal status of the resources, and the penalties for violation of project permits and laws.

The Contractor Education and Environmental Training sessions will be given before the initiation of construction activities and repeated, as needed, when new personnel begin work within the project limits. Daily updates and synopsis of the training will be performed during the daily safety ("tailgate") meeting. All personnel who attend the training will be required to sign an attendance list stating that they have received the Contractor Education and Environmental Training.

4.2-15 Biological Monitor to Be Present during Construction Activities in areas where impacts to Riparian, Riverine, Wetland, Endangered Species or Endangered Species Critical habitat occurs. A biological monitor (or monitors) will be present onsite during construction activities that could result in direct or indirect impacts on sensitive biological resources (including listed species) and to oversee permit compliance and monitoring efforts for all special-status resources.

A biological monitor (qualified biologist) is any person who has a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field and/or has demonstrated field experience in and knowledge about the identification and life history of the special-status species or jurisdictional waters that could be affected by project activities. The biological monitor(s) will be responsible for monitoring the Contractor to ensure compliance with the Section 404 Individual Permit, Section 401 Water Quality Certification and the Lake and Streambed Alteration Agreement. Activities to ensure compliance would include performing construction-monitoring activities, including

monitoring environmental fencing, identifying areas where special-status plant species are or may be present, and advising the Contractor of methods that may minimize or avoid impacts on these resources. Biological monitor(s) will be required to be present in all areas during ground disturbance activities and for all construction activities conducted within or adjacent to identified Environmentally Sensitive Areas, Wildlife Exclusion Fencing, and Non-Disturbance Zones.

4.2-16 Food and Trash: All food-related trash items (e.g., wrappers, cans, bottles, food scraps) will be disposed of in closed containers and removed at least once a week from the construction site.

4.2-17 Rodenticides and Herbicides: Use of rodenticides and herbicides in the project footprint will be restricted. This measure is necessary to prevent poisoning of special-status species and the potential reduction or depletion of the prey populations of special–status wildlife species.

4.2-18 Wildlife Exclusion Fencing: Exclusion barriers (e.g., silt fences) will be installed at the edge of the construction footprint and along the outer perimeter of Environmentally Sensitive Areas and Environmentally Restricted Areas to restrict special-status species from entering the construction area. The design specifications of the exclusion fencing will be determined through consultation with the USFWS and/or CDFW. Clearance surveys will be conducted for special-status species after the exclusion fence is installed. If necessary, clearance surveys will be conducted daily.

4.2-19 Equipment Staging Areas: Staging areas for construction equipment will be located outside sensitive biological resources areas, including habitat for special-status species, jurisdictional waters, and wildlife movement corridors, to the maximum extent possible.

4.2-20 Plastic mono-filament netting (erosion-control matting) or similar material will <u>not</u> be used in erosion control materials to prevent potential harm to wildlife. Materials such as coconut coir matting or tackified hydroseeding compounds will be used as substitutes.

4.2-21 Vehicle Traffic During ground-disturbing activities, project-related vehicle traffic will be restricted within the construction area to established roads, construction areas, and other designated areas to prevent avoidable impacts. Access routes will be clearly flagged and off-road traffic will be prohibited.

4.2-22 Entrapment Prevention: All excavated, steep-sided holes or trenches more than 8 inches deep will be covered at the close of each working day with plywood or similar materials, or a minimum of one escape ramp constructed of earth fill for every 10 feet of trenching will be provided to prevent the entrapment of wildlife. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals.

All culverts or similar enclosed structures with a diameter of 4 inches or greater will be covered, screened, or stored more than 1 foot off the ground to prevent use by wildlife. Stored material will be cleared for common and special-status wildlife species before the pipe is subsequently used or moved.

4.2-23 Weed Control Plan: A Weed Control Plan will be prepared and implemented to minimize or avoid the spread of weeds during ground-disturbing activities. In the Weed Control Plan, the following topics will be addressed:

- ***Schedule for noxious weed surveys.***
- ***Weed control treatments, including permitted herbicides, and manual and mechanical methods for application; herbicide application will be restricted in Environmentally Sensitive Areas.***
- ***Timing of the weed control treatment for each plant species.***
- ***Fire prevention measures.***

4.2-24 Dewatering/Water Diversion: Open or flowing water may be present during construction. If construction occurs where there is open or flowing water, a strategy that is approved by the resource agencies (e.g., USACE, SWRCB/RWQCB, and CDFW), such as the creation of cofferdams, will be used to dewater or divert water from the work area. If cofferdams are constructed, implementation of the following cofferdam or water diversion measures is recommended to avoid and lessen impacts on jurisdictional waters during construction:

- ***The cofferdams, filter fabric, and corrugated steel pipe are to be removed from the creek bed after completion of the project.***
- ***The timing of work within all channelized waters is to be coordinated with the regulatory agencies.***
- ***The cofferdam is to be placed upstream of the work area to direct base flows through an appropriately sized diversion pipe. The diversion pipe will extend through the Contractor's work area, where possible, and outlet through a sandbag dam at the downstream end.***
- ***Sediment catch basins immediately below the construction site are to be constructed when performing in-channel construction to prevent silt- and sediment-laden water from entering the main stream flow. Accumulated sediments will be periodically removed from the catch basins.***

□mplementation of t□e a□o□e mitigation meas□res is considered ade□□ate to minimi□e constr□ction□related impacts to t□e e□tent feasi□le□incl□ding t□e potential for in□asi□e species occ□pancy ca□sed □y pro□ect□related dist□r□ance of nat□ral areas.

4.□ □e□□latory Compliance

□mpacts on □iological reso□rces □ill □e permitted or a□t□ori□ed t□ro□g□ cons□ltation □it□ t□e □ario□s nat□ral reso□rce reg□latory agencies □□□□ □□□□CE□□□ □C□/□□ □C□□and CD□□ □. □ot□ formal and informal cons□ltation □it□ t□ese agencies may res□lt in additional pro□ect□ specific a□oidance and minimi□ation meas□res.

4.□.1 □e□□latory □□ency □ccess

□f re□□ested□ □efore□ d□ring□ or on completion of gro□nd□dist□r□ing acti□ities□ access to t□e constr□ction site □ill □e pro□ided to □□□□ □□□□CE□ □□ □C□/□□ □C□□and CD□□ staff. □eca□se of safety concerns□ agency personnel □ill c□ec□ in □it□ t□e Contractor □efore accessing t□e constr□ction site. □f agency personal access t□e constr□ction site□t□e □iological monitor □ill prepare a memorand□m □it□in 1 day of t□e □isit t□at doc□ments agency access and iss□es raised d□ring t□e field meeting.

4.4 Critical Habitat

Critical □a□itat □as □een designated for se□eral species ad□acent to or in t□e general □icinity of t□e □an □oa□□in Corridor. □ne e□ample is t□e critical □a□itat designated for t□e delta smelt in □an Pa□lo □ay ad□acent to t□e □P□□ trac□s □est of Croc□ett. □□e specific locations of pertinent critical □a□itat areas are s□o□n in maps contained in t□e appendices to t□is doc□ment. □□e primary mitigation for potential impacts to critical □a□itat □ill □e a□oidance. □ □ere a□oidance is not feasi□le□mitigation meas□res 4.2□1 and 4.2□□ □ill □e implemented. □t is rare t□at critical □a□itat e□tends □it□in t□e railroad property o□ned □y □□□□ and □P□□ □eca□se t□ese areas are generally maintained to s□pport rail operations□not protect □a□itat. □o□e□er□ □□ere eit□er permanent or temporary dist□r□ances □ill occ□r □it□in critical □a□itat□f□ll mitigation □ill □e pro□ided to offset impacts to s□c□ □a□itat. □s indicated in t□e s□□se□□ent disc□ssion on c□m□lati□e impacts□certain areas □□an Pa□lo □ay□Cons□mnes □i□er Preser□e and t□e Do□

C□emical Preser□e□t□at contain critical □a□itat for species may not □e f□lly mitiga□le□and an □na□oida□le significant ad□erse □iological reso□rce impact may occ□r. □□is can only □e determined after t□e ne□ trac□engineering and design are completed and a□oidance meas□res incorporated. □ □ere a□oidance cannot □e ac□ie□ed□t□e resid□al impact to critical □a□itat may □e □na□oida□le.

4.□ Wetlan□s an□ Other Waters Coor□ination □□mmary

□ etlands and ot□er □aters in t□e pro□ect □icinity□incl□ding □aters of t□e □.□.□□aters of t□e state□ and state stream□eds□ are reg□lated □y t□e federal go□ernment □□□□CE□ and t□e □tate of California □□ □C□ and CD□□ □. □ □en considering □etlands and ot□er □aters□t□ese feat□res are collecti□ely termed □risdictional □aters. □ etlands and ot□er □aters are ass□med to fall □nder t□e □risdiction of t□e □□□CE□ □□ □C□□ and CD□□ for p□rposes of t□is disc□ssion. □□e □risdictional stat□s of t□ese □aters □ill □e confirmed □y t□e □□□CE□□□ □C□□and CD□□ □□en t□e reg□latory permitting process is cond□cted. □□rt□er definitions are presented □elo□.

- **Wetlan□s**: □ccording to t□e □□□CE □ etlands Delineation Man□al □En□ironmental □a□oratory 19□□□ and t□e recently p□□lis□ed □egional □□pplement to t□e Corps of Engineers □ etland Delineation Man□al: □rid □ est □egion □Version 2.0□ □□□CE 200□□□□t□ree criteria m□st □e satisfied to classify an area as a □risdictional □etland: □1□ a predominance of plant life t□at is adapted to life in □et conditions □ydrop□ytic □egetation□□ □2□ soils t□at sat□rate□ flood□ or pond long eno□g□ d□ring t□e gro□ing season to de□elop anaero□ic conditions in t□e □pper part □ydric soils□□ and □3□ permanent or periodic in□ndation or soils sat□ration□ at least seasonally □□etland □ydrology□.

- **Waters o□the U.□.**: □□e C□ □ defines □aters of t□e □.□. as follo□s: □1□all □aters t□at are c□rrently □sed□or □ere □sed in t□e past□or may □e s□scepti□le to □se in interstate or foreign commerce□incl□ding all □aters t□at are s□□□ect to t□e e□□ and flo□ of t□e tide□ □2□ all interstate □aters incl□ding interstate □etlands□ □3□ all ot□er □aters s□c□ as intrastate la□es□ri□ers□streams □incl□ding intermittent streams□□ m□dflats□sandflats□ □etlands□slo□g□s□prairie pot□oles□□et meado□s□playa la□es□or nat□ral ponds□t□e □se□degradation or destr□ction of □□ic□ co□ld affect interstate or foreign commerce□ □4□all impo□ndments of □aters ot□er□ise defined as □aters of t□e □.□.□□5□tri□□taries to t□e foregoing types of □aters□ and □6□ □etlands ad□acent to t□e foregoing □aters □33 C□□ 32□.3□a□□.

- **Waters o□the □tate**: □ aters of t□e state are □roadly defined □y t□e Porter□Cologne □ ater □□ality Control □ct □□ection 1305□e□□. □nder t□is definition□isolated □etlands t□at may not □e s□□□ect to reg□lations □nder federal la□ are considered □aters of t□e state. □n Marc□ 9□2012□t□e California □ ater □oards released a preliminary draft of t□eir □ etland □rea Protection Policy□□□ic□ incl□des a proposed □etland definition. □nder t□eir proposed definition□ an area is a □etland if□ □nder normal circ□mstances□ it □1□ is contin□o□sly or rec□rrently in□ndated □it□ s□allo□ □ater or sat□rated □it□in t□e □pper s□□strate□ □2□ □as anaero□ic conditions □it□in t□e □pper s□□strate ca□sed □y s□c□ □ydrology□and □3□eit□er lac□s □egetation or t□e □egetation is dominated □y □ydrop□ytes □□□ □C□ 2012□.

- □**tate □treambe□s**: CD□□ □as not released an official definition of la□e or stream□ed and t□erefore t□e e□tent of t□e area reg□lated □nder □ection 1602 remains □ndefined.

□o□e□er□CD□□ □risdiction generally incl□des t□e stream□ed and □an□□toget□er □it□ t□e ad□acent floodplain and riparian □egetation.

□ased on t□e □ac□gro□nd re□ie□ and s□□se□□ent □inds□ield s□r□eys□n□mero□s □risdictional □aters occ□r in t□e □□□ for t□is pro□ect. Many of t□e □risdictional □aters □canals/ditc□es and seasonal ri□erine□are □ea□ily managed □y local irrigation districts□□□ic□ ser□e p□□lic □ater needs and agric□lt□ral prod□ction. □s a res□lt□t□ese □risdictional □aters s□pport fe□ nat□ral □iological f□nctions and □al□es. □□e □iological f□nctions of t□ese man□made feat□res incl□de limited □a□itat for □ildlife and capacity for □ater storage or release. □ n□m□er of t□ese □risdictional □aters □a□e □een pre□io□sly degraded or impacted □y e□isting roads and □□□□ □ail□ay and □P□□ infrastr□ct□re.

Direct impacts on nat□ral and man□made feat□res incl□de t□e remo□al or modification of local □ydrology□t□e redirection of flo□□and t□e placement of fill material. □n t□e case of man□made feat□res□t□ese impacts □o□ld remo□e or disr□pt t□e limited □iological f□nctions t□at t□ese feat□res pro□ide. □n nat□ral areas□t□ese acti□ities □o□ld remo□e or disr□pt t□e □ydrology□ □egetation□□ildlife □se□□ater □□ality conditions□and ot□er □iological f□nctions pro□ided □y t□e reso□rces.

□emporary impacts on □risdictional □aters incl□de t□e placement of temporary fill d□ring constr□ction in □ot□ man□made and nat□ral □risdictional □aters. □emporary fill co□ld □e placed d□ring t□e constr□ction of access roads and staging/e□□ipment storage areas. □□e temporary fill □o□ld res□lt in a temporary loss of □risdictional □aters and co□ld potentially increase erosion and sediment transport into ad□acent areas.

Potential indirect impacts on □risdictional □aters incl□de a n□m□er of □ater□□□ality□related impacts: erosion and transport of fine sediments or fill do□nstream of constr□ction to □nintentional release of contaminants into □risdictional □aters t□at are o□tside of t□e pro□ect footprint. □□ese disc□arges □o□ld indirectly impact ad□acent or do□nstream □risdictional □aters.

□ □□risdictional Determination and s□□se□□ent appro□al of t□e determination □y t□e reg□latory agencies □ill □e cond□cted on eac□ facility as t□e design □ecomes a□aila□le and constr□ction of a partic□lar facility is sc□ed□led to occ□r □it□in t□e foreseea□le f□t□re. □o□e□er□□nforeseen direct impacts□indirect impacts□and temporary impacts to nat□ral and man□made □ater □odies may occ□r depending □pon t□e design of t□e infrastr□ct□re impro□ement□and t□e constr□ction met□odology re□□ired.

4.□ C□m□lati□e Impacts

C□m□lati□e □iological reso□rce impacts can only occ□r □□en s□c□ reso□rces are not a□oided□ protected or mitigated as o□tlined a□o□e. □□e mitigation re□□irements o□tlined in □ection 4.2 are identified to ens□re t□at □iological reso□rces are a□oided or ot□er□ise protected or mitigated□s□c□ t□at no c□m□lati□ely considera□le impacts to significant □iological reso□rces are forecast to occ□r if t□e proposed pro□ect is implemented as analy□ed in t□is doc□ment.

□□ese impacts may incl□de direct impacts s□c□ as t□e remo□al or modification of local □ydrology□t□e redirection of flo□□and t□e placement of fill material. Potential indirect impacts on □risdictional □aters incl□de a n□m□er of □ater□□□ality□related impacts: erosion and transport of fine sediments or fill do□nstream of constr□ction to □nintentional release of contaminants into □risdictional □aters t□at are o□tside of t□e pro□ect footprint. □emporary impacts on □risdictional □aters incl□de t□e placement of temporary fill d□ring constr□ction in □ot□ man□made and nat□ral

□risdictional □aters. □emporary fill co□ld □e placed d□ring t□e constr□ction of access roads and staging/e□□ipment storage areas. □□e temporary fill □o□ld res□lt in a temporary loss of □risdictional □aters and co□ld potentially increase erosion and sediment transport into ad□acent areas.

□n t□e case of man□made feat□res□t□ese impacts □o□ld remo□e or disr□pt t□e limited □iological f□nctions t□at t□ese feat□res pro□ide. □n nat□ral areas□t□ese acti□ities □o□ld remo□e or disr□pt t□e □ydrology□□egetation□□ildlife □se□□ater □□ality conditions□and ot□er □iological f□nctions pro□ided □y t□e reso□rces. □□erefore t□ese impacts s□o□ld □e □□antified and analy□ed in a s□□se□□ent tier doc□ment.

□o□e□er□t□ere are certain areas □it□in t□e o□erall pro□ect area of potential impact □□ere t□e reso□rce impacts from constr□cting ne□ infrastr□ct□re may ca□se □na□oida□le significant ad□erse impacts on □iological reso□rces. □□ese areas are: □it□in t□e □P□□ segment □et□een □a□land and Martine□ □□ere e□tensi□e fill into □an Pa□lo □ay may □e re□□ired to install a t□ird main trac□□□it□in t□e □P□□ □resno □□□di□ision segment □et□een □toc□ton and □acramento □□ere t□e constr□ction of a second trac□ co□ld ca□se direct or indirect loss of t□e Cons□mnes □i□er Preser□e area□□it□in t□e □□□□ trac□ segment □et□een Port C□icago to □a□ley □□ere t□e Do□ C□emical Mitigation area occ□rs and at t□e □ic□ols c□r□e location □□ere s□□stantial loss of □etlands may occ□r □dependent □pon t□e final design□t□at cannot □e reasona□ly or feasi□ly offset□and □it□in ot□er critical □a□itat areas for specific species identified in C□apter 3 of t□is doc□ment. □□e □ltimate design of t□ese referenced impro□ements m□st □e □ased on so□nd trac□ engineering□□□t it may □e possi□le to a□oid certain impacts □y designs t□at a□oid s□c□ impacts.

□or e□ample□in □P□□s segment □et□een □a□land and Martine□it may □e possi□le to a□oid fill into □an Pa□lo □ay □y placing t□e t□ird trac□ inland against t□e e□isting □l□ff. □egardless□□ntil t□ese designs are □ro□g□t fort□ t□e significance of □iological reso□rces at t□e a□o□e referenced segments is s□c□ t□at a finding of pro□ect specific and c□m□lati□ely considera□le ad□erse impact □as □een reac□ed in t□is doc□ment.

Chapter 5. References

Note: California Department of Fish and Game (CDFG) changed its name to California Department of Fish and Wildlife (CDFW) effective January 1, 2013. However, the name has not been changed in these published references.

Alexander, D.G., and R.A. Schlising. 1998. "Patterns in Time and Space for Rare Macroinvertebrates and Vascular Plants in Vernal Pool Ecosystems at the Vina Plains Reserve, and Implications for Pool Landscape Management." In: C.W. Whitman, E.T. Bander, D. Belk, W.R. Ferren, Jr., and R. Ornduff (eds.), *Proceedings, Ecology, Conservation and Managements of Vernal Pool Ecosystems, California Native Plant Society Conference, Sacramento, California* (held in 1996). pp. 161–168.

Andreasen, Katarina. 2010. *Second Edition of the Jepson Manual: Vascular Plants of California.* [Online *Eremalche* treatment for public viewing.] http://ucjeps.berkeley.edu/tjm2/review/treatments/malvaceae_all.html (accessed July 13, 2010)

Armor, C. and P.L. Herrgesell. 1985. Distribution and Abundance of Fishes in the San Francisco Bay Estuary between 1980 and 1982. Hydrobiologia 129, 21 I-227 (1985).

Austin, C.C. and H.B. Shaffer. 1992. "Short-, Medium-, and Long-Term Repeatability of Locomotor Performance in the Tiger Salamander *(Ambystoma californiense)*." *Functional Ecology* 6:145–153.

Baicich, Paul J. and O.J. Harrison. 2005. *A Guide to the Nest, Eggs, and Nestlings of North American Birds.*

Bakersfield, City of. 2007. "Conservation Element." In: Metropolitan Bakersfield General Plan. Bakersfield, CA: December 11, 2007. pp. V-4 and V-5. http://www.co.kern.ca.us/planning/pdfs/mbgp/MBGPChapterV.pdf (accessed September 2010)

_____. 2010. Bakersfield Municipal Code, Bakersfield, California. Current through Ordinance 4621. Seattle, WA: Quality Code, August 2010 code supplement). http://www.qcode.us/codes/bakersfield/ (accessed September 2010)

Bakersfield, City of and Kern County. 1994. Metropolitan Bakersfield Habitat Conservation Plan. Technical assistance by Thomas Reid Associates with Quad Consultants and Tierra Madre Consultants, April 1994. http://www.co.kern.ca.us/planning/pdfs/MetroBakHCP.pdf (accessed March 2012)

Barr, C.B. 1991. *The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle* (Desmocerus californicus dimorphus). U.S. Fish and Wildlife Service, Sacramento, California.

Barry, S.J. and H.B. Shaffer. 1994. "The Status of the California Tiger Salamander *(Ambystoma californiense)* at Lagunita: A 50-Year Update." *J. Herpetol.* 28:159–164.

Bash, Jeffrey S. 1999. *The Role of Wood in the Life Cycle of Western Pond Turtles* (Clemmys marmorata). Forest Concepts, LLC.

Baxter, R.D. 2000. Splittail and Longfin Smelt. IEP Newsletter. Spring: 19–21.

Bay Delta and Tributaries (BDAT) Project Site. Available online at: http://bdat.ca.gov (accessed December 22, 2009)

Beier, P. and S. Loe. 1992. "In My Experience: A Checklist for Evaluating Impacts to Wildlife Movement Corridors." *Wildlife Society Bulletin* 20:434–440.

Beier, P. and R.F. Noss. 1998. "Do Habitat Corridors Provide Connectivity?" *Conservation Biology* 12(6): 1241–1252.

Belluomini, L. 1980. *Status of the Ringtail in California*. California Department of Fish and Game, Nongame Wildlife Investigations. June. 5pp.

Bennett, A.F., 1999. Linkages in the landscape: the role of corridors and connectivity in wildlife conservation. Gland, Switzerland: IUCN.

BING Maps (Bing). 2010. Microsoft Corporation and its data suppliers http://www.bing.com/maps (accessed November 2011)

Boettinger, J.L. 1997. "Aquisalids (Salorthids) and Other Wet Saline and Alkaline Soils: Problems Identifying Aquic Conditions and Hydric Soils." In: *Aquic Conditions and Hydric Soils: The Problem Soils*. S.W. Sprecher and M.J. Vepraskas (eds.). Madison, WI: Soil Science Society of America. pp. 79–97.

Bolster, B.C. 2005. Lasiurus blossevillii *Western Red Bat*. Western Bat Working Group Species Account. http://www.wbwg.org/speciesinfo/species_accounts/vespertilonidae/labl.pdf (accessed May 23, 2012)

Bremner-Harrison, S., B.L. Cypher, C.M. Fiehler, A.P. Clevenger, and D. Hacker. 2007. *Use of Highway Crossing Structures by Kit Foxes*. Prepared by the Endangered Species Recovery Program at California State University, Stanislaus for the California Department of Transportation. August 2007.

Brown, L.R. and P.B. Moyle. 1993. "Distribution, Ecology, and Status of the Fishes of the San Joaquin River Drainage, California." *California Fish and Game* 79:96–114.

Bureau of Reclamation. 1990. *Final Report of the San Joaquin Valley Drainage Program*. September 1990.

Burt, Charles E. 1931. "An Interpretation of Certain Experimental and Observational Data on the Limbless Lizard, *Anniella pulchra* Gray." *Copeia* (3): 105–106.

Busby, P.J., T.C. Wainwright, G.J. Bryant., L. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon and California. U.S. Department of Commerce, National Oceanic and Atmospheric Administration Technical Memo NMFS-NWFSC-27. 261 pages.

Buskirk, James R. 2002. "The Western Pond Turtle, *Emys marmorata*." *Radiata* 11(3): 3–30.

CalFish. 2009. A Cooperative Anadromous Fish and Habitat Data Program Database. http://www.calfish.org/

California Department of Fish and Game (CDFG). 1988. *A Guide to Wildlife Habitats of California*. Edited by Kenneth E. Mayer and William F. Laudenslayer, Jr.

_____. 1994. *Staff Report Regarding Mitigation for Impacts on Swainson's Hawks* (Buteo swainsoni) *in the Central Valley of California.* Sacramento, CA. November 8, 1994.

_____. 1998. A status review of the spring-run Chinook salmon in the Sacramento River drainage. Report to the Fish and Game Commission. Candidate species status report 98-1. Sacramento, California. June. 394 pages.

_____. 2003. *The Vegetation Classification and Mapping Program: List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database*. September.

_____. 2004. 2004 Annual Status and Trends Report – Common Crabs of the San Francisco Estuary.

_____. 2004. *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard. Habitat Conservation Planning*, San Joaquin Valley Southern Sierra Region. May 2004.

_____. 2005. California Wildlife Relationships. Version 8.1. California Interagency Wildlife Task Group. Personal Computer Program. Sacramento, California.

_____. 2008a. California Wildlife Habitat Relationship System. Version 8.2. California Interagency Wildlife Task Group. Personal Computer Program and GIS Shapefiles. Sacramento, California.

_____. 2008b. *Complete List of Amphibian, Reptile, Bird, and Mammal Species in California*. September 2008 (updated).

_____. 2009. California Natural Diversity Database (CNDDB). RareFind 3 personal computer program. Special-status species occurring in the Mare Island, Briones Valley, Richmond, San Quentin, Cordelia, Benicia, Cuttings Wharf, Sears Point, and Petaluma Point 7.5-minute quadrangles. Accessed in November 2009.

_____. 2009a. *Protocols for Surveying and Evaluating Impacts on Special-Status Native Plant Populations and Natural Communities*. California Natural Resources Agency. November 24, 2009.

_____. 2009a. State-Managed California Commercial Herring Fishery. Available at: http://www.dfg.ca.gov/marine/herring/index.asp (accessed 12/15/09)

_____. 2009b. California Halibut (Paralichthys californicus). Available at: http://www.delta.dfg.ca.gov/baydelta/monitoring/calhal.asp (accessed 12/15/09)

_____. 2009c. Marine Sportfish Identification: Flatfishes. Available at: http://www.dfg.ca.gov/marine/mspcont8.asp (accessed 12/15/09)

_____. 2010. *The Vegetation Classification and Mapping Program: Natural Communities List Arranged Alphabetically by Life Form*. September 2010. http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf (accessed January 2012)

_____. 2012. California Natural Diversity Database (CNDDB). Rarefind query of the USGS 7.5 minute quads nine-quad review area and GIS query of occurrences within a 10-mile buffer of the various project alignments. Rarefind Version 3.0.5. Wildlife and Habitat Data Analysis Branch. January.

_____. 2012b. *Staff Report on Burrowing Owl Mitigation*. March 2012.

California Department of Transportation (Caltrans). 2009. *California Essential Habitat Connectivity Project Work Plan*. http://www.dot.ca.gov/hq/env/bio/files/CAConn_WorkPlan.pdf

California High-Speed Rail Authority (Authority) and USDOT Federal Railroad Administration (FRA). 2005. *Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Proposed California High-Speed Train System.* Vol. 1, *Report.* Sacramento and Washington, DC: California High-Speed Rail Authority and USDOT Federal Railroad Administration. August 2005.

_____. [2008] 2010. *Final Bay Area to Central Valley High-Speed Train (HST) Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS).* Sacramento and Washington, DC: California High-Speed Rail Authority and USDOT Federal Railroad Administration. May 2008, Revised 2010.

_____. [2009] 2011a. *Central Valley Biological Resources and Wetland Survey Plan.* Prepared by URS/HMM/Arup Joint Venture, AECOM/CH2M HILL Joint Venture, and Parsons/ICF. Prepared October 2009, Revised June 2011.

_____. 2011b. *Fresno to Bakersfield Preliminary Jurisdictional Waters and Wetlands Delineation Report.* Oakland: URS/HMM/Arup Joint Venture.

_____. 2011c. *Fresno to Bakersfield Section: Hydrology and Water Resources Technical Report*. Oakland: URS/HMM/Arup Joint Venture.

_____. 2012. *Fresno to Bakersfield Supplemental Preliminary Jurisdictional Waters and Wetlands Delineation Report.* Oakland: URS/HMM/Arup Joint Venture.

California Native Plant Society (CNPS). 2001. *CNPS Botanical Survey Guidelines*. Revised June 2, 2001. http://www.cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf (accessed October 2009 and March 2010)

_____. 2010. Inventory of Rare and Endangered Plants (online edition, v7-10b). California Native Plant Society. Sacramento, CA. Accessed on August 12 from http://www.cnps.org/inventory

_____. 2012. "Online Inventory of Rare and Endangered Plants" http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi (accessed January 2012)

California Soil Resource Lab. 2005. "Online Soil Survey." http://casoilresource.lawr.ucdavis.edu/drupal/node/27 (accessed March 2010)

California State Coastal Conservancy and the U.S. Fish and Wildlife Service (USFWS). 2003. Final Programmatic Environmental Impact Statement/Environmental Impact Report. San Francisco

California State University, Stanislaus. 2006. Endangered Species Recovery Program. Online Information. Stanislaus, California. http://esrp.csustan.edu/speciesprofiles/.

Campbell, J.B. 2002. *Introduction to Remote Sensing.* New York: The Guilford Press.

Camp, Dresser, and McKee (CDM) and The Bay Institute. 2000. San Pablo Bay Watershed Restoration Framework Program. Prepared for California State Coastal Conservancy and U.S. Army Corps of Engineers. November 2000.

Caywood ML. 1974. Contributions to the life history of the splittail Pogonichthys macrolepidotus (Ayres) [MS thesis]. Available from: California State University, Sacramento. 77 p.

Central Valley Regional Water Quality Control Board (CVRWQCB). 2004. *Water Quality Control Plan for the Tulare Lake Basin*. 2nd ed. California Regional Water Quality Control Board, Central Valley Region. January 2004.

Chester, C.C. Hilty, J.A. (2010) Connectivity Science, in Worboys, G.L., Francis, W.L. Lockwood, M. (eds) Connectivity Conservation Management, Earthscan, London.

Consortium of California Herbaria (CCH). 1983. Record of *Atriplex coronata* var. *notaior* occurrence provided by the participants of the Consortium of California Herbaria. http://ucjeps.berkeley.edu/cgi-bin/new_detail.pl?UCSB47367.

Corcoran, City of. 2009. Corcoran, California, City Code. Coeur d Alene, Idaho: Sterling Codifiers, Inc. July 20, 2009. http://sterlingcodifiers.com/codebook/index.php?book_id 396 (accessed September 2010)

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. La Roe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C., Jamestown, ND: Northern Prairie Wildlife Research Center Online. http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm (Version 04DEC1998).

Crooks, K.R., C.L. Burdett, D.M. Theobald, C. Rondinini, and L. Boitani. 2011. "Global patterns of fragmentation and connectivity of mammalian carnivore habitat." Phil. Trans. of the R. Soc. Brit., 366:2642-2651.

Cypher, B.L., G.D. Warrick, M.R.M. Otten, T.P. O'Farrell, W.H. Berry, C.E. Harris, T.T. Kato, P.M, McCue, J.H. Scrivner, and B.W. Boellick. 2000. "Population Dynamics of San Joaquin Kit Foxes at the Naval Petroleum Reserves in California." *Wildl. Monogr*. 145. 43 pp.

Cypher, B.L. 2010. "Comments and Thoughts on Habitat Connectivity and Crossing Structures For San Joaquin Kit Foxes Associated With The High Speed Train Project In The San Joaquin Valley." Prepared for URS Corporation, August 2010.

Cypher, Ellen A. 2002. *Supplemental Survey Methods for Kern Mallow*. Endangered Species Recovery Program, California State University, Stanislaus.

Daniels R.A. and P.B. Moyle. 1983. Life history of the splittail (Cyprinidae: Pogonichthys macrolepidotus) in the Sacramento-San Joaquin Estuary. Fishery Bulletin 84:105-117.

Dege, M. and L.R. Brown. 2004. Effect of Outflow on Spring and Summertime Distribution and Abundance of Larval and Juvenile Fishes in the Upper San Francisco Estuary. American Fisheries Society Symposium 39: 49-65.

DigitalGlobe. 2009. ImageConnect. (Web services for GIS/professional mapping). Accessed July 2010.

Egoscue, H.J. 1956. "Preliminary Studies of the Kit Fox in Utah." *J. Mammal.* 37:351–357.

_____. 1962. "Ecology and Life History of the Kit Fox in Tooele County, Utah." *Ecology* 43:481-497.

Ehrlich, Paul R., D.S. Dobkin, and D. Wheye. 1988. *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*. New York: Simon and Schuster Inc. 785 pp.

England, A.S., J.A. Estep, and W.R. Holt. 1995. "Nest-Site Selection and Reproductive Performance of Urban-Nesting Swainson's Hawks in the Central Valley of California." *Journal of Raptor Research* 29(3): 179–186.

England, A.S., M.J. Bechard and C.S. Houston. 1997. Swainson's Hawk (*Buteo swainsonii*). In: *The Birds of North America*. No. 265. The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, D.C.

Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1*. U.S. Army Engineers Waterways Experiment Station, Vicksburg, Mississippi.

Eriksen, Clyde H. and Denton Belk. 1999. Fairy Shrimps of California's Puddles, Pools, and Playas. Mad River Press, Inc. Eureka, California.

Endangered Species Recovery Program (ESRP). 2009. GIS Maps and Data. http://esrp.csustan.edu/gis/ (accessed on October 2, 2009)

Engineering Systems Research Institute (ESRI). 2009. Virtual Earth Imagery Service, ArcGIS Software.

Estuary Invasive Spartina Project : Spartina Control Program. September 2003. Available at: http://www.spartina.org/project_documents/eis_final.htm

Feaver, P.E. 1971. "Breeding Pool Selection and Larval Mortality of Three California Amphibians: *Ambystoma tigrinum californiense* Gray, *Hyla regilla* Baird and Girard, and *Scaphiopus hammondii* Girard". Master's thesis, Fresno State College, Fresno, California.

Feyrer F., B. Herbold, S.A. Matern, and P.B. Moyle. 2003. Dietary shifts in a stressed fish assemblage: consequences of a bivalve invasion in the San Francisco Estuary. Environmental Biology of Fish 67:277-288.

Feyrer, F, M.L. Nobriga, and T.R. Sommer. 2007. Multi-decadal trends for three declining fish species: habitat patterns and mechanisms in the San Francisco Estuary, California, USA. Canadian Journal of Fisheries and Aquatic Sciences 64:723-734.

Fishbase Website. www.fishbase.org (accessed December 17, 2009).

Fisher, F.W. 1994. Past and Present Status of Central Valley Chinook Salmon. Conservation Biology Volume 8: 870-873.

Fresno, City of. 2010. *Municipal Code and Charter of Fresno, California.* Codified through Ordinance No. 2010-22. Tallahassee, Florida: Municipal Code Corporation, July 1, 2010. http://library.municode.com/index.aspx?clientId□14478□stateId□5□stateName□California (accessed September 2010)

Fresno, City of, Planning and Development Department. 2002. *2025 Fresno General Plan.* Fresno, CA: Advance Planning, February 1, 2002. pp. 155–157. http://www.fresno.gov/NR/rdonlyres/12A301CD-CB31-456D-9BDF-6A73628D22FE/0/2025FresnoGeneralPlan.pdf (accessed September 2010)

Fresno County. 2000. "Open Space and Conservation Element." In Fresno County General Plan*:* Policy Document*.* Fresno, CA: October 3, 2000. pp. 5-4, 5-5, 5-7, 5-14 to 5-20. http://www2.co.fresno.ca.us/4510/4360/General_Plan/GP_Final_policy_doc/Open_Space_Element_rj.pdf (accessed September 2010)

_____. 2010. Municipal Code Fresno County, California: A Codification of the General Ordinances of the County of Fresno, California. Covering ordinances through Ordinance No. 10-005, April 27, 2010. Tallahassee, Florida: Municipal Code Corporation. http://library.municode.com/index.aspx?clientId□16361□stateId□5□stateName□California (accessed September 2010)

Ganssle, D. 1966. Fishes and decapods of San Pablo and Suisun bays. Pages 64-94 in: D. W. Kelley (compiler) (editor). Ecological studies of the Sacramento-San Joaquin estuary, Part I: □ooplankton, □oobenthos, and fishes of San Pablo and Suisun bays, □ooplankton and □oobenthos of the Delta California Department of Fish and Game, Fish Bulletin 133.

Germano, D.J. and D.F. Williams. 1992. "Recovery of the Blunt-Nosed Leopard Li□ard: Past Efforts, Present Knowledge, and Future Opportunities." *Transactions of the Western Section of the Wildlife Society* 28:38–47.

Goals Project. 2000. Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish and wildlife. Prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project. P.R. Olofson, editor. San Francisco Bay Regional Water Quality Control Board, Oakland, California.

Gorman, Joe. 1957. "Recent Collections of the California Limbless Li□ard, *Anniella pulchra*." *Copeia* (2): 148–150.

Hallock, R.J., and F.W. Fisher. 1985. Status of winter-run Chinook salmon, Oncorhynchus tshawytscha, in the Sacramento River. Report to the California Department of Fish and Game, Anadromous Fisheries Branch, Sacramento, California.

Hallock, R.J., W.F. Van Woert, and L. Shapovalov. 1961. An evaluation of stocking hatchery- reared steelhead rainbow trout (Salmo gairdnerii gairdnerii) in the Sacramento River system. California

Department of Fish and Game. Fish Bulletin No. 14 [another reference said No. 114. Check]. 74 pages.

Hanford, City of. 2002. "Open Space, Conservation Recreation Element." In: *City of Hanford General Plan Update 2002.* Hanford, CA: June 18, 2002. pp. OCR-17 and OCR-18. http://www.ci.hanford.ca.us/civica/filebank/blobdload.asp?BlobID4733 (accessed September 2010)

_____. 2004. "Title 12, Streets, Sidewalks and Public Places." In *Hanford Municipal Code.* Seattle, Washington: Book Publishing Company. Amended January 6, 2004. http://www.ci.hanford.ca.us/civica/filebank/blobdload.asp?BlobID2394 (accessed September 2010)

Hankin, D. and R.W. Warner. 2001. Dungeness Crab: History of the Fishery, Status of Biological Knowledge and Status of the Population In California's Living Marine Resources: A Status Report (December, 2001) California Department of Fish and Game.

Hassler, T.J. 1988. Species Profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Southwest)--striped bass. U.S. Fish and Wildl. Serv. Biol. Rep. 82(11.82) U.S. Army Corps of Engineers TR EL-82-4. 29 pp.

Healey, M. C. 1991. Life History of Chinook Salmon (Oncorhynchus tshawytscha) in Pacific Salmon Life Histories. Groot, C. and Margolis, L. (ed.), Vancouver B.C.: UBC Press, pp 311-393.

Hercules, City of. 2009. Final Refugio Creek Watershed Vision Plan. September 2009. Available at: http://www.ci.hercules.ca.us/index.aspx?page523

Hickman, J.C. (ed.). 1993. *The Jepson Manual: Higher Plants of California.* Berkeley: University of California Press.

Hilty, J.A., Lidicker, W., Merenlender, A.M. 2006. Corridor Ecology: The Science and Practice of Linking Landscapes for Biodiversity Conservation. Washington: Island Press.

Hobbs, J.A., W.A. Bennett, J. Burton and M. Gras. 2007. Classification of Larval and Adult Delta Smelt to Nursery Areas by Use of Trace Elemental Fingerprinting. Transactions of the American Fisheries Society 136: 518-527.

Hoffman, W.M. 1974. *The Fresno Kangaroo Rat Study*. California Department of Fish and Game. Special Wildlife Investigation Final Report. Project W-54-R. Job II 5.4.

Holland, Dan C. 1994. *The Western Pond Turtle: Habitat and History*. *Final Report.* U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon.

Holland, Robert F. 2009. *Central Valley Vernal Pool Complexes*. California Department of Fish and Game, Sacramento, California (data).

Jameson Jr., E.W., and H.J. Peeters. 2004. *California Mammals.* Berkeley: University of California Press.

Jennings, Mark R. and Marc P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California.* Final Report submitted to the California Department of Fish and Game, Inland Fisheries Division. pp. 98–103. http://www.dfg.ca.gov/hcpb/info/herp 5Fssc.pdf

Jennings, M.R. and M.P. Hayes. 1994. Amphibians and Reptiles of Special Concern. California Department of Fish and Game, Inland Fisheries Division.

_____. 1990. Final report on the status of the California red-legged frog (Rana aurora draytonii) in the Pescadero Marsh Natural Preserve. Prepared for the California Department of Parks and Recreation under contract No. 4-823- 9018 with the California Academy of Sciences.

Jenny, Hans. 1941. *Factors of Soil Formation* . New York: McGraw Hill.

Kelly, J.T., A.P. Klimley, and C.E. Crocker. 2007. Movements of green sturgeon, Acipenser medirostris, in the San Francisco Bay Estuary, CA. Environmental Biology of Fishes 79(3-4): 281-295.

Kern County. 2010. *Kern County, California, Municipal Code.* Codified through Ordinance No. G8078. Tallahassee, Florida: Municipal Code Corporation, August 10, 2010. http://library.municode.com/index.aspx?clientId□16251□stateId□5□stateName□California□customBanner□16251.jpg□imageclass□D□cl□16251.txt (accessed September 2010)

Kern County and City of Bakersfield. 1994. *Metropolitan Bakersfield Habitat Conservation Plan.* Bakersfield: Metropolitan Bakersfield Habitat Conservation Plan Steering Committee, April 1994. http://www.co.kern.ca.us/planning/pdfs/MetroBakHCP.pdf

Kern County Planning Department. 1985. "Kern River Plan Element." In: *An Integral Part of the City of Bakersfield General Plan and the Kern County General Plan*. July 1985. pp. 6 to 8. http://www.co.kern.ca.us/planning/pdfs/kcgp/kern_river_plan_ocr.pdf (accessed August 2010)

_____. 2006. *Kern County Valley Floor Habitat Conservation Plan.* Lompoc, CA: Garcia and Associates, first public draft, December 2006. http://www.co.kern.ca.us/planning/pdfs/vfhcp_dec06.pdf.

_____. 2007. "Land Use, Open Space and Conservation Element." In: *Kern County General Plan.* Bakersfield, CA: March 13, 2007. pp. 67–68, 74–75. http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp1LandUse.pdf (accessed September 2010)

Kings County. 2010. *Code of Ordinances, County of Kings, California.* Codified through Ordinance No. 474.1. Tallahassee, Florida: Municipal Code Corporation, March 2, 2010. http://library.municode.com/index.aspx?clientId□12257□stateId□5□stateName□California (accessed September 2010)

Kings County Planning Department. 2010a. "Land Use Element." In: 2035 Kings County General Plan. Hanford, CA: January 26, 2010. pp. LU-25 and LU-26. http://www.countyofkings.com/planning/2035□20draft□20general□20plan/Final□20Docs/02□20Land□20Use□20Element.pdf (accessed September 2010)

_____. 2010b. "Resource Conservation Element." In: *2035 Kings County General Plan.* Hanford, CA: January 26, 2010. pp. RC-42 to RC-43, RC-46 to RC-49. http://www.countyofkings.com/planning/2035□20draft□20general□20plan/Final□20Docs/03□20Resource□20Conservation□20Element.pdf (accessed September 2010)

Kjelson, M. A., P. F. Raquel, and F. W. Fisher. 1981. The Life History of Juvenile Chinook Salmon, Oncorhynchus tshawytscha, in the Sacramento-San Joaquin Estuary of California. Estuaries Volume 4: 285.

Kochert, Michael N., and Karen Steenhoff. 2002. *Golden Eagles in the United States and Canada: Trends, and Conservation Challenges.* USGS Forest and Rangeland Ecosystems Science Center, Boise, Idaho.

Kuhn□, Linda Ann. 2004. Anniella pulchra: *Moss Landing Marine Labs Earthquake Reconstruction California Legless Lizard Relocation Project*. ABA Consultants/Moss Landing Marine Laboratories.

Larsen, Caryla. 1987. *Badger Distribution Study.* California Department of Fish and Game, Nongame Wildlife Investigations Report. Project: W-65-R-4, Job: I-11. 8 pp., plus appendices. http://www.dfg.ca.gov/wildlife/nongame/publications/bm_research/docs/87_14.pdf.

Leidy, R.A., 2007. Ecology, Assemblage Structure, Distribution, and Status of Fishes in Streams Tributary to the San Francisco Estuary, California. Prepared for the San Francisco Estuary Institute. Contribution No. 530. April 2007.

Leidy, R.A., G.S. Becker, B.N. Harvey. 2005. Historical distribution and current status of steelhead/rainbow trout (Oncorhynchus mykiss) in streams of the San Francisco Estuary, California. Center for Ecosystem Management and Restoration, Oakland, CA.

MacKen□ie, C., L.S. Weiss-Glan□, and J.R. Moring 1985. Species profiles: Life histories and environmental requirements of coastal fishes and invertebrates (Mid-Atlantic): American shad. Biological Report 82(11.37). U.S. Department of Interior, Fish and Wildlife Service, Division of Biological Services, Washington, DC.

McEwan, D. and T. A. Jackson. 1996. Steelhead restoration and management plan for California. California Department of Fish and Game. Sacramento, California. 234 pages.

Meng, L. and P.B Moyle. 1995. Status of Splittail in the Sacramento-San Joaquin Estuary. Transaction of the American Fisheries Society 124: 538-549.

Moyle, P. B., R. M. Yoshiyama, J. E. Williams, and E. D. Wikramanayake. 1995. Fish Species of Special Concern in California. Sacramento, CA: California Department of Fish and Game.

Moyle, P. B. 2002. Inland Fishes of California. Berkeley, CA: University of California Press. Moyle, P.B., Baxter RD, Sommer T, Foin TC, Matern SA. 2004. Biology and population dynamics of Sacramento splittail (Pogonichthys macrolepidotus) in the San Francisco Estuary: a review. San Francisco Estuary and Watershed Science [online serial]. Vol. 2, Issue 2 (May 2004), Article 3. http://repositories.cdlib.org/jmie/sfews/vol2/iss2/art3

Miller, Charles Martin. 1944. “Ecological Relationships and Adaptations of the Limbless Li□ards of the Genus *Anniella*.” *Ecological Monographs* 14(3): 271–289.

Montanucci, R.R. 1965. “Observations on the San Joaquin Leopard Li□ard, *Crotaphytus wislizenii silus Stejneger*.” *Herpetologica* 21:270–283.

Morrell, S.H. 1972. “Life History of the San Joaquin Kit Fox.” *California Fish and Game Journal* 58(3): 162–174.

Moyle, P.B. 2002. *Inland Fishes of California*. Berkeley and Los Angeles: University of California Press.

Moyle, P.B., R.M. Yoshiyama, J.E. Williams, and E.D. Wikramanayake. 1995. *Fish Species of Special Concern in California.* 2nd ed. Prepared for the California Department of Fish and Game. June.

Myers, J.M., R.G. Kope, G.J. Braynt, D. Teel, L.J. Lierheimer, T.C. Wainwright, W.S. Grant, F.W. Waknit□, K. Neely, S.T. Lindley, and R.S. Waples. 1998. Status Review of Chinook Salmon From NMFS-NWFSC-35. NOAA Tech Memo U.S. Washington, Idaho, Oregon, and California. Report No. Department of Commerce.

National Marine Fisheries Service (NMFS). 1997. Impacts of California Sea Lions and Pacific Harbor Seals on Salmonids and on the Coastal Ecosystems of Washington, Oregon, and California. NOAA Technical Memorandum NMFS-NWFSC-28. Seattle, WA.

_____. 2007. Report on the Subtidal Habitats and Associated Biological Taxa in San Francisco Bay. June 2007.

_____. 2008. Proposed Designation of Critical Habitat for the Southern Distinct Population Segment of North American Green Sturgeon. Draft Biological Report. September 2008. Long Beach, CA.

_____. 2009a. Biological Opinion on the Long-Term Central Valley Project and State Water Project Operations Criteria and Plan. Southwest Region.

_____. 2009b. Public Draft Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of Central Valley Steelhead. National Marine Fisheries Service Southwest Regional Office Sacramento, California

Natural Resources Conservation Service (NRCS). 2009. "Web Soil Survey." http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm (accessed March 2010)

_____. 2010a. "National Hydric Soils List by State." http://soils.usda.gov/use/hydric/lists/state.html (accessed February 2010)

_____. 2010b. *Official Soil Series Descriptions.* Lincoln, NE: United States Department of Agriculture. http://soils.usda.gov/technical/classification/osd/index.html (accessed March 2010)

Nobriga, ML, Sommer, TR, Feyrer, F, Fleming, K. 2008. Long-term trends in summertime habitat suitability for delta smelt, Hypomesus transpacificus. San Francisco Estuary and Watershed Science 6: http//repositories.cdlib.org/jmie/sfews/vol6/iss1/art1.

Orloff, Sue. 1980. *Ringtail Distribution Study: Survey and Inventory*. California Department of Fish and Game, Nongame Wildlife Investigations. 10 pp.

Orloff, S., F. Hall, and L. Spiegel. 1986. "Distribution and Habitat Requirements of the San Joaquin Kit Fox in the Northern Extreme of Its Range." *Western Section Wildlife Society (CAL-NEV) Conference Transactions* 22:60–70.

Orsi, J.J. 1999. Report on the 1980-1995 Fish, Shrimp, and Crab Sampling in the San Francisco Estuary, California. http://www.estuaryarchive.org/archive/orsi_1999 (Accessed December 16, 2009)

Pacific Fishery Management Council (PFMC). 1998. Fishery Management Plan: Coastal Pelagic Species. Appendix D: Description and Identification of Essential Fish Habitat for the Coastal Pelagic Species Fishery Management Plan. December 1998. Available online at http://www.pcouncil.org/cps/cpsfmp.html (accessed December 3, 2009)

_____. 2005. The Pacific Coast Groundfish Fishery Management Plan as Amended Through Amendment 19 (Including Amendment 15). APPENDI B: Pacific Coast Groundfish Essential Fish Habitat. Available online at: http://www.pcouncil.org/groundfish/gffmp/fmpthru19.html (accessed December 8, 2009).

Peeters, Hans, and Pam Peeters. 2005. *Raptors of California* (California Natural History Guides). Berkeley: University of California Press. 294 pp.

Penrod, K., R. Hunter, and M. Merrifield. 2001. *Missing Linkages: Restoring Connectivity to the California Landscape, Conference Proceedings, November 2, 2000, San Diego Zoo, San Diego, California*. Co-sponsored by the California Wilderness Society, The Nature Conservancy, U.S. Geological Survey, Center for Reproduction of Endangered Species, and California State Parks.

Penrod, K., C. Cabanero, P. Beier, C. Luke, W. Spencer, and E. Rubin. 2003. *South Coast Missing Linkages: A Linkage Design for the Tehachapi Connection. South Coast Wildlands Project, Monrovia, California*. http://scwildlands.org/reports/SCML_Tehachapi.pdf.

Radtke, L. D. 1966. Distribution of smelt, juvenile sturgeon, and starry flounder in the Sacramento-San Joaquin Delta with observations on food of sturgeon. In Turner, J.L. and D.W. Kelly (ed.): Ecological

studies of the Sacramento-San Joaquin Estuary. Part II California Department of Fish and Game, Fish Bulletin 136: 115-119.

Rathbun, Galen B., N. Siepel and D. Holland. 1992. "Nesting Behavior and Movements of Western Pond Turtles, *Clemmys marmorata*." *The Southwestern Naturalist* 37(3): 319–324.

Reed, P.B., Jr. 1988. *National List of Plant Species That Occur in Wetlands: California (Region 0)*. U.S. Fish and Wildlife Service Biological Report 88(26.10). 135 pp.

Reese, Devin A. 1996. Comparative Demography and Habitat Use of Western Pond Turtles in Northern California: The Effects of Damming and Related Alterations. Unpublished Ph.D. diss. University of California at Berkeley. p. 26.

Reese, Devin A. and Hartwell H. Welsh. 1997. "Use of Terrestrial Habitat by Western Pond Turtles, *Clemmys marmorata*: Implications for Management." In: J. Van Abbema (ed.). *Proceedings, Conservation, Restoration, and Management of Tortoises and Turtles: An International Conference*. New York Turtle and Tortoise Society. pp. 352–357.

Rosenfield, J. A. and R. D. Baxter. 2007. Population dynamics and distribution patterns of longfin smelt in the San Francisco Estuary. Transactions of the American Fisheriesn Society.

San Joaquin Valley Chapter of the Wildlife Society (SJVC). 2012. *The Valley Fever*. Newsletter by the San Joaquin Chapter of the Wildlife Society, pp. 7-9. January.

Sawyer, J. and T. Keeler-Wolf. 1995. *Manual of California Vegetation*. Sacramento: California Native Plant Society. 471 pp.

Sawyer, J.O., T. Keeler-Wolf, and J. Evens. 2009. *A Manual of California Vegetation*. 2nd ed. Sacramento: California Native Plant Society.

Shafter, City of. 2005. *City of Shafter General Plan.* Shafter, CA: LSA Associates, Inc., Draft April 2005. pp. 6-2. http://shafter.com/DocumentView.aspx?DID 242 (accessed September 2010)

_____. 2010. *Shafter Code of Ordinances.* Codified through Ordinance No. 632. Tallahassee, FL: Municipal Code Corporation, May 18, 2010. http://library.municode.com/index.aspx?clientId 16892 stateId 5 stateName California (accessed September 2010)

Sherwin, Rick, and D.A. Rambaldini. 2005. Antro ous pallidus *Pallid Bat*. Western Bat Working Group Species Account. http://www.wbwg.org/speciesinfo/species_accounts/vespertilonidae/anpa.pdf (accessed May 23, 2012)

Sherwin, Rick, and A. Piaggio. 2005. Corynorhinus townsendii *Townsend's Big-Eared Bat*. Western Bat Working Group Species Account. http://www.wbwg.org/speciesinfo/species_accounts/vespertilonidae/coto.pdf (accessed May 23, 2012)

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. Available online at: http://www.dfg.ca.gov/wildlife/nongame/ssc/birds.html

Siders, M.S. 2005. Eumops perotis *Western Mastiff Bat*. Western Bat Working Group Species Account. http://www.wbwg.org/speciesinfo/species_accounts/molossidae/eupe.pdf.

Smallwood, K.S. 1995. “Scaling Swainson’s Hawk Population Densities for Assessing Habitat Use across an Agricultural Landscape.” *Journal of Raptor Research* 29(3): 172–178.

Solomeshch, A.I., M.G. Barbour, and R.F. Holland. 2007. “Vernal Pools.” In *Terrestrial Vegetation of California* . 3rd ed. M.G. Barbour, T. Keeler-Wolf, and A.A. Schoenherr (eds.) Berkeley: University of California Press, pp. 394–424.

Sommer, T., R. Baxter and B. Herbold. 1997. Resilience of splittail in the Sacramento-San Joaquin Estuary. Transactions of the American Fisheries Society 1997 126: 961-976.

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California*. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration. February.

State Water Resources Control Board (SWRCB). 2012. *Preliminary Draft Water Quality Control Policy for Wetland Area Protection and Dredge and Fill Permitting.* March 9, 2012.

Stebbins, R.C. 1972. *California Amphibians and Reptiles*. Berkeley: University of California Press. 152 pp.

_____. 1985. *A Field Guide to Western Reptiles and Amphibians*. Boston: Houghton Mifflin Company.

_____. 2003. *Western Reptiles and Amphibians*. 3rd ed. Peterson Field Guides. Boston: Houghton Mifflin Company. 533 pp.

Storer, Tracy Irwin. 1925. “A Synopsis of the Amphibia of California.” *Univ. California Publ. Zool*. 27:1-342.

Swainson’s Hawk Technical Advisory Committee (SHTAC). 2000. *Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley*. May 31, 2000.

Trenham, P.C. and H.B. Shaffer. 2005. "Amphibian Upland Habitat Use and Its Consequences for Population Viability." *Ecological Applications* 15(4):1158–1168.

Tulare County. 2010a. *Tulare County General Plan 2030 Update.* Visalia, CA: Revised draft February 2010. pp. (Part I) Page 8-9, 8-10, 8-21 to 8-23. http://generalplan.co.tulare.ca.us/documents/GeneralPlan2010/GeneralPlan2030Update.pdf (accessed September 2010)

_____. 2010b. *Tulare County Code: A Codification of the General Ordinances of Tulare County, California.* Current through Ordinance 3402. Seattle, Washington: Code Publishing Company. March 2, 2010. http://www.codepublishing.com/CA/tularecounty/ (accessed September 2010)

Turner, J.L. and H.K. Chadwick. 1972. Distribution and abundance of young-of-the-year striped bass, Morone saxatilis, in relation to river flow in the Sacramento-San Joaquin Estuary. Trans. Amer. Fish. Soc. 101(3): 442-452.

U.S. Army Corps of Engineers (USACE). 2004. Framework for Assessing the Potential Effects of Dredging on Sensitive Fish Species in San Francisco Bay. Final Report. August 5, 2004. Prepared by LFR. Available at: http://www.spn.usace.army.mil/ltms/rpt- USACE-SciencePlan-Final-Aug04-09170.pdf (accessed December 11, 2009)

_____. 2005. *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification*. December 7, 2005. http://www.usace.army.mil/CECW/Documents/cecwo/reg/.../rgl05-05.pdf.

_____. 2008a. *Regulatory Guidance Letter No. 08-02: Jurisdictional Determinations*. June 26, 2008. http://www.usace.army.mil/CECW/Documents/cecwo/reg/rgls/rgl08-02.pdf.

_____. 2008b. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. Wetlands Regulatory Assistance Program, Washington, D.C.

_____. 2008c. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.* U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory. By R.W. Lichvar and S.M. McColley. Hanover, NH. ERDC/CRREL TR-08-12.

U.S. Bureau of Reclamation (Reclamation). 2008. Biological Assessment on the Continued Long-term Operations of the Central Valley Project and the State Water Project. August 2008.

U.S. Department of Agriculture (USDA). 1971. *Soil Survey of Eastern Fresno Area, California*. http://soils.usda.gov/survey/printed_surveys/state.asp?state□california□abbr□CA.

_____. 1982. *Soil Survey of Tulare County, California, Western Part, Survey Area CA659*. http://soils.usda.gov/survey/printed_surveys?state.asp?state□California□abbr□CA.

_____. 1986. *Soil Survey of Kings County, California*. Available from web site, http://soils.usda.gov/survey/printed_surveys/state.asp?state□California□abbr□CA.

_____. 1988. *Soil Survey of Kern County, California, Northwestern Part*. http://soils.usda.gov/survey/printed _surveys/state.asp?state_California□abbr□CA

_____. 1998. *Hydric Soils of California*. Natural Resource Conservation Service. http://www.statlab.iastate.edu/soils/hydric/ca.html. (accessed June 2009)

USDA and Natural Resource Conservation Service (NRCS). 1999. *8-Digit Watershed Boundary Data 1:24,000*. National Cartography and Geospatial Center, Fort Worth, Texas.

_____. 2006. *Field Indicators of Hydric Soils in the United States*, *Guide for Identifying and Delineating Hydric Soils,* Version 6.0. G.W. Hurt and L.M. Vasilas (eds.). USDA and NRCS in cooperation with the National Technical Committee for Hydric Soils.

_____. 2010. National Water and Climate Center. *Climate Analysis for Wetlands* (WETS). http://www.wcc.nrcs.usda.gov/climate/wetlands.html. (accessed April 2010)

U.S. Fish and Wildlife Service (USFWS). 1984. *Valley Elderberry Longhorn Beetle Recovery Plan*. U.S. Fish and Wildlife Service, Portland, Oregon.

_____. 1984. The salt marsh harvest mouse/California clapper rail recovery plan. USFWS Region 1, Portland, OR.

_____. 1985. *Revised Blunt-Nosed Leopard Lizard Recovery Plan*. United States Fish and Wildlife Service. Region 1, Portland, Oregon.

_____. 1994. *Federal Register Final Rule: Determination of Endangered Status for the Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, and the Vernal Pool Tadpole Shrimp; and Threatened Status for the Vernal Pool Fairy Shrimp.* September 19, 1994.

_____. 1996. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants*. September 23, 1996.

_____. 1996a. Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods. April 19, 1996.

_____. 1996b. Endangered and threatened wildlife and plants: determination of threatened status for the California red-legged frog. Federal Register 61(101):25813–25833. May 23.

_____. 1996c. Sacramento-San Joaquin Delta Native Fishes Recovery Plan. November 26, 1996. Portland, Oregon. Available online at: http://ecos.fws.gov/docs/recovery_plan/961126.pdf

_____. 1998. *Recovery Plan for Upland Species of the San Joaquin Valley, California.* U.S. Fish and Wildlife Service, Region 1, Portland, Oregon. 319 pp.

_____. 1999a. *Draft Recovery Plan for the Giant Garter Snake* (Thamnophis gigas). U.S. Fish and Wildlife Service, Sacramento, California. http://ecos.fws.gov/docs/recovery_plan/990702b.pdf.

_____. 1999b. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle.* U.S. Fish and Wildlife Service, Sacramento, California. July 9, 1999.

_____. 1999c. *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance*. U.S. Fish and Wildlife Service, Sacramento, California. June 1999.

_____. 2002. Recovery Plan for the California Red-legged Frog (Rana aurora draytonii). U.S. Fish and Wildlife Service, Portland, Oregon, viii 173 pp.

_____. 2004. "Endangered and Threatened Wildlife and Plants: Proposed Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover Proposed Rule." *Federal Register* 69:75608–75656.

_____. 2005a. *Kern and Pixley National Wildlife Refuges Final Comprehensive Conservation Plan*. February 2005. http://library.fws.gov/CCPs/kern-pixley_final.pdf.

_____. 2005b. *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon.* U.S. Fish and Wildlife Service, Region 1, Portland, Oregon. December 15.

_____. 2005c. *Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog*. August 2005. www.fws.gov/sacramento/es/documents/crf_survey_guidance_aug2005.pdf.

_____. 2006a. "Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants Final Rule." *Federal Register*, Vol. 71, No. 28, pp. 7118-7316.

_____. 2006b. *Valley Elderberry Longhorn Beetle* (Desmocerus californicus dimorphus) *5-Year Review: Summary and Evaluation*. U.S. Fish and Wildlife Service, Sacramento, California. September 2006.

_____. 2008. *Birds of Conservation Concern 2008*. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. http://www.fws.gov/migratorybirds/.

_____. 2008a. Species Account. Sacramento Fish Wildlife Office Species Account California red-legged frog (Rana aurora draytonii). Available online at: http://www.fws.gov/sacramento/es/animal_spp_acct/ca_red-legged_frog.pdf

_____. 2008b. Biological Opinion on the on the Proposed Coordinated Operations of the Central Valley Project (CVP) and State Water Project (SWP). Sacramento, CA.

_____. 2009. *National Wetlands Inventory* (NWI). http://www.fws.gov/Wetlands/Data/DataDownload/html (accessed September and October 2009)

_____. 2009. Sacramento Fish Wildlife Office Species Account for Vernal Pool Fairy Shrimp (Branchinecta lynchi). Accessed February 2010 at http://www.fws.gov/sacramento/es/animal_spp_acct/vernal pool fairy shrimp.htm

_____. 2010. Sacramento Fish Wildlife Office Species Account for California clapper rail. Accessed August 11 at http://www.fws.gov/sacramento/es/animal_spp_acct/ca_clapper_rail.pdf

_____. 2010a. *San Joaquin Kit Fox (*Vulpes macrotis mutica*) 5-Year Review: Summary and Evaluation.* Sacramento Fish and Wildlife Office. Sacramento, California.

_____. 2010b. *Tipton Kangaroo Rat* (Dipodomys nitratoides nitratoides) *5-Year Review: Summary and Evaluation*. Sacramento Fish and Wildlife Office. Sacramento, California. February 2010.

_____. 2012. *Federal Endangered and Threatened Species That Occur in or May Be Affected by Projects USGS 7.5 Minute Quads.* Last Updated: September 18, 2011. http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-overview.htm / (accessed January)

USFWS and CDFG. 1996. *Survey Protocol for the Morro Bay Kangaroo Rat.* April 1996.

_____. 2003. *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander*. October 2003.

U.S. Geological Survey (USGS). 2009. National Hydrography Dataset. http://nhd.usgs.gov/.

U.S. Geological Survey in cooperation with the U.S. Environmental Protection Agency. 1999. *National Hydrography Dataset* (NHD). http://nhd.usgs.gov/ (accessed in September and October 2009)

Uptain, C., W.A. Clark, and S.M. Juare. 1985. *Mark-Recapture Population Estimates and Visitation indices for the Blunt-Nosed Leopard Lizard,* Gambelia sila, *at the Pixley National Wildlife Refuge.* U.S. Fish and Wildlife Service, Delano, California.

Van Horn Job, C.L., Cypher, B. L., and S.E. Phillips. 2011. "Blunt-nosed Leopard Lizard Surveys at Pixley National Wildlife Refuge in 2011." Prepared for Pixley National Wildlife Refuge, September 9.

Vileisis, A. 1997. *Discovering the Unknown Landscape: A History of America's Wetlands.* Washington, D.C.: Island Press.

Vollmar Consulting. 2006. Memo from Memo from Josh Phillips of Vollmar Consulting to Elizabeth Purl of Impact Sciences, Inc., regarding Terrestrial Wildlife Habitat Evaluation, Hercules Ferry/Intermodal Terminal Project. September 12, 2006.

_____. 2008. Delineation of Potential Jurisdictional Waters of the United States, June 2008. Hercules Intermodal Transit Facility.

_____. 2007. 90 Day Survey Report, 2007 Wet Season Large Branchiopod Surveys. Hercules Ferry Intermodal Terminal Project.

Wang, J.C.S. 1986. Fishes of the Sacramento-San Joaquin Estuary and Adjacent Waters, California: A Guide to the Early Life Histories. IEP Technical Report No. 9. California Department of Water Resources, California Department of Fish and Game, U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service. Available at http://elib.cs.berkeley.edu

_____. 1991. Early life stages and early life history of the delta smelt, Hypomesus transpacificus, in the Sacramento-San Joaquin Estuary, with comparison of early life stages of longfin smelt, Spirinchus thaleichthys. Interagency Ecological Study Program for the Sacramento-San Joaquin Estuary. Technical Report 28. Sacramento, California.

Warrick, G.D., T.T. Kato, and B.R. Rose. 1998. *Microhabitat Use and Home Range Characteristics of Blunt Nosed Leopard Lizards*. EG□G Energy Measurements, Inc., Tupman, California.

Wasco, City of. 2010. *Wasco Municipal Code. A Codification of the General Ordinances of the City of Wasco, California.* Current through Ordinance 608. Seattle, Washington: Code Publishing Company, May 18, 2010. http://www.codepublishing.com/ca/Wasco/ (accessed September 2010)

Weintraub, J.D. 1980. "Selection of Daytime Retreats by Recently Metamorphosed *Scaphiopus multiplicatus*." *J. Herpetol.* 14:83–84.

Werschkull, G.D., F.T. Griggs, and J.M. □aninovich. 1984. *Tulare Basin Protection Plan*. The California Nature Conservancy. January 1984.

Western Region Climate Center (WRCC), Historical Climate Information Program. 2010. http://www.wrcc.dri.edu/CLIMATEDATA.html (accessed July 15, 2010)

Wetlands Water Resources, Inc (WWR). 2009. Biological Evaluation Report – Chelsea Wetland Restoration Project. May 11, 2009. Project No. 1136. Prepared for the City of Hercules.

_____. 2007a. Hercules Multimodal Transit Facility. Fish and Fisheries Assessment. Prepared for Impact Sciences, Inc. 15 May 2007.

_____. 2007b. Hercules Multimodal Transit Facility Project. Eelgrass and Widgeongrass Presence/Absence Survey and Bathymetric Survey. Data Collection Report.

Wetland Wildlife Associates (WWA). 2007. Bird Surveys for the Hercules Ferry Terminal Project.

Young, P.Ss, Cech, J.J. Jr. 1996. Environmental tolerances and requirements of splittail. Transactions of the American Fisheries Society 125:664-678. Federal Register Notices

58 FR 33212, June 16, 1993. Designated Critical Habitat□Sacramento River Winter-run Chinock Salmon. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 58: 33212-33219.

59 FR 440, January 4, 1994. Endangered and Threatened Species□Status of the Sacramento River Winter-run Chinock Salmon Final Rule. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 59: 440-450.

63 FR 13347, March 19, 1998. Endangered and Threatened Species: Threatened Status for Two ESUs of Steelhead in Washington, Oregon and California Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 63: 13347-13371.

64 FR 24049, May 5, 1999. Designated Critical Habitat□Central California Coast and Southern Oregon/Northern California Coasts Coho Salmon. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 64: 24049-24062.

64 FR 50394, September 16, 1999. Endangered and Threatened Species: Threatened Status of Two Chinock Salmon Evolutionarily Significant Unites (ESUs) in California□Final Rule. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 64: 50394-50415.

69 FR 19975, April 15, 2004. Endangered and Threatened Species Establishment of Species of Concern List, Addition of Species to Species of Concern List, Description of Factors for Identifying Species of Concern, and Revision of Candidate Species List Under the Endangered Species Act. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 69: 19975-19979.

70 FR 37160, June 28, 2005. Endangered and Threatened Species: Final Listing Determinations for 16 ESUs of West Coast Salmon, and Final 4(d) Protective Regulations for Threatened Salmonid ESUs. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 70: 37160-37204.

70 FR 52488, Friday, September 2, 2005. Endangered and Threatened Species Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 70: 52488-52672.

71 FR 834, January 5, 2006. Endangered and Threatened Species: Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead Final Rule. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 71: 834-862.

71 FR 17757, April 7, 2006. Endangered and Threatened Wildlife and Plants: Threatened Status for Southern Distinct Population Segment of North American Green Sturgeon. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 71.

74 FR 52300, October 9, 2009. Endangered and Threatened Wildlife and Plants: Final Rulemaking To Designate Critical Habitat for the Threatened Southern Distinct Population Segment of North American Green Sturgeon. Department of Commerce. National Oceanic and Atmospheric Administration. Vol. 74, No. 195.

Chapter 6. □□□□res

Figure 1-1 San Joaquin Corridor Intercity Routes

Figure 1-2 Current BNSF Track Structure

Figure 1-3 Proposed BNSF 5/10-Year (79 mph) Plan

Figure 1-4 Proposed BNSF 25-Year (79 mph) Plan

Figure 1-5 Proposed BNSF 5/10-Year (90 mph) Plan

Figure 1-6 Proposed BNSF 25-Year (90 mph) Plan

Figure 1-7 Proposed UPRR 25-Year (90 mph) Plan, Niles – Tracy Subdivision

Figure 1-8 Proposed UPRR 25-Year (90 mph) Plan, Fresno Subdivision

Figure 1-9 Proposed Track Upgrades – UPRR Antioch to Oakland

Figure 1-10 Proposed Track Upgrades – UPRR Stockton to Sacramento

Figure 1-11 Proposed Stockton Station Alternative Sites (USGS)

Figure 1-12 Hercules Station Area on USGS Map

Figure 1-13 Elk Grove Potential Station Site Location

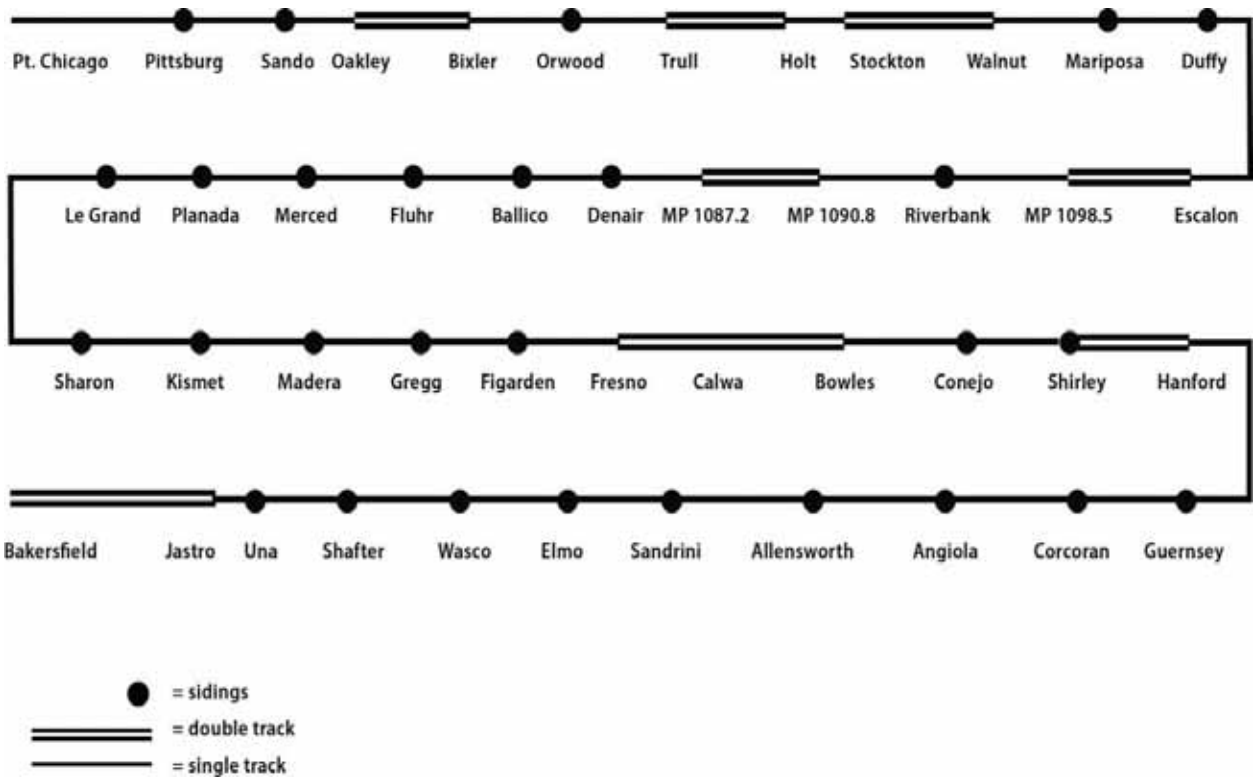
Figure 1-14 Potential Fresno Layover Facility Site (USGS)

Figure 1-15 Potential Merced Layover Facility Site (USGS)

□□□re□□□□ □□n □□□□□n □□rr□□r □n□erc□□□R□□□e

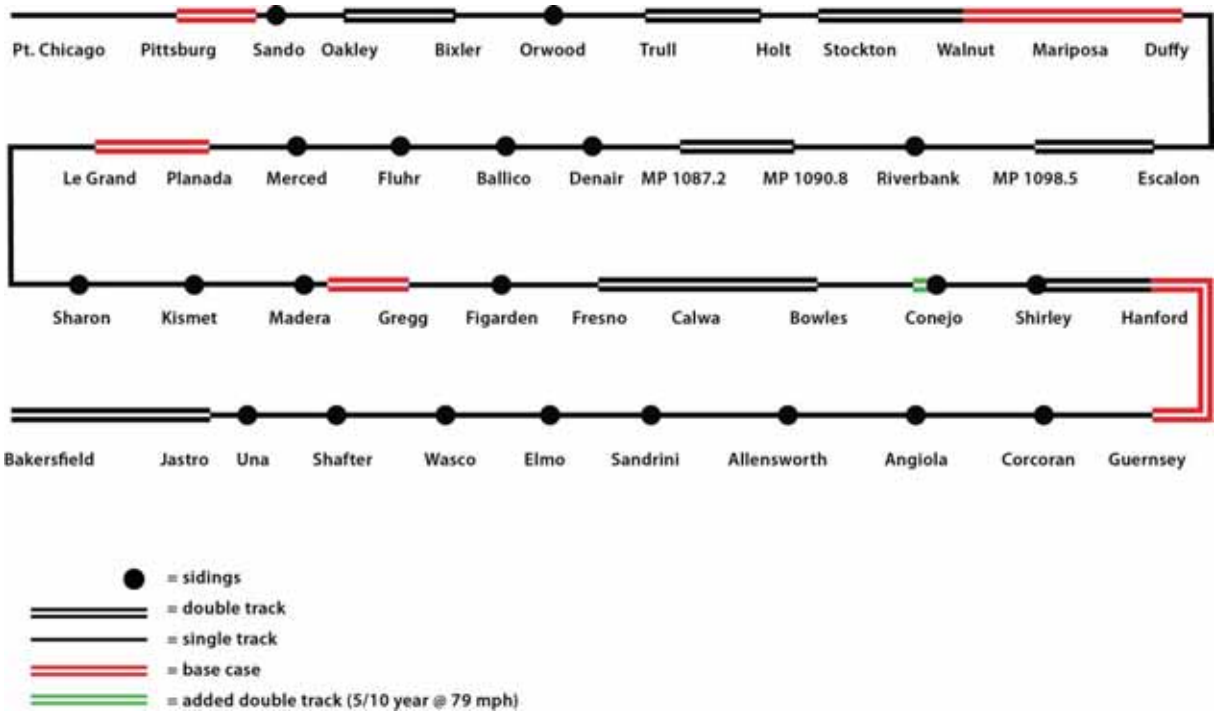
Source: J.L. Patterson □ Associates, Inc. / Amtrak California

□□□□re □□□□ □□rren□□□□□ □r□c□ □□r□c□□re



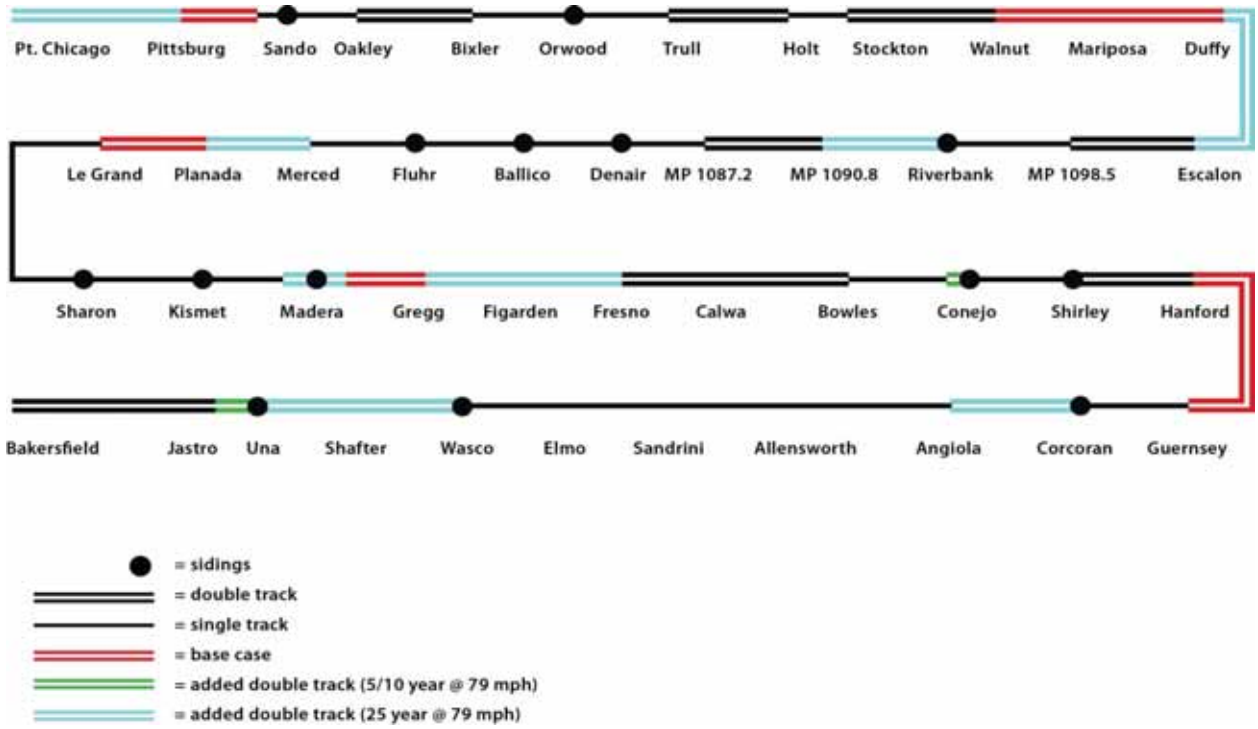
Source: Based on BNSF Railway Modeling Report□Modified from Original

□□□□re □□□□ □r□□□se□ □□□□ □ □□□□□e□r □□□ □ □□□□□□n



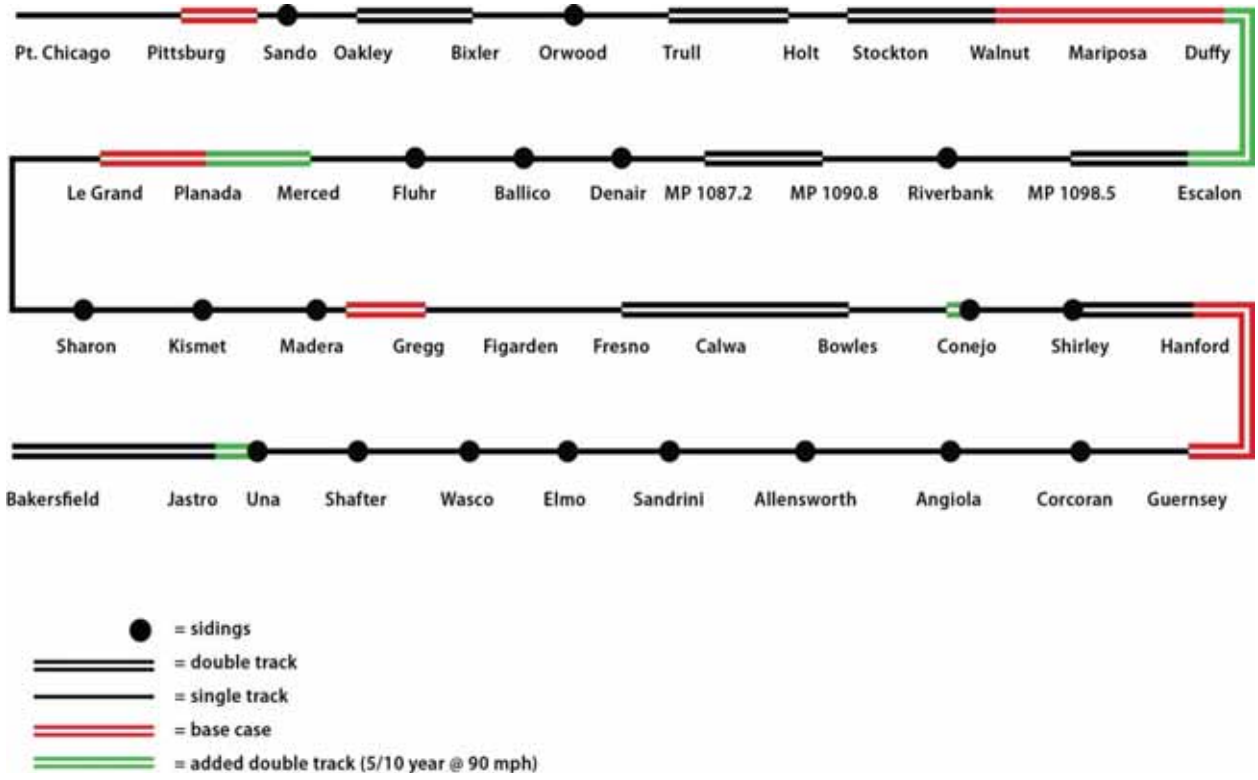
Source: Based on BNSF Railway Modeling Report□Modified from Original

[illegible]re [illegible] [illegible]r[illegible]se[illegible] [illegible] [illegible]e[illegible]r [illegible] [illegible] [illegible]n



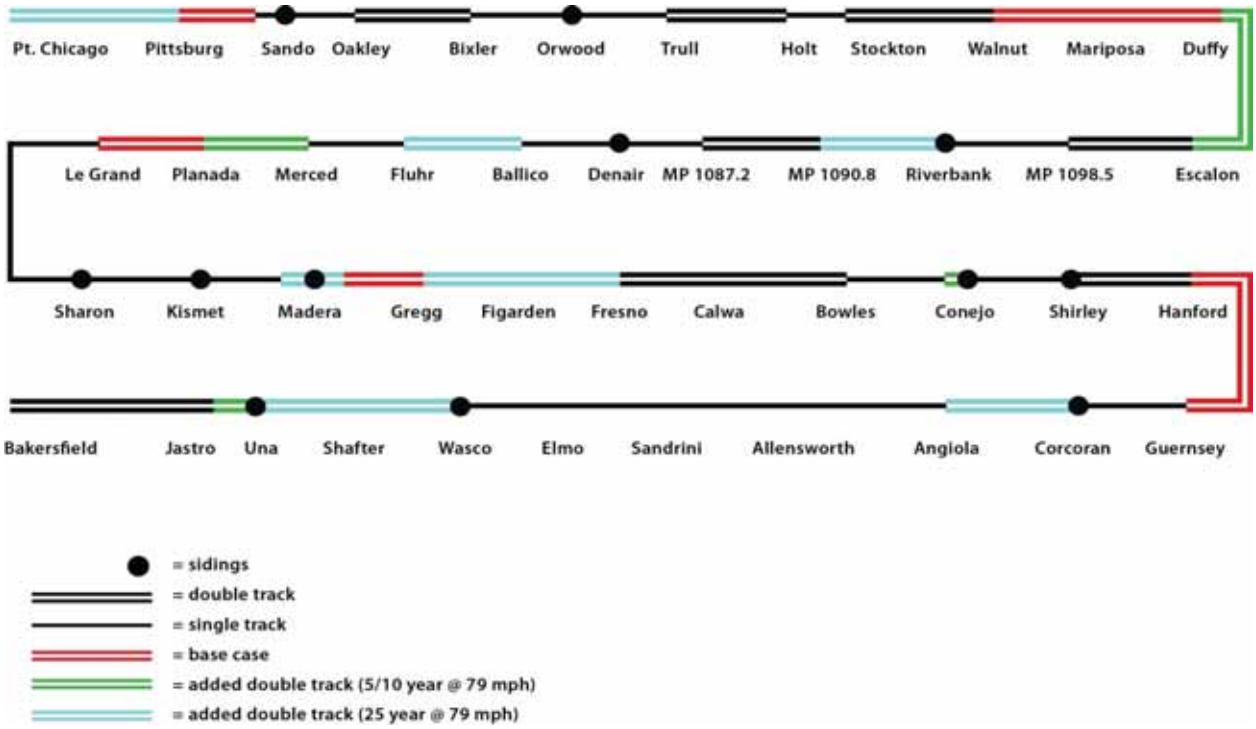
Source: Based on BNSF Railway Modeling Report[illegible]Modified from Original

[illegible]re [illegible] [illegible]r[illegible]se[illegible] [illegible] [illegible] [illegible]e[illegible]r [illegible] [illegible] [illegible]n



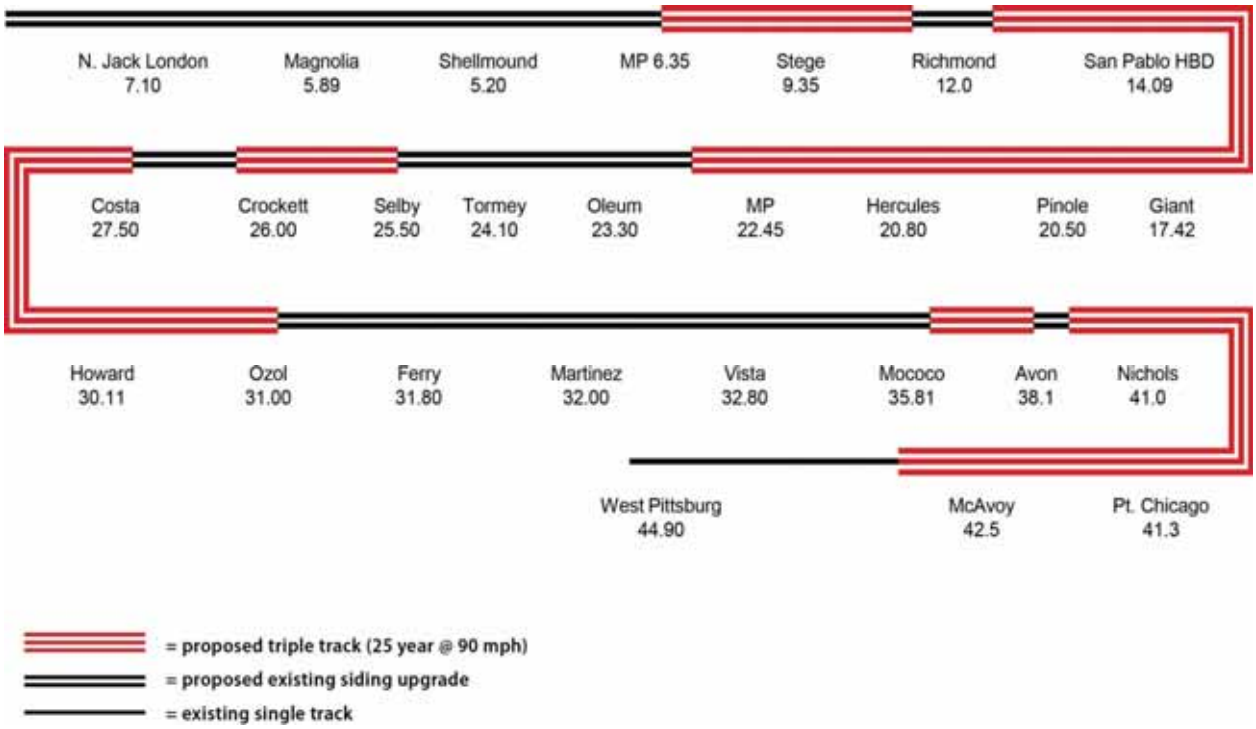
Source: Based on BNSF Railway Modeling Report[illegible]Modified from Original

□□□□re □□□□ □r□□□se□ □□□□ □□□□e□r □□□ □ □□□□□□n



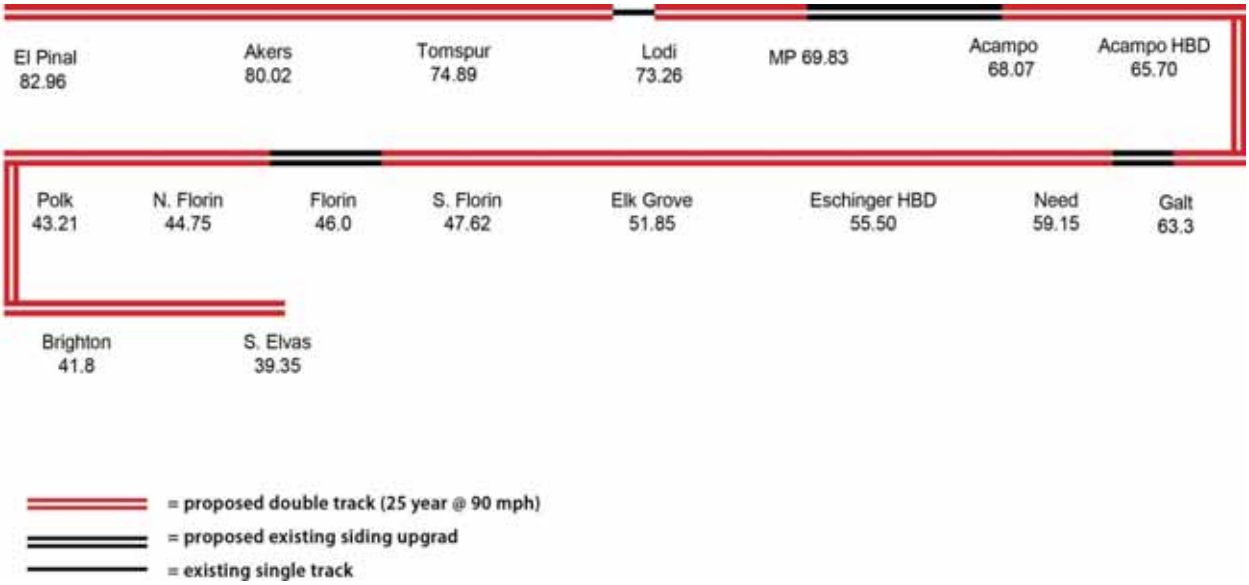
Source: Based on BNSF Railway Modeling Report□Modified from Original

□□□□re □□□□ □r□□□se□ □□RR □□□□e□r □□□ □ □□□□□□n
□□es □ □r□c□ □□□□□□□s□□n



Source: J.L. Patterson □ Associates, Inc.

□□□□re □□□□ □r□□□se□ □□RR □□□□e□r □□□ □ □□□□□□n
□resn□ □□□□□□□s□□n

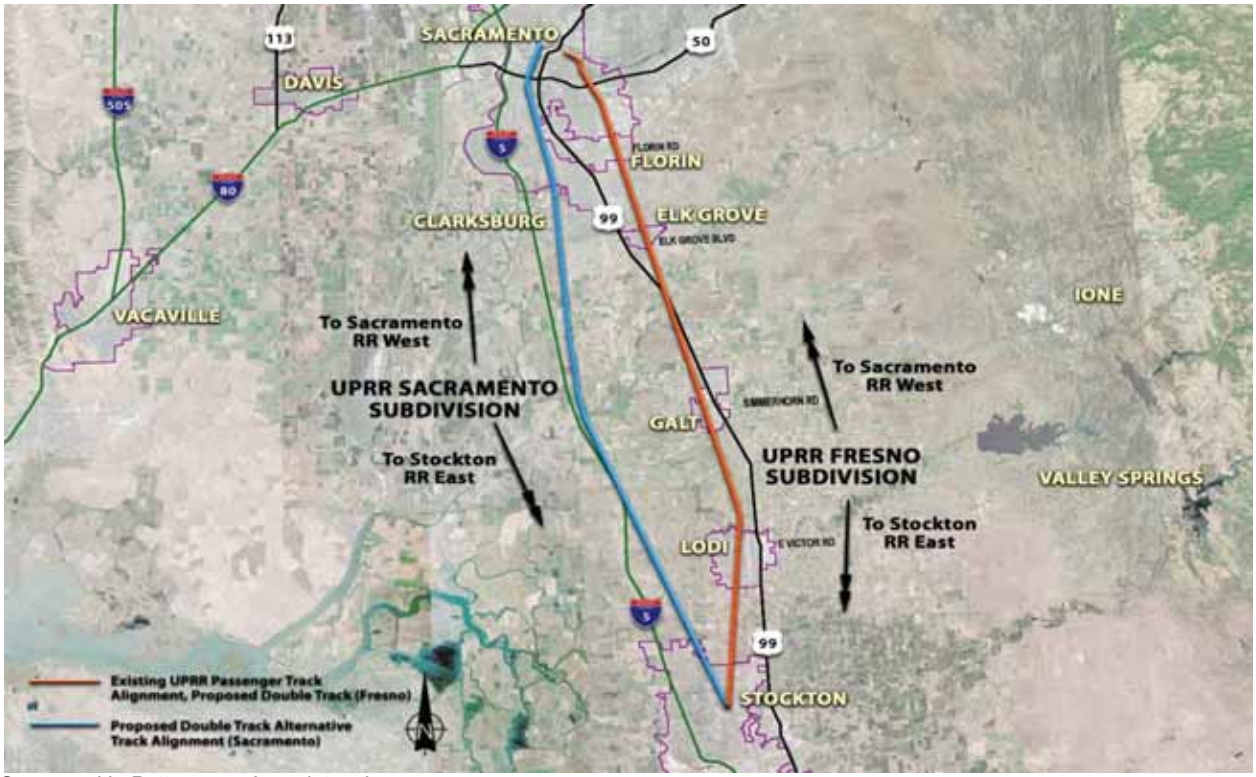


Source: J.L. Patterson □ Associates, Inc.

□□□□re □□□□□ □r□□□se□ □r□c□ □□□r□□es □ □□RR □n□□□c□ □□ □□□□n□

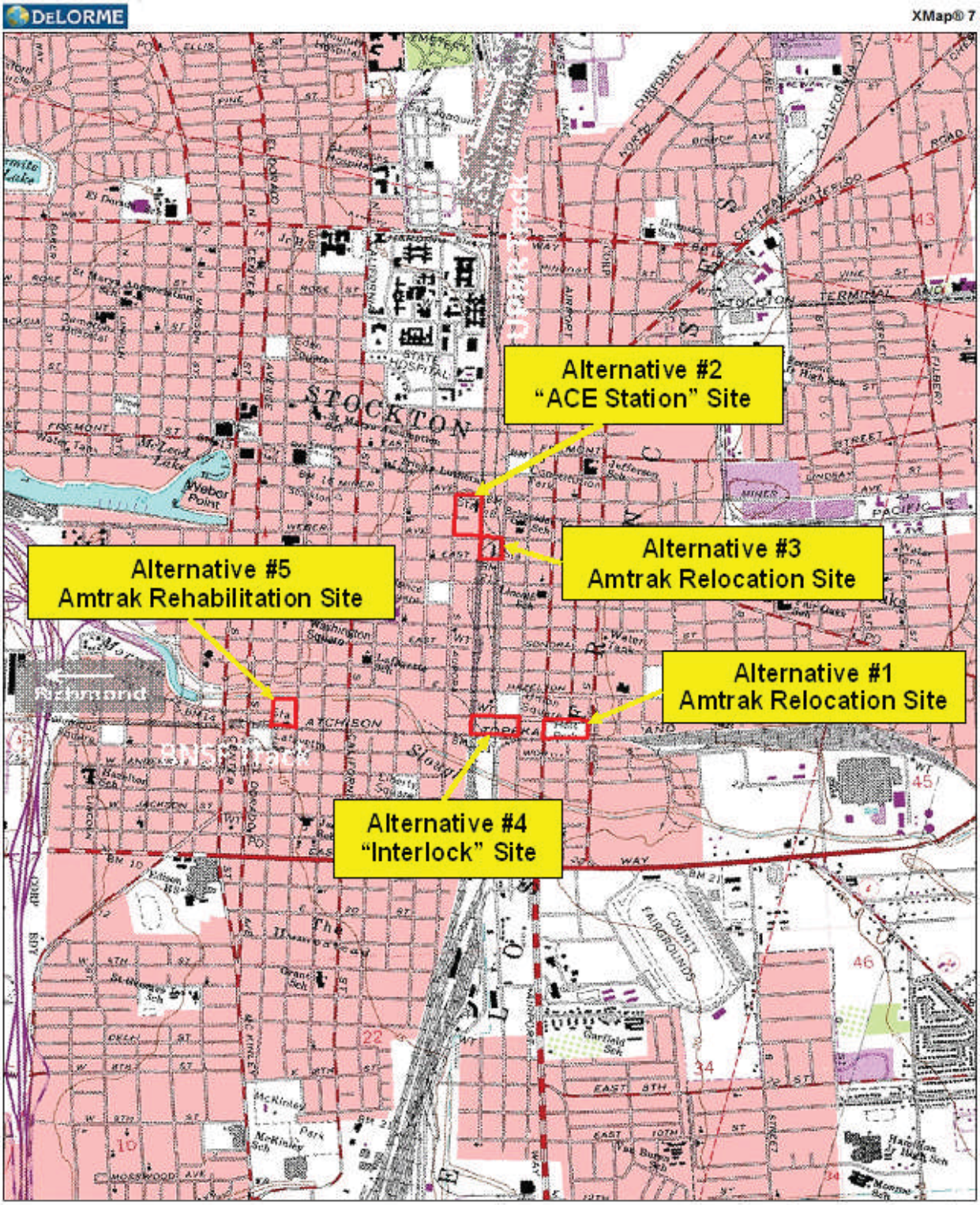
Source: J.L. Patterson □ Associates, Inc.

□□□□re □□□□□ □r□□□se□ □r□c□ □□□r□□es □ □□RR □□□c□□□n □□ □□cr□□ en□□



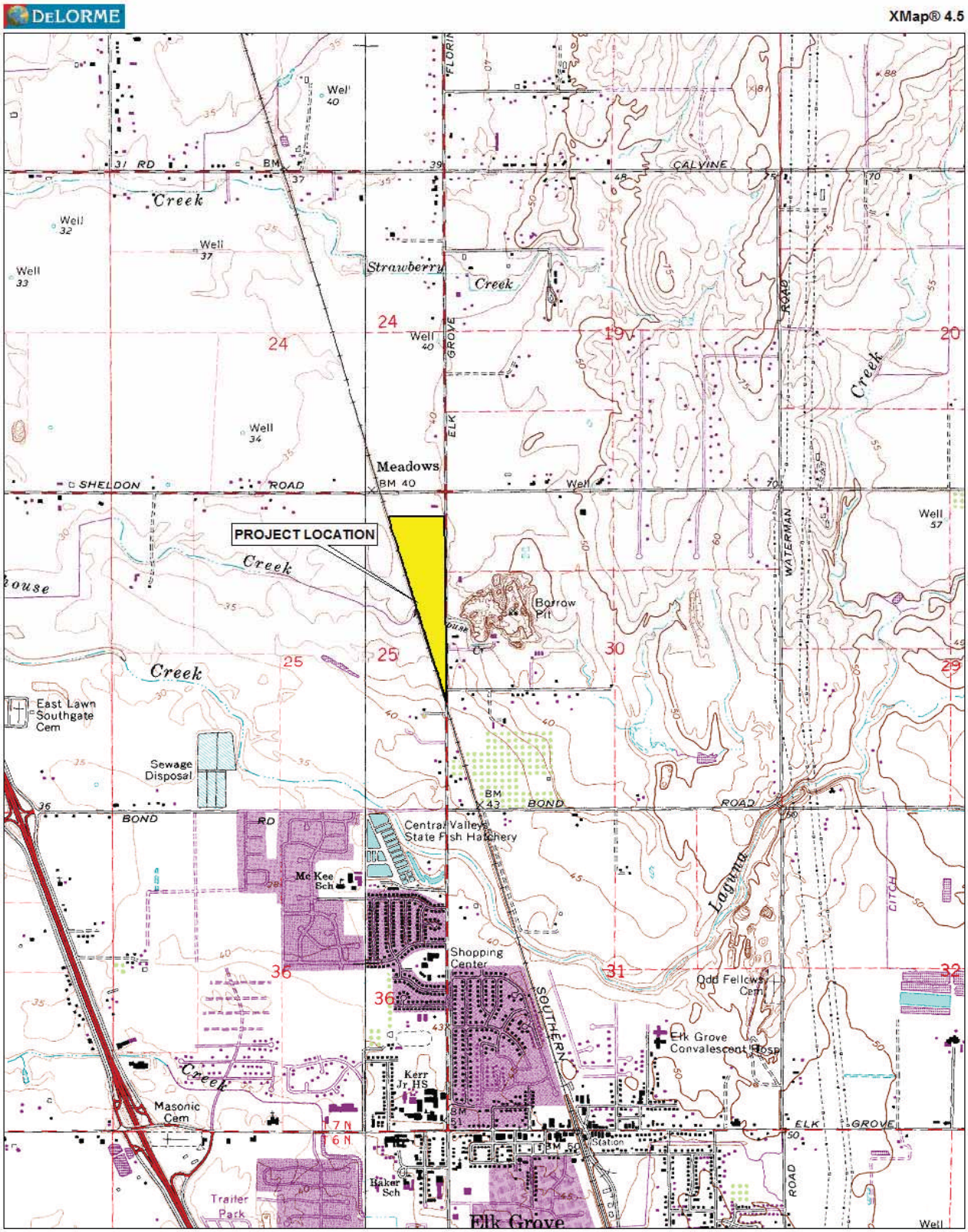
Source: J.L. Patterson □ Associates, Inc.

□□□□re □□□□□ □r□□□se□ □□□c□□□n □□□□□n □□ern□□□e □□es
□□□□ □□□ □ □n□e □□□□r□n□□e □ □□ □□□□c□□□n □ es□□

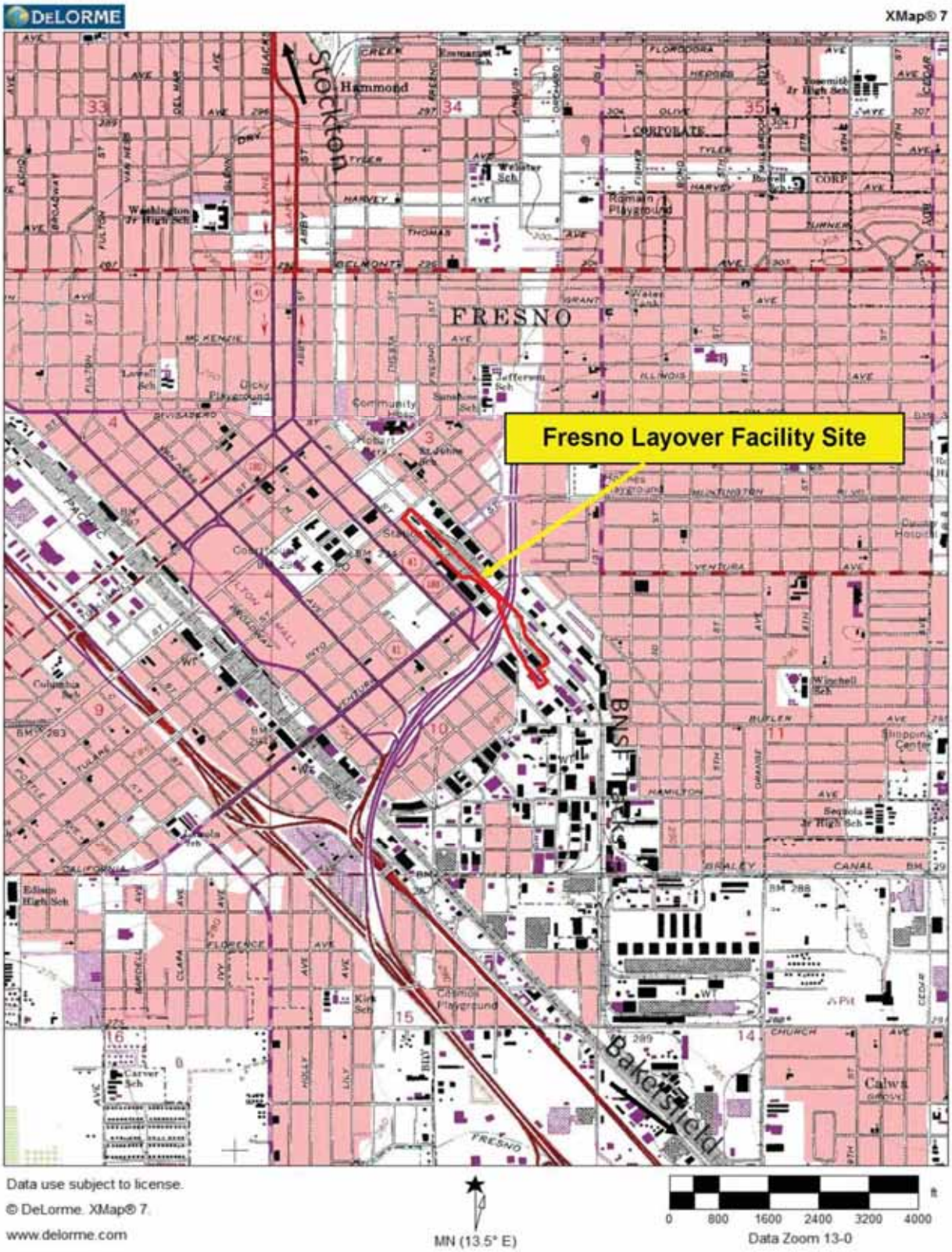


□□□□re □□□□□ □erc□es □□□□□n □re□ □n
□□□□ □□□ □ □n□e □□□□r□n□e □ □□

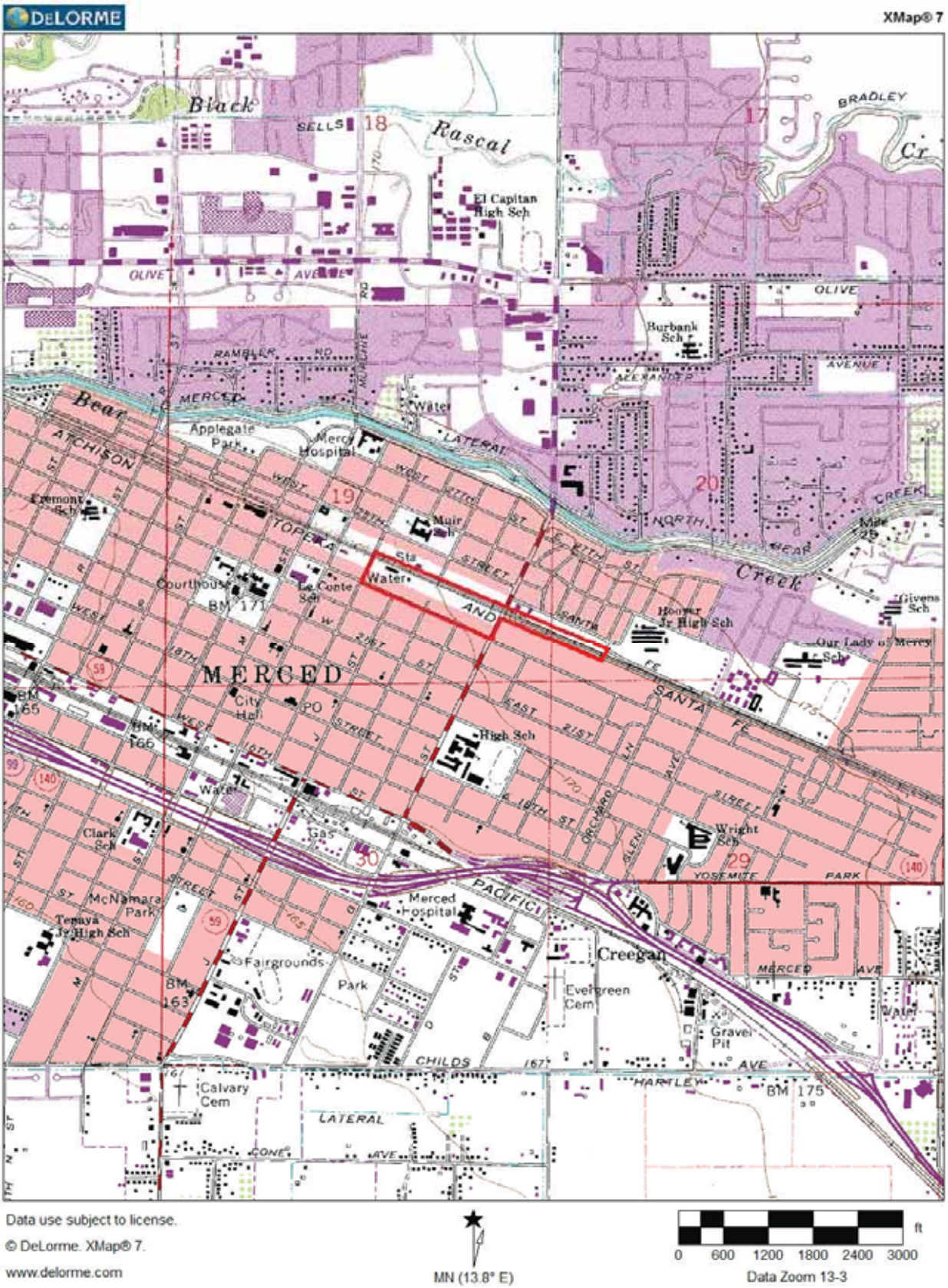
[illegible]re [illegible] [illegible] [illegible]r[illegible]e [illegible]en[illegible]n [illegible]e [illegible]c[illegible]n


DeLORME
XMap® 4.5
PROJECT LOCATION
Meadows
Borrow Pit
Sewage Disposal
East Lawn Southgate Cem
Central Valley State Fish Hatchery
Mc Kee Sch
Shopping Center
Odd Fellows Cem
Elk Grove Convalescent Hosp
Kerr Jr. HS
Masonic Cem
Baker Sch
Trailer Park
Elk Grove
Laguna
Strawberry Creek
SHELDON ROAD
BOND RD
BOND ROAD
CALVINE
ELK GROVE
WATERMAN ROAD
SOUTHERN
Data use subject to license.
© 2004 DeLorme. XMap® 4.5.
www.delorme.com
MN (0.0° W)
0 800 1600 2400 3200 4000 ft
Data Zoom 13-0

□□□□re □□□□□ □□□□ □ □□□en□□□□resn□ □□□□□er □□c□□□□ □□e
□□□□ □□□ □ □n□e □□□□r□n□e □ □□ □□resn□ □□□□□□



□□□□re □□□□□ □□□□ □ □□□en□□□□□erce□ □□□□□er □□c□□□□ □□e
□□□□ □□□ □ □n□□e □□□□r□n□□e □ □□ □□erce□□



Data use subject to license.

© DeLorme. XMap® 7.

www.delorme.com

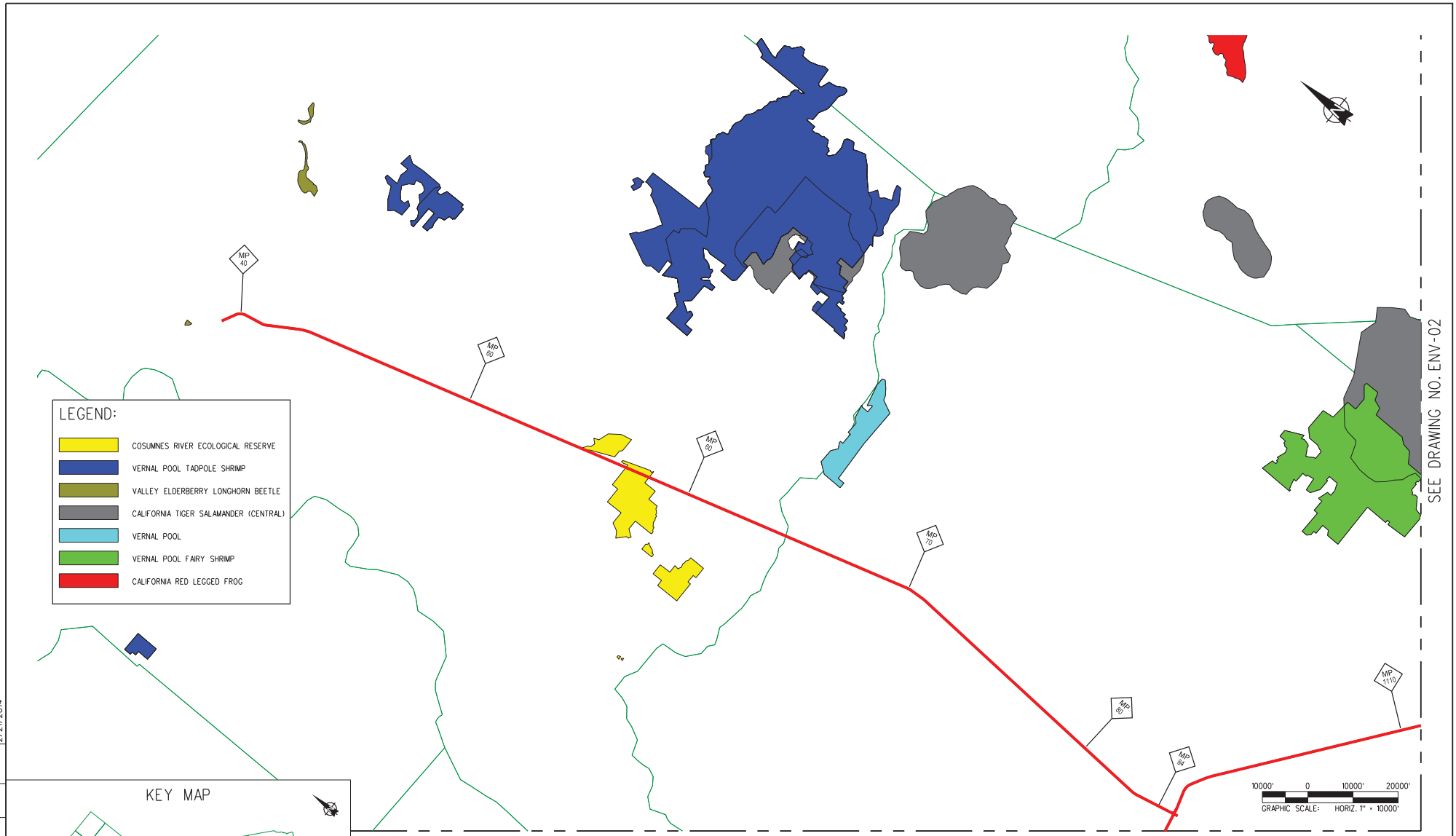
MN (13.8° E)

0 600 1200 1800 2400 3000 ft

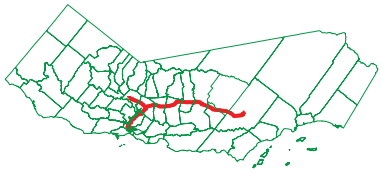
Data Zoom 13-3

APPENDIX 4

Critical Habitat Maps



KEY MAP



Information confidential all plans, drawings, specifications, and/or information furnished hereunto shall remain the property of the Burlington Northern Santa Fe Railway and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Burlington Northern Santa Fe Railway

BNSF RAILWAY

PATTERSON & ASSOCIATES, INC. 725 TOWN & COUNTRY RD SUITE 300 ORANGE, CA 92868

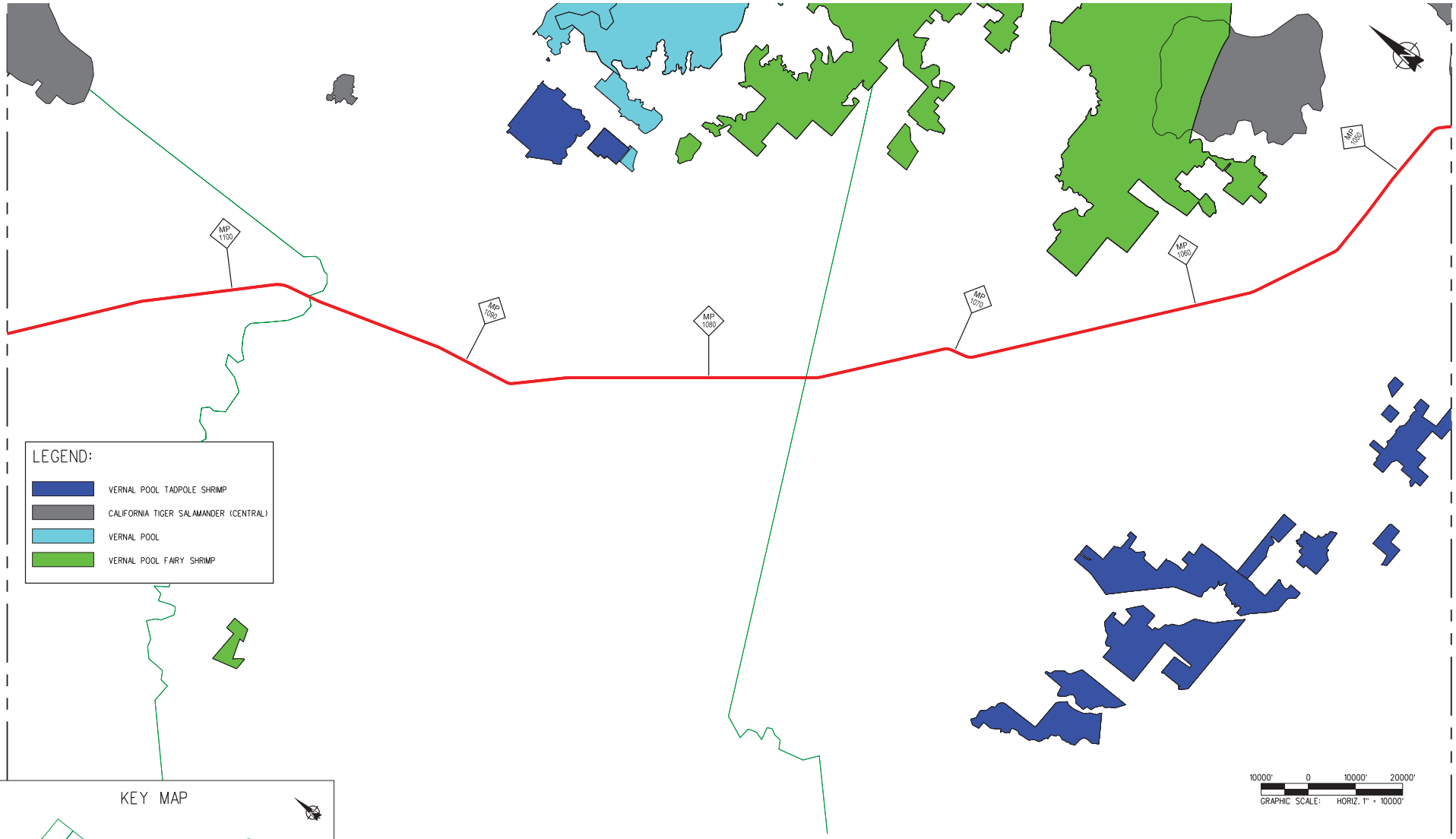
BNSF RAILWAY
SAN JOAQUIN CORRIDOR

PIER NES ENVIRONMENTAL MAPS

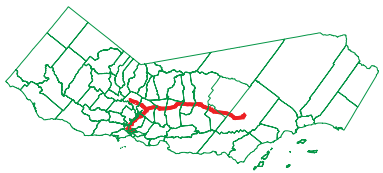
CONTRACT NO.	
DRAWING NO.	ENV-01
REVISION	SHEET NO.
SCALE	AS SHOWN

PROJECT NUMBER	COST ELEMENT	LINE ITEM	CONTRACT DESIGNATION	PHYSICAL ENTITY	WORK ELEMENT

J:\Projects\Caltrans_DOR\Caltrans_On-Call_75A0276\Task_10\Drawings\Environmental_Maps\CA_Habitat_01.dgn
7:54:23 AM
2/21/2014



KEY MAP



Information confidential all plans, drawings, specifications, and/or information furnished hereunto shall remain the property of the Burlington Northern Santa Fe Railway and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Burlington Northern Santa Fe Railway

BNSF RAILWAY

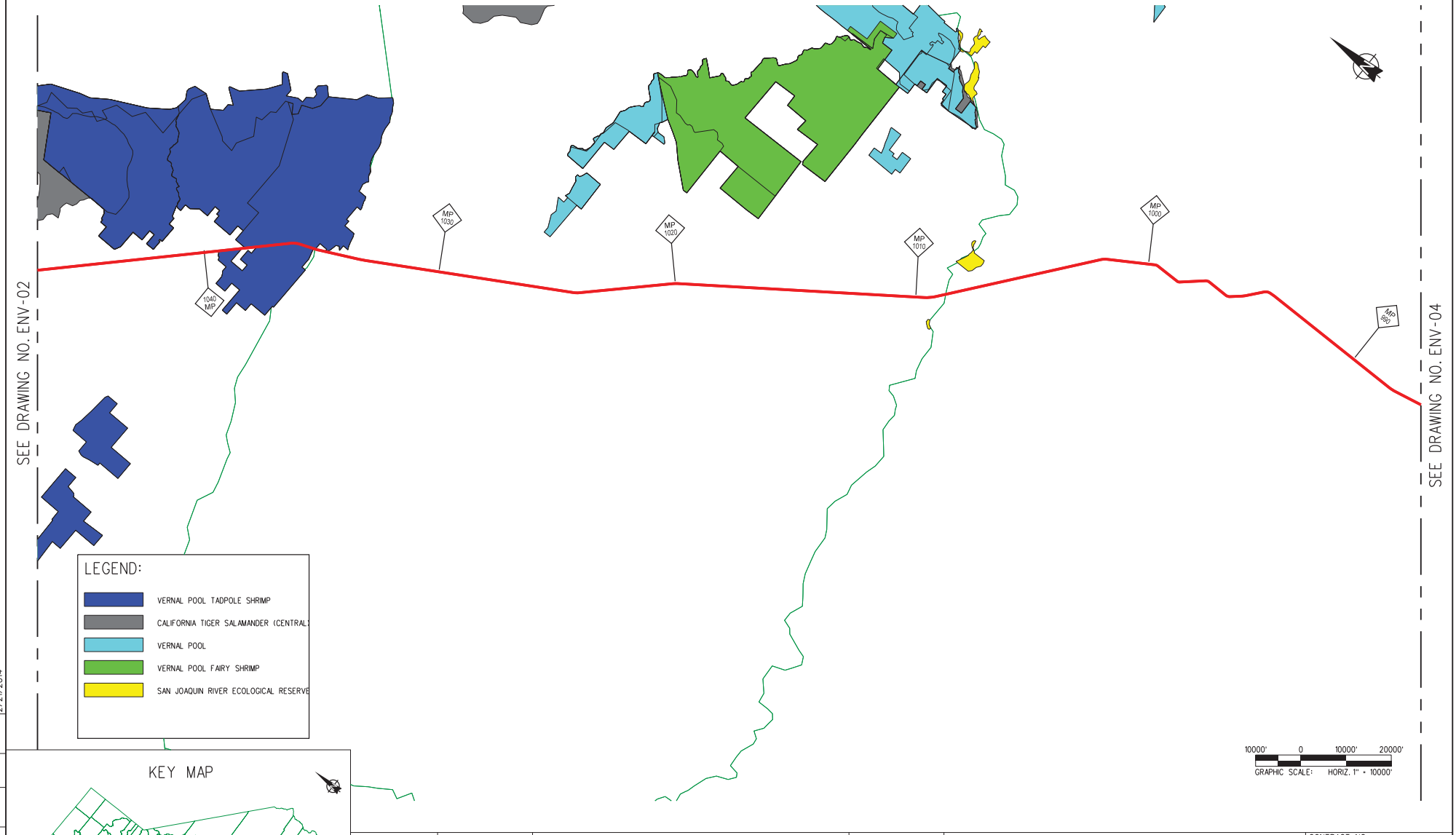
PATTERSON & ASSOCIATES, INC. 725 TOWN & COUNTRY RD SUITE 300 ORANGE, CA 92868

BNSF RAILWAY
SAN JOAQUIN CORRIDOR

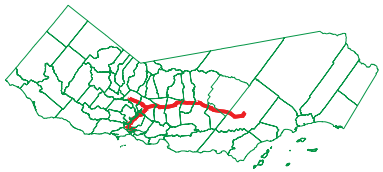
PIER NES ENVIRONMENTAL MAPS

CONTRACT NO.	
DRAWING NO.	ENV-02
REVISION	SHEET NO.
SCALE	AS SHOWN

PROJECT NUMBER	COST ELEMENT	LINE ITEM	CONTRACT DESIGNATOR	PHYSICAL ENTITY	WORK ELEMENT
					J:\Projects\Caltrans_DOR\Caltrans_On-Call_75A0276\Task_10\Drawings\Environmental_Maps\CA_Habitat_02.dgn 7:54:24 AM 2/21/2014



KEY MAP



Information confidential all plans, drawings, specifications, and/or information furnished hereunto shall remain the property of the Burlington Northern Santa Fe Railway and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Burlington Northern Santa Fe Railway

BNSF RAILWAY

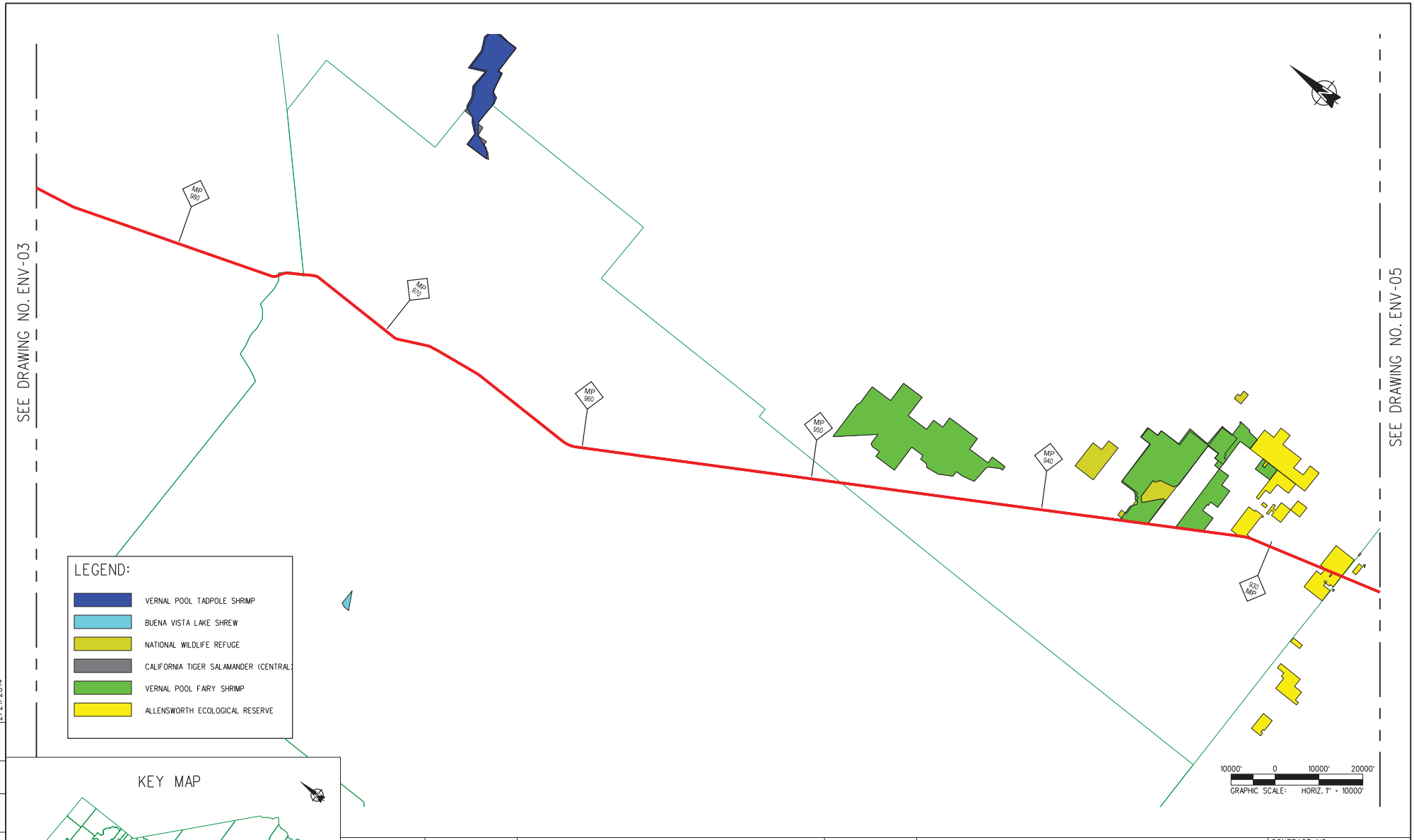
PATTERSON & ASSOCIATES, INC. 725 TOWN & COUNTRY RD SUITE 300 ORANGE, CA 92868

BNSF RAILWAY
SAN JOAQUIN CORRIDOR

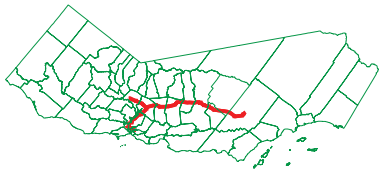
PIER NES ENVIRONMENTAL MAPS

CONTRACT NO.	
DRAWING NO.	ENV-03
REVISION	SHEET NO.
SCALE	AS SHOWN

PROJECT NUMBER	COST ELEMENT	LINE ITEM	CONTRACT DESIGNATION	PHYSICAL ENTITY	WORK ELEMENT
					J:\Projects\Caltrans_DOR\Caltrans_On-Call_75A0276\Task_10\Drawings\Environmental_Maps\CA_Habitat_03.dgn 7:54:24 AM 2/21/2014



KEY MAP



J:\Projects\Caltrans_DOR\Caltrans_On-Call_75A0276\Task_10\Drawings\Environmental_Maps\CA_Habitat_04.dgn
7:54:25 AM
2/21/2014

PROJECT NUMBER	COST ELEMENT	LINE ITEM	CONTRACT DESIGNATION	PHYSICAL ENTITY	WORK ELEMENT

Information confidential all plans, drawings, specifications, and/or information furnished hereewith shall remain the property of the Burlington Northern Santa Fe Railway and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Burlington Northern Santa Fe Railway

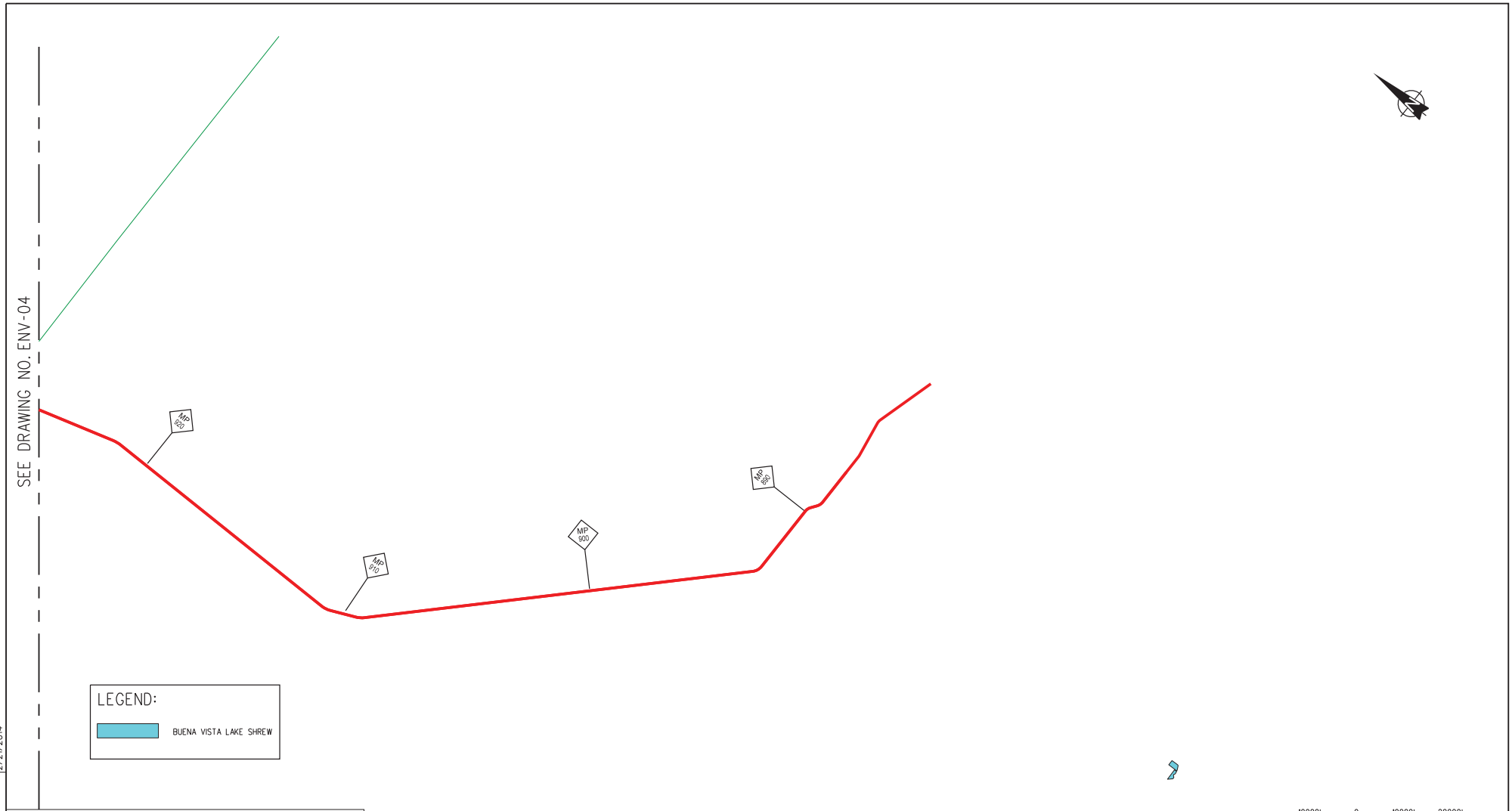
BNSF RAILWAY

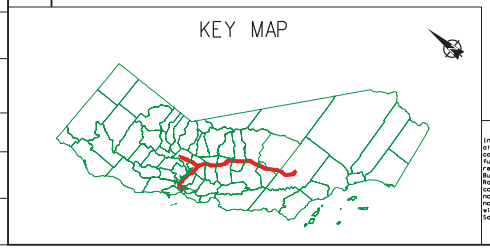
PATTERSON & ASSOCIATES, INC.
725 TOWN & COUNTRY RD
SUITE 300
ORANGE, CA 92868

BNSF RAILWAY
SAN JOAQUIN CORRIDOR

PIER NES ENVIRONMENTAL MAPS

CONTRACT NO.	
DRAWING NO.	ENV-04
REVISION	SHEET NO.
SCALE	AS SHOWN





Information confidential all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the Burlington Northern Santa Fe Railway and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Burlington Northern Santa Fe Railway

BNSF RAILWAY

PATTERSON & ASSOCIATES, INC. 725 TOWN & COUNTRY RD SUITE 300 ORANGE, CA 92868

BNSF RAILWAY
SAN JOAQUIN CORRIDOR

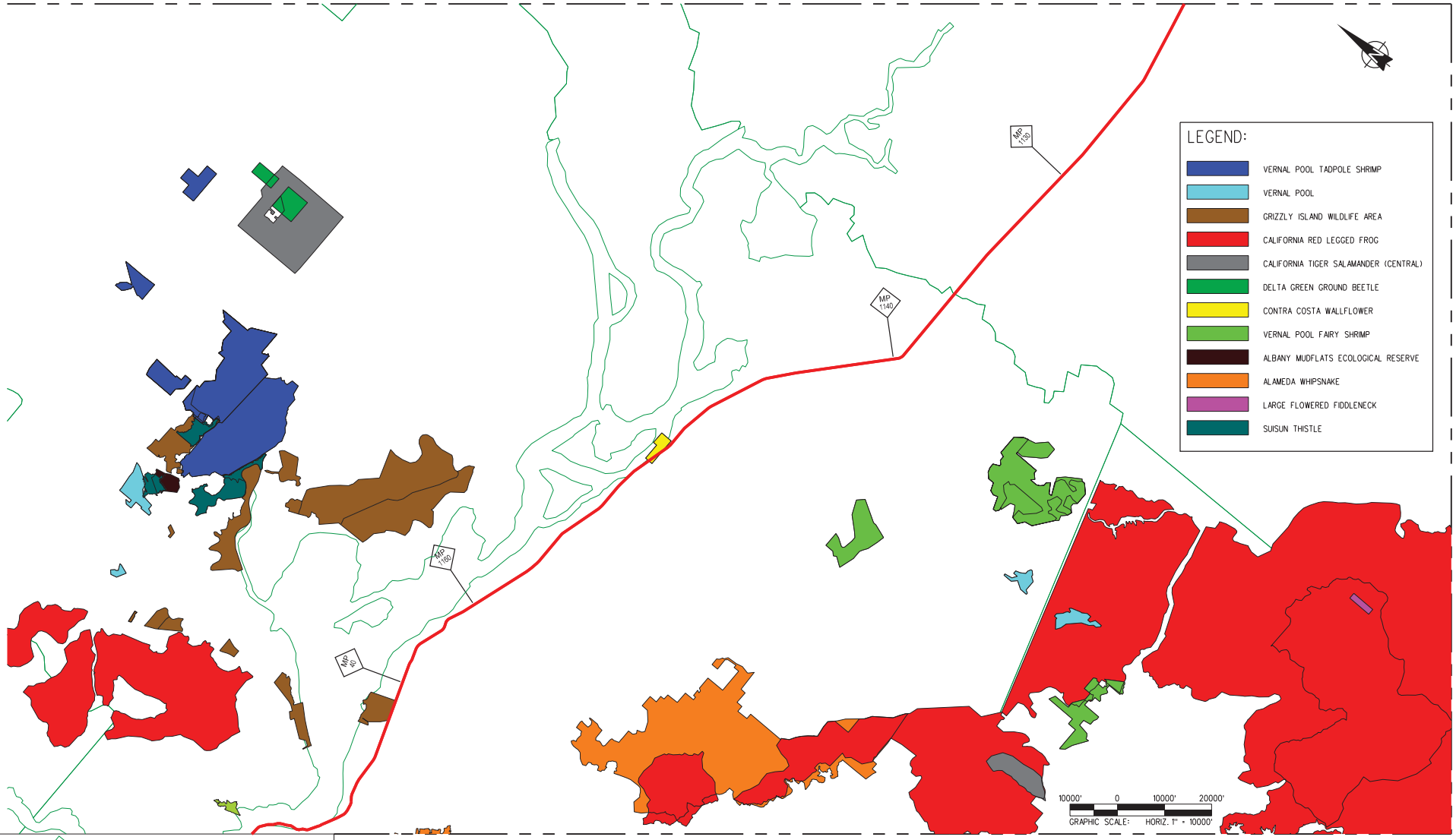
PIER NES ENVIRONMENTAL MAPS

CONTRACT NO.
DRAWING NO. ENV-05
REVISION
SHEET NO.
SCALE AS SHOWN

PROJECT NUMBER | COST ELEMENT | LINE ITEM | CONTRACT DESIGNATION | PHYSICAL ENTITY | WORK ELEMENT

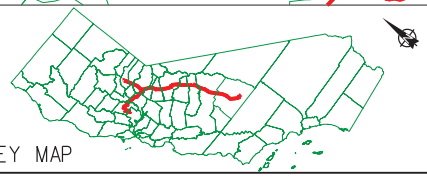
J:\Projects\Caltrans_DOR\Caltrans_On-Call_75A0276\Task_10\Drawings\Environmental_Maps\CA_Habitat_05.dgn
7:54:25 AM
2/21/2014

SEE DRAWING NO. ENV-01



SEE DRAWING NO. ENV-02

SEE DRAWING NO. ENV-07



KEY MAP

Information confidential all plans, drawings, specifications, and/or information furnished hereunto shall remain the property of the Burlington Northern Santa Fe Railway and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Burlington Northern Santa Fe Railway

BNSF RAILWAY

PATTERSON & ASSOCIATES, INC. 725 TOWN & COUNTRY RD SUITE 300 ORANGE, CA 92868

BNSF RAILWAY
SAN JOAQUIN CORRIDOR

PIER NES ENVIRONMENTAL MAPS

CONTRACT NO.

DRAWING NO. ENV-06

REVISION

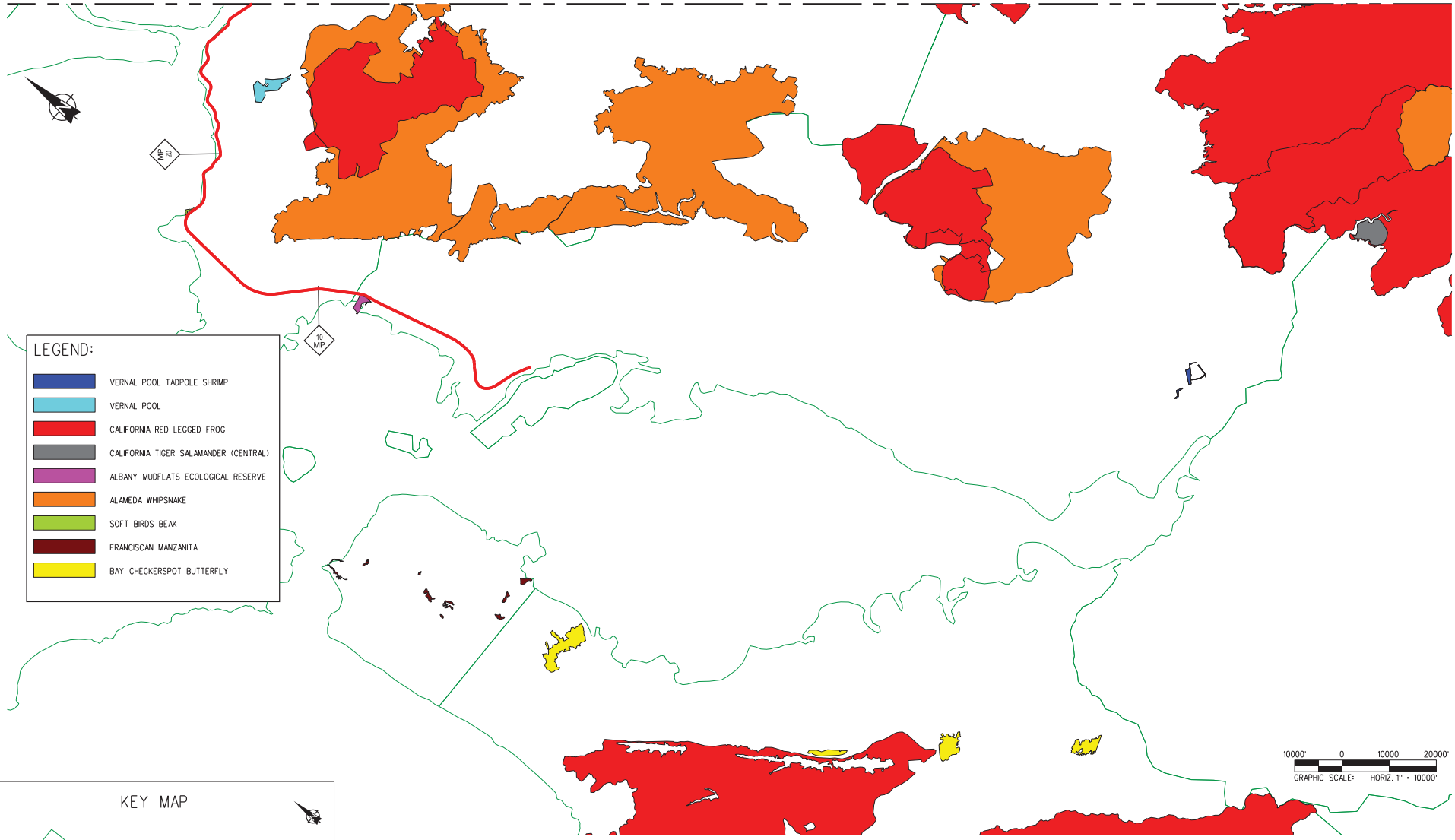
SHEET NO.

SCALE AS SHOWN

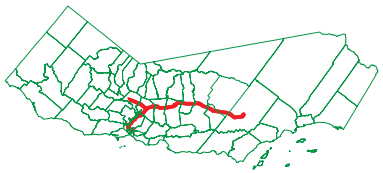
PROJECT NUMBER | COST ELEMENT | LINE ITEM | CONTRACT DESIGNATION | PHYSICAL ENTITY | WORK ELEMENT

J:\Projects\Caltrans_DOR\Caltrans_On-Call_75A0276\Task_10\Drawings\Environmental_Maps\CA_Habitat_06.dgn
7:54:26 AM
2/21/2014

SEE DRAWING NO. ENV-06



KEY MAP



Information confidential all plans, drawings, specifications, and/or information furnished herewith shall remain the property of the Burlington Northern Santa Fe Railway and shall be held confidential and shall not be used for any purpose not provided for in agreements with the Burlington Northern Santa Fe Railway

BNSF RAILWAY

PATTERSON & ASSOCIATES, INC. 725 TOWN & COUNTRY RD SUITE 300 ORANGE, CA 92868

BNSF RAILWAY
SAN JOAQUIN CORRIDOR

PIER NES ENVIRONMENTAL MAPS

CONTRACT NO.	
DRAWING NO.	ENV-07
REVISION	SHEET NO.
SCALE	AS SHOWN

J:\Projects\Caltrans_DOR\Caltrans_On-Call_75A0276\Task_10\Drawings\Environmental_Maps\CA_Habitat_07.dgn
7:54:26 AM
2/21/2014

PROJECT NUMBER	COST ELEMENT	LINE ITEM	CONTRACT DESIGNATOR	PHYSICAL ENTITY	WORK ELEMENT

APPENDIX 5a

Preliminary Historical/Archaeological Resources Study for the SJC Amtrak California

PRELIMINARY HISTORICAL/ARCHAEOLOGICAL RESOURCES STUDY

SAN JOAQUIN CORRIDOR AMTRAK CALIFORNIA SERVICE PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT

Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California

For Submittal to:

Caltrans District 7
Dawn Kukla, Senior Environmental Planner
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

Prepared for:

Tom Dodson, President
Tom Dodson and Associates
2150 North Arrowhead Avenue
San Bernardino, CA 92405

Prepared by:

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Bai "Tom" Tang, Principal Investigator
Michael Hogan, Principal Investigator

September 13, 2013
CRM TECH Contract #2561

NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION

Author(s): Bai "Tom" Tang, Principal Investigator
Terri Jacquemain, Historian / Report Writer
Laura H. Shaker, Native American Liaison

Consulting Firm: CRM TECH
1016 E. Cooley Drive, Suite A / B
Colton, CA 92324
(909) 824-6400

Date: September 13, 2013

Title: Preliminary Historical / Archaeological Resources Study: San Joaquin Corridor Amtrak California Service Programmatic Environmental Impact Report, Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California

For Submittal to: Caltrans District 7
Dawn Kukla, Senior Environmental Planner
Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 9001
(213) 897-9572

Prepared for: Tom Dodson, President
Tom Dodson and Associates
2150 North Arrowhead Avenue
San Bernardino, CA 92405
(909) 882-3612

Project Size: Approximately 660 linear miles of railroad rights-of-way

Keywords: Program-level historical / archaeological resources overview; San Francisco Bay and Delta region, Sacramento and San Joaquin Valleys, Antelope Valley, and Los Angeles Basin; Burlington Northern Santa Fe Railway (BNSF), formerly Atchison, Topeka and Santa Fe Railway (ATSF); Union Pacific Railroad (UPRR), formerly Southern Pacific Railroad (SPRR); Southern California Regional Rail Authority (SCRRA)

MANAGEMENT SUMMARY

Between 2009 and 2013, at the request of Tom Dodson and Associates, CRM TECH performed a preliminary historical/archaeological resources study for the San Joaquin Corridor Amtrak California Service Programmatic Environmental Impact Report (EIR). The study, and the EIR it is associated with, are necessitated by a proposed railroad transportation expansion program for the purpose of improving and enhancing passenger rail service between Sacramento, Oakland, Bakersfield, Los Angeles, and other communities in between through the year 2035.

The Area of Potential Effects (APE) subject to this study is delineated to include approximately 660 linear miles of the Burlington Northern Santa Fe Railway (BNSF, formerly Atchison, Topeka and Santa Fe Railway [ATSF]), Union Pacific Railroad (UPRR, formerly Southern Pacific Railroad [SPRR]), and Southern California Regional Rail Authority (SCRRA) rights-of-ways in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties. Seven locations under consideration for potential facility developments are addressed under separate cover.

As a part of the environmental review process for the proposed undertaking, the present study is prepared in anticipation of further project review under the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act once the project plans are formulated. The California Department of Transportation (Caltrans), as the lead agency for the undertaking, required the study in order to determine, on a program level, the potential impacts of the railway improvement component of the strategic plan on any known "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Title 14 CCR §15064.5(a)(1)-(3), that may exist in or near the APE.

The specific purpose of this study is to review past survey coverage of the APE, inventory previously identified "historic properties" or "historical resources" located within or partially within the APE for future statutory/regulatory compliance considerations, and assess the potential of the APE for as-yet undocumented historical/archaeological sites. The scope of the study includes cultural resources records searches, archaeological and historical background research, consultations with Native American representatives, and a field reconnaissance along the project route.

The records searches revealed that 13 previously recorded historical/archaeological sites located at least partially within the APE are currently listed in the National Register of Historic Places or the California Register of Historical Resources, have been determined eligible for listing, are designated California Historical Landmarks, or have been found eligible for local historical designations. These 13 sites meet the definition of "historic properties" and/or "historical resources," and project impacts to these sites should be avoided, if feasible, or mitigated to a level less than significant.

Site Number	**Description**	**Status***
07-000149	Shell mound	3D
10-002960/10-004675/ 10-004678/10-004679	Components of Washington Colony canal system	3B

15-007061	Tehachapi Loop on SPRR	CHL #508
16-000126	Melga Canal	5D2
16-000127	Settlers Ditch	5D2
19-001534	Palmdale Ditch	3S
19-186112	Segments of SPRR	3S
19-187053	San Fernando Railroad Tunnel (SPRR Tunnel 25)	2S2
19-188229	Buena Vista Viaduct	2S2
24-000648	Bradley Overhead Bridge	3S
34-000505	First transcontinental railroad (SPRR)	CHL #780
39-004246	South San Joaquin Irrigation District main canal	3CS
50-000074	Hetch Hetchy Aqueduct	3S

* Status codes:

- 2S2 Determined eligible for the National Register (NR); listed in the California Register (CR).
- 3B Appears eligible for NR both individually and as a contributor to a NR-eligible district.
- 3D Appears eligible for NR as a contributor to a NR-eligible district.
- 3S Appears eligible for NR as an individual property.
- 3CS Appears eligible for CR as an individual property.
- 5D2 Contributor to a district that is eligible for local listing or designation.
- CHL California Historical Landmark.

Based on these findings, the most likely historical/archaeological sites to be encountered in the APE are the railroad lines themselves and associated features, along with a host of irrigation canals that crisscross the APE, many of which may be considered important in local and regional history. Under current regulatory guidelines, however, in most cases cultural resources studies for linear transportation infrastructure projects may exclude these irrigation canals from the APE since such projects generally have little potential to affect their overall historical characteristics and significance.

Most of the railroad lines within the APE, as parts of the first transcontinental railways to reach California, certainly played important roles in the rapid growth of the state during the late 19th and early 20th centuries. However, as working components of the modern transportation infrastructure, these rail lines typically do not retain sufficient historic integrity to be considered eligible for listing in the National Register or the California Register. Exceptions to this are usually special railroad features that have acquired significance from other aspects of their history, such as engineering feats. Sites 15-007061 (Tehachapi Loop) and 19-187053 (San Fernando Railroad Tunnel) exemplify such features.

Only one of the 13 historical/archaeological sites listed above is of prehistoric origin. However, the presence of the known prehistoric sites in relatively concentrated clusters in or near certain segments of the APE suggests a heightened probability for similar cultural remains to be encountered in subsurface deposits at these locations. Native American representatives contacted during this study also expressed concerns over some of these locations. These areas of heightened prehistoric archaeological sensitivity include:

Contra Costa County:

- Near UPRR Mile Post 14.2 in the City of Richmond, between Parr Avenue and San Pablo Creek, where Site 07-000149, a shell midden with burials and a contributor to the Lower San Pablo Creek Archaeological District, was previously noted as being likely to extend into the APE.

- Along the eastern shore and promontories of the San Pablo Bay, where four prehistoric sites were recorded in the APE during early 20th century, along with several other sites nearby.

Sacramento County:
- Where the APE crosses the Mokelumne River watershed near the Sacramento-San Joaquin County line.

Kern County:
- Around the location of Site 15-002507, a Native American village site that ostensibly was obliterated by the construction of the railroad in the 1890s, which reportedly encompasses the APE at the eastern end of the BNSF yard in Bakersfield.
- Where the APE traverses Site 15-002553, a large Native American village site that occupies most the southeast quarter of Section 18, T32S R33E, Mount Diablo Baseline and Meridian.

Los Angeles County:
- Around Site 19-001575, a large, multi-component archaeological site recorded near the Los Angeles Union Station Passenger Terminal, where potentially significant cultural remains are likely to extend in subsurface deposits beyond the established site boundaries.

In light of these previous archaeological discoveries and concerns expressed by the Native American representatives, the portions of the APE at and near these locations should be considered archaeologically sensitive. If any ground disturbing activities are necessary at these locations, further archaeological investigations will be required to determine whether any potentially significant archaeological remains are present within or adjacent to the APE.

Based on these findings, CRM TECH presents the following recommendations to Caltrans and other responsible public agencies:

- Project plans should be carefully crafted and reviewed to avoid direct or indirect effects that would compromise the significance and integrity of the 13 historical/archaeological sites that constitute "historic properties" and/or "historical resources," if feasible. If avoidance proves infeasible, further analysis will be necessary to ascertain the level and aspect of significance for the affected sites in order to formulate proper mitigation measures.
- Once the specific APE for each project under the proposed program is established, it should be treated with a standard Phase I, project-level historical/archaeological resources assessment, including an intensive-level field survey, especially in the areas of high archaeological sensitivity.
- If buried cultural materials are encountered during any earth-moving operations associated with the program, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

TABLE OF CONTENTS

MANAGEMENT SUMMARY i
INTRODUCTION 1
PROJECT DESCRIPTION 1
Setting 3
Archaeological Context 3
Ethnohistoric Context 5
Nisenan 5
Miwuk 7
Costanoan 7
Northern Valley Yokuts 8
Southern Valley Yokuts 8
Kitanemuk 9
Serrano 9
Tataviam 10
Gabrielino 10
Historic Context 11
Sacramento and Vicinity 12
Bay and Delta Region 12
San Joaquin Valley 13
Antelope Valley 14
Los Angeles Basin 14
RESEARCH METHODS 15
Records Search 15
Native American Participation 16
Historical Background Research 16
Field Reconnaissance 16
RESULTS AND FINDINGS 17
Records Search 17
North Central Information Center (NCIC) 17
Northwest Information Center (NWIC) 18
Southern San Joaquin Valley Information Center (SSJVIC) 19
Central California Information Center (CCIC) 22
South Central Coastal Information Center (SCCIC) 25
Native American Participation 26
Field Reconnaissance 28
SUMMARY OF FINDINGS 28
REFERENCES 31
APPENDIX 1: Personnel Qualifications 37
APPENDIX 2: Correspondence with Native American Representatives 43
APPENDIX 3: Previously Recorded Cultural Resources in the APE 99

LIST OF FIGURES

Figure 1. Project alignment..... 2
Figure 2. Traditional territories of Native American groups along the APE..... 6

LIST OF TABLES

Table 1. Records Search Locations.....15
Table 2. Previously Recorded Cultural Resources in the APE, Sacramento County 18
Table 3. Previously Recorded Cultural Resources in the APE, Contra Costa and Alameda Counties 19
Table 4. Previously Recorded Cultural Resources in the APE, Fresno County.....20
Table 5. Previously Recorded Cultural Resources in the APE, Kern County.....21
Table 6. Previously Recorded Cultural Resources in the APE, Kings County 21
Table 7. Previously Recorded Cultural Resources in the APE, Madera County 22
Table 8. Previously Recorded Cultural Resources in the APE, Tulare County 22
Table 9. Previously Recorded Cultural Resources in the APE, Merced County.....23
Table 10. Previously Recorded Cultural Resources in the APE, San Joaquin County 24
Table 11. Previously Recorded Cultural Resources in the APE, Stanislaus County 25
Table 12. Previously Recorded Cultural Resources in the APE, Los Angeles County.....25
Table 13. Summary of Native American Requests.....27
Table 14. Known Historic Properties / Historical Resources in the APE 29

INTRODUCTION

Between 2009 and 2013, at the request of Tom Dodson and Associates, CRM TECH performed a preliminary historical/archaeological resources study for the San Joaquin Corridor Amtrak California Service Programmatic Environmental Impact Report (EIR). The study, and the EIR it is associated with, are necessitated by a proposed railroad transportation expansion program for the purpose of improving and enhancing passenger rail service between Sacramento, Oakland, Bakersfield, Los Angeles, and other communities in between through the year 2035.

The Area of Potential Effects (APE) subject to this study is delineated to include approximately 660 linear miles of the Burlington Northern Santa Fe Railway (BNSF, formerly Atchison, Topeka and Santa Fe Railway [ATSF]), Union Pacific Railroad (UPRR, formerly Southern Pacific Railroad [SPRR]), and Southern California Regional Rail Authority (SCRRA) rights-of-ways in Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties (Fig. 1). Seven locations under consideration for potential facility developments are addressed under separate cover.

As a part of the environmental review process for the proposed undertaking, the present study is prepared in anticipation of further project review under the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act once the project plans are formulated. The California Department of Transportation (Caltrans), as the lead agency for the undertaking, required the study in order to determine, on a program level, the potential impacts of the railway improvement component of the strategic plan on any known "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Title 14 CCR §15064.5(a)(1)-(3), that may exist in or near the APE.

The specific purpose of this study is to review past survey coverage of the APE, inventory previously identified "historic properties" or "historical resources" located within or partially within the APE for future statutory/regulatory compliance considerations, and assess the potential of the APE for as-yet undocumented historical/archaeological sites. The scope of the study includes cultural resources records searches, archaeological and historical background research, consultations with Native American representatives, and a field reconnaissance along the project route. The following report presents a summary of the methods, results, and conclusions of the study.

PROJECT DESCRIPTION

The proposed undertaking is designed to enhance the safety and efficiency of railroad operations and vehicular movement along the San Joaquin Intercity Passenger Rail Corridor. It consists primarily of the installation of new railroad tracks adjacent to three existing segments of the BNSF and UPRR mainlines, which will require modification or construction of bridges, culverts, grade crossings, and utility crossings, along with associated road improvements and the establishment of temporary construction staging areas. The lengths and locations of the track segments to be affected are as follows:

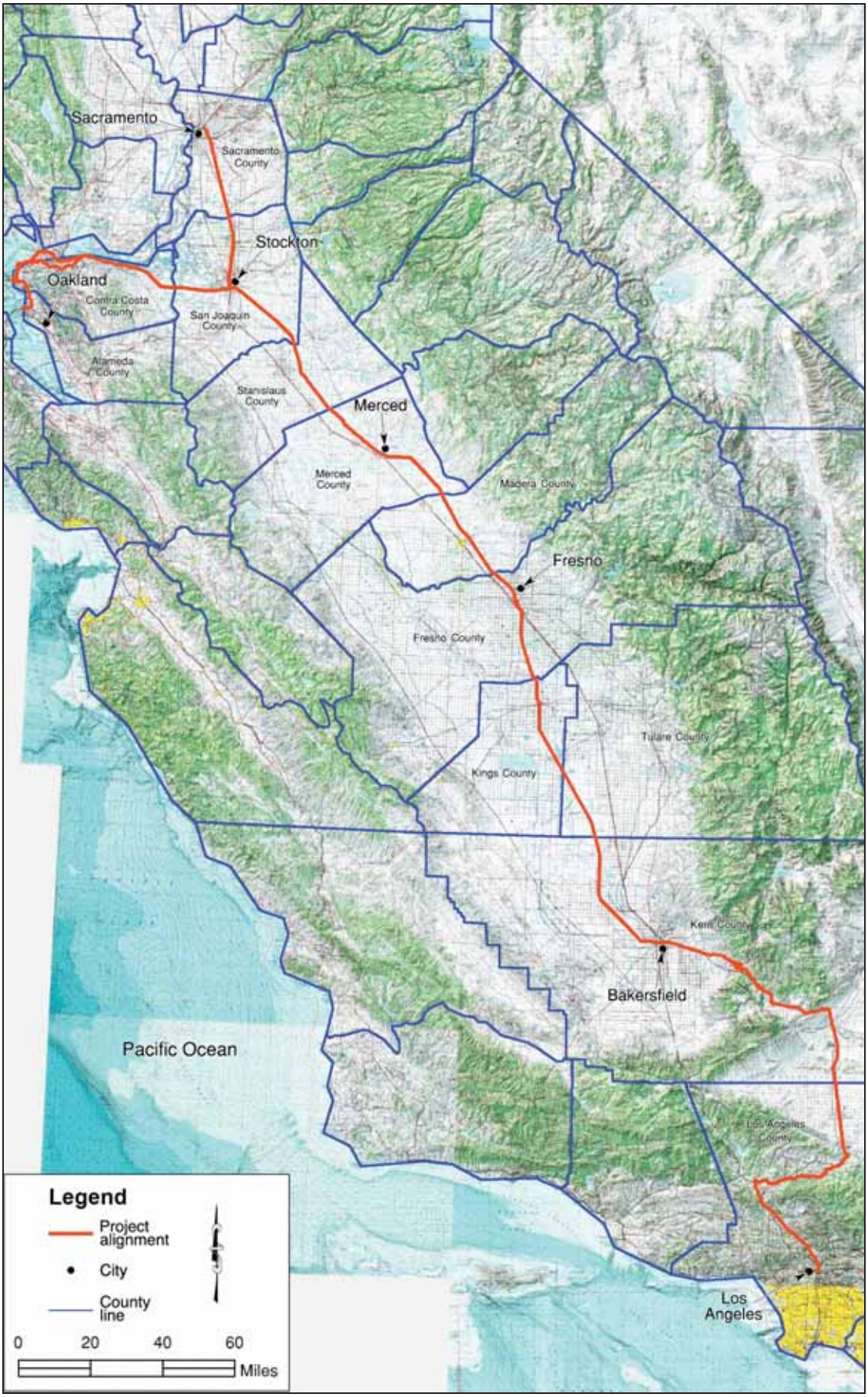


Figure 1. Project alignment across the State of California.

- 188.5 miles on the BNSF line between Bakersfield (Mile Post [MP] 887.7) and Port Chicago (MP 1164.0), 276.3 track miles in total;
- 22.11 miles on the UPRR line between Port Chicago (MP 41.3) and Oakland (MP 3.2) 38.1 track miles in total; and
- 43.61 miles on the UPRR (Fresno Subdivision) line east of State Route 99, between Stockton (MP 82.96) and Sacramento (MP 39.35), 43.61 track miles in total.

Three other segments of existing tracks included in the APE are slated for passenger service improvements, including upgrades to signals, bridges, warning devices, and grade crossings. These segments include:

- The BNSF line from Fresno to Hanford;
- The BNSF line between Port Chicago and Richmond; and
- Extension of passenger service from Bakersfield to Los Angeles on the BNSF, the UPRR, and the SCRRA's Metrolink line from Lancaster.

SETTING

ARCHAEOLOGICAL CONTEXT

It is widely acknowledged that human occupation in what is now the State of California began 8,000-12,000 years ago. In attempting to describe and understand the cultural processes that occurred in the ensuing years, archaeologists have developed a number of chronological frameworks that endeavor to correlate distinctive eras to technological and cultural changes observed in the archaeological record. Since the APE traverses a variety of environmental and cultural settings through the San Francisco Bay and Delta region, the Sacramento and San Joaquin Valleys, the Antelope Valley, and the Los Angeles Basin, no single chronological framework can apply to the entire APE. However, it is generally agreed that California prehistory can be divided into three broad periods, namely the Paleoindian, the Archaic, and the Late Prehistoric, although the specific chronologic divisions among these remain the subject of much debate and, additionally, differ from one region to another.

The earliest archaeological surveys in the San Francisco Bay and Delta region were conducted along the bayshore of Alameda and Contra Costa Counties in 1906-1908 by N.C. Nelson. Nelson documented more than 100 shell mounds along the shores, including the extensive Ellis Landing site (CA-CCO-295), a large shell mound and cultural midden more than 25 feet in depth, 15 feet of which was below the present ground surface (Moratto 1984:229, 231). Excavations at the site recovered numerous human burials and artifacts. Three potential cultural strata were identified at the Ellis Landing site. The lower levels contained items such as spatulate bone objects, triangular and rectangular abalone shell ornaments, red ochre, cobble mortars, an atlatl spur, grooved sinker stones, large non-stemmed points, and olivella saddle and saucer beads. The middle level contained dissimilar objects, such as perforate charmstones, incised bone tubes, olivella saucer beads, stemmed projectile points, and mortars with flared sides. The top three feet contained some of the same artifacts as in the middle level, plus clam disk beads.

The findings at the Ellis Landing site, combined with those at an inland shell mound site (CA-CCO-259), provided the type of components exemplifying a "Late Horizon" site in the

Bay and Delta region, spanning from some 2,000 years ago to historic times (Moratto 1984:232). Similarly, the Lower San Pablo Creek Archaeological District is characterized by large shell mounds as deep as 23 feet or more that have yielded human bones as well as faunal remains, worked obsidian, and other artifacts that are temporally attributed to the Early Middle to Late Horizon divisions (Banks 1978).

Since the mid-20th century, numerous archaeological surveys and excavations in the Bay and Delta region have also yielded Early Horizon sites, and distinctive local and regional complexes have been identified (Moratto 1984:252). Excavations in interior Contra Costa County have identified transition phases between Middle and Late Horizon periods of occupation. Mortars and pestles have been recovered from sites in the interior that date as early as 2000 BC, suggesting that the Native people were consuming acorns or some other hard-shelled foodstuff at that time. A typical bayshore village of 4,000-2,000 years ago would have been situated near a marsh setting with available fresh water, a location that would have permitted exploitation of several eco-zones with the optimal mix of resource variety and abundance (*ibid.*:282). Later, smaller settlements probably appeared in the interior with an increase in the exploitation of terrestrial food sources (*ibid.*).

Archaeological investigations in the Central Valley found an early foundation in the 1930s when one of the most influential temporal schemes was proposed for the region by Lillard et al. (1939). It defined three archaeological periods—Early, Middle and Late—based on mortuary practices and associated ornamental artifacts (Moratto 1984:180). In the 1950s, Beardsley (1954) refined this earlier scheme, also on the basis of burial practices and associated grave goods, and established the three primary horizons—Early, Middle, and Late—of what is known as the Central California Taxonomic System (Nelson 2000:10).

More recently, archaeological focus has turned to developing sequences applicable to localized areas, as well as concepts for dealing with cultural units without temporal implications (Moratto 1984:201). However, the three periods mentioned above, along with the earlier Archaic Period, still provide a useful framework as general indicators of cultural stability and change over time. According to Wendy Nelson (2000:10), the Early Period is now commonly recognized as dating from 2,500 to 500 BC, with the Middle Period from 500 BC to AD 300 and the Late Period from AD 300 to 1840.

Also marked by changes in archaeological remains, a frequently used archeological time frame for the Antelope Valley region relies on a five-period chronology outlined for the Mojave Desert by Warren (1984) and Warren and Crabtree (1986). These five periods are the Lake Mojave Period (12,000-7,000 years ago), the Pinto Period (7,000-4,000 years ago), the Gypsum Period (4,000-1,500 years ago), the Saratoga Springs Period (1,500-800 years ago), and the Protohistoric Period (800 years ago to European contact). The time frame is based on increased cultural complexity and general technological changes that progressed from large stone projectile points with few milling stones for grinding food products, to smaller projectile points with an increase in milling stones. The scheme attempts to account for and reflect increases in population and changes in food procurement and resource exploitation strategies over time.

According to the general framework for the prehistory of the Los Angeles Basin, as outlined in Moratto (1984), migration of indigenous groups from the interior deserts of southern California to the already inhabited coastal region appears to have taken place

around 7,500 years ago. Unfortunately, little is known about the coastal groups during this early period in prehistory. With the immigration of people from the interior, a fusion of regional cultural traits occurred, specifically those pertaining to subsistence procurement. The newcomers introduced new plant resources and plant processing techniques to the coast groups while they learned to exploit more intensively the littoral, or coastline, resources.

Archaeological investigations at various sites along the southern Californian coast have uncovered valuable data regarding later time periods in this region. Sites dating to the La Jolla I Period (5500-3500 BC) have yielded numerous millingstone tools, crude scrapers, and flexed burials. The La Jolla II Period (3500-2000 BC) is distinguished by the presence of cemeteries, discoidals, and projectile point types. La Jolla III (2000-1000 BC) reflects Yuman influence from the east. With this second intrusion of eastern groups to the area, increased exploitation of terrestrial food sources further diminished the coastal people's dependence on shoreline resources. With an increasing focus on acorn-processing activities, indigenous groups along the southern Californian coast slowly began settling the interior regions. There was also a shift from inhumation to cremation around 500 BC, possibly another result of eastern influences.

ETHNOHISTORIC CONTEXT

From the northern end to the southern end, the project alignment traverses the traditional territories of at least eight Native American groups, namely Nisenan, Miwuk, Costanoan, Northern Valley Yokuts, Southern Valley Yokuts, Kitanemuk, Serrano, Tataviam, and Gabrielino (Fig. 2). A brief profile of each, based published ethnographic literature, is presented below.

Nisenan

According to Kroeber (1925; 1929), Beals (1933), and Wilson and Towne (1978), the Nisenan were divided geographically into the Foothill Nisenan and the Valley Nisenan, the latter of which occupied the northern tip of the APE. Nisenan social organization generally centered on a major village with one or more satellite settlements that varied in size from a few dozen residents to as many as 1,000, with the larger villages generally located along the Sacramento River and its tributaries. Dwellings consisted of pole-framed, dome-shaped houses, called *hü*, which were usually 10-15 feet in diameter and covered with tules or tule mats plastered with earth. Major villages had one or more ceremonial / dance house(s) or *k'um*, owned by the chief(s), and most villages also had at least one sweathouse or *k'um-imhü*.

Those living higher in the mountains traded black oak acorns and sugar pine nuts with those lower in the foothills for salt, game, fish, roots, or grasses. Feathers were also prized in these exchanges, as were the shell beads that moved from the coast into the interior through active trade networks. Clamshell disk beads were assigned a standard value and acted as currency for most other resources and goods. The east-west trade routes generally followed the major streams and trails in Nisenan territory.

The indigenous patterns of Nisenan society began to disintegrate with the arrival of the Franciscan priests who established missions along the coast after 1769, followed in the early

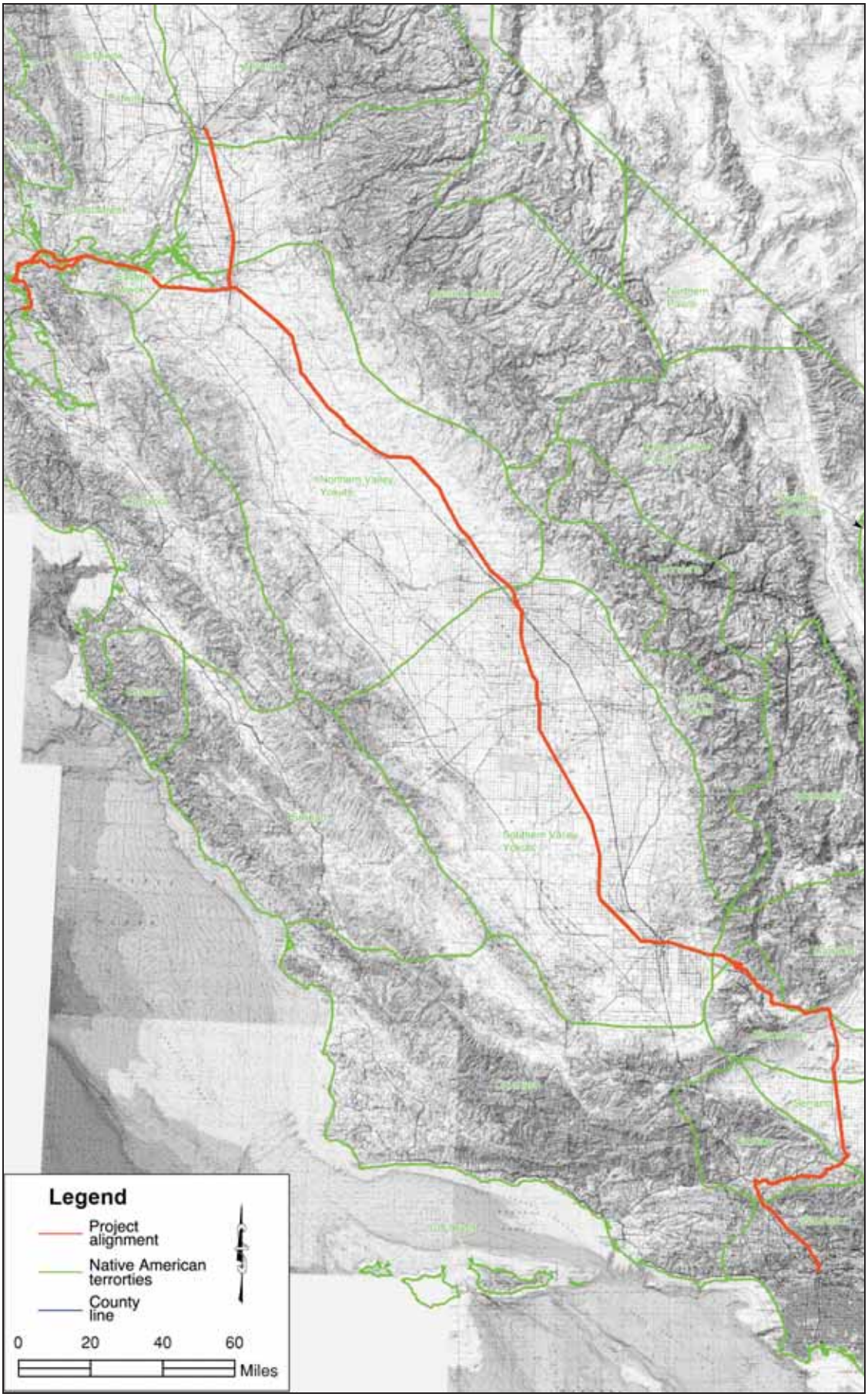


Figure 2. Traditional territories of Native American groups along the APE, based on Heizer (1978:ix)

1800s by fur trappers. The culture and population of the area declined progressively as missionization and introduced diseases took their toll, including a malaria epidemic that swept the Sacramento Valley in 1833. During the Gold Rush years of 1849-1850, the surviving Nisenan lost or left their traditional territory for more remote, safer locations. Today, the few survivors of Nisenan descent live scattered among other Native Americans or the general population, with little manifestation of their ethnical identity.

Miwuk

The Miwuk, or Miwok, comprised three territorially distinct sub-groups: Coast, Lake, and Interior, or Plains. Their territory extended from Walnut Creek eastward to the Sacramento-San Joaquin River Delta. The Miwuk depended on fishing but also on the abundant game available, as well as insects and plant resources, including acorn, pinecones, roots, bulbs, seeds, berries, and tobacco (Kelly 1978; Levy 1978a). Tule were used in the manufacture of many items, including baskets, floor mats, watercraft, and women's skirts.

Salt and obsidian were major trade items from the Great Basin area, olivella and abalone were brought in from the coast, cedar bows were imported from the mountains, and baskets were traded back and forth among the groups. Miwuk society was organized by tribelet, smaller units estimated to have ranged between 300 and 500 persons each. Each tribelet had defined boundaries and rights to the resources within their territory. The office of the chief was patrilineal in succession, although in the absence of a male heir, the position would pass to the chief's daughter.

Due to their location near the navigable Sacramento and San Joaquin Rivers, the Miwuk were first contacted by Spanish expeditions as early as the latter part of the 1700s. Many Miwuk tribelets disappeared through the combined effects of missionization, diseases, and the arrival of thousands of non-Native people in the 1840s. The early part of the 20th century witnessed the establishment of a few small reservations at the Indian *rancherías*, where many Miwuk people still reside. In recent decades, there has been a renaissance of Native American activism and cultural revitalization among a number of groups of Miwuk descent.

Costanoan

Geographically, the Costanoan, or "coast people," lived in a contiguous territory extending from the southern edge of the Carquinez Strait west to the sea, and south to the Carmel, Sur, and Salinas Rivers. The inland territory limits are not known, but likely extended to the Mount Diablo range. The Costanoan comprises approximately 50 ethnically diverse groups within a linguistic family of eight different languages (Kroeber 1925; Levy 1978b). As with the Miwuk, the basic political and social unit among the Costanoan was the tribelet, and the roles of the triblet and the chief are also similar to those of the Miwuk. The population of a tribelet is estimated to have ranged from 50 to 500 persons, with an average of 200 members.

Because of their seaside habitat, mussels were a staple in the Costanoan diet, along with a variety of fish and other sea animals. Game animals and plant resources were also exploited for food, clothes, and medicines. Tules from nearby marshes were vital for

housing, bedding, watercraft, clothing, and baskets. Costanoan trade partners were primarily the Miwok and the Yokuts.

Contact between the Costanoan and Spanish explorers occurred as early as 1602, but most accounts of interaction were provided by later expeditions carried out in 1769-1771 and later, by missionaries who established missions in Costanoan territory. As a result of missionization and diseases, many Costanoan tribelets disappeared during the first half of the 19th century, and secularization of the mission system and the arrival of gold miners, trappers, and settlers in the 1840s further depleting their numbers. It is estimated that all of the Costanoan languages were extinct by 1935. In 1971, Costanoan descendants, numbering in the hundreds, formed the Ohlone Indian Tribe, a corporate entity.

Northern Valley Yokuts

The territory of the Northern Valley Yokuts lies within the northern San Joaquin Valley, extending from the present-day Stockton-Lodi area southward to the Madera-Fresno area. Most of the Northern Valley Yokut population lived near the San Joaquin River and its tributaries. Main food staples were most likely fish, waterfowl, wild seeds, and tule roots, which were secured and processed with baskets and various tools made of stone, wood, or bone (Wallace 1978a). Earthenware pots, produced by other Native American groups and obtained through trade, appear to have been used infrequently. The basis of the Northern Valley Yokuts' social unit was probably the biological family, with the society divided into totemic moieties. Tribal affiliation was based on sedentary village life, made possible by the abundance of natural resources, although travel and trade were also an important aspect of Northern Valley Yokuts culture.

The native lifeways of the Northern Valley Yokuts eroded gradually and the population declined progressively after the first casual contacts with Spanish colonizers in the late 1700s and early 1800s. Proselytizing and missionization in the area began in earnest in the early 1800s, with dramatic effects on the native society. During the Gold Rush years of 1849-1850, the Northern Valley Yokuts lost almost all of their traditional territory, and were eventually settled by the U.S. government on the Fresno and Tule River Reserve and other reservations. At the present time, Northern Valley Yokut descendents are mostly scattered among other Native Americans or the general population.

Southern Valley Yokuts

The traditional homeland of the Southern Valley Yokuts extends from the southern end of the San Joaquin Valley, between the San Joaquin River and the lower Kings River, to the Tehachapi Mountains. The biological family also formed the basic domestic and economic unit in the Southern Valley Yokuts society, while the patrilineal, exogamous, totemic lineage represented a key grouping (Wallace 1978b). There was no over-arching political grouping or unity among the Southern Valley Yokuts, and localized groups collectively controlled tribal lands with the resources shared by members.

Southern Valley Yokuts sustained themselves with fish, waterfowl, shellfish, roots, and seeds found in abundance near the many rivers, lakes, sloughs, and the seasonal marshes. Baskets were important in securing and processing foods, along with nets, sinew-backed bows, stone-tipped arrows, and stone scrapers. Stone mortars, wooden mortars, and

pestles were obtained through trade, as were the lithic materials used to make stone tools. Perforated marine shell disks were used as currency. There is no evidence of clay vessel manufacturing among the Southern Valley Yokuts, probably due to their skill in basket making and a preferential use of baskets in daily chores.

The native life-style of the Southern Valley Yokuts received little influence from early, casual contacts with Spaniards in the late 1700s and early 1800s. In 1833, however, an epidemic of introduced disease devastated the native population with an estimated 75% mortality rate. After the annexation of California by the U.S., the decline of Southern Valley Yokuts population and culture accelerated as Euroamerican settlers overran the tribal territory and displaced the native people. The Southern Valley Yokuts offered little resistance, and instead allowed themselves to be interned on the Tejon Reservation and later on the Tule River Reservation.

Kitanemuk

The Kitanemuk were a small tribe located principally on the southern and western flanks of the Tehachapi Mountains. Precise data on the demographic characteristics and political organization of the Kitanemuk is scarce, with Blackburn and Bean (1978) among the few available written sources on Kitanemuk culture. The general ecological adaptation and subsistence technology of the Kitanemuk differed little from that of their neighbors, such as the Southern Valley Yokuts. Linguistic evidence suggests the presence of some form of the patrilineal system found elsewhere in southern California, but the lineages were not totemic, nor was there evidence of moieties.

The Kitanemuk may have had contacts with the Spanish colonizers as early as the 1770s, but little historical information is available today on this small tribe, which had no more than 500-1,000 members at the peak of its population. The tribe was apparently represented at the San Fernando, San Gabriel, and San Buenaventura Missions. After the American annexation, some Kitanemuks were found on the Tejon Reservation in the 1850s, and later on at the Tule River Reservation, where some of their descendants still reside.

Serrano

The traditional homeland of the Serrano, meaning "mountaineer" or "highlander," is centered at the San Bernardino Mountains, but also includes portions of the San Bernardino Valley and the southern rim of the Mojave Desert. Prior to European contact, the Serrano were primarily hunter-gatherers and occasionally fishers, and settled mostly where flowing water emerged from the mountains (Kroeber 1925; Strong 1929; and Bean and Smith 1978a). They were loosely organized into exogamous clans, which were led by hereditary heads, and the clans in turn were affiliated with one of two exogamous moieties. The exact nature, structure, function, and number of the clans are not known, except that each clan was the largest autonomous political and landholding unit, the core of which was the patrilineage. There was no pan-tribal political union among the clans.

Although contact with Europeans may have occurred as early as 1771 or 1772, Spanish influence on Serrano lifeways was negligible until the 1810s, when a mission *asistencia* was established on the edge of Serrano territory. Between then and the end of the mission era in 1834, most of the Serranos were removed to the nearby missions. At present, most

Serrano descendants are found on the San Manuel and the Morongo Indian Reservations, where they participate in ceremonial and political affairs with other Native American groups on an inter-reservation basis.

Tataviam

According to King and Blackburn (1978), the traditional homeland of the Tataviam was located principally in the upper reaches of the Santa Clara River drainage, on the south-facing slopes of the Liebre and Sawmill Mountains. The general ecological adaptation and subsistence technology of the Tataviam are also similar to those of their neighbors, such as the Kitanemuk and Gabrielino. Their language is thought to belong to the Takic family, although it appears to have diverged from other languages in the family around 1,000 BC and became unrecognizable to neighboring groups in historic times. Little historical information is available today on the Tataviam, which had less than 1,000 members at the time of European contact.

Gabrielino

Since around 500 BC, the Los Angeles Basin has been the homeland of the Tongva, known also as the Gabrielino, a Takic-speaking people considered to be the most populous and most powerful native group in aboriginal southern California. Gabrielino territory was centered in the Los Angeles Basin, and reached from the San Clemente Island to the present-day San Bernardino-Riverside area and south into southern Orange County, and their influence spread as far as the San Joaquin Valley, the Colorado River, and Baja California. Today, the leading ethnographic sources on Gabrielino culture are Bean and Smith (1978b), Miller (1991), and McCawley (1996).

Because of the geographic diversity, different groups of the Gabrielino adopted different types of subsistence economy, albeit all based on some combination of gathering, hunting, and/or fishing. With the similarities to other southern California tribes in economic activities, inland Gabrielino groups' industrial arts, dominated by basket weaving, demonstrated no substantial difference from those of their neighbors. Coastal Gabrielino material culture, on the other hand, reflected an elaborately developed artisanship fashioned through the medium of steatite, and rivaled by few other groups in southern California.

Gabrielino social organization was evidently based on a moiety system where clans belonged to one of two main social/cultural divisions. There also were ordered social classes, topped with an elite consisting of the chiefs, usually ascended from a patrilineal system, their immediate families, and the very rich. Villages were politically autonomous, each with its own leader, although often several villages were allied under the leadership of a single chief. The villages were frequently engaged in warfare against one another, resulting in what some consider to be a state of constant enmity between coastal and inland Gabrielino groups.

As early as 1542, the Gabrielino were in contact with the Spanish during the historic expedition of Juan Rodríguez Cabrillo, but it was not until 1769 that the Spaniards took steps to colonize Gabrielino territory. Shortly afterwards, most of the Gabrielino people were incorporated into Mission San Gabriel and other missions in southern California.

Due to introduced diseases, dietary deficiencies, and sanctioned extermination, Gabrielino population dwindled rapidly. By 1900, they had almost ceased to exist as a culturally identifiable group. In recent decades, however, there has been a renaissance of Native American activism and cultural revitalization among a number of groups of Gabrielino descendants.

HISTORIC CONTEXT

Stretching some 660 miles from Sacramento to Los Angeles, the railroad lines comprising the APE practically bisect California, and have serves as major transportation arteries in the state since their inception in the 1800s. Along its way, the project route traverses several geographically distinct regions, resulting in provincial identities based largely on climate variation and exploitation of available natural resources.

Unique characteristics notwithstanding, these regions also share a common history rooted in significant events and themes in California history. For example, early Spanish explorers Pedro Fages and Francisco Garcés were among those who led expeditions through most areas along the APE in the 1770s, followed in more specific areas by Gabriel Moraga, Jedediah Smith, Kit Carson, and others. Early expeditions birthed the mission system, and these religious and military outposts established on the Pacific coast and elsewhere represented the first major European colonization effort in California and introduced European livestock, fruits, vegetables, cattle, horses and ranching to the west.

After Mexico gained independence from Spain in 1821, the new authorities in Alta California began dismantling the mission system. The process of secularization required the surrender of mission landholdings throughout the province to the Mexican government, which then divided them into large ranchos and granted these to prominent citizens. Most of the APE, however, remained largely untouched during the Spanish and Mexican periods due to its inland location, far from the centers of colonization along the coastline, where most early contacts occurred.

Territorial disputes between the U.S. and Mexico ended in 1848 with the cession of much of Mexico's northern territory to the U.S., which spurred easterners to head west. Nearly simultaneously, gold was discovered at Sutter's Mill on the western slope of the Sierra Nevadas, bringing hundreds of thousands of hopeful prospectors and others to California. At the time, gold was the basis of the world's economy and its discovery in California placed it center stage in world trade and nearly instantaneously made San Francisco the major U.S. port for Asian commerce. The impacts of the Gold Rush permeated every imaginable facet of human activity in California. Some 10 years later, after the gold boom went bust, the wealth amassed during its heyday helped sustain the commerce that had been established and channel local economies into new industries (Kidder and Oppenheim 2007:190).

Underpinning this common background from the Mission and Rancho periods through modern times have been the acquisition, disbursement, and development of land. The seemingly perpetual progression was noted in 1948 by W.W. Robinson (1948:175):

> Today most of the early-day ranchos or other large land holdings have become fifty-foot lots, one-acre "estates," or small ranches—or they are in the process of becoming so. Some parts of the state, it is true, are remote from populations centers and have been less affected

> by the pressure of population. In still other parts development of large-scale "industrialized" farming has caused small holdings to become large. In recent years, then, California has had the smallest and some of the largest individually owned land areas in its history, but the overall tendency seems in the direction of constant reduction and subdivision.

Historically, the success of land development in California was largely predicated on the availability of rail transport, which was in many cases the factor that determined the placement, prosperity, and the eventual socioeconomic character of hundreds of cities across the state. For this study, the historical background of the APE is divided regionally into Sacramento and vicinity, the Bay and Delta area, the San Joaquin Valley, the Antelope Valley, and the Los Angeles Basin.

Sacramento and Vicinity

The first Europeans to visit the Sacramento area were Spaniard Gabriel Moraga and trappers who ventured to the area in the early 1800s. The earliest white settlement occurred around 1839, and is attributed to Swiss native John Sutter, who envisioned a community on the banks of the American River based on his bucolic homeland. The discovery of gold at his sawmill in 1848 transformed Sutter's wharf near the confluence of the American and Sacramento Rivers nearly overnight into the incorporated city of Sacramento, and two years later into the government seat of the newly formed state of California (Davis 1890:220).

Agriculture had replaced mining by the 1860s, with almonds, walnuts, rice, and prunes among the major cash crops. Meanwhile, the completion of the Central Pacific Railroad (now UPRR) line linking Sacramento to the Bay Area in 1870 provided an economic catalyst that spurred development well into modern times. However, as the state legislative seat with a largely white-collar workforce, heavy industry in the area remained limited, although food processing played a significant role. Instead, Sacramento and the vicinity early on experienced more suburban development outside its downtown core. Today, the state government remains by far Sacramento's largest employer, supplemented by numerous federal agencies with offices in Sacramento.

Bay and Delta Region

For the Bay and Delta region, the historic period began in 1776 with the establishment of a mission and a *presidio*, or fortress, both named San Francisco, after St. Francis of Assisi. But it was the near simultaneous occurrence in 1948 of easterners heading west after the U.S. annexation of California and the discovery of gold in the Sierra Nevadas that caused the established—but lightly populated—port city of San Francisco to explode from less than 1,000 residents in 1847 to 25,000 only three years later (Deverell and White 2006:331).

Exponential population growth increased the need for services, including railways to transport goods. For many Bay and Delta area cities, including Oakland, Richmond, Antioch, and Pittsburg, this meant serving as a relay point from ship to rail and vice versa for people and freight. The Central Pacific Railroad completed its track from Oakland to Tracy in 1878 (Slocum 1888:491), and in 1900 the ATSF established a terminal in Richmond and began shipping freight cars across the San Francisco Bay by ferry (Gustafson and

Serpico 1996:187; Durham 1998:698). The SPRR followed suit in 1902, installing a track that converged at the Point Richmond ATSF terminus (Signor 2003). The completion of these rail lines was an immediate and significant boost to the growth of the inland Delta.

Through the 1920s the region continued to grow as passenger and freight hub, with shipbuilding and food processing also emerging as important economic factors. While seasonal workers flocked to the Central Valley to pick crops, many others came to the Delta cities to work day and night packing and loading the harvest onto boxcars for shipment to the eastern markets. Shortly after World War II, shipbuilding waned, and the invention of refrigerated trucks meant crated vegetables could be picked up at the field, bypassing the packing sheds located in town and diminishing the industry. In more recent times the inland Bay and Delta areas experienced intense suburbanization as commuter communities in support of the industrial and commercial centers in San Francisco and the Silicon Valley.

San Joaquin Valley

In accounts of their 1770s expeditions, both Pedro Fages and Francisco Garcés indicated that the San Joaquin Valley was a bleak and arid expanse of land, which undoubtedly deterred Spanish settlement of the region (Clough and Secrest 1984:25). Later, Spanish army officer Gabriel Moraga led a series of expeditions into the San Joaquin Valley between 1804 and 1810 in search of a suitable mission site, followed in 1927 by famed trapper Jedediah Smith. Yet even at the time of American annexation, almost the entire San Joaquin Valley, along with the southern Sierra Nevada and the northwestern Mojave Desert, was largely unpopulated except for the gold mining camps in the Mother Lode country. Indeed, it was because of its isolation and vastness that the San Joaquin Valley managed to keep its rural landscape intact and relatively unhindered by urbanization for the 250 years following the unflattering assessment by Fages and Garcés.

Founded in 1852 on a loose arrangement of small farms, the oldest community in the San Joaquin Valley was Visalia, but most towns along the APE owe their origins primarily to the coming of the SPRR in the 1870s. Spurred by popular resentment to the SPRR's transportation monopoly in California, a second railroad through Central Valley, the San Francisco and San Joaquin Valley Railway, was constructed from Stockton to Bakersfield in 1895-1897 (Gustafson and Serpico 1996:159). The line was acquired by the ATSF in 1899 and became a part of the ATSF's first line to reach the port of San Francisco.

Throughout the late 19th century, railroad and irrigation had a critical influence on the growth of the Central Valley. With its nearly level valley floor, the San Joaquin Valley possessed some of the richest agricultural land in the U.S. once large-scale irrigation began. Early farming on the plains was aided by the use of dams and weirs that transported water from the local rivers and streams, although these were mostly seasonal flows (Small and Smith 1926:567). Demand for a more reliable water supply resulted in the organization of various water districts, many of which continue to operate today. As a result, San Joaquin Valley farmers have distinguished themselves as leading agricultural producers in California. Primary crops include raisin, cotton, barley, hay, nuts, vegetables, poultry, beef, and dairy products (Beck and Haase 1974:94-97; CDFA n.d.).

Around the turn of the century, oil discoveries on the Kern River and the subsequent "oil boom" brought the Bakersfield area to the forefront of California's budding petroleum

industry, which today hosts the largest oil fields in the state (Wikipedia n.d.). However, agriculture has remained the dominant factor in the area's economy, as well as its cultural heritage, to the present time. The housing boom in the last decades, characterized by master-planned communities that have taken over once-prime farmland, has had a major impact on the San Joaquin Valley population, and with it has created increasing concerns regarding preservation of the rural lifestyle.

Antelope Valley

Besides Pedro Fages and Francisco Garcés, Jedediah Smith, Kit Carson, and John C. Fremont also traversed the Antelope Valley, but these early explorations left the region relatively unchanged. In fact, the high desert remained essentially uninhabited until near the end of the 19th century, attracting only occasional hunters and travelers drawn by legendary stories of massive antelope herds. In 1876, the SPRR chose the Antelope Valley for its line between the San Joaquin Valley and the Los Angeles Basin, and established a string of regularly spaced sidings and water stops across the desert. During the next decade, new towns sprang up around the railroad stations, including today's Mojave, Rosamond, and Lancaster. In the late 1890s, a change in station location on the SPRR brought about the town of Palmdale (Palmdale City Library 1991).

Many of the boom towns of the 1880s came to an abrupt end in 1894 with the onset of a severe drought that lasted several years, forcing all but a few stalwart residents to leave the Antelope Valley (Settle 1983:3). The devastated agricultural economy of the valley recovered after a series of irrigation works made it possible for the cultivation of deciduous fruits and alfalfa to become the primary means of livelihood in the area (Palmdale City Library 1991). After the end of World War II, the Antelope Valley was transformed into a center of aerospace and defense industry, which remains the leading industry in the area today. Since the 1980s, cities in the Antelope Valley, especially Palmdale and Lancaster, have experienced phenomenal growth as "bedroom communities" in support of the Greater Los Angeles area. The increase in base population, however, has also spurred cultivation of a more localized identity through residential, commercial, and civic development.

Los Angeles Basin

In 1771, Spanish explorers and missionaries established Mission San Gabriel in what is now the City of Montebello. Ten years later, in an effort to ease dependence on the mission, the Spanish governor of Alta California recruited several dozen poor farmers from Mexico to take up residence on a patch of land later to be known as Los Angeles (Bean and Rawls 1988:33). In the 1780s, the role of Los Angeles as a pivotal center for commercial and social activities was greatly enhanced by the Spanish colonial government's grants of vast tracts of land, or *ranchos*, to several soldiers set to retire from service (Ethington 2005). The wealth of the *ranchéros* revolved around cattle raising, a wildly lucrative business that provided the scaffolding for the economic and social development of the region for nearly a century and formed the basis for private property development (*ibid*.). The war that began in 1846 between the U.S. and Mexico ended Mexican rule and eventually brought an end to the now-romanticized *rancho* period.

American settlers flooded California during the second half of the 19th century, partly due to the discovery of gold and other precious metals in the Sierra Nevadas in 1848, which

increased demand for beef and other cattle products throughout the state. The SPRR reached southern California in 1876, followed by the competing ATSF in 1883-1885. The completion of the two transcontinental railways, particularly the latter, was a huge catalyst for economic development in southern California, based in land sales, and naturally, transport. A frantic rate war between the two railroad giants drastically drove down the cost of traveling from the eastern states. With the efforts of land investors and publicists promoting Los Angeles as an ideal residential and commercial environment, the city's population exploded from 11,183 in 1880 to 50,395 in 1890, and then nearly doubled to 102,479 by 1900 (Ethington 2005).

At the turn of the 20th century, port facilities, railway terminals, banks, factories, and oil fields were among the enterprises underway. Development spread rapidly outward, refining transportation corridors and commuting patterns, further sustained in part by the development of an interurban railway system, spearheaded by the Pacific Electric Railway, and a regional highway system. Towns by the dozens sprang up all around Los Angeles, refining the transportation corridors and commuting patterns that took shape as suburban development spread rapidly outward.

Settlement, though still dense along the railroad, shifted to a more contemporary urban landscape, as industries in need of rail transport remained focused along the railroad and residential areas and new urban cores developed away from the rail lines. By the mid- and late 20th century, the forces of industrialization, urbanization, and increasingly, residential development has superceded the agrarian landscape, essentially merging the Los Angeles Basin cities along the APE into one metropolitan area.

RESEARCH METHODS

RECORDS SEARCH

The records search for Los Angeles County was carried out at the South Central Coastal Information Center at California State University, Fullerton by CRM TECH archaeologist Nina Gallardo (see App. 1 for qualifications). The records searches for the other 11 counties were carried out by personnel on staff at the information centers of the California Historical Resource Information System whose jurisdiction covers various portions of the APE (see Table 1). The scope of the records searches encompassed the area within a quarter-mile radius of the existing railroad rights-of-way.

Table 1. Records Search Locations

Date	Information Center	Counties Covered
11/22/2011	South Central Coastal Information Center (SCCIC), California State University, Fullerton	Los Angeles
12/6/2011	Southern San Joaquin Valley Information Center (SSJVIC), California State University, Bakersfield	Fresno, Kern, Kings, Madera, Tulare
11/3/2011	Central California Information Center (CCIC), California State University, Stanislaus	Merced, San Joaquin, Stanislaus
11/3/2011	Northwest Information Center (NWIC), Sonoma State University, Rohnert Park	Alameda, Contra Costa
11/29/2011	North Central Information Center (NCIC), California State University, Sacramento	Sacramento

Sources consulted during the records searches include listings of California Historical Landmarks and Points of Historical Interest, the National Register of Historic Places, the California Register of Historical Resources, the California Historical Resources Inventory, the Caltrans Historic Bridge Inventory, local historic resources inventory or registers available, and other pertinent historic materials on file at the information centers. In addition, the California State Lands Commission shipwreck database, a listing of known and potential vessels located on the State's tide and submerged lands, was searched for any submerged cultural resources that may be located in or near the APE.

NATIVE AMERICAN PARTICIPATION

On October 17, 2011, CRM TECH submitted a written request to the State of California's Native American Heritage Commission for a records search in the commission's sacred lands file. Following the commission's recommendations, CRM TECH further contacted a total of 59 Native American representatives in writing and by telephone between March 25, 2012, and March 22, 2013, to solicit local Native American input regarding any cultural resources concerns over the proposed undertaking. A detailed record of the correspondence between CRM TECH and the Native American representatives is attached in Appendix 2.

HISTORICAL BACKGROUND RESEARCH

Historical background research for this study was conducted by CRM TECH historian Terri Jacquemain (see App. 1 for qualifications) on the basis of published literature in local and regional history, online databases of various federal and county agencies, and historic maps of the APE, including the U.S. General Land Office's (GLO) land survey plat maps and the U.S. Geological Survey's (USGS) topographic maps. The results of the research were used to establish themes in the historic context for various regions along the APE, as presented above under "Setting." Specific information on the historical background of communities along the APE was also used to assist in the identification of potential "historic properties"/"historical resources" within or adjacent to the APE, and areas of high sensitivity for such resources.

FIELD RECONNAISSANCE

Between August 2009 and October 2012, CRM TECH archaeologists Daniel Ballester and Robert Porter (see App. 1 for qualifications) completed the field reconnaissance of the APE. The survey was accomplished by driving along the project route in a motor vehicle, as close to the railroad tracks as proper access would permit. Whenever possible, Ballester and Porter inspected the railroad rights-of-way and surrounding areas for evidence of human activities dating to the prehistoric or historic period (i.e., 45 years ago or older). Potentially sensitive areas, such as level embankments near natural waterways that may have provided prehistoric Native Americans with a favorable habitation site, where inaccessible by vehicle, were inspected on foot. When encountered, features of potential historical/archaeological interest were inspected briefly on foot and photographed, and their locations were noted on project maps for future reference.

RESULTS AND FINDINGS

RECORDS SEARCH

The results of the records searches are presented below first by information center and then by county. Some of the previously recorded cultural resources, particularly linear features such as pipelines, transmission lines, and the railways themselves, have been recorded in segments in several counties. A county-by-county search of the CSLC shipwreck database yielded no submerged cultural resources within or adjacent to any segment of the APE. Site records for cultural resources previously recorded at least partially within the APE boundaries are attached to this report in Appendix 3.

For clarification purposes, the term "prehistoric" refers to cultural resources of Native American origin, "historic" refers to non-Indian cultural resources that are more than 45 years in age, "site" refers to a historical / archaeological resource that has been recorded into the California Historical Resources Inventory, and "isolate" indicates a cultural locality with fewer than three artifacts. Isolates by definition do not qualify as archaeological sites due to the lack of contextual integrity, and thus require no further consideration in the Section 106- and CEQA-compliance process.

North Central Information Center (NCIC)

Sacramento County

Some 250 surveys were found in NCIC records within a quarter-mile of the APE in Sacramento County, nearly 100 of them including various segments of the APE, and more than three dozens focusing on the railroad itself. As a result of these surveys, approximately 500 sites and several isolates were recorded within the quarter-mile scope of the records search. Fifteen of the sites were of prehistoric origin, all recorded in and near the Mokelumne River watershed, but the vast majority were historic-period buildings of various vintage and functions. The isolates all dated to the historic period.

Seventeen of the sites were recorded in or partially in the APE, along with an isolate that consisted of a glass insulator (see Table 2). Two of the sites, 34-000046 and 34-000076, were described as prehistoric occupation areas lying partially in the railroad right-of-way near the Sacramento-San Joaquin County line, in the Mokelumne River watershed. As noted above, several other prehistoric sites found in NCIC records sites were among a cluster found in the Mokelumne River watershed, but later studies indicate that the mapped locations for many of these, including 34-000046 and 34-0000076, were questionable (Jones and Stokes Associates 1995a:5; Darcangelo 2001:1).

During a 1995 study, neither 34-000046 nor 34-0000076 could be relocated, nor could two other prehistoric sites plotted on NCIC maps near the same location (Jones and Stokes Associates 1995a:5). The 1995 site record update for 34-000046 further notes that the Mokelumne River watershed area was "not a likely location for this type of archaeological site" (Jones and Stokes Associates 1995b:1). Nevertheless, the number of prehistoric sites previously recorded in this area, although questionable in location, suggests that the APE may have a heightened potential for subsurface archaeological deposits despite its location in a floodplain area.

Table 2. Previously Recorded Cultural Resources in the APE, Sacramento County	
Site No	**Description**
34-000046	Occupation site
34-000076	Occupation site
34-000455	Sacramento Valley Railroad
34-000505	First transcontinental railroad (CHL #780)
34-000507	Southern Pacific Railroad
34-000508	Lower American River levee
34-000509	American River South Bank levee
34-000647	Southern Pacific Railroad / Union Pacific Railroad
34-000699	Calvine Road
34-000700	Elk Grove-Florin Road
34-000742	Del Paso Boulevard
34-001302	Mohave Pipeline
34-001304	Isolate: glass insulator
34-001663	North Sacramento Freeway
34-001992	Gas pipeline bridge over Mokelumne River
34-002463	Bridge (#24-48L)
34-003868	Southern Pacific Railroad (segment)
34-004121	Brighton Underpass and flood gates

Of the 15 historic-period sites in or crossing the APE, five were segments of the UPRR line with associated features such as spurs, berms and pilings (34-000505, 34-000507, 34-000647, 34-003868, and 34-003870). The UPRR in Sacramento County was completed by the Central Pacific Railroad Company in 1869 as part of the first transcontinental railroad, with the Fresno subdivision today bearing the representative designation of California Historical Landmark No. 780 (OHP 1990:170). Also recorded in Sacramento County and elsewhere was the ubiquitous Mojave Pipeline alignment, which intersects the UPRR railway in the San Joaquin Valley at 35 locations in Kern, Tulare, Fresno, Madera, Merced, Stanislaus, San Joaquin, and Sacramento Counties.

Northwest Information Center (NWIC)

Nearly 200 previous studies within the quarter-mile scope of the records search in Alameda and Contra Costa Counties were reported to the NWIC. As a result of these and other similar studies, a total of 17 historical / archaeological sites have been recorded within the scope of the records search in these counties, 11 of them lying at least partially within the APE. Seven of the 11 sites were linear infrastructure features dating to the historic-era, and four were prehistoric in nature (see Table 3).

Contra Costa County

The four prehistoric sites were originally part of a series of middens, shell mounds, and burial sites recorded by N.C. Nelson around 1907. Of the four, 07-000137 and 07-000138 were both located on the east shore of San Pablo Bay, on the promontory by Lone Tree Point (Nelson 1907a; 1907b). At the time, Nelson described both as having been displaced by the Union and Western oil refineries, respectively (*ibid.*). He further reported that only faint traces remained of 07-000142, located in a small area between the UPRR and BNSF tracks "three-quarters of a mile west of Pinoles" (Nelson 1907c). Later surveys at the locations of these sites indicate that 07-000137 and 07-000138 no longer existed within the railroad right-of-ways, but no further information regarding 07-000142 was found in NWIC records (Tremaine 2001a; 2001b).

Table 3. Previously Recorded Cultural Resources in the APE, Contra Costa and Alameda Counties	
Site No.	**Description**
07-000137	Shell mound
07-000138	Shell mound
07-000142	Shell mound
07-000149	Shell mound
07-000514	Abandoned telephone poles
07-000515	Segment of Highway 4
07-000806	Atchison, Topeka and Santa Fe Railroad
07-000813	Southern Pacific Railroad, Northern Contra Costa County Route
07-002695	Contra Costa Canal
07-002951 / 01-010927	Contra Costa Las Positas Transmission Line
07-002956 / 01-010947	Pittsburg to Tesla Transmission Line

Also recorded by Nelson, 07-000149, a large shell midden with burials, was found in Richmond between Parr Avenue and San Pablo Creek (Nelson 1907d). Later updates to the site record described 07-000149 as likely to extend under the UPRR tracks at the southern end of the site (Banks 1978). Site 07-000149, along with a number of other known prehistoric sites recorded along the San Pablo Creek or Wildcat Creek, are considered to be contributors to the Lower San Pablo Creek Archaeological District, which has been determined eligible for listing in the National Register of Historic Places (NRHP 1986). These previous findings strongly suggest an exceedingly high sensitivity for subsurface prehistoric cultural materials in this portion of the APE.

Included among the previously recorded historic-period sites were several segments and associated features of the BNSF that were collectively designated as Site 07-000806, and the Southern Pacific line, recorded as 07-000813. Both sites were determined not to meet the statutory / regulatory threshold for significance due to the loss of historic integrity (Smallwood 2004:1; Banks 2006:1). The other sites were linear features that cross the APE. None of the bridges within the scope of the records search and listed in the Caltrans bridge inventory qualified for listing in the National Register.

Alameda County

All of the previously recorded historical / archaeological resources identified in NWIC files were located in Contra Costa County, although the Contra Costa-Las Positas Transmission Lines and the Pittsburg to Tesla Transmission Line also extend into Alameda County as 01-010927 and 01-010947, respectively (see Table 3).

Southern San Joaquin Valley Information Center (SSJVIC)

The records searchs provided by the SSJVIC for Fresno, Kern, Kings, Madera, and Tulare Counties reveal that 321 previous cultural resource studies have been conducted within the quarter-mile scope of the records search and 347 historical / archaeological sites and isolates were recorded.

Fresno County

In Fresno County, eight surveys covered portions of the APE, and 11 sites and a prehistoric isolate have been recorded within the APE (see Table 4). The isolate (10-004475) was

Table 4. Previously Recorded Cultural Resources in the APE, Fresno County	
Site No.	**Description**
10-002960 / 10-004678 / 10-004675 / 10-004679	Washington Colony Canal, including the Oleander branch of the canal and culverts and other features under the BNSF Railway
10-002961	Briggs Canal
10-002966	Palladini Ditch
10-004475	Isolate: obsidian biface flake
10-004667	Golden State Boulevard bridge over North Avenue and the BNSF Railway
10-004677	Central Canal
10-004680	Wristen Canal
10-005572	BNSF Railroad Bridge over the Herndon Canal, ca. 1917
10-005573	Herndon Canal

described as a single obsidian biface flake lying in the railroad right-of-way near MP 1008.5, south of the San Joaquin River.

Among the historic-period sites were the Washington Colony Canal (10-002960 / 10-004678), the backbone of the Washington Irrigated Colony's canal system, which was previously determined to be a National Register-eligible district; the North Branch of the Oleander Canal (10-004679), a contributing element of the same historic district; and a collection of 18 railroad bridges, wooden box culverts, and concrete culverts on the BNSF line. The majority of these were considered ineligible for the California Register of Historical Resources, but a 1924 concrete culvert (10-004675) at the BNSF crossing over the North Branch of the Oleander Canal was deemed historically significant due to its association with the Washington Irrigated Colony's canal system (Love and Tang 2001a:1).

Two other previously recorded irrigation features were the Central Canal, the main water supply line for the Central California Colony, a potential historic district pending further documentation, and the Wristen Canal. As a secondary component of the Fresno Irrigation District's extensive canal system, the Wristen Canal was determined ineligible for listing in the California Register but worthy of special consideration in local planning due to its long history (Love and Tang 2001b:2). Similarly, the 1936 Golden State Boulevard (formerly U.S. Route 99) bridge over North Avenue and the BNSF line was found ineligible for the California Register, but possibly retaining sufficient local historical interest to merit local designation (*ibid.*:1). Two other sites, representing the Herndon Canal and the BNSF bridge over it, were found not to qualify for historic designation. Site records for the Briggs Canal and the Palladini Ditch did not contain evaluations.

Kern County

In Kern County 10 surveys covered portions of the APE. As a result, 154 sites and isolates were previously recorded within the scope of the records search, including 44 prehistoric sites and 30 prehistoric isolates. However, despite this substantial number, only two prehistoric sites and five historic-period sites were recorded within the APE (see Table 5).

Of the two prehistoric sites, 15-002507 was evidently recorded on the basis of historical newspaper accounts and is described in the site record as a "village site, small group of shelter located on a sandy hill [that] in the 1890s was destroyed to make way for a railroad" (Ptomey and Wear 1989:1-2). The location of 15-002507 in SSJVIC records apparently includes the east end of the BNSF rail yard in Bakersfield. No other similar sites were reported near 15-002507.

Table 5. Previously Recorded Cultural Resources in the APE, Kern County	
Site No.	**Description**
15-002507	Village site (destroyed)
15-002553	Bedrock milling features, burials, midden
15-003529	SPRR, Mojave to Los Angeles
15-003549	Los Angeles Aqueduct
15-007061	Tehachapi Loop on SPRR (CHL 508)
15-007232	Stine Canal
15-010711 / 15-013268	SPRR-ATSF line, Bakersfield to Mojave

The second site, 15-002553, is described as a large Native American occupation site that was "well known in the Tehachapi area for years" but was not formally recorded until 1989 (Murphy et al. 1989). The site encompassed most of the southeast quarter of Section 18, T32S R33E MDBM, and consisted of dozens of bedrock milling features, tools and points, and bones from at least three people. A fourth set of skeletal remains was found just outside the northern boundary in 2004, and consequently the site boundaries were expanded (Walker 2004:1). Despite years of relic-hunting and looting, Site 15-002553 was found to yield a "surprising" number of artifacts when first recorded (Murphy et al. 1989:3). In light of the discovery of humans remains nearby some 15 years after it was first recorded, Site 15-002553 and the surrounding area, including the APE at this location, should be considered highly sensitive for prehistoric subsurface deposits.

Of the historic-period sites, three were segments of the railway, including the Tehachapi Loop, the famed railway engineering feat designated as California Historical Landmark No. 508 in 1953. The other two were linear water conveyance features that cross the APE. One of these represented the Los Angeles Aqueduct in Kern County, a clearly significant water feature that remains in use today, and the other is the Stine Canal, which was found ineligible for the National Register.

Kings County

According to SSJVIC records, about a dozen surveys have been carried out within the records search scope in Kings County, with at least three covering portions of the APE. Six archaeological sites and an isolate were reported to the SSJVIC, most of them within or across the APE (see Table 6). Among these, Site 16-000085, consisting of a telegraph line, and 16-000120, a group of 17 railroad features, were determined not to be eligible for listing in the California Register (Love and Tang 2002a:2). Site 16-000121, People's Ditch, was considered potentially eligible, but the railroad crossing over the canal was determined not to contribute to that potential (*ibid.*:3). Two other sites, 16-000126 and 16-000127, were branch canals of the People's Ditch system, and were both determined to be contributors to the potential significance of that site. In addition to these five sites, Isolate 16-000084, consisting of an obsidian biface flake, was also found in the APE.

Table 6. Previously Recorded Cultural Resources in the APE, Kings County	
Site No.	**Description**
16-000084	Isolate: obsidian biface
16-000085	Western Union Telegraph Line (abandoned)
16-000120	ATSF Railway (now BNSF)
16-000121	Peoples Ditch system
16-000126	Melga Canal
16-000127	Settlers Ditch

Madera County

As in Kings County, about a dozen surveys were previously completed within the records search scope in Madera County, with three covering portions of the APE. A total of five previously recorded cultural resources, all dating to the historic period, were located within the records search scope, four of them in the APE (see Table 7). Three were railroad features, and the fourth was a component of a water system, namely an access road and culvert crossing the APE. Site 20-002662 consisted of a five-mile segment of the BNSF line and associated features, determined collectively not to be eligible for listing in the National Register or the California Register (Smallwood 2009a:5). No evaluation was offered in any of the other site records.

Table 7. Previously Recorded Cultural Resources in the APE, Madera County

Site No.	Description
20-002662	ATSF Railway (now BNSF)
20-002696	East Madera Underpass / Bridge over State Route 145 (BNSF)
20-002825	ATSF bridge over the Fresno River
20-002826	Madera Irrigation District Access Road and Culvert

Tulare County

A 1977 survey on roads that included a number of railway crossings were among some 40 previous studies within the scope of the records search in Tulare County, and 13 historical / archaeogical sites and two isolates were recorded within the scope of the records search. Of these, two historic-era irrigation features and the two isolates were recorded within or crossing the APE (see Table 8).

Table 8. Previously Recorded Cultural Resources in the APE, Tulare County

Site No.	Description
54-003382	Isolate: biface flake
54-003383	Isolate: flake
54-004619	Lakeland Canal
54-004630	Taylor Canal

Central California Information Center (CCIC)

As elsewhere, portions of the APE in Merced, San Joaquin, and Stanislaus Counties were included in previous cultural resources studies, which in this case number approximately 266, according to CCIC records. Nearly 300 cultural resources have been recorded within the scope of the records search, more than half of them in San Joaquin County. Also as elsewhere, most of these sites and isolates dated to the historic period and represented buildings or other built-environment features. A dozen prehistoric sites were identified in San Joaquin County, and one in Merced County.

Merced County

In Merced County, 54 surveys were reported to the CCIC within the scope of the records search, including 26 studies that covered various segments of the APE. A total of eight sites have been recorded within or partially within the APE, all of them dating to the historic period (see Table 9). Site 24-001880 represented four palms standing within the

Table 9. Previously Recorded Cultural Resources in the APE, Merced County	
Site No.	**Description**
24-000552	Livingston Canal
24-000606	Fairfield Canal / Black Rascal Creek
24-000607	Hartley / Doane Lateral
24-000608 / 24-001887	Le Grand Canal
24-000648	Bradley Overhead Bridge, No. 39-44
24-001880	Date Palms near Merced ATSF Railway station
24-001881	Segment of the BNSF Railway in Merced County
24-001909	Merced Irrigation District

existing BNSF right-of-way, approximately 150 feet northwest of the Merced Amtrak Station, and Site 24-001881 represented a 16.5-mile segment of the railroad itself. They were recorded during a 2009 study as associated features of the ATSF Railway and the former ATSF station in Merced, and were determined not to meet any of the criteria for listing in the National Register of Historic Places or the California Register of Historical Resources (Smallwood 2009b:3; 2009c:3).

Site 24-000648 was recorded as a highway bridge over the BNSF line, known as the Bradley Overhead Bridge (Bridge No. 39-0044). It was determined eligible for listing in the National Register (Brewer 2001:4), but may have since been demolished (CCIC 2011:2). Also recorded crossing the APE were four canals, Livingston, Fairfield, Hartley / Doane , and Le Grand, as well as features associated with the Merced Irrigation District.

Outside of the APE boundaries, an additional 50 previously recorded sites were found in CCIC records, all but one of them dating to the historic period. The one prehistoric site, 24-000617, was located on the banks of the Merced River, to the northeast of the APE, and was described as a number of lithic artifacts collected by the landowner, which was said to contain items associated with human burials. The vast majority of the historic-period sites were residential buildings, many of them belonging to two historic districts (24-000735 and 24-000838; see App. 3) located on either side of the Merced Amtrak station. Both of the districts have been found eligible for listing in the National Register of Historic Places (Arguelles 1985a:1; 1985b:1).

San Joaquin County

Of 182 previous cultural resources investigations reported to the CCIC within the scope of the records search in San Joaquin County, 74 included portions of the APE. As a result of these and similar studies, approximately 220 sites and isolates have been recorded within the scope of the records search, including 16 sites in or partially in the APE, all dating to the historic period (see Table 10).

There appears to be extensive past survey coverage of the various historic railway lines, represented by Sites 39-000002 / 39-004643 (SPRR / UPRR), 39-000015 / 39-000446 (Tidewater Southern Pacific Railroad), 39-000098 (Western Pacific Railroad / UPRR), 39-000112 / 39-000445 (ATSF / BNSF), and 39-004457 (Central California Traction Company). There is no record indicating that Site 39-000098 has been formally evaluated for historic significance, and the other four sites have been determined not to be eligible for the National Register or the California Register (Corbett et al. 1996a:3; 1996b:3; Byrd 2002:5; Martinez 2008:1).

Table 10. Previously Recorded Cultural Resources in the APE, San Joaquin County	
Site No.	**Description**
39-000002 / 39-004643	SPRR and bridge
39-000015 / 39-000446	Tidewater Southern Railroad
39-000098	Western Pacific Railroad / UPRR
39-000112 / 39-000445	ATSF Railway
39-000363	Railroad bridge at Bear Creek
39-000439	Electrical distribution lines
39-004245	Telegraph line along the ATSF
39-004246	South San Joaquin Irrigation District main canal
39-004247	ATSF bridge over Navy Drive (Bridge No. 29C-0209)
39-004399	Mokelumne Aqueduct
39-004457	Central California Traction Railroad
39-004581	Daggett Road
39-004582	Daggett Road Ditch
39-004875	Bear Creek levees
39-004876	Channelized Pixley Slough and levees

Associated railroad features previously recorded within the APE included the SPRR (now UPRR) bridge over Bear Creek, the BNSF bridge over Navy Drive in Stockton, and a telegraph line along the BNSF line. Among these, the latter two have been evaluated as not being eligible for listing in the California Register (Love and Tang 2001a:i).

Other sites recorded within or partially within the APE in San Joaquin County includes a group of levees at Bear Creek (39-004875) and the South San Joaquin Irrigation District's main canal where it intersects the BNSF line (39-004246). Site 39-004875 was previously evaluated as not being eligible for the National Register or the California Register, while Site 39-004246 was found eligible for the California Register with a local level of significance, pending further documentation (Love and Tang 2001b:i; Hibma 2008a:2; 2008b:2). The other four recorded sites represent linear features that cross the APE. Among these, the Mokelumne Aqueduct was found to be "potentially" eligible for listing in the National Register, but apparently was not further evaluated against the necessary criteria (Dexter 2003:2), while the other three were determined not to qualify for any level of historical designation.

Stanislaus County

Thirty surveys, half of them covering various portions of the APE, and 13 sites have been reported to the CCIC within the scope of the records search in Stanislaus County. All of the sites dated to the historic period, and included five located within or across the APE (see Table 11). Of these five, one was a 3.4-mile segment of the railway itself, which was found ineligible for listing in the National Register (Daly 2009a:3), and another was the BNSF railway bridge across the Tuolomne River, which is yet to be evaluated.

The three other sites were all water conveyance features acrossing the APE. Of these, Hetch Hetchy Aqueduct was found eligible for listing in the National Register during a 2007 study, while the other two were determined not to qualify for any historical designation (Carey and Co. 2007a:1; 2007b:1; Daly 2009b:6). None of the bridges listed in the Caltrans bridge inventory and in the records search scope was eligible for listing in the National Register.

Table 11. Previously Recorded Cultural Resources in the APE, Stanislaus County	
Site No.	**Description**
50-000020	ATSF Bridge
50-000073	Segment of TID Upper Lateral
50-000074	Hetch Hetchy Aqueduct
50-002002	Modesto Main Canal
50-002006	ATSF Railway

South Central Coastal Information Center (SCCIC)

Los Angeles County

Some 75 cultural resources studies were conducted within the scope of the records search in Los Angeles County. Approximately three dozens of them have included portions of the APE, carried out mainly in conjunction with railroad improvement projects and other linear infrastructure projects such as pipelines and fiber-optic telecommunication lines. Also within this quarter-mile scope, more than 300 sites and isolates have been recorded, 12 of which were located at least partially within the APE (see Table 12).

All 12 of these sites dated to the historic period, four representing segments of SPRR (now UPRR) and the rest consisting of linear features within or across the railroad right-of-way. One recorded segment of the SPRR, designated Site 19-186112, has been deemed eligible for the National Register (Ashkar 1999:2). Completed in 1876-1877, the SPRR line played a crucial role in the growth of the region during the late 19th and early 20th centuries. As a component of the historical infrastructure that remains in service today, however, it is of questionable integrity to relate to its potential period of significance, and thus that evaluation is worth re-visiting in future studies. Sites 19-001534, 19-187053, and 19-188229 were also found eligible for listing in the National Register (City of Los Angeles 1986:1; McAvoy 1994:1; Anderson 2009:1). Site 19-003558 was apparently not evaluated for historical significance when it was first recorded in 2006.

Among the previously recorded cultural resources outside the APE, around 200 of them were 20th century refuse deposits, structural remains, and abandoned rail alignments. Approximately 33 prehistoric sites and isolates, almost all of them composed of lithic scatters and/or isolated flakes, were also reported in SCCIC records. Closest to the APE was 19-001575, a large, multi-component archaeological site recorded on the grounds of Los Angeles Union Station, a National Register-listed property (Warren 2004:1).

Table 12. Previously Recorded Cultural Resources in the APE, Los Angeles County	
Site No.	**Description**
19-001534	Palmdale Ditch
19-002105	Los Angeles Aqueduct
19-002132	Los Angeles Aqueduct Transmission Line
19-003558	Mining camp and SPRR sop and siding at Ravenna
19-150037	Railroad Tunnel No. 18
19-003282/19-180638/ 19-186110/19-186112	Segments of SPRR (now UPRR) in Los Angeles County
19-186876	Vincent Lines/ SCE Rock-Pardee Transmission Line Corridor
19-187053	San Fernando Railroad Tunnel (Tunnel 25)
19-188229	Buena Vista Viaduct

The prehistoric component of the site, possibly associated with the Gabrielino village of *Yangna*, consisted of a cemetery with at least 14 internments and 5 cremations as well as such artifacts as projectile points, lithic debitage, shell beads, and groundstone tools (Horne 2000:1; Warren 2004:1-2). The historic-period component of the site included substantial deposits of artifacts dating to the 1860s-1930s era, architectural remains, and other features such as privies, wells, and refuse dumps (Foster 1989:1; Horne 2000:1; Warren 2004:1). These features and artifacts were believed to be associated with residential and commercial establishments that were once present nearby, including the mid-19th century residence of famed southern California pioneer Benjamin Davis Wilson, an orphan asylum operated by the Sisters of Charity between 1856 and 1890, the second Chinatown in Los Angeles (1880-1933), and a 19th century red light district.

In light of the site's possible connection with a known Gabrielino village, a prominent person in 19th century southern California history, the former Chinatown, and other interesting and potentially significant episodes in local history, coupled with the presence of Native American human remains, Site 19-001575 is clearly significant and demonstrates the potential to contain additional subsurface cultural deposits beyond the established boundaries. Although much of the site has evidently been removed through past construction activities and archaeological excavations, the existing site records suggest that portions of the site are yet to be treated with systematic archaeological investigations, and that some of the features discovered during previous studies also require further research (Warren 2004:3).

Furthermore, it was reported that 3-12 feet of fill dirt were brought to the area during the construction of Union Station in the 1930s, below which would be the original ground surface (Horne 2000:3). Since the boundaries of the site have been limited to the extent of past archaeological investigations, any subsurface deposits that remain at or near the site, if any, are likely to be buried beneath this layer of fill.

NATIVE AMERICAN PARTICIPATION

In response to CRM TECH's inquiry, the Native American Heritage Commission reported in a letter dated October 21, 2011, that the sacred lands record search identified "numerous" sacred sites in the APE. The commission recommended that local Native American groups be contacted for further information, and provided a list of potential contacts for that purpose (see App. 2). Upon receiving the commission's response, CRM TECH initiated contact with all 59 individuals on the referral list and the organizations that they represent. The initial written request for comments was sent to the tribal representatives on March 25, 2012, and follow-up telephone solicitations were carried out between July 7, 2012, and March 22, 2013 (see App. 2).

At the recommendations of the original contacts, 14 additional individuals were also consulted, for a total of 73. The names of the added contacts are included in Appendix 2. Among the responses received, 7 of the tribal representatives requested copies of reports or additional documentation, 18 requested future consultation, 10 recommended monitoring, 6 requested notification of inadvertent archaeological discoveries, and 4 had no comment or concerns. The names and responses of these tribal representatives are summarized below in Table 13 (see App. 2 for details).

Table 13. Summary of Native American Requests						
Name and Position	**Tribe/Affilation**	**Report/ Document**	**Further Consultation**	**Monitoring**	**Discovery Notification**	**No Concerns**
Jean-Marie Feyling, Native American Consultant	Amah / Mutsun Tribal Band		√	√		
Irene Zwieriein, Chairperson	Amah / Mutsun Tribal Band		√	√		
Roselynn Lwenya, Environmental Director	Buena Vista Rancheria of Me-Wuk Indians of California	√	√			
Silvia Burley, Chairperson	California Valley Miwok Tribe				√	
Robert George Ledger, Sr., Chairman	Dumna Wo-Wah Tribal Government	√	√	√		
Eric Smith, Cultural Resources Manager	Dumna Wo-Wah Tribal Government	√	√			
Kenneth Woodrow, Chairperson	Eshom Valley Band of Michahai and Wuksachi Indians		√			
Andrew Salas, Chairperson	Kizh / Gabrieleno Band of Mission Indians		√	√		
Robert Dorame, Chairperson / Cultural Resources	Gabrielino Tongva Indians of California Tribal Council		√	√		
John Davis, Chairman	Kings River Choinumni Farm Tribe				√	
Rosemary Cambra, Chairperson	Muwekma Ohlone Indian Tribe of the San Francisco Bay Area		√	√	√	
Cosme Valdez, Interim Chief Executive Officer	Nashville-El Dorado Mikok					√
Katherine Erolinda Perez, Chairperson	North Valley Yokuts Tribe		√			
John Valenzuela, Chairperson	San Fernando Band of Mission Indians				√	
Shana Brum, Cultural Specialist	Santa Rosa Tachi Rancheria	√	√	√		
Daniel Fonseca, Cultural Resources Director	Shingle Springs Band of Miwok Indians	√	√			
Lawrence Bill, Chairperson	Sierra Nevada Native American Coalition		√			
Jay Johnson, Spiritual Leader	Southern Sierra Miwuk Nation					√
Katherine Montes Morgan, Chairperson	Tejon Indian Tribe				√	
David Alvarez, Chairperson	Traditional Choinumni Tribe					√
Ramona Garibay, Representative	Trina Marine Ruano Family		√	√	√	
Tina Guerrero, Vice-Chairperson	Tubatulabals of Kern Valley					√
Marcos Guerrero, THPO	United Auburn Indian Community of the Aubuen Rancheria	√	√	√		
David Keyser, Chairperson	United Auburn Indian Community of the Aubuen Rancheria	√	√			
Jakki Kehi			√	√		
Randy Yonemura			√			

Among the specific concerns expressed, 11 of the tribal representatives stated that the APE is extremely sensitive for Native American cultural resources, such as village and burial sites, and are concerned these sites may be disturbed. Those who share this concern are Jean-Marie Feyling and Irene Zwieriein of the Amah / Mutsun Tribal Band, Robert Ledger, Sr., of the Dumna Wo-Wah Tribal Government, Kenneth Woodrow of the Eshom Valley

Band of Michahai and Waksachi Indians, Andrew Salas of the Kizh/Gabrieleno Band of Mission Indians, Robert Dorame of the Gabrielino Tongva Indians of California Tribal Council, Rosemary Cambra of the Mukekma Ohlone Indian Tribe of the San Francisco Bay Area, Shana Brum of the Santa Rosa Tachi Rancheria, Ramona Garibay of the Trina Marine Ruano Family, Randy Yonemura of Miwok descent, and Lawrence Bill of the Sierra Nevada Native American Coalition, who expressed strong opposition to the proposed undertaking.

Shana Brum, Cultural Specialist for the Santa Rosa Tachi Rancheria, also had concerns regarding the proposed secondary rail alternative from Fresno to Visalia. She stated that there were several known burial sites along State Route 198, close to Visalia, and that there were known, but undocumented, Native American burial sites near the City of Corcoran and other nearby cities along the Tulare Lake shoreline. Ms. Brum stated that the tribe was trying to preserve a burial mound in Hanford, and was working on an area of high cultural sensitivity along State Route 99 near the City of Goshen.

In addition to general concerns regarding cultural resources, Robert Dorame, Chairperson for the Gabrielino Tongva Indians of California Tribal Council, and Rosemary Cambra, Chairperson for the Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, expressed specific concerns regarding archaeological/cultural monitoring during the ground-disturbing activities for the undertaking. Mr. Dorome and his group were adamant about rotating Native American groups if monitoring would be required, and requested that it be included as part of mitigation measures for the undertaking. Ms. Cambra suggested that there be a Memorandum of Agreement between the lead agency and the various tribes that are indigenous to the area, which would include rotation of the various groups during the monitoring.

FIELD RECONNAISSANCE

During the field reconnaissance, several railroad depots and bridges that are more substantial than the typical minor open-deck wooden trestles or simple concrete culverts were noted within or adjacent to the APE, along with a number of other buildings of industrial nature. Some of these features will need to be recorded and evaluated individually if the proposed project will potentially impact their current conditions. The existing BNSF, UPRR, and SCRRA railroad tracks mostly rest on raised berms of earth and crushed rock. It was further noted during the field reconnaissance that, as anticipated, the ground surface along the rail lines has been extensively disturbed in the past, leaving it rather unlikely for any subsurface archaeological deposits, especially those of prehistoric origin, to have survived intact within the APE. No evidence of any of prehistoric cultural materials or features was encountered.

SUMMARY OF FINDINGS

The records searches revealed that 13 previously recorded historical/archaeological sites located at least partially within the APE are currently listed in the National Register of Historic Places or the California Register of Historical Resources, have been determined eligible for listing, are designated California Historical Landmarks, or have been found eligible for local historical designations (Table 14). These 13 sites meet the definition of

Table 14. Known "Historic Properties"/"Historical Resources" in the APE		
Site Number	**Description**	**Status***
07-000149	Shell mound	3D
10-002960 / 10-004675 / 10-004678 / 10-004679	Components of Washington Colony canal system	3B
15-007061	Tehachapi Loop on SPRR	CHL #508
16-000126	Melga Canal	5D2
16-000127	Settlers Ditch	5D2
19-001534	Palmdale Ditch	3S
19-186112	Segments of SPRR	3S
19-187053	San Fernando Railroad Tunnel (SPRR Tunnel 25)	2S2
19-188229	Buena Vista Viaduct	2S2
24-000648	Bradley Overhead Bridge	3S
34-000505	First transcontinental railroad (SPRR)	CHL #780
39-004246	South San Joaquin Irrigation District main canal	3CS
50-000074	Hetch Hetchy Aqueduct	3S

* Status codes:

- 2S2 Determined eligible for the National Register (NR); listed in the California Register (CR).
- 3B Appears eligible for NR both individually and as a contributor to a NR-eligible district.
- 3D Appears eligible for NR as a contributor to a NR-eligible district.
- 3S Appears eligible for NR as an individual property.
- 3CS Appears eligible for CR as an individual property.
- 5D2 Contributor to a district that is eligible for local listing or designation.
- CHL California Historical Landmark.

"historic properties" and / or "historical resources," and project impacts to these sites should be avoided, if feasible, or mitigated to a level less than significant.

Based on these findings, the most likely historical / archaeological sites to be encountered in the APE are the railroad lines themselves and associated features, along with a host of irrigation canals that crisscross the APE, many of which may be considered important in local and regional history. Under current regulatory guidelines, however, in most cases cultural resources studies for linear transportation infrastructure projects may exclude these irrigation canals from the APE since such projects generally have little potential to affect their overall historical characteristics and significance.

Most of the railroad lines within the APE, as parts of the first transcontinental railways to reach California, certainly played important roles in the rapid growth of the state during the late 19th and early 20th centuries. However, as working components of the modern transportation infrastructure, these rail lines typically do not retain sufficient historic integrity to be considered eligible for listing in the National Register or the California Register. Exceptions to this are usually special railroad features that have acquired significance from other aspects of their history, such as engineering feats. Sites 15-007061 (Tehachapi Loop) and 19-187053 (San Fernando Railroad Tunnel) exemplify such features.

Only one of the 13 historical / archaeological sites listed above is of prehistoric origin. However, the presence of the known prehistoric sites in relatively concentrated clusters in or near certain segments of the APE suggests a heightened probability for similar cultural remains to be encountered in subsurface deposits at these locations. Native American representatives contacted during this study also expressed concerns over some of these locations. These areas of heightened prehistoric archaeological sensitivity include:

Contra Costa County:

- Near UPRR Mile Post 14.2 in the City of Richmond, between Parr Avenue and San Pablo Creek, where Site 07-000149, a shell midden with burials and a contributor to the Lower San Pablo Creek Archaeological District, was previously noted as being likely to extend into the APE.
- Along the eastern shore and promontories of the San Pablo Bay, where four prehistoric sites were recorded in the APE during early 20th century, along with several other sites nearby.

Sacramento County:

- Where the APE crosses the Mokelumne River watershed near the Sacramento-San Joaquin County line.

Kern County:

- Around the location of Site 15-002507, a Native American village site that ostensibly was obliterated by the construction of the railroad in the 1890s, which reportedly encompasses the APE at the eastern end of the BNSF yard in Bakersfield.
- Where the APE traverses Site 15-002553, a large Native American village site that occupies most the southeast quarter of Section 18, T32S R33E, Mount Diablo Baseline and Meridian.

Los Angeles County:

- Around Site 19-001575, a large, multi-component archaeological site recorded near the Los Angeles Union Station Passenger Terminal, where potentially significant cultural remains are likely to extend in subsurface deposits beyond the established site boundaries.

In light of these previous archaeological discoveries and concerns expressed by the Native American representatives, the portions of the APE at and near these locations should be considered archaeologically sensitive. If any ground disturbing activities are necessary at these locations, further archaeological investigations will be required to determine whether any potentially significant archaeological remains are present within or adjacent to the APE.

Based on these findings, CRM TECH presents the following recommendations to Caltrans and other responsible public agencies:

- Project plans should be carefully crafted and reviewed to avoid direct or indirect effects that would compromise the significance and integrity of the 13 historical/archaeological sites that constitute "historic properties" and/or "historical resources," if feasible. If avoidance proves infeasible, further analysis will be necessary to ascertain the level and aspect of significance for the affected sites in order to formulate proper mitigation measures.
- Once the specific APE for each project under the proposed program is established, it should be treated with a standard Phase I, project-level historical/archaeological resources assessment, including an intensive-level field survey, especially in the areas of high archaeological sensitivity.
- If buried cultural materials are encountered during any earth-moving operations associated with the program, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

REFERENCES

Anderson, Katherine
2009 California Historical Resource Information System site record, 19-001534. On file, South Central Coastal Information Center, California State University, Fullerton.

Arguelles, Marcus
1985a California Historical Resource Information System site record, 24-000753. On file, Central California Information Center, California State University, Stanislaus.
1985b California Historical Resource Information System site record, 24-000838. On file, Central California Information Center, California State University, Stanislaus.

Ashkar, S.
1999 California Historical Resource Information System site record, 19-186112. On file, South Central Coastal Information Center, California State University, Fullerton.

Banks, Peter
1978 California Historical Resource Information System site records, 07-000148 to 07-000150. On file, Northwest Information Center, Sonoma State University, Rohnert Park.

Banks, Suzanne
2006 California Historical Resource Information System site record, 07-000813. On file, Northwest Information Center, Sonoma State University, Rohnert Park.

Beals, R.
1933 *Ethnology of the Nisenan*. University of California Publications in American Archaeology and Ethnology 31. Reprinted by Malki Museum Press, Banning, Calif., 1972.

Bean, Lowell John, and Charles R. Smith
1978a Serrano. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 570-574. Smithsonian Institution, Washington, D.C.
1978b Gabrielino. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 538-549. Smithsonian Institution, Washington, D.C.

Bean, Walton, and James J. Rawls
1988 *California: An Interpretive History*. McGraw-Hill, Inc., San Francisco, California.

Beardsley, R. K.
1954 *Temporal and Areal Relationships in Central California Archaeology*. University of California Archaeological Survey Reports 24 and 25. Berkeley.

Beck, Warren A., and Ynez D. Haase
1974 *Historical Atlas of California*. University of Oklahoma Press, Norman.

Blackburn, Thomas C., and Lowell John Bean
1978 Kitanemuk. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: California, pp. 564-569. Smithsonian Institution, Washington, D.C.

Brewer, Chris
2001 California Historical Resource Information System site record, 24-000648. On file, Central California Information Center, California State University, Stanislaus.

Byrd, David S.
2002 California Historical Resource Information System site record, 39-000002. On file, Central California Information Center, California State University, Stanislaus.

Carey and Co.
2007a California Historical Resource Information System site record, 39-000445. On file, Central California Information Center, California State University, Stanislaus.
2007b California Historical Resource Information System site record, 39-000446. On file, Central California Information Center, California State University, Stanislaus.

CCIC (Central Coastal Information Center)
2011 Notation by CCIC staff personnel regarding Site 24-000648 (Bradley Overhead Bridge/Caltrans Bridge No. 39-0044). On file, Central California Information Center, California State University, Stanislaus.
CDFA (California Department of Food and Agriculture)
n.d. 2010 Crop Year, Agricultural Overview. Http://www.cdfa.ca.gov/statistics/.
City of Los Angeles
1986 California Historical Resource Information System site record, 19-188229. On file, South Central Coastal Information Center, California State University, Fullerton.
Clough, Charles W., and William B. Secrest
1984 *Fresno County—The Pioneer Years*. Panorama West Books, Fresno, California.
Corbett, M., W. Minor, and W. Kostura
1996a California Historical Resource Information System site record, 39-000445. On file, Central California Information Center, California State University, Stanislaus.
1996b California Historical Resource Information System site record, 39-000446. On file, Central California Information Center, California State University, Stanislaus.
Daly, Pamela
2009a California Historical Resource Information System site record, 50-002006. On file, Central California Information Center, California State University, Bakersfield.
2009b California Historical Resource Information System site record, 50-000073. On file, Central California Information Center, California State University, Bakersfield.
Darcangleo, M.
2001 California Historical Resource Information System site record, 34-000076 (update). On file, North Central Information Center, Sonoma State University, Rohnert Park.
Davis Win. J.
1890 *Illustrated History of Sacramento County*. Lewis Publishing, Chicago.
Deverell, William, and Deborah Gray White
2006 *United States History: Independence to 1914*. Holt, Rinehart and Winston, Orlando, Florida.
Dexter, Sean
2003 California Historical Resource Information System site record, 39-004399. On file, Central California Information Center, California State University, Stanislaus.
Durham, David L.
1998 *California's Geographic Names: A Gazetteer of Historic and Modern Names of the State*. Quill Driver Books, Fresno, California.
Ethington, Philip J.
2005 Los Angeles. Microsoft Encarta Online Encyclopedia. Http://encarta. msn.com.
Foster, John
1989 California Historical Resource Information System site record, 19-001575. On file, South Central Coastal Information Center, California State University, Fullerton.
Gustafson, Lee, and Phil Serpico
1996 *Coast Lines Depots: Valley Division*. Omni Publications, Palmdale, California.
Heizer, Robert F. (ed.)
1978 *Handbook of North American Indians*, Vol. 8: *California*. Smithsonian Institution, Washington, D.C.
Hibma, Michael R.
2008a California Historical Resource Information System site record, 39-004246. On file, Central California Information Center, California State University, Stanislaus.

2008b California Historical Resource Information System site record, 39-004457. On file, Central California Information Center, California State University, Stanislaus.
Horne, Melinda C.
2000 California Historical Resource Information System site record, 19-001575 (update). On file, South Central Coastal Information Center, California State University, Fullerton.
Jones and Stokes Associates
1995a Archeological Inventory and Determination of Effect for the Union Pacific Railroad Bridge 116.37 Replacement Project, Sacramento County. On file, North Central Information Center, Sonoma State University, Rohnert Park.
1995b California Historical Resource Information System site record, 34-000046 (update). On file, North Central Information Center, Sonoma State University, Rohnert Park.
JRP (JRP Historical Consulting Services) and Caltrans (California Department of Transportation)
2000 Water Conveyance Systems in California: Historic Context Development and Evaluation Procedures. Issued by the Cultural Studies Office, Caltrans Environmental Program, Sacramento.
Kelly, Isabel
1978 Coast Miwok. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 414-425. Smithsonian Institution, Washington, D.C.
Kidder, David S., and Noah D. Oppenheim
2007 *The Intellectual Devotional: American History: Revive Your Mind, Complete Your Education, and Converse Confidently about Our Nation's Past*. Modern Times, Athens, Greece.
King, Chester, and Thomas C. Blackburn
1978 Tataviam. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 535-537. Smithsonian Institution, Washington, D.C.
Kroeber, Alfred L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Washington, D.C.
1929 *The Valley Nisenan*. University of California Publications in Archaeology and Ethnology 24:4. University of California Press, Berkeley.
Levy, Richard
1978a Eastern Miwok. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 398-413. Smithsonian Institution, Washington, D.C.
1978b Castanoan. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 485-495. Smithsonian Institution, Washington, D.C.
Lillard, J. B., R. F. Heizer, and F. Fenenga
1939 *An Introduction to the Archaeology of Central California*. Sacramento Junior College Department of Anthropology Bulletin 2. Sacramento.
Love, Bruce, and Bai "Tom" Tang
2001a Historical Resources Compliance Report: The Burlington Northern Santa Fe Railway Company San Joaquin Corridor Capacity Improvements, Bowles to Calwa, Fresno County, California, Caltrans District 6. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.
2001b Historical Resources Compliance Report: The Burlington Northern Santa Fe Railway Company San Joaquin Corridor Capacity Improvements, Escalon-Stockton,

San Joaquin County, California, Caltrans District 10. On file, Central California Information Center, California State University, Stanislaus.
2002a Historical Resources Compliance Report: The Burlington Northern and Santa Fe Railway Company San Joaquin Corridor Capacity Improvements Project, Guernsey to Shirle, Kings County, California, Caltrans District 6. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Martinez, Jesse
2008 California Historical Resource Information System site record, 39-004457. On file, Central California Information Center, California State University, Stanislaus.

McAvoy, Christine
1994 California Historical Resource Information System site record, 19-187053. On file, South Central Coastal Information Center, California State University, Fullerton.

McCawley, William
1996 *The First Angelinos: The Gabrielino Indians of Los Angeles*. Malki Museum Press/Ballena Press, Banning/Novato, California.

Miller, Bruce W.
1991 *The Gabrielino*. Sand River Press, Los Osos, California.

Moratto, Michael J. (ed.)
1984 *California Archaeology*. Academic Press, Orlando, Florida.

Murphy, Peggy, S. Jackson, K., R. Novickas, K. Zimmerman, and S. Harris
1989 California Historical Resource Information System site record, 15-002553. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Nelson, N.C.
1907a California Historical Resource Information System site record, 07-000137. On file, Northwest Information Center, Sonoma State University, Rohnert Park.
1907b California Historical Resource Information System site record, 07-000138. On file, Northwest Information Center, Sonoma State University, Rohnert Park.
1907c California Historical Resource Information System site record, 07-000142. On file, Northwest Information Center, Sonoma State University, Rohnert Park.
1907d California Historical Resource Information System site record, 07-000149. On file, Northwest Information Center, Sonoma State University, Rohnert Park.

Nelson, Wendy J.
2000 Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project, Segment WS04: Sacramento to Bakersfield. Manuscript report on file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

NRHP (National Register of Historic Places)
1986 Lower San Pablo Creek Archeological District, Determination of Eligibility listing No. 65007912. Http://www.nrhp.focus.nps.gov/natreg/docs/FED_DOE.xls.

OHP (Office of Historic Preservation, State of California)
1990 California Historical Landmarks. State of California Department of Parks and Recreation, Sacramento.

Palmdale City Library
1991 *Palmdale: How It All Began*. Palmdale City Library, Palmdale.

Ptomey, Steven, and Lori Wear
1989 California Historical Resource Information System site record, 15-002507. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Robinson, W. W.
1948 *Land in California.* University of California Press, Berkeley.
Settle, Glen A. (ed.)
1983 *Lancaster: Celebrating a Century*. Compiled by the Centennial Committee of the City of Lancaster. City of Lancaster, Lancaster, California.
Signor, John R.
2003 *Southern Pacific's Western Division.* Signature Press, Wilton, California.
Slocum, W.A.
1888 *History of Contra Costa County California.* Republished in 1974 by Brooks-Sterling Company, Oakland, California.
Small, Kathleen Edwards, and J. Larry Smith
1926 *History of Tulare County, California, and Kings County, California.* The S.J. Clarke Publishing Company, Chicago.
Smallwood, Josh
2004 California Historical Resource Information System site record, 07-000806 (update). On file, Northwest Information Center, Sonoma State University, Rohnert Park.
2009a California Historical Resource Information System site record, 20-002662. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.
2009b California Historical Resource Information System site record, 24-001880. On file, Central California Information Center, California State University, Stanislaus.
2009c California Historical Resource Information System site record, 24-001881. On file, Central California Information Center, California State University, Stanislaus.
Strong, William Duncan
1929 *Aboriginal Society in Southern California.* University of California Publications in American Archaeology and Ethnology 26. Reprinted by Malki Museum Press, Banning, California, 1972.
Tremaine, Kim
2001a California Historical Resource Information System site record, 07-000137 (update). On file, Northwest Information Center, Sonoma State University, Rohnert Park.
2001b California Historical Resource Information System site record, 07-000138 (update). On file, Northwest Information Center, Sonoma State University, Rohnert Park.
Walker, Brandon H.
2004 California Historical Resource Information System site record, 15-002553 (update). On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.
Wallace, William J.
1978a Northern Valley Yokuts. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 462-470. Smithsonian Institution, Washington, D.C.
1978b South Valley Yokuts. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 448-461. Smithsonian Institution, Washington, D.C.
Warren, Claude N.
1984 The Desert Region. In Michael J. Moratto (ed.): *California Archaeology*; pp. 339-430. Academic Press, Orlando, Florida.

Warren, Claude N., and Robert H. Crabtree
1986 Prehistory of the Southwestern Area. In Warren L. D'Azevedo(ed.): *Handbook of North American Indians*, Vol. 11: *Great Basin*; pp. 183-193. Smithsonian Institution, Washington, D.C.

Warren, Keith
2004 California Historical Resource Information System site record, 19-001575 (update). On file, South Central Coastal Information Center, California State University, Fullerton.

Wikipedia
n.d. San Joaquin Valley. Http://en.wikipedia.org/wiki/ San_Joaquin_Valley #Agriculture.

Wilson, N., and A. Towne
1978 Nisenan. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 387-397. Smithsonian Institution, Washington, D.C.

APPENDIX 1

PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History / Historic Preservation, UC Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.

2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside / Colton, California.
1993-2002	Project Historian / Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, UC Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, UC Riverside.
1988-1993	Research Assistant, American Social History, UC Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Honors and Awards

1988-1990	University of California Graduate Fellowship, UC Riverside.
1985-1987	Yale University Fellowship, Yale University Graduate School.
1980, 1981	President's Honor List, Northwestern University, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (With Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

Membership

California Preservation Foundation.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA*

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.

2002	Section 106—National Historic Preservation Act: Federal Law at the Local Level. UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands.
1992-1998	Assistant Research Anthropologist, University of California, Riverside
1992-1995	Project Director, Archaeological Research Unit, U. C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C. Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U. C. Riverside.
1984-1998	Archaeological Technician, Field Director, and Project Director for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Author and co-author of, contributor to, and principal investigator for numerous cultural resources management study reports since 1986.

Memberships

* Register of Professional Archaeologists.
Society for American Archaeology.
Society for California Archaeology.
Pacific Coast Archaeological Society.
Coachella Valley Archaeological Society.

PROJECT HISTORIAN/REPORT WRITER
Terri Jacquemain, M.A.

Education

2004 M.A., Public History and Historic Resource Management, University of California, Riverside.
- M.A. thesis: Managing Cultural Outreach, Public Affairs and Tribal Policies of the Cabazon Band of Mission Indians, Indio, California; internship served as interim Public Information Officer, Cabazon Band of Mission Indians, June-October, 2002.

2002 B.S., Anthropology, University of California, Riverside.
2001 Archaeological Field School, University of California, Riverside.
1991 A.A., Riverside Community College, Norco Campus.

Professional Experience

2003- Historian / Architectural Historian / Report Writer, CRM TECH, Riverside / Colton, California.
- Author / co-author of legally defensible cultural resources reports for CEQA and NHPA Section 106;
- Historic context development, historical / archival research, oral historical interviews, consultation with local communities and historical organizations;
- Historic building surveys and recordation, research in architectural history; architectural description

2002-2003 Teaching Assistant, Religious Studies Department, University of California, Riverside.
2002 Interim Public Information Officer, Cabazon Band of Mission Indians.
2000 Administrative Assistant, Native American Student Programs, University of California, Riverside.
1997-2000 Reporter, *Inland Valley Daily Bulletin*, Ontario, California.
1991-1997 Reporter, *The Press-Enterprise*, Riverside, California.

Membership

California Preservation Foundation.

PROJECT ARCHAEOLOGIST/FIELD DIRECTOR
Daniel Ballester, M.S.

Education

2013	M.S., Geographic Information System (GIS), University of Redlands, California.
1998	B.A., Anthropology, California State University, San Bernardino.
1997	Archaeological Field School, University of Las Vegas and University of California, Riverside.
1994	University of Puerto Rico, Rio Piedras, Puerto Rico.
2007	Certificate in Geographic Information Systems (GIS), California State University, San Bernardino.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside, California.

Professional Experience

2002- Field Director, CRM TECH, Riverside/Colton, California.
- Report writing, site record preparation, and supervisory responsibilities over all aspects of fieldwork and field crew.

1999-2002 Project Archaeologist, CRM TECH, Riverside, California.
- Survey, testing, data recovery, monitoring, and mapping.

1998-1999 Field Crew, K.E.A. Environmental, San Diego, California.
- Two and a half months of excavations on Topomai village site, Marine Corp Air Station, Camp Pendleton.

1998 Field Crew, A.S.M. Affiliates, Encinitas, California.
- Two weeks of excavations on a site on Red Beach, Camp Pendleton, and two weeks of survey in Camp Pendleton, Otay Mesa, and Encinitas.

1998 Field Crew, Archaeological Research Unit, University of California, Riverside.
- Two weeks of survey in Anza Borrego Desert State Park and Eureka Valley, Death Valley National Park.

PROJECT ARCHAEOLOGIST
Robert Allen Porter, B.A.

Education

2000 B.A., Anthropology, California State University, San Bernardino.
2010 Graduate Student, Anthropology and Education, California State University, San Bernardino.

Professional Experience

2001- Project Archaeologist, CRM TECH, Riverside/Colton, California.
- Trained in survey, excavation, historical analysis and construction monitoring; experienced in field recording cultural resources.

2000 Archaeological field class under the direction of Claude Warren. Excavated units at Soda Lake in the Mojave Desert and produced lake bottom stratigraphic profiles and carbon sample collections.

Honors and Awards

Spring 2000 Dean's Honors List (G.P.A. of 4.0 in 15 units).
Fall 2000 Dean's Honors List (G.P.A. of 3.9 in 12 units).

PROJECT ARCHAEOLOGIST
Nina Gallardo, B.A.

Education

2004 B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004- Project Archaeologist, CRM TECH, Riverside/Colton, California.
- Surveys, excavations, construction monitoring, field recordation, mapping, records searches, and Native American liaison.

Honors and Awards

2000-2002 Dean's Honors List, University of California, Riverside.

Special Skills

- Knowledge of current local research methods and field applications of archaeological principles.
- Strong understanding of federal, state, local, and tribal regulations pertaining to cultural resources.
- Familiarity with Trimble GEO XT and ARC PAD 10.
- Proficiency in Adobe and Microsoft products.

APPENDIX 2

CORRESPONDENCE WITH NATIVE AMERICAN REPRESENTATIVES*

* A sample of the letters sent to the tribal representatives is included in this appendix.

Subject: 2561 San Joaquin Corridor Program
Date: Monday, October 17, 2011 1:13 PM
From: Nina Gallardo <ngallardo@crmtech.us>
To: Dave Singleton <ds_nahc@pacbell.net>
Cc: Laura Shaker <lshaker@crmtech.us>

RE: Sacred Land records search

Hi, Dave:

This is to request a Sacred Lands records search

Name of project:
The San Joaquin Corridor Program EIR/EIS
CRM TECH #2561

Project size:
480 miles of rail rights-of-way and 8 facility sites

Location:

Counties of Los Angeles, Kern, Tulare, Kings, Fresno, Madera, Merced, Stanislaus, San Joaquin, Sacramento, Contra Costa and Alameda

Please call if you need more information or have any questions. Results may be faxed to the number below. I appreciate your assistance in this matter.

Map included

Thanks,

Nina Gallardo
(909) 824-6400
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

October 21, 2011

Ms. Nina Gallardo, RPA
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Sent by FAX to: 909-824-6405
No. of Pages: 13

Re: Sacred Lands File Searches and Native American Contacts lists for the **"San Joaquin Coorider Program EIR / EIS Project (480 miles of Rail and Facilities Improvements);"** located in Los A"ngeles, Kern, Tulare, Kings, Fresno, Madera, Merced, Stanislaus, San Joaquin, Sacramento, Contra Costa and Alameda counties, California

Dear Ms. Gallardo:

The Native American Heritage Commission (NAHC) conducted a Sacred Lands File searches of the 'area of potential effect,' (APEs) based on the location map provided for the project areas you specified. There were numerous sacred sites identified; the applicant should also be aware that the NAHC Sacred Lands Inventory is not exhaustive and does not preclude the discovery of cultural resources during ground braking activity. The NAHC recommends that discussion of Native American cultural resources be had with the contacts provided on the attached lists, grouped by counties, as follows: a) Los Angeles, b) Kern, Tulare and Kings, c) Fresno and Madera, d) Merced Stanislaus and San Joaquin, e) Sacramento, f) Contra Costa and Alameda counties. The Native American contacts will be able to assess any impact of the proposed project on Native American cultural resources as well as 'traditional cultural properties,' defined by federal standards.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources, impacted by proposed projects including archaeological, places of religious significance to Native Americans and burial sites

The California Environmental Quality Act (CEQA – CA Public Resources Code §§ 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. CA Government Code §65040.12(e) defines "environmental justice" provisions and is applicable to the environmental review processes.

Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e).. Lead agencies should consider avoidance as defined in §15370 of the CEQA Guidelines when significant cultural resources as defined by the CEQA Guidelines §15064.5 (b)(c)(f) may be affected by a proposed project. If so, Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "substantial," and Section 2183.2 which requires documentation, data recovery of cultural resources.

The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

Partnering with local tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 4(f), Section 110 (f)(k) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The NAHC remains concerned about the limitations and methods employed for NHPA Section 106 Consultation.

Also, California Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery', another important reason to have Native American Monitors on board with the project.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. An excellent way to reinforce the relationship between a project and local tribes is to employ Native American Monitors in all phases of proposed projects including the planning phases.

Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibility threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton

Attachment: Native American Contact List

California Native American Contacts
Los Angeles County
October 21, 2011

Charles Cooke
32835 Santiago Road
Acton , CA 93510
suscol@intox.net

(661) 733-1812 - cell
suscol@intox.net

Chumash
Fernandeno
Tataviam
Kitanemuk

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@hotmail.com
(661) 753-9833 Office
(760) 885-0955 Cell
(760) 949-1604 Fax

Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Fernandeno Tataviam Band of Mission Indians
Ronnie Salas, Cultural Preservation Department
601 South Brand Boulevard, Suite 102
San Fernando CA 91340
rsalas@tataviam-nsn.gov
(818) 837-0794 Office

(818) 837-0796 Fax

Fernandeno
Tataviam

Gabrielino Tongva Nation
Sam Dunlap, Chairperson
P.O. Box 86908
Los Angeles , CA 90086
samdunlap@earthlink.net

(909) 262-9351 - cell

Gabrielino Tongva

LA City/County Native American Indian Comm
Ron Andrade, Director
3175 West 6th St, Rm. 403
Los Angeles , CA 90020
randrade@css.lacounty.gov
(213) 351-5324
(213) 386-3995 FAX

San Manuel Band of Mission Indians
Ann Brierty, Policy/Cultural Resources Departmen
26569 Community Center. Drive
Highland , CA 92346
(909) 864-8933, Ext 3250
abrierty@sanmanuel-nsn.gov
(909) 862-5152 Fax

Serrano

Ti'At Society/Inter-Tribal Council of Pimu
Cindi M. Alvitre, Chairwoman-Manisar
3098 Mace Avenue, Aapt. D
Costa Mesa, , CA 92626
calvitre@yahoo.com
(714) 504-2468 Cell

Gabrielino

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490
Bellflower , CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-761-6417- fax

Gabrielino Tongva

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Los Angeles County
October 21, 2011

Gabrielino-Tongva Tribe
Bernie Acuna
1875 Century Pk East #1500 Gabrielino
Los Angeles , CA 90067
(619) 294-6660-work
(310) 428-5690 - cell
(310) 587-0170 - FAX
bacuna1@gabrieinotribe.org

Gabrielino-Tongva Tribe
Linda Candelaria, Chairwoman
1875 Century Park East, Suite 1500
Los Angeles , CA 90067 Gabrielino
lcandelaria1@gabrielinoTribe.org
626-676-1184- cell
(310) 587-0170 - FAX
760-904-6533-home

Gabrieleno Band of Mission Indians
Andrew Salas, Chairperson
P.O. Box 393 Gabirelino Tongva
Covina , CA 91723
(626) 926-4131
gabrielenoindians@yahoo.com

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Kern, Tulare and Kings Counties
October 21, 2011

Santa Rosa Rancheria
Rueben Barrios, Chairperson
P.O. Box 8
Lemoore , CA 93245
(559) 924-1278
(559) 924-3583 Fax
Tache
Tachi
Yokut

Tejon Indian Tribe
Katherine Montes- Morgan, Chairperson
2234 4th Street
Wasco , CA 93280
kmorgan@bak.rr.com
661-758-2303
Yowlumne
Kitanemuk
Kawaiisu

Tule River Indian Tribe
Ryan Garfield, Chairperson
P.O. Box 589
Porterville , CA 93258
chairman@tulerivertribe-nsn.
(559) 781-4271
(559) 781-4610 FAX
Yokuts

Kawaiisu Tribe of Tejon Reservation
David Laughinghorse Robinson
PO Box 1547
Kernville , CA 93238
(661) 664-3098 - work
(661) 664-7747 - home
horse.robinson@gmail.com
Kawaiisu

Ron Wermuth
P.O. Box 168
Kernville , CA 93238
warmoose@earthlink.net
(760) 376-4240 - Home
(916) 717-1176 - Cell
Tubatulabal
Kawaiisu
Koso
Yokuts

Esohm Valley Band of Indians/Wuksache Tribe
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas , CA 93906
kwood8934@aol.com
831-443-9702
Foothill Yokuts
Mono

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
981 N. Virginia
Covina , CA 91722
deedominguez@juno.com
(626) 339-6785
Yowlumne
Kitanemuk

Chumash Council of Bakersfield
Arianne Garcia, Chairperson
P.O. Box 902
Bakersfield , CA 93302
chumashtribe@sbcglobal.net
(661) 836-0486
(661) 836-0487
Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Kern, Tulare and Kings Counties
October 21, 2011

Kern Valley Indian Council
Robert Robinson, Co-Chairperson
P.O. Box 401
Weldon , CA 93283
brobinson@iwvisp.com
(760) 378-4575 (Home)
(760) 549-2131 (Work)

Tubatulabal
Kawaiisu
Koso
Yokuts

Tubatulabals of Kern Valley
Donna Begay, Tribal Chairwoman
P.O. Box 226
Lake Isabella, CA 93240
drbegay@aol.com
(760) 379-4590
(760) 379-4592 FAX

Tubatulabal

Santa Rosa Tachi Rancheria
Lalo Franco, Cultural Coordinator
P.O. Box 8
Lemoore , CA 93245
(559) 924-1278 - Ext. 5
(559) 924-3583 - FAX

Tachi
Tache
Yokut

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Fresno and Madera Counties
October 21, 2011

Big Sandy Rancheria of Mono Indians
Liz Hutchins Kipp, Chairperson
P.O. Box 337 / 37302 Western Mono
Auberry , CA 93602
ck@bigsandyrancheria.com
(559) 855-4003
(559) 855-4129 Fax

Sierra Nevada Native American Coalition
Lawrence Bill, Interim Chairperson
P.O. 125 Mono
Dunlap , CA 93621 Foothill Yokuts
(559) 338-2354 Choinumni

Cold Springs Rancheria of Mono Indians
Robert Marquez, Chairperson
P.O. Box 209 Mono
Tollhouse , CA 93667
(559) 855-5043
559-855-4445 - FAX

Choinumni Tribe; Choinumni/Mono
Lorrie Planas
2736 Palo Alto Choinumni
Clovis , CA 93611 Mono

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road Mono
Clovis , CA 93619
rwgoode911@hotmail.com
(559) 299-3729 Home
(559) 355-1774 - cell

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 Yokuts
Friant , CA 93626-0177
(559) 325-0351
(559) 217-9718 - cell
(559) 325-0394 FAX

Dumna Wo-Wah Tribal Goverment
Keith F. Turner, Tribal Contact
P.O. Box 306 Dumna/Foothill
Auberry , CA 93602 Mono
t'si-akimcorr@at.net
(559) 855-3128 Home
(559) 696-0191 (Cell)

Kings River Choinumni Farm Tribe
John Davis, Chairman
1064 Oxford Avenue Foothill Yokuts
Clovis , CA 93612-2211 Choinumni
(669) 307-6430

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Fresno and Madera Counties
October 21, 2011

Dunlap Band of Mono Historical Preservation Soc
Mandy Marine, Board Chairperson
P.O Box 18 Mono
Dunlap , CA 93621
mandy_marine@hotmail.com
559-274-1705
559-252-0198 - fax

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue Choinumni
Fresno , CA 93720
davealvarez@sbcglobal.net
(559) 323-6231
(559) 292-5057 FAX

Dumna Wo-Wah Tribal Government
Jim Redmoon - Cultural Resources Representative
724 W. Fountain Dumna/Foothill
Fresno , CA 93705 Choinumni
redmoonrising@att.net
559-824-0265
559-243-9926 -home

Chowchilla Tribe of Yokuts
Jerry Brown
10553 N. Rice Road North Valley Yokuts
Fresno , CA 93720
559-434-3160

The Choinumni Tribe of Yokuts
Rosemary Smith, Chairperson
1505 Barstow Choinumni
Clovis , CA 96311 Foothill YoKut
monoclovis@yahoo.com
559-862-5757

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Merced, Stanislaus and San Joaquin Counties
October 21, 2011

Southern Sierra Miwuk Nation
Jay Johnson, Spiritual Leader
5235 Allred Road
Mariposa , CA 95338
209-966-6038

Miwok
Pauite
Northern Valley Yokut

Tuolumne Band of Me-Wuk
Reba Fuller
P.O. Box 699
Tuolumne , CA 95379
rfuller@mlode.com
(209) 928-3475 - Tribal Office
(209) 928-1677 - Fax

Me-Wuk - Miwok

California Valley Miwok Tribe
Silvia Burley, Chairperson
10601 N Escondido PL
Stockton , CA 95212
s.burley@californiavalleymiwoktribe-nsn.
209-931-4567
209-931-4333

Miwok

North Valley Yokuts Tribe
Katherine Erolinda Perez
PO Box 717
Linden , CA 95236
(209) 887-3415
canutes@verizon.net

Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

Tuolumne Band of Me-Wuk
Kevin Day, Chairperson
P.O. Box 699
Tuolumne , CA 95379
receptionist@mlode.com
(209) 928-3475 - Tribal Office
(209) 928-1677 - Fax

Me-Wuk - Miwok

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Sacramento County
October 21, 2011

Wilton Rancheria
Mary Daniels-Tarango, Chairperson
7916 Farnell Way Miwok
Sacramento , CA 95823
wiltonrancheria@frontier.
(916) 427-2909 Home

Randy Yonemura
4305 - 39th Avenue Miwok
Sacramento , CA 95824
honortraditions@mail.com
(916) 421-1600

United Auburn Indian Community of the Auburn Rancheria
David Keyser, Chairperson
10720 Indian Hill Road Maidu
Auburn , CA 95603 Miwok
530-883-2390
530-883-2380 - Fax

Buena Vista Rancheria
Rhonda Morningstar Pope, Chairperson
PO Box 162283 Me-Wuk / Miwok
Sacramento , CA 95816
rhonda@buenavistatribe.
916 491-0011
916 491-0012 - fax

Ione Band of Miwok Indians
Yvonne Miller, Chairperson
PO Box 699 Miwok
Plymouth , CA 95669
(209) 274-6753
(209) 274-6636 Fax

El Dorado Miwok Tribe
PO Box 711 Miwok
El Dorado , CA 95623
916-996-0384

Wilton Rancheria
Leland Daniels, Cultural Resources Rep
7531 Maple Leaf Lane Miwok
Sacramento , CA 95828
(916) 689-7330

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
P.O. Box 1340 Miwok
Shingle Springs, CA 95682 Maidu
nfonseca@ssband.org
(530) 676-8010
(530) 676-8033 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Sacramento County
October 21, 2011

Nashville-El Dorado Miwok
Cosme Valdez, Interim Chief Executive Officer
PO Box 580986 Miwok
Elk Grove , CA 95758
valdezcom@comcast.net
916-429-8047 voice
916-429-8047 fax

United Auburn Indian Community of the Auburn Rancheria
Marcos Guerrero, Tribal Preservation Committee
10720 Indian Hill Road Maidu
Auburn , CA 95603 Miwok
mguerrero@auburnrancheria.com
530-883-2364
530-883-2320 - Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Alameda and Contra Costa Counties
October 21, 2011

Jakki Kehl
720 North 2nd Street
Patterson , CA 95363
jakki@bigvalley.net
(209) 892-1060
Ohlone/Costanoan

Amah/Mutsun Tribal Band
Melvin Ketchum III, Environmental Coordinator
7273 Rosanna Street
Gilroy , CA 95020
408-842-3220
Ohlone/Costanoan

Trina Marine Ruano Family
Ramona Garibay, Representative
30940 Watkins Street
Union City , CA 94587
soaprootmo@msn.com
510-972-0645-home
209-688-4753-cell
Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

Muwekma Ohlone Indian Tribe of the SF Bay Area
Rosemary Cambra, Chairperson
2574 Seaboard Avenue
San Jose , CA 95131
muwekma@muwekma.org
408-205-9714
510-581-5194
Ohlone / Costanoan

Amah/MutsunTribal Band
Irene Zwierlein, Chairperson
789 Canada Road
Woodside , CA 94062
amah_mutsun@yahoo.com
(650) 851-7747 - Home
(650) 851-7489 - Fax
Ohlone/Costanoan

Amah/MutsunTribal Band
Jean-Marie Feyling
19350 Hunter Court
Redding , CA 96003
jmfgmc@sbcglobal.net
530-243-1633
Ohlone/Costanoan

Amah/Mutsun Tribal Band
Joseph Mondragon, Tribal Administrator
882 Bay view Avenue
Pacific Grove, CA 94062
831-372-9015
831-372-7078 - fax
Ohlone/Costanoan

The Ohlone Indian Tribe
Andrew Galvan
PO Box 3152
Fremont , CA 94539
chochenyo@AOL.com
(510) 882-0527 - Cell
(510) 687-9393 - Fax
Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

California Native American Contacts
Alameda and Contra Costa Counties
October 21, 2011

Linda G. Yamane
1585 Mira Mar Ave
Seaside , CA 93955
rumsien123@yahoo.com
831-394-5915

Ohlone/Costanaon

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed The San Joaquin Corridor Program EIR/EIS; Segment of a rail and facility improvement Project development project from Los Angeles to Alameda County, California approximately 480 miles

March 25, 2012

Katherine Erolinda Perez
Northern Valley Yokuts Tribe
P.O. box 717
Linden, CA 95236

RE: San Joaquin Corridor Program EIR/EIS
480 Miles of Railroad Rights-of-Way and Five Facility Improvement Sites
Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California
CRM TECH Contract #2561

Dear Ms. Perez:

Caltrans is proposing a railroad improvement project on the San Joaquin Corridor in order to accommodate existing and future passenger rail demand and projected increases in ridership through 2035. The project would reduce negative impacts to the natural environment and air quality by increasing the availability of public transportation, and serve to improve overall rail safety and operation along the San Joaquin Corridor.

The proposed improvements to the San Joaquin Corridor include both primary and secondary project objectives. Among the primary project objectives is the installation of over 360 miles of new trackage to be added alongside three main rail line segments. The new track would be installed adjacent to existing BNSF and UP rail lines but would require bridges, culverts, grade crossings, utility crossings, staging areas and road improvements. The project also proposes a new maintenance facility in Sacramento, a new or rehabilitated passenger station in Stockton, and a new layover facility in either Merced or Fresno. Other proposed improvements include the installation of a secondary rail segment from Fresno to Visalia, the extension of passenger service along the San Joaquin Corridor from Bakersfield to Los Angeles, and the development of infrastructure to enable passenger service on the existing BNSF alignment between Port Chicago and Richmond.

In a letter dated October 21, 2011, the Native American Heritage Commission reports that a sacred lands record search for the Area of Potential Effects (APE) identified numerous Native American sacred sites in the project vicinity, and recommends that local Native American groups be contacted for further information. Therefore, as part of the cultural resources study for this project, I am writing to request your input on potential Native American cultural resources in or near the APE. In addition to Native American scoping, the scope of the study includes a historical/archaeological resources records search, historical background research, and a systematic field survey, which will be conducted in the near future.

Please respond at your earliest convenience if you have any specific knowledge of sacred/religious sites or other sites of Native American traditional cultural value within or near the APE. Any information or concerns regarding Native American cultural resources or sacred sites in the vicinity of the APE may be forwarded to CRM TECH by telephone, e-mail, facsimile, or standard mail. Requests for documentation or information we cannot

provide will be forwarded to our client and/or Caltrans. We would also like to clarify that CRM TECH, as the cultural resources consultant for the project, is not the appropriate entity to initiate government-to-government consultations. Thank you for the time and effort in addressing this important matter.

Respectfully,

Laura Hensley Shaker
CRM TECH

Encl.: APE map

CALIFORNIA VALLEY MIWOK TRIBE

10601 N. Escondido Pl., Stockton, CA 95212 Ph: (209) 931.4567 Fax: (209) 931.4333

http://www.californiavalleymiwoktribe-nsn.gov

April 04, 2012

Ms. Laura Hensley Shaker
CMR TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

RE: San Joaquin Corridor Program EIR / EIS – 480 Miles of Railroad Rights-of-Way and Five Facility Improvement Sites – CRM TECH Contract #2561

Dear Ms. Hensley-Shaker;

This letter is in response to your letter (dated March 25, 2012), in which Caltrans is proposing a railroad improvement project on the San Joaquin Corridor in order to accommodate existing and future passenger rail demand and projected increases in ridership through 2033. The Tribe understands that the project improvements to the San Joaquin Corridor include both primary and secondary project objectives. Among the primary project objectives is the installation of over 360 miles of new trackage to be added alongside three mail rail line segments. The new track would be installed adjacent to existing BNSF and UP rail lines but would require bridges, culverts, grade crossings, utility crossings, staging areas and road improvements. The project also proposes a new maintenance facility in Sacramento, a new or rehabilitated passenger station in Stockton, and a new layover facility in either Merced or Fresno.

Other proposed improvements include the installation of a secondary rail segment from Fresno to Visalia, the extension of passenger service along the San Joaquin Corridor from Bakersfield to Los Angeles, and the development of infrastructure to enable passenger service on the existing BNSF alignment between Port Chicago and Richmond.

The Tribe's concerns are, being that this project is covering such a vast amount of land; we are interested in only the following counties within said project: Alameda, Contra Costa, Fresno, Madera, Merced, San Joaquin, and Stanislaus. The California Valley Miwok Tribe's only concern is that since Miwok Indians regularly lived and traveled through these areas, there is a heightened possibility that historic Miwok artifacts could be found.

The "Tribe" is requesting that it be kept apprised of Miwok artifacts if any are found at this location.

Respectfully,

Silvia Burley, Chairperson

RECEIVED APR 06 2012

TEJON
INDIAN TRIBE

April 4, 2012

Laura Hensley Shaker
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re: San Joaquin Corridor Program EIR/EIS
480 Miles of Railroad Rights-of-Way and Five Facility Improvement Sites
Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California
CRM TECH Contract #2561

Dear Laura Hensley Shaker,

Thank you, for the letter dated March 25, 2012 and the opportunity to comment on this project. Tejon Indian Tribe has no conflict with this project nor do we know of any cultural resources that might be impacted at this site. However, before I can comment, I am asking you to please forward me a more detailed map of the Kern County area for this site as soon as possible. I would also like for you notify me immediately if any site/s and / or artifacts are discovered during your project in the area.

Sincerely,

Kathryn Montes Morgan
Tribal Chair
Tejon Indian Tribe

RECEIVED APR 07 2012

2234 4th Street Wasco, CA 93280 661 758.2303

SHINGLE SPRINGS RANCHERIA

Shingle Springs Band of Miwok Indians,
Shingle Springs Rancheria
(Verona Tract), California
5281 Honpie Road, Placerville, CA 95667
P.O. Box 1340, Shingle Springs, CA 95682
(530) 676-8010 Office (530)676-8033 Fax

April 9, 2012

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

RE: San Joaquin Corridor Program EIR/EIS
480 Miles of Railroad Rights-of-Way and Five Facility Improvement Sites
Alameda, Contra, Fresno, Kern, Kings, Los Angeles, Madera, Merced,
Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California
CRM TECH Contract #2561

Dear Laura Hensley Shaker

The Most likely Descendant, Daniel Fonseca would like to initiate consultation process with Caltrans for the Railroad Improvement Project located in Alameda, Contra, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties. Among other things, we would like this consultation to address the cultural and historic resource issues, pursuant to the regulations implementing Section 106 of the National Historic Preservation Act.

Prior to meeting we would like to request any and all completed record searches and or surveys that were done in or around the project area up to and including environmental, archaeological and cultural reports.

Please let this letter serve as a formal request for the Shingle Springs Band of Miwok Indians to be added as a consulting party in identifying any Traditional Cultural Properties (TCPs) that may exist within the project's Area of Potential Effects (APE).

Please contact Crystal Dilworth, Cultural Resource Office Manager at 530-698-1471 to schedule a consultation meeting pursuant to Section 106 of the NHPA.

Sincerely,

Daniel Fonseca
Cultural Resources Director

RECEIVED APR 13 2012

MIWOK
MAIDU

United Auburn Indian Community
of the Auburn Rancheria

David Keyser
Chairman

Kimberly DuBach
Vice Chair

Gene Whitehouse
Secretary

Brenda Conway
Treasurer

Calvin Moman
Council Member

April 16, 2012

Laura Hensley Shaker
CRM Tech
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Subject: San Joaquin Corridor Program EIR/EIS, 480 Miles of Railroad Rights-of-Way and Five Facility Improvement Sites, Sacramento County, California (Contract#2561)

Dear Ms. Shaker,

Thank you for requesting information regarding the above referenced project. The United Auburn Indian Community (UAIC) of the Auburn Rancheria is comprised of Miwok and Southern Maidu (Nisenan) people whose tribal lands are within Placer County and ancestral territory spans into El Dorado, Nevada, Sacramento, Sutter, and Yuba counties. The UAIC is concerned about development within its aboriginal territory that has potential to impact the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial significance. We appreciate the opportunity to comment on this and other projects in your jurisdiction.

In order to ascertain whether or not the project could affect cultural resources that may be of importance to the UAIC, we would like to receive copies of any archaeological reports that have been, or will be, completed for the project. We also request copies of future environmental documents for the proposed project so that we have the opportunity to comment on potential impacts and proposed mitigation measures related to cultural resources. The information gathered will provide us with a better understanding of the project and cultural resources on site and is invaluable for consultation purposes. Please contact us if any Native American cultural resources are in, or found to be within, your project area.

We are only interested in Project activities occurring in Sacramento County. Thank you again for taking these matters into consideration, and for involving the UAIC early in the planning process. We look forward to reviewing the aforementioned documents as requested. Please contact Marcos Guerrero, Tribal Historic Preservation Officer, at (530) 883-2364 or email at mguerrero@auburnrancheria.com if you have any questions.

Sincerely,

David Keyser,
Chairman

CC: Marcos Guerrero, THPO

RECEIVED APR 28 2012

Tribal Office 10720 Indian Hill Road Auburn, CA 95603 (530) 883-2390 FAX (530) 883-2380

From: "Robert Ledger" < ledgerrobert@ymail.com >
To: lshaker@crmtech.us
Cc: "John Ledger" < jflledgerjohn@yahoo.com >
Sent: Saturday, June 9, 2012 7:48:50 PM
Subject: Re: San Joaquin

Mrs. Shaker, The Dumna Wo-Wah Tribal Government Would like to make a Request for the pedestrian survey and wanted to know if it has been completed, if so The Tribe would like to see them, The Slough, crossings ground disturbing activities and culverts the tribe knows they have the potential to unearth cultural / Burials and even known sites. The Dumna knows these sites should either be avoided or Monitored by the Dumna entering / exiting as well within the Project area. Any further discussion you can contact myself Robert George Ledger Sr.

Tribal Chairman Robert George Ledger Sr
Dumna Wo - Wah Tribal Government
2216 E Hammond
Fresno CA,
Contact info
559-519-1742
ledgerrobert@ymail.com

From: Laura Shaker <lshaker@crmtech.us>
To: Robert Ledger <ledgerrobert@ymail.com>
Cc: "John Ledger" < jflledgerjohn@yahoo.com >
Sent: Wednesday, June 13, 2012 10:21 PM
Subject: Re: San Joaquin

Dear Mr. Ledger,

Thank you for your response. At this point, no date has been set date for the survey, which will be limited to the railroad grade right-of-way, but will stretch for nearly 600 miles from Los Angeles to north of Sacramento. For this reason, survey coverage will employ a combination of methods, including pedestrian and "windshield," and cover many miles each day. There will be no excavations during the field survey.

Besides Native American consultation, the study will include a search of records at the various archaeological information centers and the Sacred Lands files, which will aid in identifying areas known to be sensitive for cultural deposits.

Your request for members of the Dumna Wo-Wah Tribe to be present for monitoring during ground disturbances associated with the project, and for copies of the field survey report, will be forwarded to the project proponent.

Sincerely,
Laura Shaker
CRM TECH
909-376-7844

From: "Robert Ledger" <ledgerrobert@ymail.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Wednesday, June 13, 2012 11:00:57 PM
Subject: Re: San Joaquin

We look forward to working with you, Tribal Chairman Robert George Ledger Sr.

From: "Laura Shaker" <lshaker@crmtech.us>
To: kmorgan@tejontribe.net
Sent: Friday, June 15, 2012 5:50:32 PM
Subject: CRM TECH Project #2561 San Joaquin Corridor

Ms. Morgan,
Thank you for your response to the project referenced above. I have attached a map of the APE where it runs through Kern County, as well as a list of the cultural resources that have been recorded in the one-mile scope of the APE. I apologize in advance because of the attachment size, the version of the attached map is difficult to see. I will be sending out a clearer copy via mail. Thank you for your time and consideration in this important matter. I look forward to speaking with you next week.

Sincerely,
Laura Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: kmorgan@tejontribe.net
Sent: Friday, June 15, 2012 6:43:22 PM
Subject: Re: CRM TECH Project #2561 San Joaquin Corridor

Hello Ms. Morgan,
The scope of search for this project was actually a 1/4 mile scope, not a one mile scope.

Thank you,
Laura Shaker

From: Laura Shaker [mailto:lshaker@crmtech.us]
Sent: Friday, June 15, 2012 6:38 PM
To: Marcos Guerrero; David Keyser
Subject: CRM TECH Project #2561 San Joaquin Corridor

Hello Mr. Keyser and Mr. Guerrero,
Thank you for your response letter dated April 16, 2012 from the United Auburn Indian Community of the Auburn Rancheria in regards to the project referenced above. At this time we have not conducted the archaeological field survey for this project. However, a cultural resources records search has been conducted at the information center for the APE with a 1/4 mile scope of search. I have attached a list of the previously recorded cultural resources that have been recorded within the scope of the search for the Sacramento County area of the proposed undertaking. Although CRM TECH will not be able to provide you with copies of previous reports concerning the APE, I will forward your request to the project proponents. Please feel free to contact me if you have any questions.

Sincerely,
Laura Shaker

From: "Marcos Guerrero" <mguerrero@auburnrancheria.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Tuesday, June 19, 2012 11:03:01 AM
Subject: RE: CRM TECH Project #2561 San Joaquin Corridor

Thank you Laura,
We appreciate CRMTech including us in the consultation. We are interested in any ground disturbance at or near the location known cultural resources. Your project also raises many concerns about buried resources, unanticipated and inadvertent discoveries. As the project progress it may be necessary to meet and go over project plans, at which point we could project you with a sensitivity maps and well as the locations were we would want to recommend tribal monitors.
Let me know if you have any questions,

Marcos Guerrero, RPA, THPO
Cultural Resources Manager
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603
Office: (530) 883-2364
Cell: (916) 300-8792
Fax: (530) 885-5476

From: Laura Shaker [mailto:lshaker@crmtech.us]
Sent: Thursday, June 21, 2012 4:19 PM
To: office@cvmt.net
Subject: San Joaquin Corridor Project- (CONFIDENTIAL)!

Ms. Burley,
As per our telephone conversation, the traditional use area of the California Valley Miwok Tribe encompasses many of the various counties, in which the APE is located, including Alameda, Contra Costa, Fresno, Madera, Merced, San Joaquin, and Stanislaus. Attached are lists of the cultural resources according to the counties which you have expresses interest in that have been previously recorded with the various information centers within the 1/4 mile scope of the records search of the APE. As I am sure you are well aware- this information is to be kept confidential and is not to be shared with any other organizations or individuals other than the Tribe.

Please note that the field survey has yet to be completed, therefore it is not known at this time which of these resources are still in place. We encourage you to review this list and determine if there area certain resources that your group may have a particular concern about, as well as whether or not you may have knowledge of Native American sacred sites or cultural resources that we may no be aware of.

Thank you for your time in this important matter. If you have any questions, please feel free to contact me.

Sincerely,
Laura Hensley Shaker

From: "s burley" <s.burley@californiavalleymiwoktribe-nsn.gov>
To: lshaker@crmtech.us
Sent: Thursday, June 21, 2012 5:31:28 PM
Subject: Re: San Joaquin Corridor Project- (CONFIDENTIAL)! - Thank You!

This is to confirm that CVMT has received your email.
Thank you for your prompt reply.

Have a great weekend!

/s/
Silvia Burley, Chairperson
California Valley Miwok Tribe
10601 N. Escondido Pl.
Stockton, CA 95212
Tribal Office: (209) 931-4567
Fax: (209) 931-4333
http://www.californiavalleymiwoktribe-nsn.gov

From: "Laura Shaker" <lshaker@crmtech.us>
To: " Marcos Guerrero" <mguerrero@auburnrancheria.com>
Sent: Monday, Jun 21, 2012 5:44 PM
Subject: Re: CRM TECH Project #2561 San Joaquin Corridor

Hello Mr. Guerrero,

Thank you for your recent response.

The purpose of these initial inquiries between CRM TECH and the various tribal entities are for scoping purposes only in hopes of gathering additional information regarding information pertaining to unknown Native American cultural resources that may be affected by the proposed project. Any subsequent consultations regarding tribal monitoring, treatment and disposition of artifacts, and updates regarding the undertaking should take place legally between lead agency (Caltrans) and the tribe, during the official government-to-government consultation under Section 106. All of your requests for this project will be included in our report and forwarded to Caltrans. Attached is a summary of the recommendations from tribe concerning this project so far.

Thank you for your time and consideration in this important matter. Please feel free to contact me if you have any further questions or if there are specific areas of concern along the APE that you wish to discuss.

Sincerely,
Laura Hensley Shaker

From: "Marcos Guerrero" <mguerrero@auburnrancheria.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Thursday, June 21, 2012 5:51:00 PM
Subject: Re: CRM TECH Project #2561 San Joaquin Corridor

Ok thank you Laura,
Can you provide me with 1:24000 USGS quads of the APE within Sacramento County. At this point I can do a records search of our inventory to see what known cultural resources, archaeological sites, and ethnographic villages are in the project.
Do you know if we will be compensated for this search?

Marcos Guerrero, RPA, THPO

From: "Laura Shaker" <lshaker@crmtech.us>
To: " Marcos Guerrero" <mguerrero@auburnrancheria.com>
Sent: Monday, July 2, 2012 8:50 AM
Subject: Re: CRM TECH Project #2561 San Joaquin Corridor

Hello Mr. Guerrero,
At this time we do not have the APE plotted on the 1:24000 USGS maps. I do not believe that we are actually going to be plotting the APE on the 1:2400 USGS since it is such a large APE and it follow the railroad all the way up. What I can get for you is a zoomed in version of the APE that was plotted in our GIS system. That will hopefully help you get a better idea of where it stops, etc. As far as compensation for a records search, CRM TECH will not be able to compensate for your expenses. If you have any further questions regarding compensation you would have to determine that with the lead agency, which is Caltrans in this case.

Thank you,
Laura Shaker

From: "Marcos Guerrero" <mguerrero@auburnrancheria.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Cc: "Michael Hogan" <mhogan@crmtech.us>, "Nina" <ngallardo@crmtech.us>
Sent: Monday, July 2, 2012 9:55:36 AM
Subject: Re: CRM TECH Project #2561 San Joaquin Corridor

Ok great thanks Laura,
I just need some type of maps showing me where to look.
Please send what you have.
Thanks

Marcos Guerrero, RPA, THPO

To: Laura Shaker
(909) 824-6405

Subject: San Joaquin Corridor Program EIR/EIS CRM TECH Contract #2561

From: andysalas (gabrielenoindians@yahoo.com)

To: christinaswindall@yahoo.com;

Date: Tuesday, July 10, 2012 9:49 PM

Dear Laura H. Shaker,

This email is in response to your in regards to the above subject project. The proposed project is within Numerous highly culturally sensitive village areas and in order to protect our resources we're requesting one of our experienced & certified Native American monitors to be on site during all ground disturbances.
In all cases, when the NAHC states there are "no records of sacred sites" in the subject area; they always refer the contractors back to the Native American Tribes whose tribal territory the project area is in. This is due to the fact, that the NAHC is only aware of general information on each California NA Tribe they are NOT the "experts" on our Tribe. Our Elder Committee & Tribal Historians are the experts and is the reason why the NAHC will always refer contractors to the local tribes.
Please contact our office regarding this project to coordinate a NA monitor to be present.

Sincerely,
Andy Salas
Chairman Of The KIZH/Gabrieleno Band Of Mission Indians
Of the Los Angeles Basin

Sent from my BlackBerry® by Boost Mobile

From: Laura Shaker <lshaker@crmtech.us>
Date: Fri, 20 Jul 2012 16:39:47
To: <gabrielenoindians@yahoo.com>
Subject: Re: San Joaquin Corridor Project

Hello Andy,
I received your letter dated July 10th. I will make sure that these requests get to Caltrans. Also you mentioned to add "Kizh Gabrieleno Band of Mission Indians" is that your official tribal name? You are listed on the NAHC list as Gabrieleno Band of Mission Indians.

Thanks,
Laura

From: "andysalas" <gabrielenoindians@yahoo.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Monday, July 23, 2012 8:48:32 AM
Subject: Re: San Joaquin Corridor Project

Dear Laura
Yes our Official name is Kizh / Gabrieleno Band of Mission Indians. We are listed only as Gabrieleno Band of Mission Indians with the NAHC. Thank you Andy

---

From: Steven Hutchason <miwoksteve@gmail.com>
Date: Thu, 9 Aug 2012 10:57:23 -0700
To: Michael Hogan <crmtech@crmtech.us>
Subject: San Joaquin Corridor Program EIR / EIS

Hello, Laura my name is Steven Hutchason I am the Cultural Preservation Director for Wilton Rancheria. I was just hired and have been going through some old mail here at the tribal office. I am trying to get updated information on projects that the tribe was notified on over the past couple of years. Please send an update of this project (San Joaquin Corridor Program) to 9300 W. Stockton Blvd, Suite 200 Elk Grove, CA 95758 or via e-mail to miwoksteve@gmail.com

Thank you for your time,

Steven Hutchason
Executive Director of Cultural Preservation
Wilton Rancheria
9300 W. Stockton Blvd, Suite 200
Elk Grove, CA 95758
PH: (916) 683-6000

From: Laura Shaker < lshaker@crmtech.us >
To: Robert Ledger < ledgerrobert@ymail.com >
Cc: ledger17bonnie@yahoo.com ; nuem2007@yahoo.com
Sent: Tuesday, November 27, 2012 4:49 PM
Subject: San Joaquin Corridor Program

Hello Mr. Ledger,

It was a pleasure speaking with you earlier this afternoon. As a follow up to our conversation I wanted to pass along the contact information for the Lead Agency for the San Joaquin Corridor Program.

The Caltrans Division of Rails is the Official Lead Agency / project proponent for this project (I do not have the name of the contact there). Because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Have a good rest of your week,
Laura

From: "Laura Shaker" <lshaker@crmtech.us>
To: anthonyhburris@gmail.com, tony@ionemiwok.org
Cc: "honortraditions" <honortraditions@gmail.com>
Sent: Tuesday, November 27, 2012 6:57:40 PM
Subject: CRM TECH Project #2561 San Joaquin Corridor

Mr. Burris,
Attached is the project letter for the San Joaquin Corridor Program, which addresses the project as a whole. I look forward to hearing from you regarding any concerns that the Ione Band of Miwok Indians may have concerning the proposed undertaking.

Sincerely,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: "honortraditions" <honortraditions@mail.com>
Sent: Tuesday, November 27, 2012 7:14:42 PM
Subject: CRM TECH Project #2561 San Joaquin Corridor Project (Entire line)

Hello Mr. Yonemura,
I know that you already have a copy of these letters (along with hundreds of others from various firms I am sure). However, I thought that I would resend the electronic versions so that they would be easily accessible to you.

I look forward to hearing from you regarding these projects after you have had the opportunity to review them in more detail. Keep in mind that our correspondence will not constitute official government-to-government consultation; however I believe that it is necessary for me to better understand the project area and its history.

So in the meantime...I truly appreciate your taking the time to discuss these matters with me during the preliminary scoping for these projects, in hopes of my gaining better understanding of the cultural sensitivities concerning your people and resources.

Sincerely,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: "roselynn" <roselynn@buenavistatribe.com>
Sent: Tuesday, November 27, 2012 7:20:52 PM
Subject: CRM TECH project 2561 San Joaquin Corridor Program

Ms. Lwenya,

Attached is the project letter for the San Joaquin Corridor Program, which addresses the project as a whole. I look forward to hearing from you regarding any concerns that the Buena Vista Rancheria may have concerning the proposed undertaking.

Sincerely,
Laura Hensley Shaker

From: "Robert Ledger" <ledgerrobert@ymail.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Tuesday, November 27, 2012 7:31:03 PM
Subject: Re: San Joaquin Corridor Program

Thank you Ms. Laura it was great speaking with you as well.

Robert

From: Eric Smith < nuem2007@yahoo.com >
To: Laura Shaker < lshaker@crmtech.us >
Sent: Wed, 28 Nov 2012 14:34:27 -0000 (UTC)
Subject: Re: San Joaquin Corridor Program

Could you please give the list of scientist involved also please.

From: Laura Shaker < lshaker@crmtech.us >
To: Eric Smith < nuem2007@yahoo.com >
Cc: 'Robert Ledger' < ledgerrobert@ymail.com >
Sent: Wednesday, November 28, 2012 3:13 PM
Subject: Re: San Joaquin Corridor Program

Mr. Smith,

Are you referring to the Environmental firm who we have been contracted through? CRM TECH has been subcontracted by Tom Dodson of Tom Dodson and Associates. Other than that and the contact information for the Archeologist over at Caltrans, I do not have any further information such as biologist who may be involved etc.
Please let me know if there is anything else that I can help you with.

Thank you,
Laura

From: "Eric Smith" < nuem2007@yahoo.com >
To: "Laura Shaker" < lshaker@crmtech.us >
Cc: "Robert Ledger" < ledgerrobert@ymail.com >
Sent: Friday, November 30, 2012 10:42:33 AM
Subject: Re: San Joaquin Corridor Program

whomever handles the environmental impact to traditional cultural properties and discharges and adverse effects to human health consumption to water and plant usages.

From: Laura Shaker <lshaker@crmtech.us>
To: Eric Smith <nuem2007@yahoo.com>
Cc: Robert Ledger <ledgerrobert@ymail.com>; B. Tom Tang <ttang@crmtech.us>; tda@tdaenv.com
Sent: Friday, November 30, 2012 12:00 PM
Subject: Re: San Joaquin Corridor Program

Hello Mr. Smith,
For anything concerning archaeology and Native American cultural resources you may either contact me directly at 909-376-7844, or Alex Kirkish, the Caltrans District 7 Archeologist who is handling this project (his contact information is included below in my original email to Mr. Ledger). For issues not pertaining to archaeology, such as biology or other environmental issues, you may contact Tom Dodson and Associates at 909-882-3612.

Thanks,
Laura Hensley Shaker

From: "Eric Smith" <nuem2007@yahoo.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Cc: "Robert Ledger" <ledgerrobert@ymail.com>
Sent: Sunday, December 2, 2012 12:39:41 PM
Subject: Re: San Joaquin Corridor Program

Our way of life is not a separation from biology and archaeology, we have to have both to make determination to what has to be been done with artifacts. as archaeologist should know that when preservation exposes air to artifacts, it loses the integrity and if soil is contaminated then adverse effect towards preservation will be done financially to preserve and that includes cost for handling artifact thru hazmat handling, etc.....

From: Laura Shaker < lshaker@crmtech.us >
To: kwood8934 < kwood8934@aol.com >

Sent: Thu, Dec 13, 2012 10:08 am
Subject: San Joaquin Corridor Program

Hello Mr. Woodrow,

So, the Caltrans Division of Rails is the Official Lead Agency / project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

I will resend you the project letters and associated maps in separate emails. Please do not hesitate to give me a call if you have any questions. Also once you look over the letters can you please let me know where your major areas of concern are. I would like to note them in the report if you do not mind.

Sincerely,
Laura Hensley Shaker

From: kwood8934 < kwood8934@aol.com >
To: Laura Shaker < lshaker@crmtech.us >
Sent: Thursday, December 13, 2012 10:14:17 AM
Subject: Re: San Joaquin Corridor Program

got the information.
please send maps

ken woodrow
chair wuksachi indian tribe

From: "Laura Shaker" <lshaker@crmtech.us>
To: kwood8934@aol.com
Sent: Thursday, December 13, 2012 10:50:26 AM
Subject: San Joaquin Corridor (Entire alignment)

This is the project as a whole. This is the best map that we have of the APE, but it follows the railroad all the way up. You can see which counties it goes through.

From: Laura Shaker <lshaker@crmtech.us>
To: kwood8934 <kwood8934@aol.com>
Sent: Thu, Dec 13, 2012 10:56 am
Subject: Re: San Joaquin Corridor Program

Great. Did you get the last two emails with the letters and the maps?

From: kwood8934@aol.com
To: lshaker@crmtech.us
Sent: Thursday, December 13, 2012 11:13:22 AM
Subject: Re: San Joaquin Corridor Program

yes
thank you have
call cal tran

ken woodrow
Chair wuksachi indian tribe

From: "Laura Shaker" <lshaker@crmtech.us>
To: rpennell@tmr.org
Sent: Thursday, December 13, 2012 1:46:24 PM
Subject: San Joaquin Corridor Program letter and Contact information

Mr. Pennell,
I called earlier and left a message for you with Robert regarding any comments for the San Joaquin Corridor Program. I have attached the map that we have for the overall project. It follows the railroad up from Los Angeles to Sacramento. This is just preliminary scoping for our information gathering purposes. The Lead Agency is required by law to conduct the official government-to-government consultation with the tribes.

Caltrans Division of Rails is the Official Lead Agency / project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Please do not hesitate to call me if you have any questions that I may be able to answer.

Sincerely,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: davealvarez@sbcglobal.net
Sent: Thursday, December 13, 2012 2:09:54 PM
Subject: San Joaquin Corridor Program

Mr. Alvarez,
It was a pleasure speaking with you earlier. As per your request, I have attached the letter that was sent to you for this project and the associated map. The project follows the railroad all the way up. The Caltrans Division of Rails is the Official Lead Agency / project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Please do not hesitate to call if you have any questions.

Sincerely,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: "chochenyo" <chochenyo@aol.com>
Sent: Thursday, December 13, 2012 6:10:40 PM
Subject: San Joaquin Corridor Program

Mr. Galvan,

Attached are the letter and the associated map for the project. My apologies for the map, this is the only one that we have available to us thus far. The APE does follow the railroad up from the Los Angeles area to Sacramento. I have also included in this email the NAHC's Sacred Lands search results and well a list of the sites that have been previously recorded within the boundaries of the APE in Alameda and Contra Costa Counties, and a project description. Please note that this does not constitute official government to government consultation, which is to be conducted with the Lead Agency.

The Caltrans Division of Rails is the Official Lead Agency / project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Please do not hesitate to call if you have any questions.

Sincerely,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: "amah mutsun" <amah_mutsun@yahoo.com>
Sent: Thursday, December 13, 2012 6:25:50 PM
Subject: San Joaquin Corridor Program

Ms. Zwierlein,
It was a pleasure speaking with you earlier today. As per your request, I am sending you the contact information for Lead Agency for this project. The Caltrans Division of Rails is the Official Lead Agency / project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

I have also attached another copy of the scoping letter for your files. Please note that is only preliminary scoping for information gathering purposes. The Lead Agency will be

conducting official government-to-government consultation at a later date. Please do not hesitate to call me if you have any questions, I will be happy to answer what I can.

Sincerely,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: jakkikehl@gmail.com
Cc: rumsein123@ymail.com
Sent: Friday, December 14, 2012 1:39:10 PM
Subject: San Joaquin Corridor Project

Ms. Kehl,

It was a pleasure speaking with you earlier today. As per your request, I am sending you the contact information for Lead Agency for this project. The Caltrans Division of Rails is the Official Lead Agency/project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

I have also attached another copy of the scoping letter for your files, as well as the previously recorded sites in the 1/4 mile scope of the records search for the counties that you have expressed concerns about (the ones with the asterisk next to them are in the direct APE). Please note that is only preliminary scoping for information gathering purposes. The Lead Agency will be conducting official government-to-government consultation at a later date.
Please do not hesitate to call me if you have any questions, I will be happy to answer what I can.

Sincerely,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: rumsien123@yahoo.com
Sent: Friday, December 14, 2012 1:54:22 PM
Subject: Fwd: San Joaquin Corridor Project

Ms. Yamane,
Jakki Kehl asked me to forward this letter and information to you. Please contact me with any concerns that you may have.

Laura Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: SBrum@tachi-yokut-nsn.gov
Sent: Friday, December 14, 2012 4:58:36 PM
Subject: San Joaquin Corridor Program

Mr. Franco,
I am contacting you today regarding the San Joaquin Corridor Program. I have included a copy of the March 25, 2012 letter that was mailed out from CRM TECH, and the associated map. The majority of the program follows the UPPR, the BNSF, and the SJVRR from Los Angeles up to Sacramento.

The Caltrans Division of Rails is the Official Lead Agency / project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Feel free to contact me with any knowledge of Native American cultural concerns that you may have. Also, please note that this is only preliminary scoping for information gathering purposes and does not constitute official government-to-government consultation.

Sincerely,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: "crwermuth" <crwermuth@mchsi.com>
Sent: Friday, December 14, 2012 6:45:34 PM
Subject: San Joaquin Corridor Program

Mr. Wermuth,
Attached is the letter concerning the project that I spoke to you about this afternoon. This is just to identify potential areas of concerns along the existing railroad.

If you have any concerns please email me or call me.

Sincerely,
Laura Hensley Shaker
CRM TECH
909-376-7844

From: "Laura Shaker" <lshaker@crmtech.us>
To: "Frank Williams" <trapdirector@tulerivertribe-nsn.gov>
Sent: Friday, January 11, 2013 3:33:08 PM
Subject: CRM TECH project #2561 San Joaquin Corridor Program

I am contacting you today regarding the San Joaquin Corridor Program. The majority of the program follows the UPPR, the BNSF, and the SJVRR from Los Angeles up to Sacramento. I have included a copy of the March 25, 2012 letter that was mailed out from CRM TECH, and the associated map.

This project covers several counties, including Los Angeles, Kern, Tulare, Kings, Fresno, Madera, Merced, Stanislaus, San Joaquin, Contra, Costa, and Alameda Counties.

I have also included a list of the sites that have been previously recorded in the 1/4 mile scope of the records search for Kern, Kings, and Tulare counties. The resources with the red asterisk next to them were previously recorded along the alignment, although not necessarily there presently.

The Caltrans Division of Rails is the Official Lead Agency/project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Feel free to contact me with any knowledge of Native American cultural concerns that you may have.

Sincerely,
Laura Hensley Shaker

From: Laura Shaker < lshaker@crmtech.us >
To: canutes < canutes@verizon.net >
Sent: Friday, January 11, 2013 6:12 PM
Subject: San Joaquin Corridor Program

Hello Ms. Perez,

I am contacting you today regarding the San Joaquin Corridor Program. The majority of the program follows the UPPR, the BNSF, and the SJVRR from Los Angeles up to Sacramento. I have included a copy of the March 25, 2012 letter that was mailed out from CRM TECH, and the associated map.

This project covers several counties, including Los Angeles, Kern, Tulare, Kings, Fresno, Madera, Merced, Stanislaus, San Joaquin, Contra, Costa, and Alameda Counties.

The Caltrans Division of Rails is the Lead Agencyfor this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Feel free to contact me with any knowledge of Native American cultural concerns that you may have.

Sincerely,
Laura Hensley Shaker

From: "Frank Williams" <trapdirector@tulerivertribe-nsn.gov>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Monday, January 14, 2013 2:22:10 PM
Subject: RE: CRM TECH project #2561 San Joaquin Corridor Program

Laura,
I have forwarded this information on to Joseph Garfield of the Tule River Environmental program who does artifact work for the tribe and Hector Franco of the Tachi-yokut tribe in Lemoore who also does artifact work. If you have any further questions you can contact me.

Frankie Williams
Director, Tule River Alcoholism Program

From: "Laura Shaker" <lshaker@crmtech.us>
To: "Frank Williams" <trapdirector@tulerivertribe-nsn.gov>
Sent: Tuesday, January 15, 2013 11:11:27 AM
Subject: RE: CRM TECH project #2561 San Joaquin Corridor Program

Great! Thank you so very much Mr. Williams!
Laura

From: "Katherine Perez" < canutes@verizon.net >
To: "Laura Shaker" < lshaker@crmtech.us >
Sent: Thursday, January 17, 2013 3:57:31 PM
Subject: Re: San Joaquin Corridor Program

I am in receipt of your email. I was able to print the attachment of the letter. However, I was unable to print the map. I was wondering if you were going to be in the San Joaquin County District 10 office anytime soon. I would like to me with you and hope that you would have a map. I am also interested in any archaeological survey and documentation that have been done past and present along the corridor's along with the response you received from the Native American Heritage Commission. I can be reached by cell (209) 649.8972 or Home office (209) 887.3415. I did leave you a voice mail message.

Katherine Perez

From: "Laura Shaker" <lshaker@crmtech.us>
To: sbrum@tachi-yokut-nsn.gov
Sent: Friday, January 18, 2013 4:11:55 PM
Subject: Fwd: San Joaquin Corridor Program

Hello Shana,

Thank you for your comments and the information regarding the areas of sensitivity and concerns near the City of Visalia and surrounding areas.

I understand that your department will review the information in greater detail in preparation for the future government-to-government consultation that you will be requesting. In the meantime, I will note your comments regarding our conversation in our report.

As per your request, attached are the records search results for the proposed APE that runs through the following counties:
Merced
Madera
Fresno
Kings
Kern
Tulare

The scope of search was a quarter of a mile on either side of the APE. The sites that were previously recorded in the APE are noted with a red asterisk. Below is the contact information for the individual at Caltrans that you requested as well.

Thank you for your time,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: sbrum@tachi-yokut-nsn.gov
Sent: Friday, January 18, 2013 4:35:08 PM
Subject: San Joaquin Program APE map

Hello again Shana,
I have attached another map of the proposed APE, that may be better that the previous on noting the county lines. I hope that this one is better in helping to determine the areas of sensitivity. The area that we discussed over the phone earlier today near the proposed installation of a secondary rail segment from Fresno to Visalia, is located approximately 2/3 of the way down on this map. I wish that we had something better.

Laura

From: "Laura Shaker" <lshaker@crmtech.us>
To: sbrum@tachi-yokut-nsn.gov
Sent: Friday, January 18, 2013 5:09:58 PM
Subject: San Joaquin

Please note that for the San Joaquin Corridor program (the entire alignment); it is only to gather existing information from the tribes and information centers to facilitate in the determination of culturally sensitive areas. This will help with the development of the future project design. Therefore an intensive level field survey has yet to be done for the San Joaquin Corridor.

From: "Laura Shaker" <lshaker@crmtech.us>
Bcc: "muwekma" <muwekma@muwekma.org>; sbrum@tachi-yokut-nsn.gov; nsanchez@muwekma.org; rcambra@muwekma.org
Sent: Monday, January 21, 2013 10:00:17 AM
Subject: Fwd: San Joaquin Corridor Program Research methods/ results/NAHC results

As a follow up to our conversation last Friday, and your request for additional information regarding the current finding during the program assessment, I have attached the Research Methods and RS results for this program and the NAHC results.

From: "Laura Shaker" <lshaker@crmtech.us>
To: "Rosemary Cambra"<rcambra@muwekma.org>, "muwekma" <muwekma@muwekma.org>, "Norma Sanchez"<nsanchez@muwekma.org>
Sent: Monday, January 21, 2013 10:09:55 AM
Subject: San Joaquin Corridor Program

Ms. Cambra,

It was a pleasure speaking with you last week. Thank you for your comments and concerns that you expressed to me during our telephone conversation. I understand that your department will review the information in greater detail. In the meantime, I will note your comments regarding our conversation in our report, and will provide as much of the additional information that you have requested as possible.

Program Map:
I have attached copies of the map that we have available to us for the San Joaquin Corridor program. The majority of the program follows the UPPR, the BNSF, and the SJVRR from Los Angeles up to Sacramento.

Survey:
An intensive level field survey has yet to be done for the San Joaquin Corridor.
This preliminary scoping that CRM TECH is doing for the San Joaquin Corridor program is only to gather existing information from the tribes and information centers to facilitate in the determination of culturally sensitive areas. This will help with the project proponents with the development of the future project design.

Records Search:
As per your request, I have attached the records search results for Alameda and Contra Costa counties. In regards to the record search results that I have attached for Alameda and Contra Costa counties, shown are the previously recorded sites in the 1/4 mile scope of the records search for the counties that you have expressed concerns about (the ones with the asterisk next to them have been previously recorded in the proposed APE).
Lead Agency:
This project is under the provisions of Section 106 with Caltrans Division of Rails as the Lead Agency. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Please do not hesitate to call me if you have any questions, I will be happy to answer what I can.

Sincerely,
Laura Hensley Shaker
CRM TECH

From: Laura Shaker < lshaker@crmtech.us >
To: Katherine Perez < canutes@verizon.net >
Sent: Monday, January 21, 2013 12:34 PM
Subject: Re: San Joaquin Corridor Program

Hello Ms. Perez

I did receive your message regarding the San Joaquin Corridor Program. I will not be traveling to the San Joaquin County District 10 office, but I have reattached copies of the map that we have available to us (LA to Sac-Oakland / APE map with county lines) for the San Joaquin Corridor program. Unfortunately, these are the only maps that we have available to us. Let me know if you are still unable to open either of the maps. If you cannot I can send you another hard copy of the map. The majority of the program follows the UPPR, the BNSF, and the SJVRR from Los Angeles up to Sacramento.

Native American Heritage Commission Response: attached

Survey:
A reconnaissance level program has been done for portions of the track, an intensive level field survey has yet to be done for the San Joaquin Corridor. From my understanding, this will be done in the future, once the project design has been determined.
This preliminary scoping that CRM TECH is doing for the San Joaquin Corridor program is only to gather existing information from the tribes and information centers to facilitate in the determination of culturally sensitive areas (and does not constitute government-to-government consultation). This will help with the project proponents with the development of the future project design.

Records Search:
The results of what has been previously recorded in the APE is described in the attached research methods and summary of findings except.

Lead Agency:
This project is being under the provisions of Section 106 with Caltrans Division of Rails is the Official Lead Agency / project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Please do not hesitate to call me if you have any further questions, I will be happy to answer what I can.

Sincerely,
Laura Hensley Shaker

From: "Laura Shaker" <lshaker@crmtech.us>
To: "s burley" <s.burley@californiavalleymiwoktribe-nsn.gov>
Sent: Tuesday, January 22, 2013 7:10:32 AM
Subject: San Joaquin Corridor Projects

Hello Ms. Burley,
I want to thank you again for your response letters in regards to the San Joaquin Corridor project. I wanted to make sure that you still had my contact information as well as that of the contact person at Caltrans.

Laura Hensley Shaker
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
CRM TECH
909-376-7844
lshaker@crmtech.us

Alex Kirkish, RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation District 7 -MS 16A Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Thanks,
Laura Hensley Shaker

From: "Katherine Perez" < canutes@verizon.net >
To: "Laura Shaker" < lshaker@crmtech.us >
Sent: Thursday, January 24, 2013 9:19:50 AM
Subject: Re: San Joaquin Corridor Program

Laura,

I received all of your emails and phone messages. I will take a look them as soon as I get a minute.

Thank you

From: Laura Shaker < lshaker@crmtech.us >
To: Katherine Perez < canutes@verizon.net >
Sent: Saturday, January 26, 2013 2:23 PM
Subject: Re: San Joaquin Corridor Program

Katherine,
Thank you for letting me know. Please feel free to contact me either by telephone or by email with any areas of concern that you may have.

Thanks,
Laura Shaker

From: Katherine Perez < canutes@verizon.net >
To: Laura Shaker < lshaker@crmtech.us >
Sent: Mon, 28 Jan 2013 14:22:56 -0000 (UTC)
Subject: Re: San Joaquin Corridor Program

Laura,
Are you working out of the Los Angeles office?
Katherine Perez

From: Laura Shaker <lshaker@crmtech.us>
To: Katherine Perez <canutes@verizon.net>
Sent: Monday, January 28, 2013 2:25 PM
Subject: Re: San Joaquin Corridor Program

Katherine,
CRM TECH is subcontracted out by the environmental firm. Our office is located in the City of Colton (in southern California).

Laura

From: "Katherine Perez" <canutes@verizon.net>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Tuesday, January 29, 2013 6:20:27 AM
Subject: Re: San Joaquin Corridor Program

I was hope-in that we could meet and discuss the project.

From: "Laura Shaker" <lshaker@crmtech.us>
To: "Katherine Perez" <canutes@verizon.net>
Sent: Tuesday, January 29, 2013 2:40:30 PM
Subject: Re: San Joaquin Corridor Program

Katherine,

I understand that you would like to have a face-to-face consultation meeting. Unfortunately, that is not something that we as the archaeological consulting firm can handle on behalf of the lead agency or the project proponent. The lead agency for this

project is Caltrans Division of Rails. I can, however, discuss any specific concerns regarding Native American cultural resources that you have over the phone. Any formal meetings would have to be arranged with the lead agency. Let me know if you need me to forward you the contact information again.
Is there a good time today for me to give you a call?

Laura

From: "Laura Shaker" <lshaker@crmtech.us>
To: trtcarhmon@yahoo.com
Sent: Thursday, January 31, 2013 8:46:44 PM
Subject: Fwd: CRM TECH project #2561 San Joaquin Corridor Program

Hello Mr. Garfield,
I have am forwarding you the information regarding the program. What we are looking for is specific areas of concerns along the proposed alignment. From there the project proponents can better determine the actual APE / possible alternatives for the proposed project.

Feel free to contact me if you have any specific Native American cultural resource concerns.

Sincerely,
Laura Hensley Shaker

From: "Joseph Garfield" <joseph.garfield@yahoo.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Monday, February 4, 2013 3:31:12 PM
Subject: Re: Fwd: CRM TECH project #2561 San Joaquin Corridor Program

Hello, Ms. Shaker I've just spoke with you over the phone, I'm just letting you know that I received your e-mail on the high speed rail information. I'll get back to you after I have read the information.
Thanks; my e-mail is trtcarchmon@yahoo.com you were missing the c my number is 559-783-8892 ext.103

From: "Laura Shaker" <lshaker@crmtech.us>
To: "Joseph Garfield" <joseph.garfield@yahoo.com>
Sent: Thursday, February 7, 2013 2:36:54 PM
Subject: Re: CRM TECH project #2561 San Joaquin Corridor Program

Oh, thank you for letting me know.

Laura

From: "Laura Shaker" <lshaker@crmtech.us>
To: "gabrielenoindians" <gabrielenoindians@yahoo.com>
Sent: Friday, February 22, 2013 11:19:57 AM
Subject: San Joaquin Corridor

Hello Mr. Salas,
As a follow up to the additional information that you requested last week for the San Joaquin Corridor program, I am attaching the requested documents. If you have any specific areas of concerns please do not hesitate to contact me.

Thank you,
Laura Hensley Shaker

ADDITIONAL CONTACTS (BY REFERRAL)

Name and Position	Tribe/Affiliation	Referral
Kathy Mondragon	Amah / Mutsun Tribal Band	Ms. Mondragon left a message in response to CRM TECH's telephone call to her father, Joseph Mondragon.
Roselynn Lwenya, Environmental Director	Buena Vista Rancheria of Me-Wuk Indians of California	A tribal representative recommended Ms. Lwenya to be contacted.
Robert George Ledger, Sr., Chairman	Dumna Wo-Wah Tribal Government	Mr. Ledger responded on behalf of the tribe by e-mail.
Eric Smith, Cultural Resources Manager	Dumna Wo-Wah Tribal Government	Mr. Smith contacted CRM TECH by e-mail to request information regarding the project.
Tony Burris, Cultural Committee Chairperson	Ione Band of Miwok Indians	A tribal representative recommended Mr. Burris to be contacted.
Norma Sanchez, Tribal Administrator	Muwekma Ohlone Indian Tribe of the San Francisco Bay Area	A tribal representative asked that Ms. Sanchez be included in an e-mail exchange.
Shana Brum, Cultural Specialist	Santa Rosa Tachi Rancheria	Ms. Brum called to respond on behalf of the Santa Rosa Tachi Rancheria.
Daniel Fonseca, Cultural Resources Director	Shingle Springs Band of Miwok Indians	Mr. Foneseca responded in writing on behalf of the tribe.
Anthony Brochini, Chairperson	Southern Sierra Miwuk Nation	A tribal representative recommended Mr. Brochini to be contacted.
Tina Guerrero, Vice-Chairperson	Tubatulabals of Kern Valley	Ms. Guerrero called to respond on behalf of the Tubatulabals of Kern Valley (see phone log).
Joseph Garfield, Spiritual Advisor	Tule River Indian Tribe	A tribal representative recommended Mr. Garfield to be contacted.
J.R. Manuel, Spiritual Advisor	Tule River Indian Tribe	A tribal representative recommended Mr. Manuel to be contacted.
Frank Williams, TRAP Director	Tule River Indian Tribe	CRM TECH was advised to contact the Tule River Alcohol Program (TRAP) in order to reach Joseph Garfield and J.R. Manuel.
Steven Hutchason, Executive Director of Cutural Preservation	Wilton Rancheria Indian Tribe	Mr. Hutchason contacted CRM TECH by e-mail.

TELEPHONE LOG

Name	Tribe/Affiliation	Telephone Contacts	Comments
Jean-Marie Feyling, Native American Consultant	Amah / Mutsun Tribal Band	4:54 pm, 12 / 13 / 2012	Ms. Feyling stated that the APE was sensitive for Native American cultural resources, including human remains, from Gonzales to Oakland, and strongly recommended Native American / archaeological monitoring of all ground-disturbing activities. She requested, and was sent, contact information for the lead agency.
Melvin Ketchum, III, Environmental Coordinator	Amah / Mutsun Tribal Band	4:59 pm, 12 / 13 / 2012 9:37 am, 12 / 14 / 2012	Left messages; no response.
Joseph Mondragon, Tribal Administrator	Amah / Mutsun Tribal Band	5:06 pm, 12 / 13 / 2012 9:41 am, 12 / 14 / 2012	Left messages on Kathy Mondragon's phone (see below).
Kathy Mondragon (Joseph Mondragon's daughter)	Amah / Mutsun Tribal Band	5:06 pm, 12 / 13 / 2012 9:41 am, 12 / 14 / 2012 12:10 pm, 1 / 11 / 2013 12:34 pm, 1 / 11 / 2013 12:19 pm, 1 / 12 / 2013	Ms. Mondragon left a message stating that her father was 92 years old and was in a convalescent home. CRM TECH called back and and left messages, but received no further response.
Irene Zwieriein, Chairperson	Amah / Mutsun Tribal Band	4:45 pm, 12 / 13 / 2012	Ms. Zwieriein stated that she worked for Kewitz on the rail road alighnment from Gonzales to Oakland, and that the area was extremely sensitive for Native American cultural resources, including human remains. She strongly recommended Native American / archaeological monitoring of all ground-disturbing activities. She also requested, and was sent, contact information for the lead agency.
Liz Hutchins Kipp, Chairperson	Big Sandy Rancheria of Mono Indians	3:36 pm, 11 / 27 / 2012 1:42 pm, 11 / 30 / 2012	Left messages; no response.
Roselynn Lwenya, Environmental Director	Buena Vista Rancheria of Me-Wuk Indians of California	3:45 pm, 11 / 27 / 2012 1:45 pm, 11 / 30 / 2012 9:46 am, 12 / 14 / 2012	Ms. Lwenya stated that she was concerned with Native American cultural resources in the APE and wished to consult directly with Caltrans during formal government-to-government consultation. She requested that the tribe receive copies of reports and other information regarding the undertaking.
Rhonda Morningstar Pope, Chairperson	Buena Vista Rancheria	None	Roselynn Lwenya is the designated contact person for the tribe (see above).
Silvia Burley, Chairperson	California Valley Miwok Tribe	3:53 pm, 6 / 21 / 2012	Ms. Burley responded in a letter dated April 4, 2012 (copy attached).
Lorrie Planas	Choinumni Tribe	None	No number listed.

Rosemary Smith, Chairperson	Choinumi Tribe of Yokutes	4:28 pm, 12/14/2012 4:48 pm, 1/11/2013	Wrong number.
Jerry Brown	Chowchilla Tribe of Yokuts	3:32 pm, 11/27/2012 4:03 pm, 11/20/2012 9:54 am, 12/14/2012 1:40 pm, 1/11/2013	No answer.
Arianne Garcia, Chairperson	Chumash Council of Bakersfield	5:12 pm, 12/14/2012	Wrong number.
Robert Marquez, Chairperson	Cold Springs Rancheria of Mono Indians	4:14 pm, 11/27/2012 4:03 pm, 11/30/2012	Left messages; no response.
Robert George Ledger, Sr., Chairman	Dumna Wo-Wah Tribal Government	12:07 pm, 6/21/2012 4:17 pm, 11/27/2012	Mr. Ledger found the APE to be culturally sentive. He requested Native American monitoring during all ground-disturbing activities, and specified that the tribal monitors in Madera, Fresno, and Kings Counties should be from the Duman Wo-Wah Tribal Government. Prior to his verbal response, Mr. Ledger responded by e-mail on June 9, 2012 (copy attached).
Keith Turner, Tribal Contact	Dumna Wo-Wah Tribal Government	None	Robert George Ledger, Sr., responded on behalf of the tribe (see above).
Jim Redmoon, Cultural Resources Representative	Dumna Wo-Wah Tribal Government	4:22 pm, 12/14/2012 4:46 pm, 1/112013	Wrong number.
Mandy Marine, Board Chairperson	Dunlap Band of Mono Historical Preservation Society	4:52 pm, 11/27/2012 9:31 am, 12/13/2012	Left messages; no response.
El Dorado Miwok Tribe	El Dorado Miwok Tribe	1:40 pm, 1/11/2013 4:44 pm, 1/11/2013 12:09 pm, 1/18/2013	Left messages; no response.
Kenneth Woodrow, Chairperson	Eshom Valley Band of Michahai and Wuksachi Indians	4:55 pm, 11/27/2012 9:31 am, 12/13/2012	Mr. Woodrow stated that there were numerous sites and burials in the vicinity of the APE. He wished to review the letter and planned to contact Caltrans to request government-to-government consultation.
Ronnie Salas, Cultural Preservation Department	Fernando Tataviam Band of Mission Indians	2:21 pm, 7/7/2012 9:52 am, 7/20/2012	Left messages; no response.

Andrew Salas, Chairperson	Kizh/Gabrieleno Band of Mission Indians	3:15 pm, 7/7/2012 9:30 am, 2/22/2013	Mr. Salas stated that the APE was extremely sensitive for Native American cultural resources because the area along the railroad was used by his ancestors as trade and travel routes, and there were multiple village sites. He was concerned that Native American human remains and cultural resources may be encountered during the undertaking, and recommended that a Native American monitor from the Kizh/Gabrieleno Band of Mission Indians be present during all ground-disturbing activities within the tribe's traditional use area. He further stated that the tribe would request official government-to-government consultation with Caltrans in accordance with Section 106 guidelines. Mr. Salas also sent an e-mail on July 10, 2012 (copy attached).
Robert Dorame, Chairperson/Cultural Resources	Gabrielino Tongva Indians of California Tribal Council	2:40 pm, 7/7/2012 10:11 am, 7/20/2012	Mr. Dorame was adamant that the Gabrielino Tongva Indians of California and other tribes rotate on cultural resource monitoring required during ground-disturbing activities, and wanted this to be included in the mitigation measures for the undertaking. Mr. Dorame stated that if federal funding was involved, the lead agency must consider the concerns of all of the groups that once occupied the area, and not favor one group over another. Rotating Native American groups in the monitoring program would ensure that all interested tribes had a fair opportunity to protect their cultural heritage. This would solve the problem of one group monopolizing the monitoring for the project. He noted that one of the Chevron Corridor projects implemented rotation of Native American groups during the monitoring program and it was very successful.
Samuel Dunlap, Chairperson	Gabrielino Tongva Nation	2:38 pm, 7/7/2012 10:07 am, 7/20/2012	Left messages; no response.
Bernie Acuna, Chairman	Gabrielino-Tongva Tribe	2:45 pm, 7/7/2012 11:43 am, 1/21/2013	Left messages; no response.
Linda Candelaria, Chairwoman	Gabrielino-Tongva Tribe	2:57 pm, 7/7/2012	Ms. Candelaria wished to review the scoping letter before responding. No further response has been received.
Tony Burris, Chairperson for the Cultural Committee	Ione Band of Miwok Indians	5:08 pm, 11/27/2012 12:18 pm, 12/13/2012 11:28 am, 1/21/2013	Mr. Burris stated on November 27 that he would review the letter and respond after the next meeting of the tribe's Cultural Committee. CRM TECH left follow-up messages but received no further response.
Yvonne Miller, Chairperson	Ione Band of Miwok Indians	None	Tony Burris is the designated contact person for the tribe (see above).

David Laughinghorse Robinson, Chairman	Kawaiisu Tribe of Tejon Reservation	5:03 pm, 12/14/2012 1:57 pm, 1/11/2013	Number no longer in service.
Robert Robinson, Co-Chairperson	Kern Valley Indian Council	5:00 pm, 12/14/2012 1:58 pm, 1/11/2013	Left messages; no response.
Ron Wermuth	Kern Valley Indian Council	1:09 pm, 7/27/2012 5:04 pm, 12/14/2012 1:51 pm, 1/11/2013	Mr. Wermuth requested another copy of the scoping letter. A follow-up call was not returned. No further response has been received.
John Davis, Chairman	Kings River Choinumni Farm Tribe	5:04 pm, 11/27/2012	Mr. Davis wished to be notified of any inadvertent archaeological discoveries in Sacramento County.
Delia Dominguez, Chairperson	Kitanemuk and Yowlumne Tejon Indians	5:10 pm, 12/14/2012 2:00 pm, 1/11/2013	Left messages; no response.
Ron Andrade, Director	LA City/County Native American Indian Commission	2:23 pm, 7/7/2012 10:02 am, 7/20/2012	Left messages; no response.
Rosemary Cambra, Chairperson	Muwekma Ohlone Indian Tribe of the San Francisco Bay Area	5:08 pm, 12/13/2012 1:00 pm, 1/18/2013	Ms. Cambra had concerns over the potential for the APE to contain cultural materials, and requested a list of previously recorded sites in the APE, contact information for the lead agency, and another copy of the scoping letter with the APE map. She further requested the information to be sent to the Tribal Administrator, Norma Sanchez. In the meantime, Ms. Cambra stated that she would be requesting a Memorandum of Agreement between the lead agency and tribes indigenous to the area, which should include the rotation of the various groups during monitoring.
Cosme Valdez, Interim Chief Executive Officer	Nashville-El Dorado Miwok	3:07 pm, 11/7/2012	Mr. Valdez had no concerns.
Ron Goode, Chairperson	North Fork Mono Tribe	11:45 am, 12/13/2012 5:30 pm, 12/13/2012 11:45 am, 12/14/2012 4:35 pm, 1/11/2013	Left messages; no response.
Katherine Erolinda Perez, Chairperson	North Valley Yokuts Tribe	11:57 am,7/20/2012 11:45 am, 12/13/2012 11:48 am, 1/11/2013 8:27 am, 1/21/2013 10:43 am, 1/21/2013	Ms. Perez left messages requesting additional information, which was sent via e-mail on January 21. No further response has been received.

Andrew Galvin	Ohlone Indian Tribe	5:30 pm, 12/13/2012 12:05 pm, 1/11/2013	Mr. Galvin requested, and was sent, another copy of the scoping letter letter and the record search results for Contra Costa and Alameda Counties. A follow-up call on January 11 was not returned. No further response has been received.
John Valenzuela, Chairperson	San Fernando Band of Mission Indians	2:30 pm, 7/7/2012 9:30 am, 7/20/2012	Mr. Valenzuela deferred to other groups in closer proximity to the APE, but wished to be notified of any inadvertent archaeological discoveries.
Ann Brierty, Cultural Resources Field Manager	San Manuel Band of Serrano Mission Indians	2:35 pm, 7/7/2012 10:09 am, 7/20/2012	Left messages; no response.
Rueben Barrios, Chairperson	Santa Rosa Tachi Rancheria	1:00 pm, 7/27/2012 4:37 pm, 12/14/2012 1:45 pm, 1/11/2013	Lalo Franco and Shana Brum are the designated contact person for the tribe (see below).
Shana Brum, Cultural Specialist	Santa Rosa Tachi Rancheria	2:30 pm, 1/18/2013 10:35 am, 3/22/2013	Ms. Brum was concerned that Native American burials sites might be affected by the undertaking, especially along the rail segment from Fresno to Visalia. She stated that there were several known burial sites along State Route 198, close to Visalia, and that the tribe was trying to preserve a burial mound in Hanford. In addition, Corcoran and other nearby cities along the Tulare Lake shoreline contained known but undocumented Native American burial grounds. The tribe was working on an area of high cultural sensitivity along State Route 99 near the City of Goshen. She requested additional information regarding records search results, as well as contact information for the lead agency, and stated that the tribe would request early involvement in the planning process, and wished be included in any future archaeological surveys and ground-disturbing activities, such as testing and monitoring.
Lalo Franco, Cultural Coordinator	Santa Rosa Tachi Rancheria	12:02 pm, 12/13/2012 4:40 pm, 12/14/2012 1:47 pm, 1/11/2013	Left messages; no response.
Nicolas Fonseca, Chairperson	Shingle Springs Band of Miwok Indians	None	Daniel Fonseca, Cultural Resources Director, responded on behalf of the tribe in a letter dated April 9, 2012 (copy attached).
Lawrence Bill, Chairperson	Sierra Nevada Native American Coalition	12:02 pm, 12/13/2012	Mr. Bill stated that he was extremely concerned with this project. He is opposed to the project and wishes to continue in government-to-government consultation with the lead agency.
Anthony Brochini, Chairperson	Southern Sierra Miwuk Nation	12:18 pm, 12/13/2012 10:43 am, 1/21/2013	Left messages; no response.

Jay Johnson, Spiritual Leader	Southern Sierra Miwuk Nation	11:39 am, 7/20/2012 4:43 pm, 1/11/2013	Mr. Johnson had no comment regarding the project and wished to be removed from the list.
Bob Pennell, Cultural Resources Director	Table Mountain Rancheria	5:17 pm, 11/30/2012 12:49 pm, 12/13/2012	Left messages; no response.
Katherine Montes Morgan, Chairperson	Tejon Indian Tribe	12:36 pm, 7/7/2012	Ms. Morgan responded in a letter dated April 4, 2012 (copy attached). A followed-up call was not returned. No further response has been received.
Cindi Alvitre, Chairwoman-Manisar	Ti'At Society / Inter-Tribal Council of Pimu	2:25 pm, 7/7/2012 10:05 am, 7/20/2012	Left messages; no response.
David Alvarez, Chairperson	Traditional Choinumni Tribe	1:50 pm, 12/13/2012	Mr. Alvarez did not have any immediate concerns, but said he would review the scoping letter again.
Ramona Garibay, Representative	Trina Marine Ruano Family	4:44 pm, 12/13/2012	Ms. Garibay was concerned that Native American cultural resources and human remains might be unearthed during the undertaking. She requested Native American/archaeological monitoring, immediate notification of any inadvertent discoveries, and further consultation with the lead agency.
Donna Begay, Chairwoman	Tubatulabals of Kern Valley	4:56 pm, 12/14/2012 2:03 pm, 1/11/2013	Tina Guerrero responded on behalf of the tribe (seee below).
Tina Guerrero, Vice-Chairperson	Tubatulabals of Kern Valley	4:56 pm, 12/14/2012 2:03 pm, 1/11/2013	Ms. Guerrero stated that the APE was outside of the tribe's area of concern, and had no further comment.
Ryan Garfield, Chairperson	Tule River Indian Tribe	1:05 pm, 7/27/2012 5:15 pm, 12/14/2012 2:10 pm, 1/11/2013	Ryan Garfield is no longer affiliated with the tribe. It was recommended that Spiritual Advisors Joseph Garfield and J.R. Manuel be contacted.
Joseph Garfield, Spiritual Advisor	Tule River Indian Tribe	2:20 pm, 1/11/2013	Left a message for Mr. Garfield with Frankie Williams (see below). Mr. Williams also passed along an e-mail to Mr. Garfield regarding the project (copy attached).
JR Manuel, Spiritual Advisor	Tule River Indian Tribe	2:20 pm, 1/11/2013	Left a message for Mr. Manuel with Frankie Williams (see below). Mr. Williams also passed along an e-mail to Mr. Manuel regarding the project (copy attached).
Frank Williams, Director of Tule River Alcohol Program	Tule River Indian Tribe	2:20 pm, 1/11/2013	Mr. Williams stated that he would pass the information along to the appropriate individuals.
Kevin Day, Chairperson	Tuolumne Band of Me-Wuk	12:11 pm, 7/20/2012 4:34 pm, 12/14/2012	Left messages; no response.
Reba Fuller	Tuolumne Band of Me-Wuk	12:19 pm, 7/20/2012 4:31 pm, 12/14/2012	Left messages; no response.

David Keyser, Chairperson	United Auburn Indian Community of the Aubuen Rancheria	4:05 pm, 6/15/2012	Mr. Keyser responded in a letter dated April 16, 2012 (copy attached).
Marcos Guerrero, Tribal Historic Preservation Officer	United Auburn Indian Community of the Aubuen Rancheria	None	David Keyser responded on behalf on the tribe via e-mail (see above).
Leland Daniels, Cultural Resources	Wilton Rancheria Indian Tribe	5:40 pm, 12/14/2012	Steven Hutchason is the designated contact person for the tribe (see below).
Mary Daniels-Tarango, Chairperson	Wilton Rancheria Indian Tribe	11:00 am, 7/27/2012	Steven Hutchason is the designated contact person for the tribe (see below).
Steven Hutchason, Executive Director of Cutural Preservation	Wilton Rancheria Indian Tribe	3:54 pm, 11/6/2012 2:50 pm, 11/7/2012 12:39 pm, 11/9/2012 2:40 pm, 12/13/2012	Left messages; no response.
Charles Cooke		1:23 pm, 7/7/2012 9:49 am, 7/20/2012	Mr. Cooke requested, and was sent, a second copy of the scoping letter and the records search results for Kern and Los Angeles Counties. No further response has been received.
Jakki Kehi		4:30 pm, 12/13/2012 12:18 pm, 12/14/2012	Ms. Kehi requested, and was sent, a second copy of the scoping letter and contact information for the lead agency. She requested the same information to be sent to Linda Yamane (see below). She recommended Native American monitoring for the project, and stated that if needed, she would contact CRM TECH in the future.
Linda G. Yamane		5:13 pm, 12/13/2012 12:11 pm, 12/14/2012	Left message; no response.
Randy Yonemura		4:57 pm, 11/30/2012 2:52 pm, 12/13/2012 1:36 pm, 1/11/2013	Mr. Yonemura stated that the APE was sensitive for cultural resources and that he knew of many sites along portions of the APE. He requested, and was sent, a second copy of the scoping letter, along with contact information for the lead agency. He said he would review the information and call to discuss the project in more detail at a later date. Follow-up messages left for Mr. Yonemura were not returned. No further response has been received.

APPENDIX 3

PREVIOUSLY RECORDED CULTURAL RESOURCES IN THE APE

APPENDIX 5b

Historic Property Survey Report
(City of Elk Grove)

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Route	Post Miles	Unit	E-FIS Project Number	Phase

District	*County*	*Funding Source*	*Federal-Aid Proj. No.*	*Location*	*E-FIS Proj. No*	*Phase*
03	SAC			Elk Grove		

`For Local Assistance projects off the highway system, use headers in italics)

Project Description:

In order to improve and expand passenger rail service between Sacramento, Oakland, and Los Angeles, the California Department of Transportation (Caltrans), Division of Rail, proposes a series of railway facility enhancements collectively known as the San Joaquin Corridor Amtrak California Service Project. The project component covered by this study consists of the construction a new passenger railway station in the northeastern portion of the City of Elk Grove, Sacramento County (see Attachment A, Maps 1-3). As currently planned, the undertaking will occur at the intersection of Elk Grove Florin Road and the Union Pacific Railroad (UPRR) at UPRR Mile Post 50.6, and will require the demolition of a residence with associated barn and shed in the southern portion of the property.

2. AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the undertaking was established in consultation with_____ _____, on_____, 2013. It is delineated to encompass the maximum extent of ground disturbances required for the undertaking, and consists of four contiguous parcels that form a triangular shape, namely 116-0042-007, 116-0042-023, 116-0042-024, 116-0042-025, and 116-0042-028, measuring a total of approximately 19.66 acres. The APE is located to the north of the Elk Grove Florin Road-UPRR intersection and south of Sheldon Road, within Section 25 of T7S R5E, Mount Diablo Baseline and Meridian (see Attachment A, Maps 2, 3)

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

√ Local Government *(Head of local government, Preservation Office / Planning Department)*

City of Elk Grove Staff Planner Nate Anderson was interviewed in person on October 2, 2013, and stated that a standard historical/archaeological study, including a records search to identify previously recorded sites in the vicinity, would adequately address any potential cultural resources concerns over the highly disturbed APE. He recommended archaeological monitoring of earth-moving activities if the APE would be found sensitive for archaeological remains, and suggested further consultation with Senior Planner Gerald Park, who oversees the Elk Grove Historic Preservation Committee. When reached by telephone on November 4, Mr. Park noted that Tom Russell of the Elk Grove Historical Society would be a good contact, and requested information from previous studies on the property, which were e-mailed to him subsequently. (See Attachment E)

√ Native American Tribes, Groups and Individuals

A total of seven tribal representatives were contacted in writing and by telephone between October 14 and November 5, 2013. Five of the representatives have responded, three via telephone and two in writing. Randy Yonemura, a Miwok representative, stated on the telephone that he had reviewed the project information with Andrew Ramey, a member of the Ione Band Cultural Committee, and that they had found the APE to be near a Native American village site on or around the hill to the east of Elk Grove Florin Road. According to Mr. Yonemura, the APE was used by local Native Americans for hunting and gathering during both the prehistoric period and the historic period. He requested further information on the extent of ground disturbance required during the undertaking, and would like to engage in further consultation with Caltrans representatives prior to the commencement of construction activities.

For the federal undertaking described in Part 1: To minimize redundancy and paperwork for the California Department of Transportation and the State Historic Preservation Officer, and in the spirit intended under the federal Paperwork Reduction Act (U.S.C. 44 Chapter 35), this document also satisfies consideration under California Environmental Quality Act Guidelines Section §15064.5(a) and, as appropriate, Public Resources Code §5024 (a)(b) and (d).

When reached by telephone, Chairman Anthony Burris of the Ione Band of Miwok Indians Cultural Committee and Chairwoman Rhonda Morningstar Pope of the Buena □ista Rancheria both stated they had no specific comments regarding the undertaking at the time. Mr. Burris indicated that he would review the project information further and respond at a later date, while Ms. Pope referred CRM TECH to Rosalind Lwenya, Environmental Director for the tribe. No further response has been received from Mr. Burris. Ms. Lwenya responded in writing on December 11, 2013.

In her letter, Ms. Lwenya writes that the APE is the within the traditional use area of the Me-Wuk people, and requests further information regarding the determination of the APE project boundaries, what tribal members participated in that determination and/or were present at the field survey, and details of the field survey and study methods and results. She also requested contact information for government-to-government consultation. In response, an e-mail was sent on December 18 in which CRM TECH acknowledged receiving Ms. Lwenya□s letter and indicated that it would be forwarded to Caltrans and included as part of this cultural resources study. A second letter, from Steven Hutchason, Executive Director of Environmental Resources for the Wilton Rancheria, was also received on December 11. Mr. Hutchason requested the cultural resources survey history of the APE, which was sent to him via e-mail on December 18. (See Attachment D)

√ Native American □erita□e □ommission

The commission was contacted in writing on September 13, 2013, and replied in a letter dated October 10 that its sacred lands records indicated no Native American cultural resources in the APE. (See Attachment D)

√ Local □istorical □ociet□ □□istoric □reservation Group *(also if applicable, city archives, etc.)*

The Elk Grove Historical Society was contacted by e-mail and telephone on October 25 and 28, 2013. Responding via e-mail on October 29, Tom Russell stated that the historical society was aware of a ranch complex in the APE and described it as being □part of the Elk Grove landscape but nothing historically significant.□ He further stated that a small shed on the property may have been moved there years ago from Franklin School to the west of the APE, and that it was suggested that the structure be incorporated into a previously proposed railway station project, possibly as a kiosk. Mr. Russell also included information on the first Elk Grove railway station. (see Attachment E)

□ □ublic In□ormation □eetin□s *(list locations, dates below and attach copies of notices)*

□ □t□er

□. SU□ □AR□ OF IDENTIFICATION EFFORTS

√	National □e□ister o□□istoric □laces	1979-2002 and supplemental information to date
√	□ali□ornia □e□ister o□□istorical □esources	1992 and supplemental information to date
√	□ali□ornia Inventor□ o□□istoric □esources	Updated to 2009
√	□ali□ornia □istorical Landmar□s	1997 and supplemental information to date
√	□ali□ornia □oints o□□istorical Interest	1992 and supplemental information to date
□	□tate □istoric □esources □ommission	
□	□altrans □istoric □i□□□a□ □rid□e Inventor□	1989 and supplemental information to date

√ Arc□aeolo□ical □ite □ecords □*List names of Institutions & date below*□

- North Central Information Center, California State University, Sacramento□November 29, 2011.

√ □t□er sources consulted *[e.g., historical societies, city archives, etc. List names and dates below]*

- Published literature in local and regional history□
- Unpublished environmental reports on file at the City of Elk Grove.

HISTORIC PROPERTY SURVEY REPORT

√ Results *(provide a brief summary of records search and research results, as well as inventory findings)*

- The results of the records search indicate that the APE was the focus of a historic building study in 1992 and the southern half of the APE, including 116-0042-007, 116-0042-024, and 116-0042-025, was included in a 2009 study for a similar railway station project. As a result of these studies, the residence and associated buildings in the APE were identified at part of the circa 1911-1957 Stohlgren/Olson Ranch, which was determined not to be eligible for listing in the National Register of Historic Places. The ranch complex was not recorded into the California Historical Resources Inventory during either of those studies, however. No other cultural resources were identified within the APE.
- Outside of the APE but within a quarter-mile radius, six additional studies have been completed on various tracts of land and linear features. Three historical/archaeological sites were recorded within the scope of the records search, including the UPRR where it crosses Sheldon Road to the north of the APE, Elk Grove Florin Road along the eastern boundary of the APE, and a commercial building dating to 1980, also located to the north of the APE. All three of the sites were found to be ineligible for listing in the National Register of Historic Places or the California Register of Historic Places.
- In addition to the cultural resources studies reported to the information center, the City of Elk Grove completed an environmental study in 2012 that again cover the southern half, also for a proposed new railway station on the property. That study determined that the Stohlgren/Olson Ranch met none of the criteria for the California Register of Historical Resources or for designation as a local historical resource pursuant to the City of Elk Grove Historic Preservation Ordinance. Thus, the Stohlgren/Olson Ranch has been determined not to constitute a "historic property" under Section 106 or a "historical resource" under CEQA. However, the City of Elk Grove planned to mount a commemorative plaque on the property if the railway station project studied in 2009 materialized.
- Historic sources suggest that the APE was developed as a farm by Carl Stohlgren around 1911, and the farm was expanded and converted to a dairy ranch around 1947. The dairy remained in operation until 1964. Of the nine buildings extant on the property in 1992, three survived as of 2009, including a residence dating to the 1910s-1920s, a barn that was remodeled to serve as a Grade A dairy barn around 1947, after Stohlgren's son-in-law Gustav Olson took over the operation, and a small wooden storage shed. These three buildings are still present in the APE, and were collectively recorded into the California Historical Resources Inventory during this study (site number pending).

V. PROPERTIES IDENTIFIED

☐ **No cultural resources** are present within the project APE.

☐ _____, who meets the professionally qualified staff standards in Section [illegible] Programmatic Agreement Attachment [illegible] as an _____, has determined that the only other properties present within the APE meet the criteria for Section [illegible] of PA Attachment [illegible] **Properties Exempt from Evaluation**.

☐ **Bridges listed as Contributors** in the Caltrans Historic Bridge Inventory are present within the APE. Appropriate pages from the Caltrans Historic Bridge Inventory are attached.

☐ Properties **previously determined not eligible** for inclusion in the National Register of Historic Places are present within the Project APE *(Include date of determination)*:

-

√ As assigned by PA, **Caltrans has determined** the following properties within the Project APE are **not eligible** for inclusion in the National Register of Historic Places:

- Stohlgren/Olson Ranch, 9040 Elk Grove Florin Road (ca. 1911-1947), previously determined ineligible for the National Register; no record found on SHPO concurrence. (See Attachment C)

☐ Caltrans, as assigned by PA, has determined that the following **archaeological sites** within the Project APE shall be considered eligible for inclusion in the National Register without conducting subsurface testing or surface collection within the APE, or [illegible] the **[illegible] ent on ESA** will protect the sites from any potential effects, in accordance with Section [illegible] PA Stipulation [illegible] See attached documentation.

-

□ISTORIC PROPERT□ SUR□E□ REPORT

□ □roperties **pre□io□s□□ □iste□ or □eter□ ine□ e□i□i□e □**or inclusion in t□e National □e□ister o□ □istoric □laces are present □it□in t□e □ro□ect A□□□ *(Include date of listing or determination)*:

-

□ As assi□ned b□ □□□ A, □altrans □as determined t□e □ollo□in□ properties □it□in t□e □ro□ect A□□ are **e□i□i□e □**or inclusion in t□e National □e□ister o□□istoric □laces:

-

□. LIST OF ATTAC□ED DOCU□ENTATION

√ □ro□ect □icinit□, Location, and A□□ □aps (Attachment A)

□ □ali□ornia □istoric □rid□e Inventor□s□eets

□ □istorical □esources □valuation □eport □□□□□□

√ Arc□aeolo□ical □urve□ □eport □A□□□

- Michael Hogan and Terri Jacquemain□Archaeological Survey Report□San Joaquin Corridor Amtrak California Service Project, Proposed Railway Station in the City of Elk Grove, Sacramento County, California□November 2013 (Attachment B)

□ Arc□aeolo□ical □valuation □eport □□A□I□A□, □□I, □II, □III□

-

√ □t□er *(Specify below)*

- Cultural resources documentation on the Stohlgren/Olson Ranch (Attachment C)□
- Correspondences with representatives of Native American groups and local community (Attachments D and E)

□. □PSR to Fi□e

√ Not applicable□

□ **No properties re□□irin□ e□□□□tion** are present □it□in t□e □ro□ect A□□□

□ □roperties **pre□io□s□□ □eter□ ine□ not e□i□i□e □**or inclusion in t□e National □e□ister o□□istoric □laces, in consultation □it□ t□e □□□□, or □ormall□ determined not eli□ible □or inclusion in t□e National □e□ister o□□istoric □laces b□t□e □eeper o□t□e National □e□ister are present □it□in t□e □ro□ect A□□□□op□o□□□□□ □eeper correspondence is attac□ed□

□ □roperties **pre□io□s□□ □eter□ ine□ e□i□i□e □**or inclusion in t□e National □e□ister o□□istoric □laces, in consultation □it□ t□e □□□□, or □ormall□ determined eli□ible □or inclusion in t□e National □e□ister o□□istoric □laces b□t□e □eeper o□t□e National □e□ister are present □it□in t□e □ro□ect A□□, but □i□ **not □e □□ecte□** b□t□e underta□in□□□op□o□□□□□ □eeper correspondence is attac□ed□

□ As assi□ned b□ □□□ A, □altrans □as determined a □indin□ o□ **No □istoric Properties A□ecte□**, accordin□ to □ection □□□ □A □tipulation I□A and □□ □□□ □□□□□d□□□, is appropriate □or t□is underta□in□□

□. □PSR to S□PO

□ Not applicable□

√ As assi□ned b□ □□□ A, □altrans □as determined t□at t□ere are properties evaluated as a result o□ t□e pro□ect t□at are **not e□i□i□e □**or inclusion in t□e National □e□ister o□□istoric □laces □it□in t□e □ro□ect A□□□□nder □ection □□□ □A □tipulation □III□, □altrans re□uests □□□□s concurrence in t□is determination□

□ As assi□ned b□ □□□ A, □altrans □as determined t□at t□ere are properties evaluated as a result o□ t□e pro□ect t□at are **e□i□i□e □**or inclusion in t□e National □e□ister o□□istoric □laces □it□in t□e

□ISTORIC PROPERT□ SUR□E□ REPORT

□ro□ect A□□□□nder □ection □□□ □A □tipulation □III□□, □altrans re□uests □□□□s concurrence in t□is determination□

√ As assi□ned b□ □□□ A, □altrans □as determined a □indin□ o□ **No □istoric Properties A□□ecte□**, accordin□ to □ection □□□ □A □tipulation I□A and □□ □□□ □□□□□d□□□, is appropriate □or t□is underta□in□, and is □ereb□ noti□in□ t□e □□□□ o□t□is □indin□□

□ As assi□ned b□ □□□ A, □altrans □as determined a **Fin□in□ o□ No A□□erse E□□ect □it□ St□n□□r□ Con□itions □ESAs**, accordin□ to □ection □□□ □A □tipulation □□□□□and □□ □□□ □□□□□b□, is appropriate □or t□is underta□in□, and is □ereb□ noti□in□ t□e □□□□ o□t□is □indin□□□□□□□□□□□□□□ *[Name]*, □□o meets t□e □ro□essionall□ □ uali□ied □ta□□□tandards in □ection □□□ □ro□rammatic A□reement □□ection □□□ □A□Attac□ment □ as a□n□□□□□□□□□□□□□□□ *[Indicate applicable PQS level]*, □as revie□ed t□e attac□ed documentation and determined t□at it is ade□uate□ *(Include description of ESAs and enforcement measures below; attach ESA Action Plan as appropriate.)*

•

□ As assi□ned b□ □□□ A, □altrans □as determined a **Fin□in□ o□ No A□□erse E□□ect □it□ St□n□□r□ Con□itions □ Re□□□i□it□tion**, accordin□ to □ection □□□ □A □tipulation □□□□□and □□ □□□ □□□□□b□, is appropriate □or t□is underta□in□, and is □ereb□ noti□in□ t□e □□□□ o□t□is □indin□□ □□□□□□□□□□□ *[Name]*, □□o meets t□e □ro□essionall□ □ uali□ied □ta□□□tandards in □ection □□□ □A Attac□ment □ as □rincipal Arc□itectural □istorian, and □as t□e appropriate education and e□perience, □as revie□ed t□e re□abilitation documentation and determined t□at t□e re□abilitation meets t□e □ecretar□ o□ t□e Interior□s □tandards □or t□e Treatment o□□istoric □roperties□ *(Include description of rehabilitation below or indicate below the title of the HPSR attachment that contains the description.)*

•

□. Fin□in□s □or St□te□O□ne□ Properties

√ Not applicable□pro□ect does not involve □altrans ri□□t□o□□□a□or □altrans□o□ned propert□□

□ □altrans □as determined t□at t□ere are **no St□te□o□ne□ c□□t□r□□reso□rces** □it□in t□e □ro□ect A□□□

□ □altrans □as determined t□at □□□**t□e St□te□o□ne□ reso□rces** □built environment and arc□aeolo□ical resources□□it□in t□e □ro□ect A□□ □**re e□e□ pt □ro□ e□□□□□tion** because t□e□meet t□e criteria set □ort□ in t□e □ection □□□ □ro□rammatic A□reement □□ection □□□ □A□Attac□ment □ □□□roperties □□empt □rom □valuation□**or □ere pre□io□s□□ □eter□ ine□ not e□i□i□e** □or inclusion in t□e National □e□ister o□□istoric □laces and□or re□istration as a □ali□ornia □istorical Landmar□ and t□at determination is still valid□

□ □altrans □as evaluated and determined t□at t□e □ollo□in□ **St□te□o□ne□ □□i□□in□s □n□ str□ct□res** □it□in t□e □ro□ect A□□ □**o NOT □ eet N□tion□□Re□ister □n□/or C□i□orni□ □istoric□□L□n□□ □r□** eli□ibilit□ criteria□

•

□ □altrans □as evaluated and determined t□at t□e □ollo□in□ **St□te□o□ne□ □rc□□eo□o□ic□□sites□ o□jects□□istricts□□□n□sc□pes** □it□in t□e □ro□ect A□□ □**o NOT □ eet t□e N□tion□□Re□ister □n□/or C□i□orni□ □istoric□□L□n□□ □r□** eli□ibilit□ criteria:

•

□ □altrans □as determined t□at t□e □ollo□in□ **St□te□o□ne□ □□i□□in□s □n□ str□ct□res pre□io□s□□ inc□□□e□ in t□e □□ster List o□□istoric□□Reso□rces** are □it□in t□e □ro□ect A□□□

•

□ □altrans □as determined t□at t□e □ollo□in□ **St□te□o□ne□ □rc□□eo□o□ic□□sites□o□jects□□istricts□ □□n□sc□pes** □it□in t□e □ro□ect A□□ **pre□io□s□□ □ere □iste□ or □eter□ ine□ e□i□i□e** □or inclusion in t□e National □e□ister and□or eli□ible or re□istered as a □ali□ornia □istorical Landmar□□

•

□ISTORIC PROPERT□ SUR□E□ REPORT

- □altrans □as evaluated and determined t□at t□e □ollo□in□ **St□te□o□ne□ □□i□□in□s □n□ str□ct□res** t□at □ **eet N□tion□□Re□ister □n□/or t□e C□i□orni□ □istoric□□L□n□□ □r□s** eli□ibilit□ criteria are □it□in t□e □ro□ect A□□ and **re□□ests t□□t S□PO □□□t□ese reso□rces to t□e □□ster List** o□ □istorical □esources pursuant to □□□ □□□□□d□□
  - ●
- □altrans □as evaluated and determined t□at t□e □ollo□in□ **St□te□o□ne□ □rc□□eo□o□ic□□sites□ o□jects□□istricts□□□n□sc□pes** □it□in t□e □ro□ect A□□ **□eet t□e N□tion□□Re□ister □n□/or C□□i□orni□ □istoric□□L□n□□ □r□** eli□ibilit□ criteria:
  - ●
- □altrans □as determined t□at t□is pro□ect □ill □ave **no e□□ect** to **st□te□o□ne□ □rc□□eo□o□ic□□sites□ o□jects□□istricts□□□n□sc□pes** □it□in t□e □ro□ect A□□ t□at meet National □e□ister and□or

  □ali□ornia □istorical Landmar□s eli□ibilit□ criteria and is providin□ notice and summar□ to □□□□ pursuant to □□□ □□□□□□□□
  - ●
- □altrans □as determined t□at t□is pro□ect □ill □ave **no e□□ect** on **st□te□o□ne□ □□i□□in□s □n□ str□ct□res** □it□in t□e □ro□ect A□□ t□at meet National □e□ister and□or □ali□ornia □istorical Landmar□s eli□ibilit□ criteria and is providin□ notice and summar□ to □□□□ pursuant to □□□ □□□□□□□□
- □altrans □as determined t□at t□is pro□ect □ill □ave **no □□□erse e□□ect** to **st□te□o□ne□ □rc□□eo□o□ic□□sites□o□jects□□istricts□□□n□sc□pes** □it□in t□e □ro□ect A□□ t□at meet National □e□ister and□or □ali□ornia □istorical Landmar□s eli□ibilit□ criteria and is providin□ notice and summar□ to □□□□ pursuant to □□□ □□□□□□□□ *(Indicate reference to Standard Conditions – ESA above, or include description of proposed treatments, ESAs, protective covenants, etc., below or indicate below which HPSR attachment contains the description.)*
- □altrans □as concluded t□at t□is pro□ect □ill □ave **no □□□erse e□□ect** on **st□te□o□ne□ □□i□□in□s □n□ str□ct□res** □it□in t□e □ro□ect A□□ t□at meet National □e□ister and□or □ali□ornia □istorical Landmar□s eli□ibilit□ criteria□ *[Name of Caltrans PQS]*, □□o meets t□e □ro□essionall□ □ual□i□ied □ta□□ □tandards in □ection □□□ □A Attac□ment □as □rincipal Arc□itectural □istorian, and □as t□e appropriate education and e□perience, □as revie□ed t□e documentation and concluded t□at it meets t□e □ecretar□ o□ t□e Interior□s □tandards □or t□e Treatment o□□istoric □roperties□□altrans is providin□ notice and summar□ to □□□□ and re□uests □□□□s comments pursuant to □□□ □□□□□□□□ *(Indicate reference to Standard Conditions – Rehabilitation above, or include description of proposed repairs, rehabilitation, ESAs, protective covenants, etc., below or indicate below, which HPSR attachment contains the description.)*
  - ●
- □or **st□te□o□ne□ □□□i□ie□ □istoric□□□□i□□in□s □n□ properties** □it□in t□e □ro□ect A□□, □altrans □as □pp□ie□ t□e C□i□orni□ □istoric□□B□i□□in□ Co□e □□□□□□ to relevant sections o□ t□e current code□s □and□or standards and, i□applicable, □as consulted □it□ t□e □ali□ornia □istorical □uildin□ □a□et□ □oard □□□□□□□ t□rou□□ its □□ecutive □irector pursuant to □ealt□ and □a□et□ □ode □ection □□□□□ and its implementin□ re□ulations at □ali□ornia □ode o□□e□ulations Title □□ □art □ □ection□□ □□□□□□ *Indicate below whether use of current code(s) and standards adversely affected character-defining features of the property and describe the alternative solutions under the CHBC, or indicate below which HPSR attachment contains the description. If applicable, attach copies of correspondence with the SHBSB or its Executive Director.)*

□□. CE□A I□PACT FINDINGS

- Not applicable□□altrans is not t□e lead a□enc□ under □□□A□
- □altrans, pursuant to □□□A Guidelines □□□□□□□□a□, □as determined t□at t□e □ollo□in□ resources **□o NOT □eet N□tion□□Re□ister criteri□ □□t ARE □istoric□□reso□rces □or p□rposes o□CE□A** because t□e□: are listed in t□e **C□□i□orni□ Re□ister** or □ere determined eli□ible b□ t□e □tate

□ISTORIC PROPERT□ SUR□E□ REPORT

□istorical □esources □ommission □□□□□□□□□a□□□□, are included in a □**oc□□re□ister** or identi□ied as **si□ni□ic□nt in □ □oc□□s□r□e□** meetin□ □ □ □ standards □□□□□□□□□□□□, or □altrans, as t□e lead a□enc□, □as determined t□at t□e□ meet t□e criteria □or listin□ in t□e □ali□ornia □e□ister □□□□□□□□□a□□□□□□□□:

●

√ □altrans □as determined a □**in□in□ o□no i□ p□ct** is appropriate because t□ere are no □istorical resources □it□in t□e □ro□ect Area limits, or t□ere are no impacts to □istorical resource□s□, pursuant to □ □ □A Guidelines □□□□□□□□□b□□□□

□ □altrans □as determined a □**in□in□ o□no s□□st□nti□□□□□erse c□□n□e □ESAs**, because t□e impacts to t□e □ollo□in□ □istorical resources □it□in t□e □ro□ect Area limits □ill be miti□ated to belo□ t□e level o□si□ni□icance b□usin□ t□e *Secretary of the Interior's Standards for the Treatment of Historic Properties With Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings (Standards)* pursuant to □ □ □A Guidelines □□□□□□□□□b□□□stablis□ment o□ □nvironmentall□ □ensitive Areas □□□A□, en□orcement measures and conditions t□at utili□e t□e *Standards* are included in t□e attac□ed documentation□□□□□□□□□□□□□ *[Name]*, □□o meets t□e □ro□essionall□ □uali□ied □ta□□□tandards in □ection □□□ □ro□rammatic A□reement □ection □□□ □A□ Attac□ment □ as a□n □□□□□□□□□□□□□□□□ *[Indicate applicable PQS level]*, □as revie□ed t□e attac□ed documentation and determined t□at it is ade□uate□*(Include description of ESAs and enforcement measures below; attach ESA Action Plan as appropriate.)*

●

□ □altrans □as determined a □**in□in□ o□no s□□st□nti□□□□□erse c□□n□e □re□□□i□it□tion / rep□ir / □ □inten□nce / □irect or in□irect □ter□tion / tr□ns□er □it□ protecti□e e□se□ ents□co□en□nts □n□/or □□ree□ ents** because t□e impacts to t□e □ollo□in□ □istorical resources □it□in t□e □ro□ect Area limits □ill be miti□ated belo□ t□e level o□si□ni□icant impact b□usin□ t□e *Secretary of the Interior's Standards for the Treatment of Historic Properties With Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings (Standards)*, pursuant □ □ □A Guidelines □□□□□□□□□b□□ □ □ □ □ □ □ □ □ *[name of Caltrans PQS]*, □□□□□□□□□□□, □□o meets t□e □ro□essionall□ □uali□ied □ta□□□tandards in □ection □□□ □A Attac□ment □ as a □□□□□□□□□□□□□□□□□□□ *[Indicate applicable PQS level:* □rincipal Arc□itectural □istorian or □rincipal Investi□ator□, and □as t□e appropriate education and e□perience, □as revie□ed t□e documentation and determined t□at t□e measures meets t□e *Standards*□*(Include description of rehabilitation below or indicate below the title of the HRCR attachment that contains the description.)*

●

□ □altrans □as determined t□at t□e pro□ect is a **C□□ss 3□ project □n□ is c□te□oric□□□□ e□e□ pt** because t□e **project is □i□ ite□ to □ □inten□nce□rep□ir□st□□i□□tion□re□□□i□it□tion□restor□tion□ conser□□□tion or reconstr□ction** o□t□e □ollo□in□ □istorical resources in a manner consistent □it□ t□e *Secretary of the Interior's Standards for the Treatment of Historic Properties With Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings,* pursuant to □ □ □A Guidelines □□□□□□□□ee attac□ed documentation□

●

□ □altrans □as determined t□at □ □**in□in□ o□s□□st□nti□□□□□erse c□□n□e to □istoric□□reso□rces** is appropriate □or t□is pro□ect, pursuant to □ □ □A Guidelines □□□□□□□□□b□because t□e pro□ect □ill cause adverse c□an□e to t□e □ollo□in□ □istorical resources □it□in t□e □ro□ect Area limits□□ee attac□ed documentation□

●

□□. □PSR PREPARATION AND DEPART□ENT APPRO□AL

□repared b□ *(sign on line)*: _____ _____

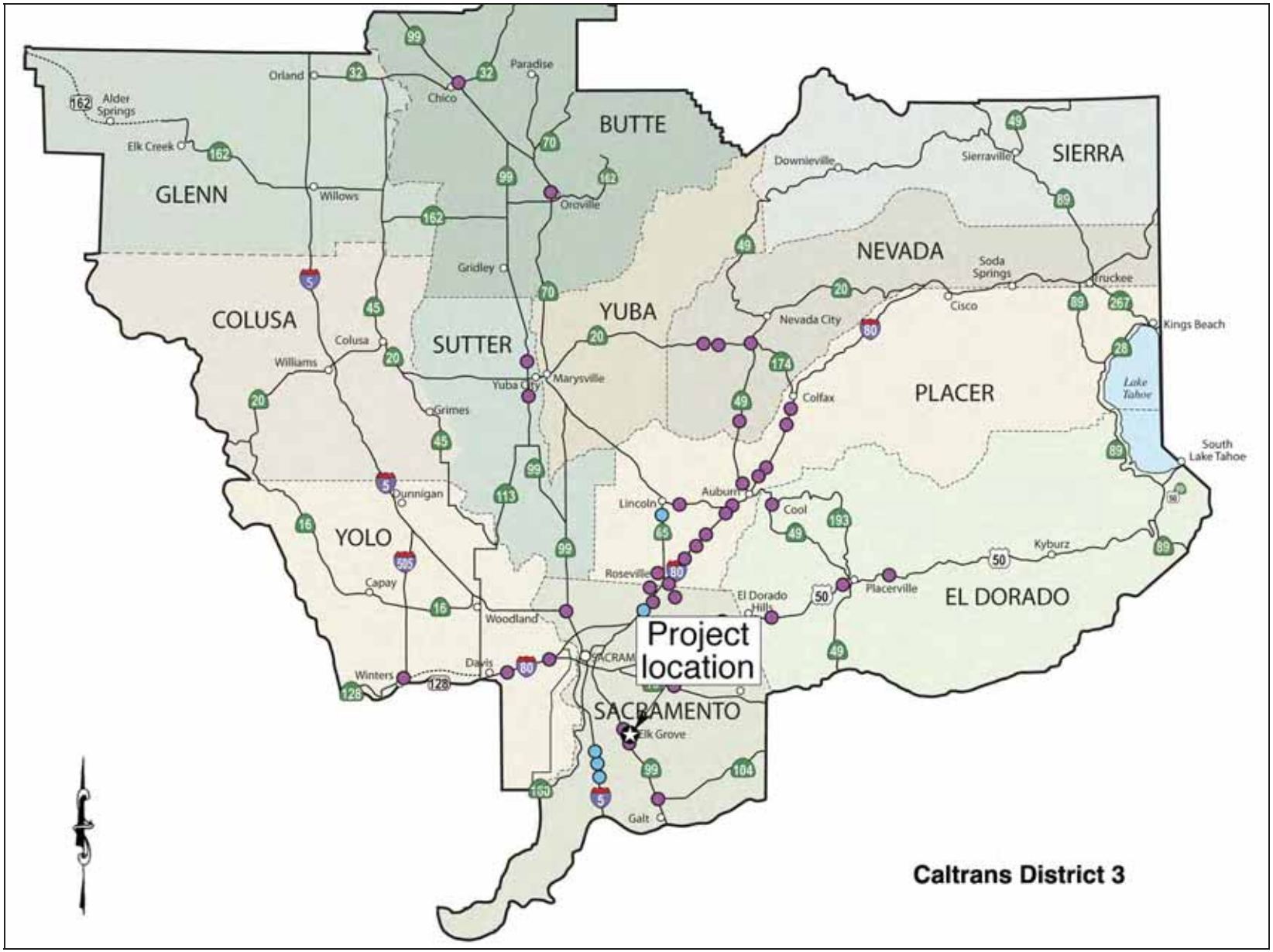
□istrict □□□ □altrans □□□: *PQS level and discipline]* □ate

□ISTORIC PROPERT□ SUR□E□ REPORT

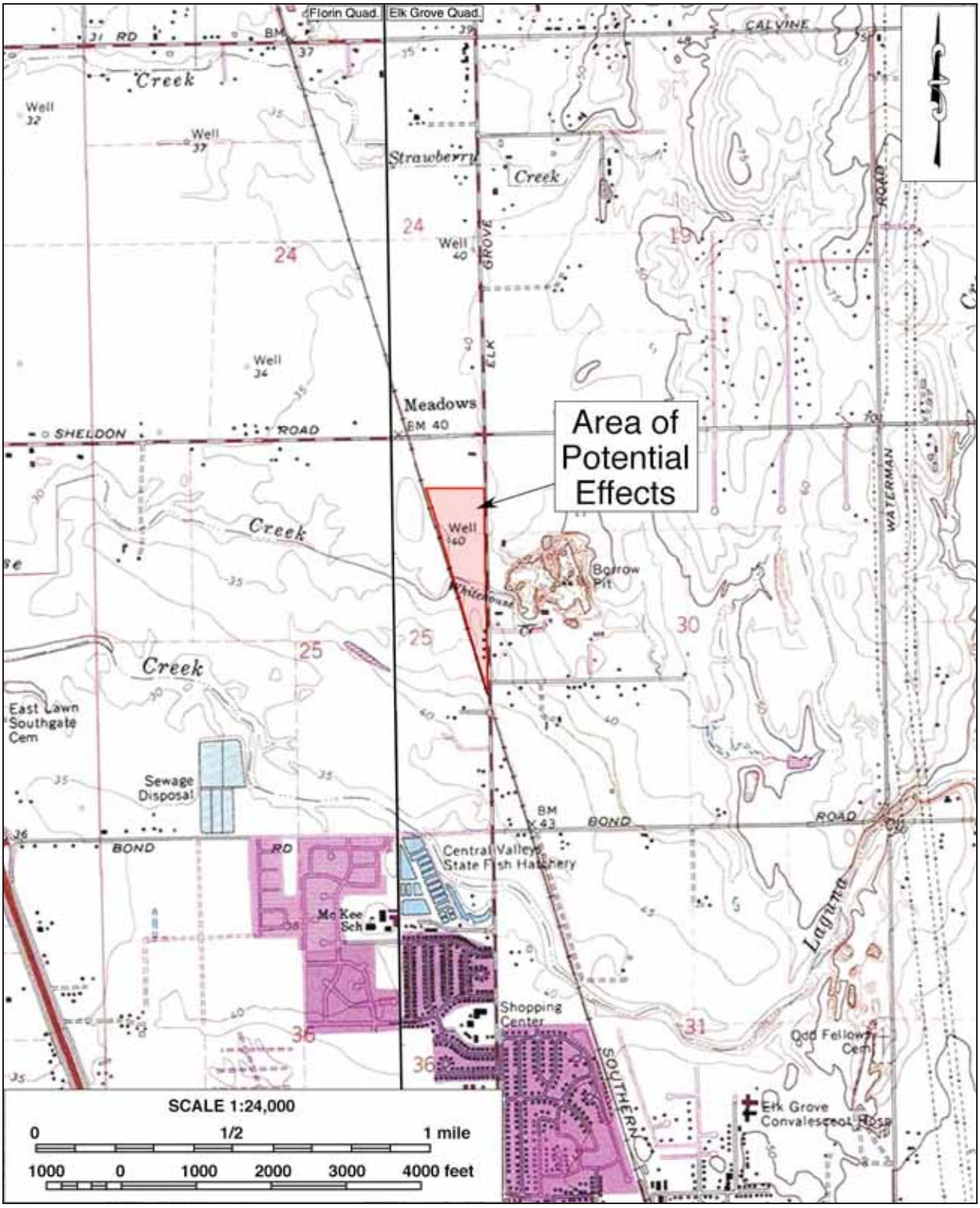
□repared b□: *(sign on line)*		1/9/2014
Consultant / discipline:	Bai "Tom" Tang, M.A., Principal Architectural Historian	Date
Affiliation	CRM TECH, 1016 E. Cooley Drive, Suite A/B Colton, CA 92324	
Reviewed for approval by: *(sign on line)*		
District Dist. 7 Caltrans PQS discipline/level:		Date
Approved by: *(sign on line)*		
District Dist. 7 EBC:		Date

ATTACHMENT A

PROJECT MAPS



Map 1. Project vicinity.



Map 2. Project location.

Map 3. Area of Potential Effects.

ATTACHMENT B
ARCHAEOLOGICAL SURVEY REPORT

SAN JOAQUIN CORRIDOR AMTRAK CALIFORNIA SERVICE PROPOSED RAILWAY STATION IN THE CITY OF ELK GROVE SACRAMENTO COUNTY, CALIFORNIA

Prepared by:

Michael Hogan, Ph.D., Principal Investigator, Archaeology
Terri Jacquemain, M.A., Archaeologist / Historian
CRM TECH
1016 East Cooley Drive, Suite A / B
Colton, CA 92324

Approved by:

Caltrans District 7
Alex Kirkish, Associate Environmental Planner / Archaeologist
Division of Environmental Planning, MS 16A
100 South Main Street, Suite 100
Los Angeles, CA 90012

CRM TECH Contract #2739
Approximately 14.21 acres
Sections 25, T7N R5E, MDBM
USGS Elk Grove, Calif., 7.5' (1:24,000) Quadrangle

November 6, 2013
(Revised December 18, 2013)

SUMMARY OF FINDINGS

In order to improve and expand passenger rail service between Sacramento, Oakland, and Los Angeles, the California Department of Transportation (Caltrans), Division of Rail, proposes a series of railway facility enhancements collectively known as the San Joaquin Corridor Amtrak California Service Project. The project component covered by this study consists of the construction of a new passenger railway station in the City of Elk Grove, Sacramento County.

This Archaeological Survey Report (ASR), as a component of the Historic Property Survey Report (HPSR) for the undertaking, is prepared under the provisions of Section 106 of the National Historic Preservation Act, as implemented through federal regulations outlined in 36 CFR Part 800, and the California Environmental Quality Act (CEQA). The extent of the survey covers the entire Area of Potential Effects (APE) for this undertaking, which is delineated to encompass the maximum extent of ground disturbances as currently projected. All cultural resources investigations reported herein comply with the Section 106 Programmatic Agreement executed on January 1, 2004.

The purpose of the survey is to identify any archaeological resources within or immediately adjacent to the APE. The scope of the study included a standard historical/archaeological resources records search, historical background research, consultations with local community and Native American representatives, and a systematic field survey. The remnants of an early 20th century farm, including three surviving buildings, were recorded within the APE during the survey. The site was previously determined not to qualify as a "historic property" under Section 106 or a "historical resource" under CEQA, as documented in HPSR Attachment C. The present survey has yielded no new information to warrant a revision to that determination.

No other archaeological features or artifact deposits, either prehistoric or historic in origin, were encountered. It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during the undertaking, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional surveys will be required if the project changes to include areas not previously surveyed.

TABLE OF CONTENTS

SUMMARY OF FINDINGS i
INTRODUCTION 1
PROJECT LOCATION AND DESCRIPTION 1
SOURCES CONSULTED 2
Summary of Methods and Results 2
Other Sources Consulted 4
Native American Consultation 4
Consultation with Local Community 5
BACKGROUND 5
Environment 5
Archaeology 6
Ethnography 7
History 8
FIELD METHODS 9
STUDY FINDINGS AND CONCLUSIONS 9
REFERENCES 9

LIST OF FIGURES

Figure 1. Previous cultural resources studies in the vicinity 3
Figure 2. Overview of the current condition of the APE 6

INTRODUCTION

The present archaeological survey covers the Area of Potential Effects (APE) for a proposed railway station in the City of Elk Grove, Sacramento County, California (see HPSR Attachment A). The survey was conducted under the provisions of Section 106 of the National Historic Preservation Act, as implemented through federal regulations outlined in 36 CFR Part 800, and the California Environmental Quality Act (CEQA). All cultural resources investigations reported herein comply with the Section 106 Programmatic Agreement executed on January 1, 2004.

The field survey of the APE was carried out on October 2, 2013, by project archaeologist/historian Terri Jacquemain, M.A., under the direction of principal investigator Michael Hogan, Ph.D. Hogan was awarded his doctorate degree in anthropology by the University of California, Riverside, in 1991, and has been working continuously in cultural resources management as field director, project archaeologist, ethnologist, and principal investigator since then. Jacquemain earned her bachelor's degree in anthropology in 2002 and master's degree in public history and cultural resource management in 2004, both from the University of California, Riverside. She has been engaged in archaeological studies, historical research, and cultural resources management in California for more than ten years.

In addition to the archaeological field survey, the scope of the study also included a historical/archaeological resources records search, historical background research, and consultations with Native American and local community representatives. The records search service was provided by the North Central Information Center (NCIC) at California State University, Sacramento. Terri Jacquemain conducted the historical research and the consultation with local community representatives. Project archaeologist Nina Gallardo (B.A., anthropology, University of California, Riverside, 2004) completed the Native American consultation.

PROJECT LOCATION AND DESCRIPTION

In order to improve and expand passenger rail service between Sacramento, Oakland, and Los Angeles, the California Department of Transportation (Caltrans), Division of Rail, proposes a series of railway facility enhancements collectively known as the San Joaquin Corridor Amtrak California Service Project. The project component covered by this survey consists of the construction of an Amtrak station in the northeastern portion of the City of Elk Grove, Sacramento County. As currently planned, the undertaking will occur at the intersection of Elk Grove Florin Road and the Union Pacific Railroad (UPRR) at UPRR Mile Post 50.6, and will require the demolition of a residence with associated barn and shed in the southern portion of the property.

The APE for the undertaking is delineated to encompass the maximum extent of ground disturbances required for the undertaking. It consists of five contiguous parcels, namely 116-0042-007, 116-0042-023, 116-0042-024, 116-0042-025, and 116-0042-028, that form a triangular shape and measure approximately 19.66 acres in total. The APE is located to the north of the Elk Grove Florin Road-UPRR intersection and south of Sheldon Road, within Section 25 of T7S R5E, Mount Diablo Baseline and Meridian (see HPSR Attachment A, Maps 2, 3).

SOURCES CONSULTED

SUMMARY OF METHODS AND RESULTS

The historical/archaeological resources records search was completed on November 29, 2011, by staff members of the NCIC. Sources consulted during the records search include listings of California Historical Landmarks and Points of Historical Interest, the National Register of Historic Places, the California Register of Historical Resources, the California Historical Resources Inventory, local historical resources inventories or registers, and other pertinent materials on file at the NCIC. The scope of the records search extends to a quarter-mile radius of the APE.

According to NCIC records, a total of eight cultural resources studies were previously completed within the scope of the records search (Fig. 1). Among them were a 1992 study on a group of buildings in the southern portion of the APE, conducted in anticipation of a street improvement project along Elk Grove Florin Road (Boghosian 1992), and a 2009 study for a proposed railway station, which covered the southern 10 acres of the APE, including APNs 116-0042-007, 116-0042-024, and 116-0042-025 (Panich 2009).

The 1992 study identified the buildings in the APE as part of the Stohlgren/Olson Ranch, an early 20th century family farm and dairy (Boghisian 1992:3). At the time of that study, the farm comprised nine buildings, including three houses, one of them in ruins, a dairy barn, a "workman's shed," an animal barn, a "hog house," and two garages (*ibid.*:6). The property was described as one of many similar small farms/ranches in the region, and was found to be most closely associated with Carl Stohlgren, who acquired the property in 1911, and, after his death in 1947, with his son-in-law Gustav Olson (*ibid.*:3, 7). Olson expanded the ranch to include a dairy operation that remained in production until 1964 (*ibid.*:3).

The Stohlgren/Olson Ranch apparently was not formally recorded into the California Historic Resources Inventory at that time, but the 1992 study concluded that it did not meet any of the criteria for listing in the National Register of Historic Places (Boghosian 1992:3). The 2009 study noted the conclusion of the 1992 study, and reported that no additional cultural resources were found (Panich 2009:2-3).

The NCIC records show that, within the quarter-mile radius of the APE, three historical/archaeological sites were previously recorded into the California Historical Resources Inventory. Among them was a commercial storage facility (34-001250), recorded near Sheldon Road to the north. Built in 1980, the building was determined to be ineligible for the National Register (Lambert 2003:2). The other two sites represented Elk Grove Florin Road outside of the eastern boundary of the APE (34-000700) and a segment of the Southern Pacific Railroad (now UPRR; 34-001302) located at its intersection with Sheldon Road. Both of these linear sites were found not to qualify for any historical designation due to the loss of integrity (Hatoff 1995:5:3; City of Elk Grove 2010:3:53). No prehistoric—i.e., Native American—cultural remains have been recorded in or near the APE.

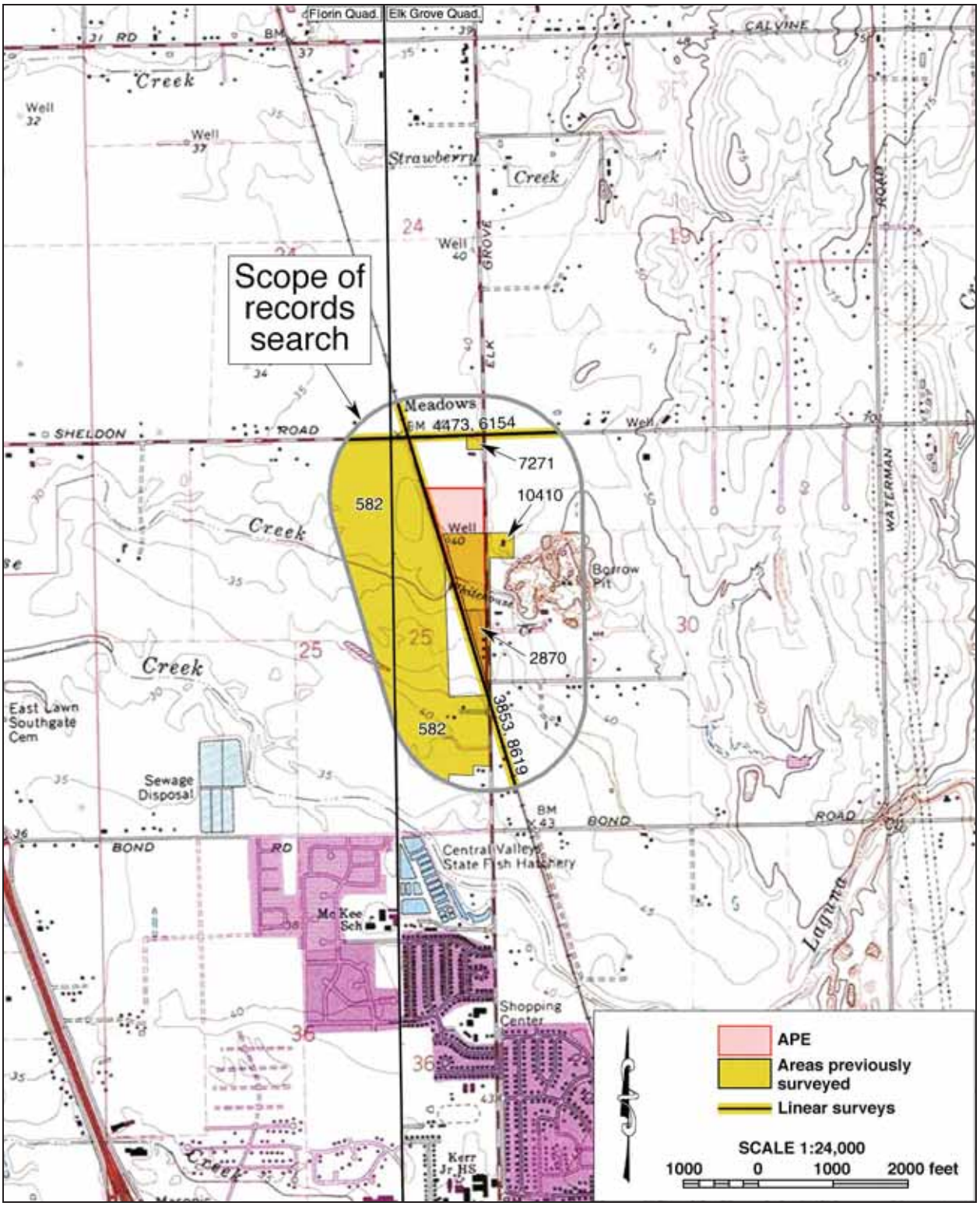


Figure 1. Previous cultural resources studies in the vicinity of the APE, listed by NCIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

OTHER SOURCES CONSULTED

In addition to the cultural resources studies reported to the NCIC, the City of Elk Grove completed an environmental study that included the all but the northernmost five acres of the APE in 2010, also for a proposed new railway station on the property (City of Elk Grove 2010). That study reported that of the nine buildings reported at the Stohlgren/Olson Ranch in 1992, only one house, a barn, and a shed remained extant at the time, and determined that the complex met none of the criteria for the California Register of Historical Resources or for designation as a local historical resource pursuant to the City of Elk Grove Historic Preservation Ordinance (*ibid.*3:52).

The Stohlgren/Olson Ranch, thus, has been determined not to constitute a "historic property" under Section 106 or a "historical resource" under CEQA. At the behest of the Elk Grove Historic Preservation Committee, however, the City of Elk Grove planned to mount a commemorative plaque on the property if the railway station project studied in 2010 materialized (City of Elk Grove 2010:2:5).

NATIVE AMERICAN CONSULTATION

On September 13, 2013, CRM TECH submitted a written request to the State of California's Native American Heritage Commission (NAHC) for a records search in the commission's sacred lands file. In response, the NAHC reports in a letter dated October 10 that the sacred lands record search identified no Native American cultural resources within a half-mile radius of the APE, but recommends that local Native American groups be contacted for further information. For that purpose, the commission provided a list of potential contacts in the region.

Upon receiving the NAHC's response, CRM TECH initiated correspondence with all six individuals on the referral list and the organizations they represent, and the initial contact resulted in a referral to an additional representative. The initial written request for comments were sent to the tribal representatives on October 14, 2013, and follow-up telephone solicitations were carried out between October 23 and November 5 (see HPSR Attachment D).

As of this time, five tribal representatives have responded to the inquiry, three via telephone and two in writing. Randy Yonemura, a Miwok representative, stated on the telephone that he had reviewed the project information with Andrew Ramey, a member of the Ione Band Cultural Committee, and that they had found the APE to be near a Native American village site on or around the hill to the east of Elk Grove Florin Road. According to Mr. Yonemura, the APE was used by local Native Americans for hunting and gathering during both the prehistoric period and the historic period. He requested further information on the extent of ground disturbance required during the undertaking, and would like to engage in further consultation with Caltrans representatives prior to the commencement of construction activities.

When reached by telephone, Chairman Anthony Burris of the Ione Band of Miwok Indians Cultural Committee and Chairwoman Rhonda Morningstar Pope of the Buena Vista Rancheria both stated they had no specific comments regarding the undertaking at the time. Mr. Burris indicated that he would review the project information further and

respond at a later date, while Ms. Pope referred CRM TECH to Rosalind Lwenya, Environmental Director for the tribe. No further response has been received from Mr. Burris. Ms. Lwenya responded in writing on December 11, 2013.

In her letter, Ms. Lwenya writes that the APE is the within the traditional use area of the Me-Wuk people, and requests further information regarding the determination of the APE project boundaries, what tribal members participated in that determination and/or were present at the field survey, and details of the field survey and study methods and results. She requests contact information for government-to-government consultation. In response, an e-mail was sent on December 18 in which CRM TECH acknowledged receiving Ms. Lwenya's letter and indicated that it would be forwarded to Caltrans and included as part of this cultural resources study. A second letter, from Steven Hutchason, Executive Director of Environmental Resources for the Wilton Rancheria, was also received by CRM TECH on December 11. Mr. Hutchason requested the cultural resources survey history of the property, which was sent to him on December 18, 2013 (see HPSR Attachment D).

CONSULTATION WITH LOCAL COMMUNITY

On October 2, 2013, Terri Jacquemain visited the City of Elk Grove Planning Department to inquire about cultural resources of local historic value or other cultural resources concerns regarding the APE. Staff Planner Nate Anderson received Jacquemain and stated that a standard historical/archaeological study, including a records search to identify previously recorded sites in the vicinity, would adequately address any potential cultural resources concerns over the highly disturbed APE. He recommended archaeological monitoring of earth-moving activities if the APE would be found sensitive for archaeological remains, and suggested further consultation with Senior Planner Gerald Park, who oversees the Elk Grove Historic Preservation Committee. When reached by telephone on November 4, Mr. Park noted that Tom Russell of the Elk Grove Historical Society would be a good contact, and requested information from previous studies on the property, which were subsequently e-mailed to him (see HPSR Attachment E).

On October 25-28, 2013, the Elk Grove Historical Society was contacted via e-mail and telephone messages. Responding on behalf of the historical society via e-mail on October 29, Tom Russell stated that the organization was aware of a ranch complex in the APE and described it as being "part of the Elk Grove landscape but nothing historically significant." He further stated that a small shed on the property may have been moved there years ago from Franklin School to the west of the APE, and that it was suggested that the structure be incorporated into a previously proposed railway station project, possibly as a kiosk. Mr. Russell also included information on the first Elk Grove railway station (see HPSR Attachment E).

BACKGROUND

ENVIRONMENT

Geologically, the APE lies within the Great Valley province of California, which is bounded on the east by the Sierra Nevada and Cascade Range provinces, on the north by the Klamath Mountains province, and on the west and the south by the Coast Ranges province

respond at a later date, while Ms. Pope referred CRM TECH to Rosalind Lwenya, Environmental Director for the tribe. No further response has been received from Mr. Burris. Ms. Lwenya responded in writing on December 11, 2013.

In her letter, Ms. Lwenya writes that the APE is the within the traditional use area of the Me-Wuk people, and requests further information regarding the determination of the APE project boundaries, what tribal members participated in that determination and/or were present at the field survey, and details of the field survey and study methods and results. She requests contact information for government-to-government consultation. In response, an e-mail was sent on December 18 in which CRM TECH acknowledged receiving Ms. Lwenya's letter and indicated that it would be forwarded to Caltrans and included as part of this cultural resources study. A second letter, from Steven Hutchason, Executive Director of Environmental Resources for the Wilton Rancheria, was also received on December 11. Mr. Hutchason requested the cultural resources survey history of the property, which was sent to him on December 18, 2013 (see HPSR Attachment D).

CONSULTATION WITH LOCAL COMMUNITY

On October 2, 2013, Terri Jacquemain visited the City of Elk Grove Planning Department to inquire about cultural resources of local historic value or other cultural resources concerns regarding the APE. Staff Planner Nate Anderson received Jacquemain and stated that a standard historical/archaeological study, including a records search to identify previously recorded sites in the vicinity, would adequately address any potential cultural resources concerns over the highly disturbed APE. He recommended archaeological monitoring of earth-moving activities if the APE would be found sensitive for archaeological remains, and suggested further consultation with Senior Planner Gerald Park, who oversees the Elk Grove Historic Preservation Committee. When reached by telephone on November 4, Mr. Park noted that Tom Russell of the Elk Grove Historical Society would be a good contact, and requested information from previous studies on the property, which were subsequently e-mailed to him (see HPSR Attachment E).

On October 25-28, 2013, the Elk Grove Historical Society was contacted via e-mail and telephone messages. Responding on behalf of the historical society via e-mail on October 29, Tom Russell stated that the organization was aware of a ranch complex in the APE and described it as being "part of the Elk Grove landscape but nothing historically significant." He further stated that a small shed on the property may have been moved there years ago from Franklin School to the west of the APE, and that it was suggested that the structure be incorporated into a previously proposed railway station project, possibly as a kiosk. Mr. Russell also included information on the first Elk Grove railway station (see HPSR Attachment E).

BACKGROUND

ENVIRONMENT

Geologically, the APE lies within the Great Valley province of California, which is bounded on the east by the Sierra Nevada and Cascade Range provinces, on the north by the Klamath Mountains province, and on the west and the south by the Coast Ranges province

(Bailey 1966:253; Norris and Webb 1976:3). The Sacramento Valley occupies the northern portion of the Great Valley province, is filled with over 20,000 feet of Cretaceous and Tertiary sedimentary rocks (Norris and Webb 1976:295). Locate approximately 15 miles south of Sacramento, Elk Grove features a seasonal climate with temperatures around 34-46 degrees Fahrenheit in the winter and 60-110 degrees between April and October. Average rainfall is 22 inches per year, falling primarily in the winter months. The elevation of the city is approximately 45 feet above mean sea level.

Situated south of Sheldon Road in the northeastern portion of the City of Elk Grove, the APE is bounded by the UPRR on the southwest and by Elk Grove Florin Road on the east. The southernmost portion of the APE is occupied by the three remaining buildings of the Stohlgren/Olson Ranch, accompanied by a group of mature domestic trees. The rest of the property is nearly completely covered by a dense growth of common weeds and shrubs (Fig. 2). The adjacent properties west and north of the APE have been developed into densely populated residential neighborhoods in recent years, while a mix of open fields and commercial properties characterizes the land use to the east, across Elk Grove Florin Road.

ARCHAEOLOGY

The date of the earliest human occupation of North America, and California, is subject to much debate. However, it is widely acknowledged that people inhabited North America around 12,000-8,000 years ago. In order to understand Native American cultures prior to European contact, archaeologists have devised chronological frameworks on the basis of

Figure 2. Overview of the current condition of the APE. (Photograph taken on October 2, 2013; view to the south)

artifacts and site types. In the Great Central Valley, according to Moratto (1984:88, 93), it is likely that the Fluted-Point Tradition gradually evolved into Western Pluvial Lakes Tradition, characterized by the absence of groundstone artifacts and by a distinctive chipped stone toolkit, as the native peoples adapted to the lake and marsh environment of the region. The former shorelines of Tulare Lake have yielded numerous artifacts ascribable to both the Fluted-Point Tradition and the Western Pluvial Lakes Tradition (*ibid*.:81).

Archaeological investigations in the Great Central Valley began in earnest in the 1930s and attempts were made to understand the temporal sequence of occupation in the area based on the archaeological record. In 1939, one of the most influential temporal schemes was proposed for the region (Lillard et al. 1939), defining three archaeological periods based on mortuary practices and associated ornamental artifacts: the Early Period, the Middle Period, and the Late Period (Moratto 1984:180). In the early 1950s, Beardsley (1954) refined this earlier scheme, also on the basis of burial practices and associated grave goods, and established the three primary horizons—Early, Middle, and Late—of what is known as the Central California Taxonomic System (Nelson 2000:10).

More recently, archaeologists have been developing sequences for more localized areas, as well as concepts for dealing with cultural units without temporal implications (Moratto 1984:201). However, the three periods mentioned above, along with the earlier Archaic Period, still provide a useful framework as general indicators of cultural stability and change over time. According to Nelson (2000:10), the Early Period is now commonly recognized as dating from 2500 to 500 BC, with the Middle Period from 500 BC to 300 AD and the Late Period from 300 to 1840 AD.

ETHNOGRAPHY

The Elk Grove area is generally considered a part of the traditional homeland of the Miwok, or Miwuk, which comprised three territorially distinct groups: Coast, Lake, and Interior Miwok. Their territory extended from Walnut Creek eastward to the Sacramento-San Joaquin River Delta. The following ethnographic discussion of Miwok culture and history is based on Kroeber (1925) and Levy (1978), the basic reference sources on this subject.

The Miwok depended on fishing but also on the abundant game available. Insects, mainly grasshoppers and yellow-jacket larvae, were also exploited, as were plant resources, including acorn, pinecones, roots and bulbs, seeds, berries and tobacco. The Miwok made both twined and coiled baskets, using willow and redbud. Tule were used in the manufacture of many items, including floor mats, water craft, and women's skirts. Trade routes were used by the Miwok reached coastal, mountain, and high desert regions. Salt and obsidian were major trade items from the Great Basin area, olivella and abalone were brought in from the coast, cedar bows were imported from the mountains, and baskets were traded back and forth among the groups

The unit of ultimate political sovereignty among the Interior Miwok was the tribelet. Typical population of a tribelet is estimated to have ranged between 300 and 500 persons. Each tribelet owned a territory with defined boundaries, and the rights to the resources

within their territory. The office of the chief was patrilineal in succession, although in the absence of a male heir, the position would pass to the chief's daughter.

Due to their location near the navigable Sacramento-San Joaquin River Delta, the Miwok were first contacted by Spanish expeditions as early as the latter part of the 1700s. Many Miwok tribelets disappeared through the combined effects of missionization, disease, and the arrival of thousands of non-Native people in the 1840s. The early part of the 20th century witnessed the establishment of a few small reservations at the Indian rancherias, where many Miwuk people still reside. In recent decades, there has been a renaissance of Native American activism and cultural revitalization among a number of groups of Miwok descent.

HISTORY

The first Europeans to visit the present-day Sacramento area were the Spanish soldier and explorer Gabriél Moraga, who led an 1806 expedition to the Central Valley in search of Indian horse raiders, and fur trappers who ventured into the region in the early 1800s. During the Spanish rule of Alta California, the European colonization efforts in the territory were focused on the mission system, featuring a series of religious and military outposts established along the Pacific coast, which introduced Catholicism as well as European livestock, fruits, vegetables, cattle, horses, and ranching to the native population. Other than the occasional expeditions, the arid interior of Alta California was largely untouched be the Spanish colonization scheme.

After Mexico gained independence from Spain in 1821, the first white settlement in the Sacramento area occurred around 1839 with the arrival of Swiss native John Sutter on the American River, who envisioned a community based on his bucolic homeland. Almost concurrent with the U.S. annexation of Alta California through the Mexican War, the discovery of gold in 1848 at Sutter's sawmill brought hundreds of thousands of prospectors to California. Among the many Gold Rush boomtowns that emerged on the western slope of the Sierra Nevada was Elk Grove, established in 1850 as a base for miners, who in turn attracted supporting business, entertainment services, and agriculture.

The town began as a stage stop on the Monterey Trail, a popular route from Sutter's Fort to San José (Pinkerton 2010). The road was later called Upper Stockton Road before becoming today's State Highway 99. The settlement was centered at a lodge built by James Hall and named the Elk Grove Hotel and Stage Stop. In 1868, however, the Western Division of the Central Pacific Railroad came through about a mile east of Hall's hotel, where another hotel was built and named Elk Grove Hotel (*ibid.*). With that, the town center shifted east to its present location. By then, the gold boom had long gone bust, but the wealth amassed during its heyday helped sustain the commerce that had been established and channel the local economy into new industries (Kidder and Oppenheim 2007:190). During the 1850s-1860s, agriculture gradually replaced mining as the main livelihood of Elk Grove, with almonds, walnuts, rice, and prunes as the most important cash crops.

As the state capital with a largely white-collar workforce, heavy industry remained limited around Sacramento. Instead, the city early on experienced more suburban development outside its downtown core, and Elk Grove was among the towns that sustained growth as one of the "bedroom communities." The City of Elk Grove incorporated in 2000, and in

2010 boasted a population of more than 155,000 (USCB n.d.). Today it is a sprawling suburban community interspersed with patches of remaining agricultural fields.

FIELD METHODS

As mentioned above, the field survey of the APE was conducted on October 2, 2013, by project archaeologist/historian Terri Jacquemain. As a result of its past use as farmland that was continually conditioned for crops or disked for weed abatement, the ground surface in the APE has been extensively disturbed, and thus the surface and near-surface sediments appear to be relatively low in archaeological sensitivity. Furthermore, except the area around the surviving buildings, ground visibility across the entire APE was poor due to the thick, low-lying vegetation growth.

Based on these observations, and considering the findings of the previous studies on the property, an intensive-level survey along regular transects was determined to be unproductive for much of the APE. Therefore, the survey was conducted along meandering lines across the open fields and around the buildings, focusing particularly on areas where the ground surface was visible.

STUDY FINDINGS AND CONCLUSIONS

As a result the field survey, the remnants of the Stohlgren/Olson Ranch, including the three surviving buildings, were formally recorded into the California Historical Resources Inventory. As stated previously, the site has been previously determined not to qualify as a "historic property" under Section 106 or a "historical resource" under CEQA, as documented in HPSR Attachment C. The present survey has yielded no new information to warrant a revision to that determination.

Sites 34-000700 (Elk Grove Florin Road) and 34-001302 (UPPR) were observed during the survey just outside the APE boundaries. Both of these sites were also previously found not to constitute "historic properties" or "historical resources." Based on their current condition and appearance as working components of the modern infrastructure, the existing conclusion on the historic significance of these sites appear valid and appropriate.

No other archaeological features or artifact deposits, either prehistoric or historic in origin, were encountered. It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during the undertaking, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional surveys will be required if the project changes to include areas not previously surveyed.

REFERENCES

Bailey, Edgar H. (ed.)
1966 *Geology of Northern California.* California Division of Mines and Geology Bulletin 190. Sacramento.

Boghosian, Paula
1992 Historic and Architectural Evaluation for Elk Grove-Florin Road Widening, Sewer Extension, and Water Transmission Line. On file, North Central Information Center, California State University, Sacramento.

City of Elk Grove
2010 Elk Grove Intermodal Rail Station Master Plan, Draft Recirculated Initial Study / Mitigated Negative Declaration. On file, City of Elk Grove Planning Services Department.

Hatoff, Brian, Barb Voss, Sharon Waechter, Stephen Wee, and Vance Bente
1995 Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project. On file, North Central Information Center, California State University, Sacramento.

Kidder, David S., and Noah D. Oppenheim
2007 *American History: Revive Your Mind, Complete Your Education, and Converse Confidently about Our Nation's Past*. The Intellectual Devotional. Rodale Inc., New York.

Kroeber, Alfred L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Washington, D.C.

Lambert, Kurt
2003 California Historical Resource Inventory site record form, 34-001250. On file, North Central Information Center, California State University, Sacramento.

Levy, Richard
1978 Eastern Miwok. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 398-413. Smithsonian Institution, Washington, D.C.

Lillard, J. B., R. F. Heizer, and F. Fenenga
1939 *An Introduction to the Archaeology of Central California*. Sacramento Junior College Department of Anthropology Bulletin 2. Sacramento.

Moratto, Michael J. (ed.)
1984 *California Archaeology*. Academic Press, Orlando, Florida.

Nelson, Wendy J.
2000 Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project, Segment WS04: Sacramento to Bakersfield. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Norris, Robert M., and Robert W. Webb
1976 *Geology of California*. John Wiley and Sons, Inc., New York.

Panich, Lee
2009 Cultural Resources Study, Elk Grove Rail Stop Project (PL 2330-01). On file, North Central Information Center, California State University, Sacramento.

Pinkerton, Elizabeth
2010 Elk Grove and the Stage Stop—1850, part 3. *Elk Grove Citizen Online*. Http://www.egcitizen.com/articles/2010/06/11/lifestyle/doc4c1254a75eb31546813357.txt.

USCB (United States Census Bureau)
n.d. 2010 Census entry for Elk Grove, California. Http://quickfacts.census.gov/qfd/states/06/0622020.html.

ATTACHMENT C

DOCUMENTATION
STOHLGREN/OLSON RANCH

2870

91-1083
ELK GROVE-SAC
#2870

Historic and Architectural Evaluation

for

Elk Grove-Florin Road Widening, Sewer Extension and Water Transmission Line

prepared for

County of Sacramento
Department of Environmental Assessment and Review
827 Seventh Street, Room 220
Sacramento, California 95814

by

Historic Environment Consultants
Paula Boghosian
5420 Home Court
Carmichael, California

June 1, 1992

RECEIVED BY:
DATE: OCT 9 1992
INITIALS: MRuss
NORTH CENTRAL INFORMATION CENTER
CALIFORNIA ARCHEOLOGICAL INVENTORY
C.S.U. SACRAMENTO

INTRODUCTION:

Sacramento County has issued a Notice of Preparation of a Draft Environmental Impact Report regarding the following Project which may affect the subject property and its structures. The Project Title is Elk Grove-Florin Road Widening, Sewer Extension and Water Transmission Line from Bond Road to Calvine Road (Control Number: 91-PWE-1083).

The purpose of this report is the evaluation of the property at 9040 Elk Grove-Florin Road (Assessor Parcel Nos. 116-0042-007, 116-0042-025) in Sacramento County, California, as to its historic and architectural significance, and any potential eligibility for listing in the National Register of Historic Places. This evaluation will provide information regarding the significance of properties that may be affected as a result of the proposed project.

CRITERIA FOR EVALUATION:

Evaluation criteria utilized in the preparation of the historical and architectural evaluation report for the Elk Grove-Florin Road Widening Project are those developed and utilized by the United States Department of the Interior for the National Register of Historic Places.

Criteria for listing properties in the National Register of Historic Places are noted as follows:

"The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. that are associated with events that have made a significant contribution to the broad patterns of our history; or

B that are associated with the lives of persons significant in our past; or

C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that have yielded, or may be likely to yield, information important in prehistory or history."

SUMMARY:

The Stohlgren.Olson property contains a small early to mid twentieth century ranch complex, located near Elk Grove in the San Joaquin Township of southern Sacramento County.

The ranch appears to have experienced two eras of heightened activity: the first era began with the ownership of Carl Stohlgren, reaching its zenith during the 1920s and 1930s. The second era of activity, and perhaps the most significant for the ranch, b3egan in the late 1940s, with the expanded and successful operation of the property as a dairy ranch. This period occurred during the 1950s and early 1960s.

In 1964, the property ceased to function as a dairy ranch and has served primarily as a residence for the current owner and is son since that time.

During its period of operation, the ranch was one of a number of relatively small ranches in the general area. A review of parcel sizes and ownerships in that area indicates that during the principal operational era of the ranch, there were a number of land parcels of similar size in the area, also apparently operating as small ranches. Activities unddertaken by the Stohlgren/Olson Ranch were generally similar to surrounding properties, with the exception of the rendering works opeated there by Stohlgren during the 1920s and 1930s.

The Stohlgren/Olson Ranch achieved some note with the quality of their herd of registered Jersey cows and its milk production. However, the ranch did not gain a sufficient degree of distinction to designate it as a dairy operation that contributed significantly to the industry in terms of product quality, innovative practices, or production quantity.

The Ranch was not an unusual, unique or outstanding representative of its kind and type of operation, and did not contribute significantly to the industry or to the area in which it functioned.

The Ranch property is not associated with any individuals that contributed significantly to the settlement, development or growth of the area. No events of local or regional significance occurred at the site.

Further, the Ranch complex is not an outstanding or particularly good representative example of its type and kind, the work of a master designer, or an outstanding architecutral design in its own right.

In conclusion, the Stolhgren/Olson Ranch complex does not appear to meet established criterions A, B, or C, and does not therefore appear to be eligible for listing in the National Register of Historic Places.

HISTORY OF PROPERTY

Stohlgren/Olson Ranch
9040 Elk Grove-Florin Road

The Stohlgren/Olson Property at 9040 Elk Grove-Florin Road occupies a triangular portion of land east of the Southern Pacific Railroad tracks in the northeast one quarter and a fraction of the northeast corner of the southeast one quarter of Section 25, Township 7 North, Range 5 East (Mt. Diablo meridian), and is shown on the United States Geological Survey Quad Map designated *Elk Grove*, revised 1979.

The property was delineated in the early twentieth century as that land formed by the angular intersection of the Central Pacific/Southern Pacific Railroad tracks with both Elk Grove-Florin and Sheldon Roads. At that time, the triangle-shaped property extended from the point at which the railroad tracks cross Elk Grove-Florin Road across from Campbell Road on the south, to the current Sheldon Road on the north, and comprised thirty four and one half acres. The property currently is bounded on the north by Whitehouse Creek, a little less than half the distance from the southern railroad crossing to Sheldon Road.

The property currently contains nine structures, including the following:

two houses,
a dairy barn,
a one car garage and attached car port,
a ruined house,
a workman's shed
an animal barn,
a two car garage, and
a deteriorated hog house.

The property also contains small corrals and a gas pump.

The buildings are concentrated in the southern portion of the property, near the crossing of the railroad tracks and Elk Grove-Florin Road. Four of the structures front on the existing road; the two houses, the two-car garage, and the animal barn. Other structures are set back farther to the west. (See sketch map, Exhibit D).

History of Property:

In 1892, the subject property was part of a larger parcel which comprised the full north one/half of Section 25, a holding of 319 acres owned by Charles Dickson. Dickson was born in Brunswick, Germany in 1818, and raised in a farming family of that region. Dickson came to the United States in 1850, and to the Sacramento area in 1856, wherehe purchased a property of 160 acres three miles from Elk Grove on upper Stockton Road. By 1892, he had increased his holdings to 319 acres. He was described as a practical farmer and gardener, and raised wheat and stock. His buildings were noted as ..."of the most substantial." Six of his children survived to maturity, one of whom apparently purchased the northern one quarter of the northern half of this section by 1900. Dickson retained ownership of the remaining portion of the half-section.

In 1911, Frederika Schwekandek, (Shwekendierk) Dickson's daughter, owned only the western portion of the northern half of the northern quarter of Section 25, and Carl Stohlgren (spelled Strahlgren in Sacramento County records at that time) had become the owner of the subject project property east of the railroad tracks. With the exception of a ruined building said to date from 1877 (Delbert Olson), and a pump house that has been relocated and converted to a garage, the existing structures appear to have been constructed during the ownership of Carl Stohlgren.

According to his grandson, Delbert Olson, Carl Stohlgren, the new owner of the property, constructed his own new dwelling and a garage in 1911. Stohlgren was a Swedish immigrant who first worked as a section foreman for the Central Pacific, later Southern Pacific, Railroad. Stohlgren engaged in a variety of activities on his land. He raised chickens and hogs, farmed, and kept a small herd of dairy cows. He also established a rendering works on the ranch, collecting and hauling animals from other locations and rendering them for fat, hides, etc.

In 1936, Olson states that Carl Stohlgren constructed a second house on the property to house his son Fred, who worked with him on the ranch. By the mid-1940s, the elder Stohlgren, then in his 70s, decided to curtail his ranch activities, and Fred Stohlgren left the ranch to work at the Gibson Winery, subsequently moving to Elk Grove.

In 1947, the elder Stohlgren passed away, and the ranch property was taken over by Gustave Olson, Stohlgren's son-in-law, and his son, Delbert. Gustave and his son had been operating a dairy together in Franklin as G. A. Olson and Son. In 1947 they moved to the Stohlgren ranch and began to upgrade its operation. They expanded the dairy to 150 cows, remodeled the chicken house into a Grade A dairy barn and began shipping milk to the Crystal Dairy in 1949. This dairy became their principal client. The Olsons used five milking machines and handled the dairy ranch with the help of one hired hand. Additionally, they raised clover and alfalfa for dairy feed.

The dairy operation was successful and their prize-winning registered Jersey cows were shown at the State Fair for a number of years. There were other dairy ranches in the area at the time, with a herd of about 150 to 200 animals being an average sized operation. The Lindsay Dairy is currently the only Jersey dairy still operating in the area.

In 1964, Delbert Olson sold the dairy cows and began to work for the Post Office. Currently retired from civil service, Delbert Olson and his son, John, still live on the ranch in the house built by Carl Stohlgren. Mr. Olson has been involved in community and history oriented activities in the area over time, including the E. Clamper Vitus organization, and he served as President of the Elk Grove Cemetery District, with oversight over five local cemeteries, in the 1960s.

The ranch has been operated by two generations of father-son partnerships. Even today, it is occupied by Delbert Olson, once a partner with his father in the ranch, and his son, John.

PROPERTY DESCRIPTION:

The Stohlgren/Olson property at 9040 Elk Grove-Florin Road currently contains nine structures, including the following:

two houses,
a dairy barn,
a one car garage and attached car port,
a ruined house,
a workman's shed
an animal barn,
a two car garage, and
a deteriorated hog house.

The property also contains small corrals and a non-functional gas pump.

The buildings are concentrated in the southern portion of the property, near the crossing of the railroad tracks and Elk Grove-Florin Road. Four of the structures front on the existing road; the two houses, the two-car garage, and the animal barn. Other structures are set back farther to the west. (See sketch map, Exhibit D).

House # 1:

According to Carl Stohlgren's grandson, Delbert Olson, this house was constructed by his grandfather in 1911. (Sacramento County Assessor Office records estimate the construction date of both houses on the property as occurring during the 1920s). This house served as the principal family ranch dwelling, and reflects influences of the Craftsman style prevalent in California during the first two decades of the twentieth century.

The one story, wood frame dwelling exhibits this stylistic influence in its general form and selected design elements. The battered shaping of the porch posts is exaggerated but reflects Craftsman design as do the cut-out rafter ends and angled braces supporting the gable eaves.

Roof forms are a combination of gables surfaced with composition shingles, and the building is sheathed with wood rustic lap siding. The gabled entry porch is supported by battered posts on stucco pillars. Wood siding similar to that of the house encloses the porch space. The porch projects from the northeast corner of the house to the east, and the southern elevation contains a shallow angled bay with windows. Windows of the house are wood framed with simple moldings and shallow projecting sills. They are primarily double hung, with one light over one. Windows at the rear are casement type. Other openings include attic and foundation vents covered with wood screen. The porch at the rear is open and covered with corrugated metal sheathing.

The building is in poor condition.

Associated structures include the front gateway, now completely overgrown with vines and planting, and the former gas pump located to the northeast of the house.

A deteriorated wood structure stands nearby and to the northwest of the house.

Alterations to House # 1:

The porch at the rear of the house is not original. The current appears to have been completed in the late 1940s.

The front porch pillars and stairs appear to have been modified, either through repair or alteration.

The building currently suffers from lack of maintenance. Roof material and siding are deteriorating, and it is in need of paint.

Garage # 1:

The garage to House #1 stands to the north of the house near the road.

The one story structure is a wood frame building with a hipped and shingled roof. The structure is surfaced with The building is almost square in form, with a rectangular shed-roofed addition on the west (rear). The addition contains a large wood sliding door. The rear also contains a paneled door and double hung window.

The south elevation contains a double hung, one light over one window. The front of the building contains automobile door openings, only one of which is still intact. This opening is enclosed by wood double doors with multi-paned windows in the upper portions. The other openings, damaged in an accident, have not been replaced and are currently covered with plywood. The structure is essentially vernacular but expresses minor Craftsman design influences that relate it to others in the complex.

The building is in fair to poor condition.

According to the owner and grandson of the builder, the garage was constructed in 1911, about the same date as the house.

Alterations:

Alterations to the Garage building include boarded up openings in the front elevation and the small shed addition at the rear.

House # 2:

House #2 stands adjacent and to the south of House # 1 along Elk Grove-Florin Road.

The structure is comprised of two dissimilar sections, constructed in different eras. The original portion is a one story, wood frame building, with some Craftsman style influences similar to House # 1. This section is the "front" portion of the building and stands along Elk Grove-Florin Road at about the same distance from the roadway as House #1.

A gabled entry porch supported by columns projects to the east from the gabled east elevation. Angled braces support the overhanging eaves. The building is surfaced with lap wood siding, and the gabled roof is covered with shingles. Rafter ends are shaped. There are various openings in the wall surfaces at the base of the house, some

of which are vents and some are lack of maintenance. Windows are double hung with wood sash, one light over one, and enframed with simple wood moldings with shallow projecting sills. A large tripartite window with a central fixed section flanked by slender double hung windows, and a door share the entry facade. Porch steps are concrete. The porch and front portion of the house are overgrown with vines. The foundation is concrete. A wire and post fence with a wood gate extends around the house on the east and south sides. A mature mulberry tree stands on the south and a number of other bushes and trees surround the house.

The rear portion of the building is a flat-roofed, stucco-surfaced extension to the west and north, with an additional entry at the juncture of the two differently constructed sections. The addition contains sliding aluminum sash windows.

The building is in poor condition.

According to the owner and grandson of the builder of most of the existing ranch buildings, this house was constructed in 1936 by Carl Stohlgren and his son Fred, as a dwelling for Fred who was working on the ranch with his father.

Alterations:

A substantial addition has been made to the rear of the house. Some of the wood sash windows of the original section of the house have been replaced with aluminum sash windows. The porch may have been modified. Overgrown planting obscures construction details.

Garage/Carport #2:

A deteriorating garage structure with attached car port stands dsouth of House #2, on the other side of the post and wire fence. The garage is a wood frame building with a facade surfaced with wood siding and sliding wood doors. The remaining sides and the roof of the structure are surfaced with corrugated metal sheathing. The foundation is concrete.

A structure comprised of a flat roof supported by poles stands adjacent to the garage, serving as a carport shelter for cars or machinery.

The garage structure is in poor and deteriorating condition, and has been moved and altered from the original design. The carport is a utilitarian makeshift structure.

The garage structure was formerly a pump house located out in the fields, and was moved to this location to serve as a garage in 1953. It is said to have been built between about 1910 and 1920, perhaps as part of the building activity that was apparently generated onthe property about 1911 with Carl Stohlgren.

House Ruin:

A deteriorated wood structure stands nearby and to the northwest of House #1. The structure is almost completely hidden from view beneath heavy overgrowth of vines and plants. Wood boards and planks are visible beneath and through the vines. The general shape of a partially collapsed building appears outlined beneath the vegetation covering it. The form of this building is indeterminant beneath the mound

of vegetation engulfing it. The framework appears to have partially collapsed and entry is unsafe. Portions of the structure have apparently been hauled away at various times by the owner. Any potential architectural values of the structure are limited due to extreme deterioration, dismemberment and visual obscurity.

According to the property owner, the ruined structure was formerly a dwelling, said by his family to have been built in 1877.

Workman's Shed:

A small wood frame structure surfaced with composition siding stands to the west of House #1. A shed roof extends from the front gable. A small gabled porch canopy supported by posts and angled brackets extends from the north elevation above a small concrete platform. Roof surfaces are wood shingled. There are window openings on three sides, with only one multi-paned window still in place. South and east windows are flanked with small vertical wood strips as decoration. The foundation is concrete.

The small structure reflects minor influences of Craftsman design through the use of such elements as the angled brackets at the eaves, and the repetition of the gabled porch and roof forms.

The structure is in poor condition and a window is missing.

Alterations:

The building has been resurfaced and the window on the west has been boarded over. The very small structure is rather temporary and makeshift in character.

Dairy Barn:

The "Grade A" Dairy Barn stands to the north of House #1, and at the rear (west) of Garage #1.

The long wood frame and concrete structure has a gabled roof with a raised ridge the full length for venting. Angled brackets support the gable eaves of the one story building. The roof is shingled and the upper walls of the building are surfaced with wood siding, while the lower four feet of wall is constructed of concrete, a requirement for milk barns handling "Grade A" milk. Rows of small square windows and large sliding doors penetrate the long walls of the essentially vernacular structure. The front elevation facing the road contains windows and a concrete platform and steps leading to a door. Milk cans used to be placed on the platform for truck pickup. The rear elevation contains a large sliding door.

The structure was originally built as a chicken house, in 1936. In 1947, the building was remodeled into a "Grade A" barn to serve the expanded dairy production effected by Gustave Olson and his son Delbert.

The structure is in poor condition.

Alterations:

The Barn experienced a major remodeling in 1947, during its conversion to a dairy barn. Most of the windows are now boarded, and a light was added to the east elevation. The interior now serves as storage.

Barn:

The Barn stands to the north of Garage #1, along Elk Grove-Florin Road.

The vernacular gabled structure is a wood frame building whose roof is of corrugated metal sheathing on the south, and covered (partially) with shingles on the north. Walls are sheathed primarily with vertical wood planking. The wall of the south elevation is of concrete up to a height of approximately four feet, similar to the walls of the Dairy Barn. A row of square window openings penetrates the southern wall. The west and north elevations also contain door and window openings. A wood corral stands in conjunction with the Barn.

This Barn appears to have been built during the 1920s by Stohlgren. It also was partially remodeled during the 1947 conversion of the ranch to a full scale dairy operation.

The structure is in poor condition and lacks the windows and doors that once enclosed its openings.

Alterations:

The Barn was remodeled in the late 1940s for use as part of the dairy ranch production expanded by the Olsons. Its roof is sheathed differently on different halves, and it lacks several doors and windows.

Hog House:

The former Hog House stands to the north of the ranch structures.

The vernacular one story, rectangular structure has a gabled roof surfaced with shingles. The wood frame building is sheathed in wood planking. There are three large openings don the southern elevation, and the northern portion of the building is largely open. The structure is deteriorated and close to ruins.

According to the owner, the hog house was probably constructed during the early 1920s.

Alterations are difficult to determine due to the poor condition of the building. Any pens formerly associated with the building are now gone.

Architectural Overview and Evaluation:

During the late nineteenth century, rural farm and ranch complexes generally utilized rather simplified versions of the prominent architectural styles of the time in the construction of their essentially functional complexes. In California, these ranged from Greek Revival design, to Italianate, and inthe latter part of the century, Eastlake and Queen Anne modes. After the turn of the century, elements from Classical and Colonial Revival styles were used, followed by a variety of versions of Craftsman design. The latter was modified and employed in such settings for at least two decades, with versions of the design extending into the 1940s. The bungalow concept and the open and functional interiors of these houses proved flexible and adaptable, and apparently worked well to earn such long and widespread use.

The Stohlgren/Olson Ranch property contains a complex of nine ranch related buildings. Of these, the two houses most strongly reflect an architectural identity, with their use of minor Craftsman stylistic references. However, some effort has been made to relate such vernacular ranch buildings as the small Workman's Shed and the Dairy Barn, to the Craftsman character of the houses. Devices used to effect that end include the use of angled brackets at the eaves, projecting rafter ends, and the scale and use of horizontal lap siding. While these elements are understated, and numerous modifications have occured, a certain relationship between the buildings is established by their use.

While some Craftsman references are utilized in the construction of the houses and reflected in some of the other buildings, they do not represent strong, outstanding or unusually well designed examples of the mode. Additionally, the buildings have experienced varying degrees of alteration and deterioration which have affected their design integrity, original building fabric, and character image. As a result of these modifications, limited initial design values, and absence of any notable designers, the complex does not appear to meet eligibility criteria for listing in the National Register of Historic Places based upon architectural or design qualities.

BIBLIOGRAPHY:

Davis, Hon. Win. J., Memorial and Biographical History of Northern California. The Lewis Publishing Co., Chicago, 1890

Guinn, James, M. History of the State of California and Biographical Record. Chapman Publishing Co., Chicago, 1906

Hoover, Mildred, Hero Rensch and Ethel Rensch, Historic Spots in California Stanford University Press, Stanford, Calif. 1966

McGowan, Joseph A. History of the Sacramento Valley. 3 Vols. Lewis Publishing Company, New York 1961

Reed, G. Walter, ed. History of Sacramento County, California. Historic Record Co., Los Angeles 1923

Sacramento County and Its Resources, A Souvenir of the Bee. James McClatchy and Co. Sacramento 1894

Thompson, Thomas and West, Albert A. History of Sacramento County, California with Illustrations. Howell-North, 1960

Willis, William L. History of Sacramento County, California Historic Record Co., Los Angeles, 1913

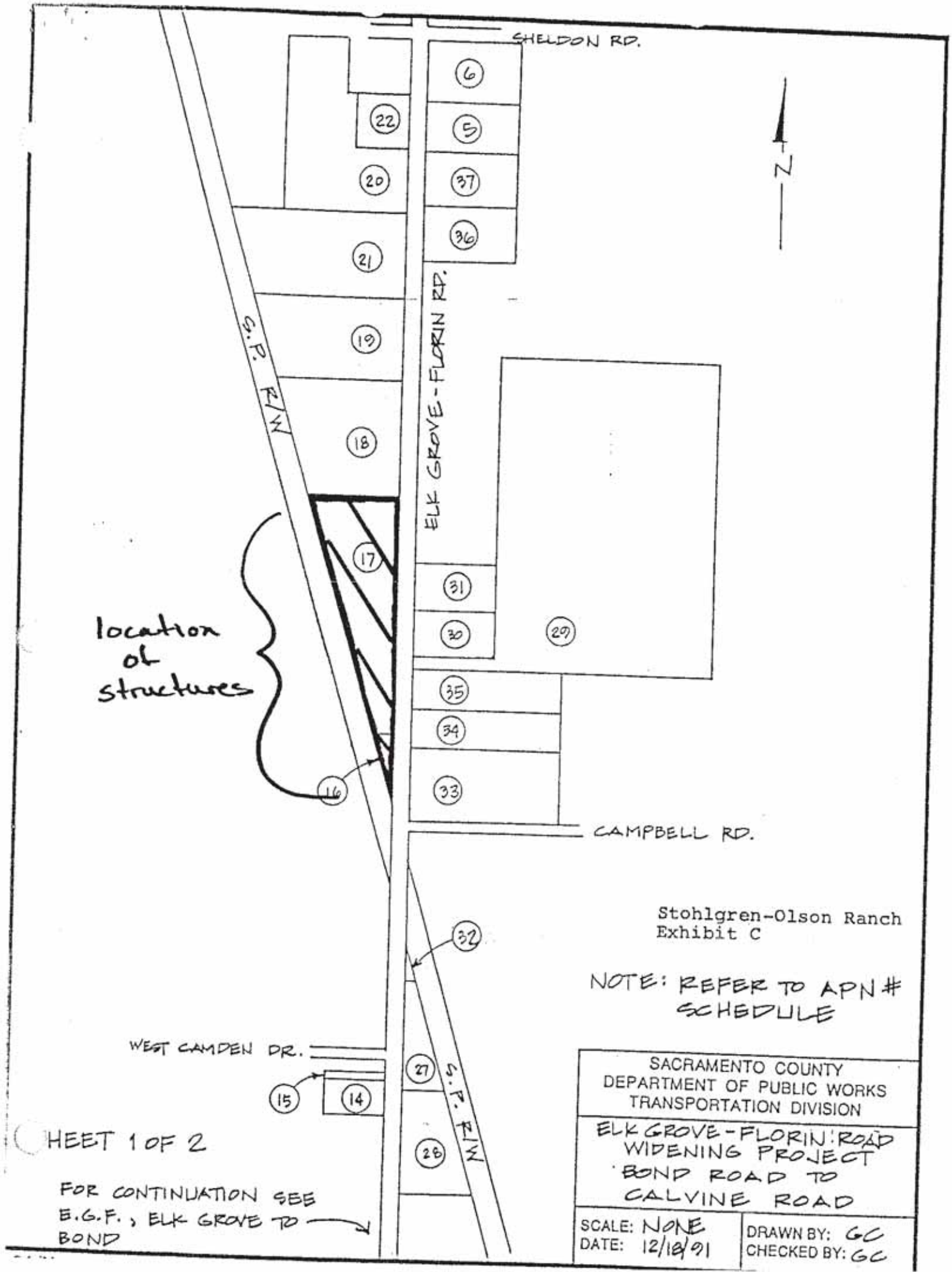
Sacramento County Map Books:
1892
1895
1900
1911
1921
1935
1939

Sacramento County Assessment Rolls:
1935
1939

Sacramento Bee/Sacramento Union Files, card index reference file prepared by Public Works Administration

Interview:

Delbert Olson, May 1992


SHELDON RD.
6
5
37
36
22
20
21
19
18
17
31
30
29
35
34
33
16
32
27
28
15
14
N
S.P. R/W
ELK GROVE-FLORIN RD.
location of structures
CAMPBELL RD.
WEST CAMDEN DR.
S.P. R/W
Stohlgren-Olson Ranch
Exhibit C
NOTE: REFER TO APN # SCHEDULE
SACRAMENTO COUNTY
DEPARTMENT OF PUBLIC WORKS
TRANSPORTATION DIVISION
ELK GROVE-FLORIN ROAD
WIDENING PROJECT
BOND ROAD TO
CALVINE ROAD
SCALE: NONE
DATE: 12/18/91
DRAWN BY: GC
CHECKED BY: GC
SHEET 1 OF 2
FOR CONTINUATION SEE
E.G.F., ELK GROVE TO
BOND

Elk Grove Intermodal Rail Station Master Plan

DRAFT RECIRCULATED INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

Prepared By

City of Elk Grove
Development Services-Planning
8401 Laguna Palms Way
Elk Grove, CA 95758

January 2010

Bridge Over Whitehouse Creek

Construction of a new bridge over Whitehouse Creek would be included as part of the project. The bridge is required to provide vehicle and pedestrian access over Whitehouse Creek to and from different areas of the station. The new bridge would be designed to accommodate a 100-year flood event as it would be located within the 100-year floodplain.

Storm Water Features

In order to adequately accommodate storm water flows, a detention basin would be constructed with a depth ranging from three to five feet. The detention basin would be designed to retain approximately 3.5 acre-feet and would accommodate a 100-year flood event. In addition, permeable pavement would be used in the parking areas and drainage swales are proposed for use in the landscaped areas to accommodate drainage flows.

Stohlgren/Olsen Ranch

A historic marker displaying the history of the Stohlgren/Olsen Ranch would be included on site as part of the proposed project. Although the site is not eligible for inclusion in the NRHP, the City of Elk Grove and the Elk Grove Historic Preservation Committee would like to commemorate this site as an important landmark within the city.

Future Expansion Areas

Although not proposed as part of the current proposed development, several areas within the project site have been reserved to accommodate future expansion of the Intermodal Rail Station, as needed. These areas have been set aside to ensure that if use of the station increases beyond the proposed capacity, adequate parking and other passenger services could still be provided without expanding beyond the existing project site. This Master Plan IS/MND analyzes existing resources and impacts associated with development of the entire project site. While impacts regarding disturbance of the future expansion areas are addressed at a programmatic level, specific impacts related to any future expansion would be evaluated in more detail at the time specific plans for a subsequent project are available.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
3.5 CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in ? 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to ? 15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

An Archaeological and Historical Resources Report was completed for the project by the City in May 2007. Subsequently, an archeologist surveyed the 600' long by 35 foot wide area of proposed widening of Elk Grove-Florin Road, including bike lanes, and new sidewalk at the southern end of the proposed project. The results of this subsequent survey are included in the Cultural Resources Study Elk Grove Rail Stop Project by Pacific Legacy dated October 30, 2009. The analysis and conclusions below are based on these reports.

ENVIRONMENTAL SETTING

City cultural resources staff conducted archaeological and historical investigations for the proposed project. These investigations included: a records search at the North Central Information Center at California State University, Sacramento in April 2007; a sacred lands search completed by the Native American Heritage Commission on May 7, 2007; consultation with the Native American community; archival research at the Sacramento County Assessor's Office; pedestrian surface survey of the project area of potential effect (APE); and completion of a report documenting the results of investigations that includes management recommendations for any significant cultural resources (e.g., prehistoric sites, historic sites, historic buildings, or isolated artifacts) within the project APE. The project is subject to the legal requirements of Section 106 of the National Historic Preservation Act of 1966 (NHPA) and its implementing regulations, as amended.

ARCHAEOLOGICAL RESOURCE IDENTIFICATION

The record search for the project identified four previous surveys within the project APE (cf., Johnson 1974; Historic Environment Consultants 1992; Michael Brandman Associates 1995; Tremaine & Associates 2001) and seven previous surveys (cf., Peak & Associates 1980; Department of Environmental Review and Assessment 1993; Woodward-Clyde Consultants 1995; Jensen & Associates 2003; Pacific Municipal Consultants 2003a, 2003b; Earthtouch Inc. 2006) within a 0.5 mile radius of the project APE. The records search also identified two private residences and outbuildings associated with the Stohlgren/Olson Ranch at 9010 and 9040 Elk Grove–Florin Road (APN 116-0042-007 and 116-0042-025) that were built from 1877 to the 1940s; site CA-SAC-545-H, Elk Grove-Florin Road; and site P-34-1302-H, the Southern Pacific San Joaquin Valley Mainline within the project APE.

Stohlgren/Olson Ranch

The project site is currently undeveloped land with the exception of three structures near the southern portion of the site. The three structures consist of a residence, a barn, and a small shed. These structures are collectively known as Stohlgren/Olson Ranch and it was previously determined not eligible for inclusion in the National Register of Historic Places (NRHP) (cf., Historic Environment Consultants 1992). Current research concurs with the previous findings and also finds that the site lacks integrity of materials, workmanship, setting, feeling, and association and does not appear to meet any of the eligibility criteria for inclusion in the California Register of Historical Resources (CRHR). In addition, the site is not listed on a local register of historical resources and for the same reasons cited above, possesses little likelihood of being be eligible for consideration as a locally important historical resource following guidance at the CCR 15064.5 (2), Public Resources Code (PRC) 5020.1 (k), and Elk Grove's Historic Preservation Ordinance.

Southern Pacific San Joaquin Valley Mainline

The Southern Pacific San Joaquin Valley Mainline Site, which is adjacent to the project APE, was previously determined not eligible for inclusion in the NRHP (cf., Woodward-Clyde Consultants 1995). The site is the current working railroad and only represents the historic alignment of the railroad. Current research concurs with the previous findings and also finds that the site lacks integrity of materials, workmanship, setting, feeling, and association and does not appear to meet any of the eligibility criteria for inclusion in the CRHR. In addition, the site is not listed on a local register of historical resources and does not appear to be eligible for consideration as a locally important historical resource following guidance at the CCR 15064.5 (2), PRC 5020.1 (k), and Elk Grove's Historic Preservation Ordinance.

Elk Grove–Florin Road

Site CA-SAC-545-H, Elk Grove–Florin Road, is a modern working road. The road generally follows the alignment of a road identified on a 1909 quadrangle map, but it is not associated with any historic features. The road has been improved and is a heavily used transportation corridor that does not include any features of historic road construction and lacks integrity of materials, workmanship, setting, feeling, and association. Site CA-SAC-545-H does not appear to meet the eligibility criteria for inclusion in the NRHP or the CRHR. In addition, the site is not listed on a local register of historical resources and does not appear to be eligible for consideration as a locally important historical resource following guidance at the CCR 15064.5 (2), PRC 5020.1 (k), and Elk Grove's Historic Preservation Ordinance.

Potential for Other Cultural Resources

Previous surveys did not encompass the entire project APE, and City cultural resources staff conducted an intensive pedestrian surface survey across the APE for the project in May 2007 using five meter parallel transects. Vegetation (e.g., brush and grasses) across portions of the project APE affected surface visibility, but areas of exposed native soils and surface scrapes provided sufficient surface visibility to identify cultural resources that would likely occur in the area. The surface survey did not identify any new cultural resources in the project APE, but did identify that the project APE has been previously disturbed by activities associated with agriculture, residential, and commercial construction; the construction of Elk Grove–Florin Road; the construction of the railroad; and installation of infrastructure. Past agricultural operations may have likely damaged or destroyed archaeological resources that may have existed on the project site to such a degree that they would yield no valuable information. Regardless,

previously unidentified cultural resources or human remains may be found during project ground disturbing activities.

Native American Consultation

City cultural resources staff requested a sacred lands search and a list of Native American contacts from the Native American Heritage Commission on April 26, 2007. The results of the sacred lands search sent to the City on May 7, 2007 did not identify any Native American cultural resources within or near the project APE. City cultural resources staff contacted all groups and/or individuals on the list provided by the Native American Heritage Commission regarding the project. To date, the City has not received any comments regarding the project from any interested parties.

DISCUSSION OF IMPACTS

a) *Would the project cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?*

No Impact. The buildings and structures at 9010 and 9040 Elk Grove–Florin Road, which would be removed as part of the proposed project, were previously determined not eligible for inclusion in the NRHP (cf., Historic Environment Consultants 1992). Elk Grove-Florin Road is a modern working road that generally follows the historic alignment of a road identified on a 1909 quadrangle map, yet is not associated with any other historic features. The Southern Pacific San Joaquin Valley Mainline, adjacent to the project was previously determined not eligible for inclusion in the NRHP. Archeological and historical investigations did not identify any cultural resources (e.g. prehistoric sites, historic sites, or buildings) located within the project area that meet the CEQA criteria as presented in §15064.5; therefore, the proposed project would be expected to have no impact on historical resources.

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?*

Less than Significant Impact. There are no known archaeological resources within the project area, and the potential for archaeological resources to be present on this site is low due to the extent of prior disturbances to the project site; therefore, the proposed project would not be expected to impact any archaeological resources. Per the City's General Plan Policy HR-6-Action 2 requirements would be included in the construction contract that the City shall be notified immediately if any archaeological resource is uncovered during construction. In the event of this type of discovery, construction would stop and an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology would be retained to evaluate the finds and recommend appropriate action. Therefore, impacts to archaeological resources would be less than significant.

c) *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?*

Less than Significant Impact. Project construction would involve grading activities requiring a minimal amount of soil excavation. There are no identified paleontological resources within the project area, and discovery of this type of resource is not anticipated. Per General Plan Policy HR-6-Action 2 of the City's General Plan, requirements would be included in the construction contract that the City shall be notified immediately if any paleontologic artifact is uncovered

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # (Pending)
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

 *Resource Name or # (Assigned by recorder) CRM TECH 2739-1

P1. Other Identifier: Stohlgren/Olsen Ranch

*P2. Location: ____ Not for Publication √ Unrestricted *a. County Sacramento
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad El Grove, Calif. Date 1979
T 7N; R 5E; NE 1/4 of SE 1/4 of Sec 25 ; M.D. B.M.
Elevation: Approximately 68 feet above mean sea level

c. Address 9040 Elk Grove Florin Road City Elk Grove Zip 95758

d. UTM: (Give more than one for large and/or linear resources) Zone 10 ; 642114 mE/ 4254802
UTM Derivation: ____ USGS Quad ____ GPS √ Google Earth;

e. Other Locational Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 0116-0042-25; on the west side of Elk Grove Florin Road, north of the Union Pacific Railroad intersection and south of Sheldon Road

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) Remnants of the Stohlgren-Olsen Ranch at this location include residence, a shed, and a former dairy barn, along with the foundational remains of several other buildings. Southernmost among the buildings is the wood-framed, single-story residence built in the Craftsman Bungalow style, facing Elk Grove Florin Road to east and sitting very close to the roadbed. It is rectangular in plan and is surmounted by a medium-pitched cross-gable roof. The roof is sheathed with composition shingles and features medium eave and rake overhang, with exposed rafter tails under the eaves and triangular brackets at the peaks and ends of the gables. A matching secondary gable over the raised entry porch is supported by battered wooden posts resting on stuccoed piers. *(Continued on p. 3)*

P3b. Resource Attributes: (List attributes and codes) HP33: Farm/ranch

*P4. Resources Present: √ Building ____ Structure ____ Object √ Site ____ District ____ Element of District
Other (isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

See p. 4

P5b. Description of Photo: (view, date, accession #) See p. 4

*P6. Date Constructed/Age of Sources:
√ Historic ____ Prehistoric ____ Both
Ca. 1911-1947 (see Items B6 and B12 for details)

*P7. Owner and Address: Unknown

*P8. Recorded by (Name, affiliation, and address): Terri Jacquemain, CRM TECH, 1016 East Cooley Drive, Suite A/B, Colton, CA 92324

*P9. Date Recorded: October 2, 2013

*P10. Survey Type: Project-level survey for Section 106- and CEQA-compliance purposes

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang (2013): Historic Property Survey Report: San Joaquin Rail Corridor 2035 Vision Project, Proposed Railway Station in the City of Elk Grove, Sacramento County, California

*Attachments: ____ None ____ Location Map √ Continuation Sheet √ Building, Structure, and Object Record
____ Archaeological Record ____ District Record ____ Linear Resource Record ____ Milling Station Record
____ Rock Art Record ____ Artifact Record ____ Photograph Record ____ Other (List):

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

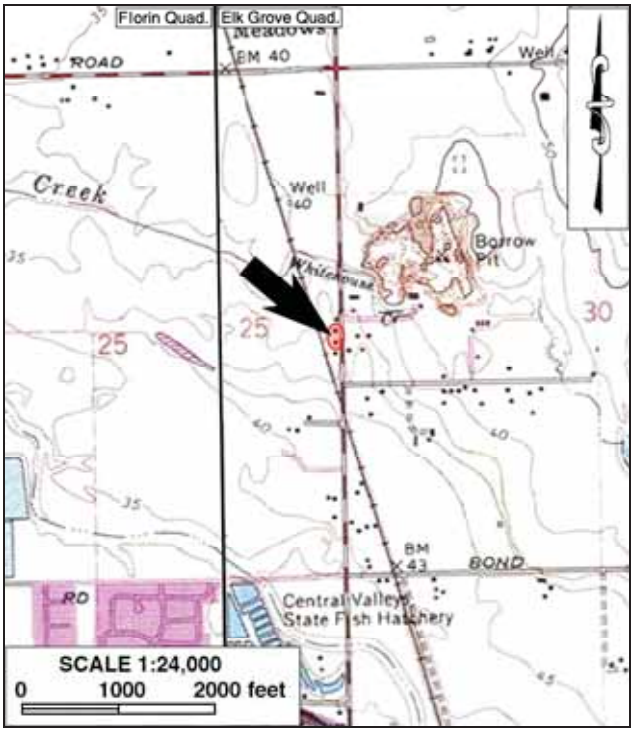
Primary # Pending
HRI #

BUILDING□STRUCTURE□AND OB□ECT RECORD

*NRHP Status Code 6Z
*Resource Name or # (Assigned by recorder) CRM TECH 2739-1

B□. Historic Name: Stohlgren/Olson Ranch
B2. Common Name:
B□. Original Use: Agricultural
B□. Present Use: Residential
*B5. Architectural Style: Craftsman
*B6. Construction History: (Construction date, alterations, and date of alterations) According to his grandson Delbert Olson, Carl Stohlgren constructed a new residence and a garage on the property in 1911. Stohlgren was a Swedish immigrant who worked as a section foreman for the Central Pacific (later Southern Pacific) *(Continued on p. 3)*
*B7. Moved□ √ No ___□es ___Unknown Date:_____ Original Location:
*B8. Related Features: See Item P3a.
B□a. Architect: Unknown
b. Builder: Unknown
*B10. Significance: Theme Early and mid-20th century rural land use and development
Area Elk Grove
Period of Significance 1911-1964
Property Type Agricultural
Applicable Criteria N/A
(Discuss importance in terms of historical or architectural conte□t as defined by theme, period, and geographic scope. Also address integrity.) The Stohlgren/Olson Ranch was studied and evaluated for historical significance by P. Bogohsian in 1992 and found not to rise to the level of historical significance required for listing in the National Register of Historic Places. At that time, the ranch complex consisted of *(Continued on p. 4)*
B□□. Additional Resource Attributes: (List attributes and codes)
*B12. References: Paula Boghosian (1992): Historic and Architectural Evaluation for Elk Grove-Florin Road Widening, Sewer Extension and Water Transmission Line (on file, North Central Information Center, California State University, Sacramento); City of Elk Grove (2010): Elk Grove Intermodal Rail Station Master Plan, Draft Recirculated Initial Study/Mitigated Negative Declaration (on file, Development Services-Planning, City of Elk Grove).
B□□. Remarks:
*B14. Evaluator: Terri Jacquemain
*Date of Evaluation: October 2013

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

*Required information

***P3a. Description** (continued): The exterior walls of the residence are clad with narrow clapboard siding painted white. Fenestration consists primarily of single-hung windows with narrow top sashes and single-paned bottom sashes, but also includes two large tripartite windows with fixed center sashes on the primary façade. The front porch is access from the north via four wooden steps with wooden handrails. An open, partial-width porch with a corrugated metal roof is found on the rear façade. A brick chimney on the southern façade has received a coat of stucco. The house appears to be occupied and is in fair condition.

To the north of the residence is a long, rectangular, one-story dairy barn. This weathered structure has a medium-pitched gable roof of composition shingling with wide eaves and exposed rafter tails, capped by a full-length monitor-like vent raised by evenly spaced rafters. The lower four feet of the exterior walls are built of concrete, a requirement for a "Grade A" milking barn. Horizontal wood siding, apparently caulked, covers the upper portion of the exterior wall surface. The main entrance to the east-facing building is slightly off-centered, next to two aluminum-framed multi-pane windows. This entrance and the most of the windows around the building have been sealed with wood panels, as have large sliding doors on the south and north sides, leaving a single sliding door in the rear for access. The building is apparently used for storage.

Between the two houses is a north-facing storage shed that is styled to look like a small house. The wood-framed structure is clad with wide, horizontal strips of gray composition siding and topped by a steep front-gable roof with wood shingles. A matching secondary gable supported by angled brackets and two square wooden posts shelters the front entrance and a small concrete stoop. A fixed window inset on the east side is flanked by short, dog-eared boards.

***B6. Construction History** (continued): Railroad before turning to farming. Along with his crops, Stohlgren kept chickens, hogs, and a small herd of dairy cows. He collected animals from other locations to render for fat, hides, and other by-products. In 1936, Stohlgren constructed a second house on the property for his son, Fred, who worked on the ranch but later left to work at the Gibson Winery in Sanger when the elder Stohlgren retired. After Carl Stohlgren's death around 1947, the ranch was taken over by his son-in-law Gustave Olson and grandson Delbert Olson, who were in the dairy business elsewhere. The Olsens moved the dairy operation to the ranch in 1947, expanding to 150 cows and upgrading a former chicken house to meet requirements for Grade A dairy products. The dairy operation relied on five milking machines and one hired hand to manage the herd of prize-winning, registered Jersey cows, while clover and alfalfa were grown on the property for feed. In 1964, Delbert Olson sold the dairy cows and went to work for the U.S. Post Office, but remained in the ranch house. Delbert Olson's community involvement included serving in the 1960s as President of the Elk Grove Cemetery District, with oversight over five local cemeteries, and as a member of E. Clamper Vitus, a Western heritage group.

***B10. Significance** (continued): nine buildings, including three houses (one of them in ruins), a dairy barn, a "workman's shed," an animal barn, a "hog house," and two garages. That number had dwindled to three by 2010, when the ranch was studied by the City of Elk Grove and further determined not to meet any of the criteria for the California Register of Historical Resources or for local historical designation. No new information has come to light to warrant a revision to these conclusions.

The Stohlgren/Olson Ranch, clockwise from top left: overview from Elk Grove Florin Road, to the southwest; circa 1910s-1920s Craftsman-style residence, view to the southwest; former dairy barn, circa 1947, view to the west; a storage shed, view to the west. (Photographs taken on October 2, 2013)

ATTACHMENT D

CORRESPONDENCE WITH NATIVE AMERICAN REPRESENTATIVES*

* A total of seven local Native American representatives were contacted; a sample letter is included in this attachment.

SACRED LANDS FILE & NATIVE AMERICAN CONTACTS LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 (Fax)
nahc@pacbell.net

Information below is provided for a Sacred Lands File Search

Project: Historical/Archaeological Resources Survey: San Joaquin Rail Corridor 2035 Vision Project, Proposed Elk Grove Station (CRM TECH Contract No. 2739)

County: Sacramento

USGS Quadrangle Name: Elk Grove, Calif.

Township 7 North **Range** 5 East MD **BM; Section(s)** 25

Company/Firm/Agency: CRM TECH

Contact Person: Nina Gallardo

Street Address: 1016 E. Cooley Drive, Suite A/B

City: Colton, CA **Zip:** 92324

Phone: (909) 824-6400 **Fax:** (909) 824-6405

Email: ngallardo@crmtech.us

Project Description: The proposed Elk Grove Station is a component of the San Joaquin Corridor Amtrak California Service Project. It entails the development of a new passenger railway station on four parcels totaling approximately 15 acres in the City of Elk Grove, Sacramento County (map attached). The area has been surveyed twice for cultural resources in the past (in 1992 and 2099), resulting in the identification of a historic-period dairy farm on the property. No other sites, buildings, structures, objects, features, or artifacts more than 50 years of age have been reported to the Northwest Information Center.

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd.
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

October 10, 2013

Nina Gallardo
CRM TECH
1016 E. Cooley Drive, Ste A/B
Colton, CA 92324

By Fax: 909-824-6405

Number of Pages: 2

Re: San Joaquin Rail Corridor 2035 Vision project, Sacramento County

Dear Ms. Gallardo;

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3713.

Sincerely,

Lyte Wanston for

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Sacramento County
October 10, 2013

Randy Yonemura
4305 - 39th Avenue Miwok
Sacramento , CA 95824
honortraditions@mail.com
(916) 421-1600
(916) 601-4069-cell

Wilton Rancheria
Steven Hutchason, Director of Cultural Preservation
9300 W. Stockton, Suite 200 Miwok
Elk Grove , CA 95758
shutchason@wiltonrancheria-nsn.gov
916-683-6000
916-683-6015

Buena Vista Rancheria
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200 Me-Wuk / Miwok
Sacramento , CA 95811
rhonda@buenavistatribe.com
916 491-0011
916 491-0012 - fax

Ione Band of Miwok Indians
Yvonne Miller, Chairperson
PO Box 699 Miwok
Plymouth , CA 95669
(209) 274-6753
(209) 274-6636 Fax

Ione Band of Miwok Indians Cultural Committee
Anthony Burris, Chairperson
PO Box 699 Miwok
Plymouth , CA 95699
(209) 274-6753
(209) 274-6636 Fax

Wilton Rancheria
Andrew Franklin, Chairperson
9300 W. Stockton, Suite 200 Miwok
Elk Grove , CA 95758
916-683-6000
916-683-6015

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed San Joaquin Rail Corridor 2035 Vision project, Sacramento County

October 14, 2013

Andrew Franklin, Chairman
Wilton Rancheria
9300 W. Stockton Avenue, Suite 200
Elk Grove, CA 95758

RE: Historic Property Survey
San Joaquin Rail Corridor 2035 Vision Project
Proposed Railway Station at Elk Grove
Approximately 15 acres in the City of Elk Grove
Sacramento County, California
CRM TECH Contract #2739

Dear Chairman Franklin

In order to improve and expand passenger rail service between Sacramento, Oakland, Bakersfield, and Los Angeles, the California Department of Transportation (Caltrans), Division of Rail, proposes a series of railway facility enhancements known collectively as the San Joaquin Corridor Amtrak California Service Project. The project component addressed in this letter consists of the construction of a new passenger railway station and associated improvements along the Union Pacific Railroad in the City of Elk Grove, Sacramento County, California.

The Area of Potential Effects (APE) for the undertaking consists of a triangular-shaped tract of agricultural land situated north of Bond Road, east of the Union Pacific Railroad, and west of Elk Grove Florin Road. The accompanying map, based on the USGS Elk Grove, Calif., 7.5' quadrangle, depicts the location of the APE in Section 25, T7S R5E, Mount Diablo Baseline and Meridian. Caltrans is the lead agency for Section 106 compliance for this project. CRM TECH has been hired to conduct a cultural resource study, including the Native American consultation, for this project.

In a letter dated October 10, 2013, the Native American Heritage Commission reports that the sacred lands record search identified no Native American cultural resources in the immediate project area, but recommends that local Native American groups be contacted for further information. Therefore, as part of the cultural resources study for this project, I am writing to request your input on potential Native American cultural resources in or near the APE.

According to records on file at the North Central Information Center, the APE was studied in 2009 for a similar station project and in 1992 prior to a road widening project. As a result, the property is known to be the site of the Stohlgren/Olsen Ranch, a family-owned farm and dairy in operation from the early 20th century through 1964. The Union Pacific Railroad, Elk Grove Florin Road, and a commercial building were the only other previously recorded cultural resources within a quarter-mile of the APE. A systematic field survey of the project area on October 2, 2013, yielded negative results for any additional cultural resources.

Please respond at your earliest convenience if you have any specific knowledge of sacred / religious sites or other sites of Native American traditional cultural value within or near the APE. Any information or concerns may be forwarded to CRM TECH by telephone, e-mail, facsimile, or standard mail. Requests for documentation or information we cannot provide will be forwarded to our client and / or Caltrans. We would also like to clarify that CRM TECH, as the cultural resources consultant for the project, is not the appropriate entity to initiate government-to-government consultations. Thank you for the time and effort in addressing this important matter.

Respectfully,

Nina Gallardo
CRM TECH
E-mail: ngallardo@crmtech.us

Encl.: APE map

December 11, 2013

Nina Gallardo
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 923324

RE: San Joaquin Rail Corridor 2035 Vision Project, Proposed Railway Station at Elk Grove

Dear Ms. Gallardo,

Buena Vista Rancheria has received your letter dated October 14, 2013, requesting specific knowledge of sacred/religious sites or other sites of Native American traditional cultural value within the area of potential effect (APE) for the subject project.

The proposed APE is within the ancestral territory of the Me-Wuk peoples, and continues to have spiritual and cultural significance for today's living descendants. Buena Vista Rancheria respectfully requests the following information. In cases where you are unable to provide the information, please forward the request appropriately, as you indicate will be done in your letter.

1. Buena Vista Rancheria wishes to participate in the determination of the APE. Who determined the APE? What tribal representation was consulted when the APE was made?
2. Who conducted the systematic field survey on October 2 and determined "completely negative results" for any new potential cultural resources?
3. What Tribal representative was present during the survey to advise and assist in making the determination?
4. Please send a copy of CRM scope of work, research design, and survey field notes, and report to Buena Vista Rancheria.
5. Buena Vista Rancheria wishes to enter government to government consultation with the appropriate government representative concerning this project. Please provide the contact information.

Thank you for advising Buena Vista Rancheria of this subject project. We look forward to hearing from you soon. Please direct information and questions to me by telephone at 916-491-0011, by email at roselynn@buenavistatribe.com, or by mail at the above address.

Sincerely,

Roselynn Lwenya, Ph.D
Environmental Resources Director/THPO
BUENA VISTA RANCHERIA OF ME-WUK INDIANS

P.O. BOX 162283 Sacramento CA 95816
TEL 916.491.0011 FAX 916.491.0012
www.buenavistatribe.com

RECEIVED DEC 13 2013

Wilton Rancheria

Department of Environmental Resources
9300 W. Stockton Blvd., Suite 200
Elk Grove, CA 95758
Ph: (916) 683-6000
Fax: (916) 683-6015

December 11, 2013

CRM TECH
Nina Gallardo
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re: San Joaquin Rail Corridor 2035 Vision Project Proposed Railway Station Elk Grove Sacramento County, California (CRM TECH Contract #2739)

Dear Nina,

Thank you for your letter dated October 14, 2013, on the above named project. Wilton Rancheria's service designation area is Sacramento County and indigenous territory spans into San Joaquin County. Wilton Rancheria is concerned about development and projects within its territory that has potential to impact its environmental resources. These resources include but are not limited to air, water, land and the lifeways of our Tribe. We appreciate the opportunity to comment on this and other projects in your jurisdiction.

To determine whether or not the project could affect resources that may be of importance to Wilton Rancheria. We would like to receive copies of any completed record searches. We would also like to request any archeological, cultural and environmental surveys and reports that have been, or will be, completed for the project. The information gathered will provide us with a better understanding of the project and resources on site. This information is invaluable for consultation purposes.

Thank you again for taking these matters into consideration, if you have any questions please contact Steven Hutchason at (916) 683-6000 ext. 2006 or email at shutchason@wiltonrancheria-nsn.gov.

Sincerely,

Steven Hutchason
Executive Director of Environmental Resources

RECEIVED DEC 14 2013

From: Nina Gallardo <ngallardo@crmtech.us>
Sent: Wednesday, December 18, 2013 2:07 PM
To: roselynn@buenavistatribe.com
Subject: San Joaquin Rail Corridor 2035 Vision Project, Proposed Railway Station in Elk Grove

Hello Ms. Lwenya,

Thank you for your response to CRM TECH's request for comment regarding San Joaquin Rail Corridor 2035 Vision Project, Proposed Railway Station in Elk Grove. The information you provided in your letter dated December 11, 2013 regarding the Buena Vista Rancheria tribe's disposition of the project and APE is appreciated. As you have requested, your request for specific information regarding the pending project report has been forwarded to Caltrans, the lead agency for the Section 106 cultural resources component of the project. Any further comment you may have will be directly forwarded to Caltrans. Again, thank you for your response.

Nina Gallardo
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
(909) 824-6400

From: Nina Gallardo <ngallardo@crmtech.us>
Sent: Wednesday, December 18, 2013 2:18 PM
To: shutchason@wiltonrancheria-nsn.gov
Subject: San Joaquin Rail Corridor 2035 Vision Project, Proposed Railway Station in Elk Grove
Attachments: 2739 Summary of Methods and Results (Record Search).docx; 2009 Elk Grove Rail Stop Project.pdf; 1992 Study (Boghosian).pdf; 2010 Study (City of Elk Grove).pdf

Hello Mr. Hutchason,

Thank you for your response to CRM TECH's request for comment regarding San Joaquin Rail Corridor 2035 Vision Project, Proposed Railway Station in Elk Grove. The information you provided in your letter dated December 11, 2013 regarding the Wilton Rancheria tribe's disposition of the project and the APE is appreciated. At your request, we have attached copies of the results of the records searches component of the pending project report and copies of the previously completed surveys of the APE, as reported by the North Central Information Center. Your letter, and any further comment you may have, will be directly forwarded to Caltrans, the lead agency for the Section 106 cultural resources component of the project. Again, thank you for your response.

Nina Gallardo
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324
(909) 824-6400

TELEPHONE LOG

Name	Tribe/Affiliation	Telephone Contacts	Comments
Rhonda Morningstar Pope, Chairperson	Buena Vista Rancheria	2:40 pm, 10/23/2013	Ms. Pope stated that Rosalind Lwenya was the designated spokesperson for the tribe (see below).
Rosalind Lwenya, Environmental Director	Buena Vista Rancheria	2:41 pm, 10/23/2013 12:09 pm, 10/25/2013	Ms. Lwenya responded in a letter dated December 11, 2013 (copy attached).
Anthony Burris, Cultural Committee, Chairperson	Ione Band of Miwok Indians	2:56 pm, 10/23/2013	Mr. Burris indicated that he was still reviewing the information and would respond at a later time.
Yvonne Miller, Chairperson	Ione Band of Miwok Indians	None	Anthony Burris is the designated spokesperson for the tribe (see above).
Randy Yonemura	Miwok	3:02 pm, 10/23/2013 12:20 pm, 10/25/2013 2:15 pm, 11/4/2013 3:47 pm, 11/6/2013	Together with Andrew Ramey, a member of the Ione Band Cultural Committee, Mr. Yonemura reviewed the project information and reported that the APE was near a Native American village site on or around the hill to the east of Elk Grove Florin Road. According to Mr. Yonemura, the APE was used by local Native Americans for hunting and gathering in prehistoric and historic-period times. He requested further information on the extent of ground disturbance required during the undertaking, and further consultation with Caltrans representatives prior to the commencement of construction activities.
Andrew Franklin, Chairperson	Wilton Rancheria	None	Steven Hutchason is the designated spokesperson for the tribe (see below).
Steven Hutchason, Director of Cultural Preservation	Wilton Rancheria	3:04 pm, 10/23/2013 12:17 pm, 10/25/2013	Mr. Hutchason responded in a letter dated December 11, 2013 (copy attached).

ATTACHMENT E

CORRESPONDENCE WITH LOCAL COMMUNITY REPRESENTATIVES

From: Terri Jacquemain <tjacquemain@crmtech.us>
Date: Thu, 24 Oct 2013 13:20:27 -0700
To: <gpark@elkgrovecity.org>
Subject: Stohlgren / Olson Ranch

Hi there Gerald Park, City of Elk Grove Senior Planner,

I am currently preparing a cultural resources report for a proposed rail station project in the City of Elk Grove. The Area of Potential Effects (APE) for the proposed undertaking consists of four contiguous parcels, 116-0042-007 and 116-0042-023, -024,and -025, that form a V shape totaling approximately 14.21 acres located in the northeastern portion of the City of Elk Grove, lying in Section 25, T7S R5E, Mount Diablo Baseline and Meridian (MDBM; map attached). The APE contains three buildings associated with the early to mid-20th century Stohlgren / Olson Ranch. Research so far indicates this former dairy has been determined not to be eligible for listing in the National or California Register or for local designation, but that a plaque marking the ranch was to be incorporated into any future rail station development on the property. As part of the local community consultation component of the report as required by Caltrans, I am writing to ask if you have any additional information, comments, or concerns regarding the proposed undertaking. Any time and effort you may have to devote to my inquiry is appreciated.

Sincerely,
Terri Jacquemain, M.A.

From: Terri Jacquemain <tjacquemain@crmtech.us>
Date: Friday, October 25, 2013 1:14 PM
To: <eghs@elkgrovehistoricalsociety.com>
Subject: Elk Grove Historical Research Inquiry

Hi there Elk Grove Historical Society,

I am currently preparing a cultural resources report for a proposed rail station project in the City of Elk Grove, to be located on four contiguous parcels, 116-0042-007 and 116-0042-023, -024,and -025, that form a V shape totaling approximately 14.21 acres located in the northeastern portion of the City of Elk Grove, lying in Section 25, T7S R5E, Mount Diablo Baseline and Meridian. The project area contains three buildings associated with the early to mid-20th century Stohlgren / Olson Ranch. Research so far indicates this former dairy has been determined not to be eligible for listing in the National or California Register or for local designation, but that a plaque marking the ranch was to be incorporated into any future rail station development on the property. As part of the local community consultation component of the report as required by Caltrans, I am writing to ask if you have any additional information, comments, or concerns regarding the proposed undertaking. Any time and effort you may have to devote to my inquiry is appreciated.

Sincerely,

Terri Jacquemain, Historian
CRM TECH

From: Tom Russell <tomkrussell@comcast.net>
Sent: Tuesday, October 29, 2013 12:10 PM
To: tjacquemain@crmtech.us
Subject: Stohlgren / Olson Ranch

Terri,

We received your message to the Elk Grove Historical Society. This is one of those properties that we knew was there and recognized that it was a cattle ranch back in the early 1900's but we don't have much else on the history. It was part of the Elk Grove landscape but nothing historically significant about the property.

Of the three buildings currently on the property, the one that has been requested to be saved is the very small tool shed or play house that sits behind the main house. This is rumored to have been from the Franklin School and moved to the Stohlgren ranch many years ago. Franklin is the small town on the western boundary of the current City of Elk Grove and was considered a part of the Elk Grove community.

Of the buildings remaining on the Stohlgren property, this tool shed or play house was discussed two or three years ago when the Amtrak stop was brought forward to the Elk Grove Historical Preservation Committee. It was suggested that this small house be preserved and restored as a remembrance of the property and the ranch that once made up the community of Elk Grove. The construction and design is reminiscent of early day building. The suggestion was that it be moved to a position where it could be used as a kiosk for the station and also relay some of the history of early Elk Grove for travelers since this was the 1868 rail line through Elk Grove.

The 1893 Elk Grove railroad station was torn down in 1972 and sold to Lodi for $1 but never put back together and used. It sat in a field until it eventually rotted away. It was discussed that the railroad station be rebuilt and used as part of the Old Town Park next to the RR tracks but the cost and restrictions were too great.

We hope this helps!
Tom Russell
tomkrussell@comcast.net

TELEPHONE LOG

Name	Telephone Contacts	Comments
Gerald Park, City of Elk Grove Senior Planner	1:37 pm, October 24, 2013 9:23 pm, October 28, 2013 3:47 pm October 30, 2013 10:03 am October 31, 2013 10:15 am November 4, 2013	Mr. Park noted that Tom Russell of the Elk Grove Historical Society would be a good contact, and requested information from previous studies on the property, which were subsequently e-mailed to him.
Elk Grove Historical Society	1:17 pm, October 25, 2013 9:27 pm, October 28, 2013	Tom Russell responded on behalf of the historical society via e-mail on October 29 (see above).

APPENDIX 5c

Letter Report Re:
Identification of Historic Properties
(City of Hercules)

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

September 23, 2013

Dawn Kukla, Senior Environmental Planner
Caltrans District 7, Division of Environmental Planning, MS 16-A
100 South Main Street, Suite 100
Los Angeles, CA 90012

RE: Identification of Historic Properties
San Joaquin Rail Corridor 2035 Vision Project
Proposed Railway Station in the City of Hercules
Contra Costa County, California
CRM TECH Contract #2738

Dear Ms. Kukla:

In order to improve and expand passenger rail service between Sacramento, Oakland, Bakersfield and Los Angeles, the California Department of Transportation (Caltrans), Division of Rail, proposes a series of railway facility enhancements known collectively as the San Joaquin Rail Corridor 2035 Vision Project. The project component addressed in this letter report consists of the construction of a new passenger railway station and associated improvements along the Union Pacific Railroad near Hercules Point, in the City of Hercules, Contra Costa County, California.

The present study is a part of the environmental review process for the proposed undertaking, as required by Caltrans in compliance with Section 106 of the National Historic Preservation Act and the California Environmental Quality Act. The purpose of the study is to assist Caltrans in identifying any "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Title 14 CCR §15064.5(a)(1)-(3), that may exist within or immediately adjacent to the Area of Potential Effects (APE) for the undertaking, which is delineated to encompass the maximum extent of ground disturbances as currently projected (Fig. 1).

In the course of preparatory research, it was discovered that the entire APE was covered by an existing cultural resources study for the Hercules Intermodal Transit Center (ITC) Final Environmental Impact Statement (FEIS), which was prepared in 2012 by the Federal Transit Administration (FTA) and the City of Hercules under Section 106 provisions (FTA and City of Hercules 2012). The scope of the study included records searches at the Northwest Information Center and the Native American Heritage Commission, historical background research, consultation with local community and Native American representatives, and an intensive-level field survey that encompassed the current APE in its entirety (*ibid.*).

In addition, a large portion of the APE was also covered by a Caltrans-format historic property survey report prepared in 2012 by the Far Western Anthropological Research Group of Davis, California, for the San Francisco Bay Trail project, a component of the Hercules ITC project (Kaijankoski 2012). The scope of that study included the same

Figure 1. Project location.

research procedures as those completed for the overall FEIS, and those that were planned for the present study.

After reviewing both of the previous studies, it is our conclusion that the current APE has been adequately surveyed for "historic properties"/"historical resources" in the recent past, and the findings of those studies are sufficient to support the identification and evaluation of "historic properties"/"historical resources" within or adjacent to the APE. Therefore, no further research procedures will be necessary for the present study, and the conclusions and recommendations will be based on the results and findings of the 2012 studies.

The records searches conducted for the 2012 studies identified three known historical/archaeological sites as lying within or partially within the current APE, namely Site 07-002570/CA-CCO-750, a prehistoric shell midden; Site 07-001006/CA-CCO-818H, the Hercules Powder Company; and Site 07-000813, the Southern Pacific Railroad (now the Union Pacific Railroad; see Fig. 2). During the archaeological field survey for the Hercules ITC FEIS, several features associated with the railroad grade and the former powder works operation were identified within the project boundaries, including foundations, signal markers, culverts, pipes, and a wooden railroad bridge (FTA and City of Hercules 2012:3:45-48).

The Native American Heritage Commission's Sacred Lands Files did not identify any Native American cultural resources within the Hercules ITC project area, nor did correspondence with eight local tribal representatives recommended by the commission (FTA and City of Hercules 2012:3:45). Nevertheless, the contacts with tribal representatives produced one response, containing a request for Native American monitoring and for specific actions to be taken if Native American remains are encountered during the project (Donaldson 2011:2).

Subsequent to the field survey, additional archaeological investigations determined that Site 07-002570 lay in the railroad right-of-way at a minimum depth of 2.89 feet below the ground surface and contained such diverse artifacts as bone tool, stone tool debris, and subsistence remains from shellfish, birds, fish, and plants (FTA and City of Hercules 2012:3:44). In light of these findings, the FEIS concluded that Site 07-002570 appeared eligible for the National Register of Historic Places, but that the site would be avoided by limiting ground disturbances in the vicinity to a maximum depth of two feet (*ibid.*; Donaldson 2012:2). Since the Hercules ITC project had the potential to affect Site 07-002570 during construction, the FEIS recommended the following mitigation measure at that location (*ibid.*:5:23).

> To ensure successful avoidance, both an archaeological and tribal monitor will be present during construction within 100 feet of the known location of the archaeological deposit. In the event intact archaeological deposits are exposed, construction at the find location will be stopped and new measures will be designed and implemented in consultation with the SHPO and tribes.

The two historic-period sites, 07-000813 and 07-001006, including the associated features found during the field survey, were determined to be ineligible for any historic

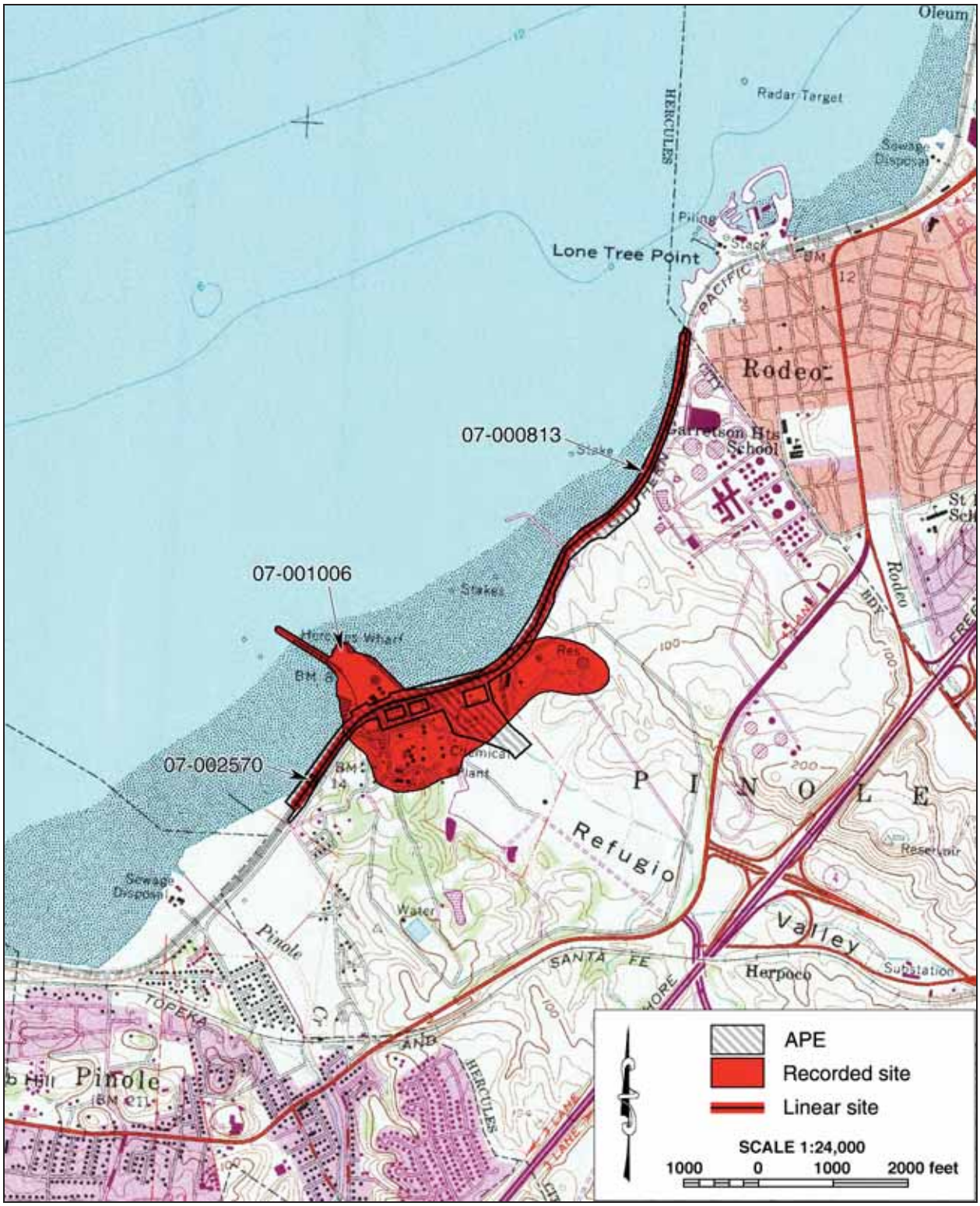


Figure 2. Locations of recorded historical/archaeological sites in the APE.

designation (Donaldson 2012:2). Therefore, the FTA and the City of Hercules concluded that the Hercules ITC project would not have an adverse effect on any "historic properties" (*ibid.*).

Responding to the findings and conclusions of the FEIS, California State Historic Preservation Officer Milford Wayne Donaldson indicated in a letter dated April 13, 2013, that he could not concur with the determination that Site 07-001006 as a whole was not eligible for the National Register at the time, but did concur that the features within the project boundaries lacked sufficient historic integrity to represent the qualities for which the whole property might be considered eligible (Donaldson 2012:2). Ultimately, Donaldson (2012:3) stated in the letter:

> Pursuant to 36 CFR 800.5(c)(1), I concur with the FTA's finding that the undertaking will have No Adverse Effect to historic properties, with the condition that an archaeological monitor be present during ground disturbance within and adjacent to the horizontal boundaries of CA-CCO-750 [07-002570].

Based on a careful review of the existing documentation, CRM TECH concludes that the findings of the 2012 FEIS and the State Historic Preservation Officer's conditional concurrence are valid and appropriate for the present undertaking as well. The conclusions and recommendations of the 2012 FEIS are thus adopted for this undertaking as follows:

- No "historic properties" or "historical resources" will be affected by the proposed undertaking as long as the maximum depth of ground disturbance at or near the location of Site 07-002570 (Fig. 2) is limited to two feet or less. If ground disturbance at that location is expected to exceed two feet in depth, additional archaeological investigations, primarily data recovery excavations to mitigate potential effect to the site, will become necessary.
- Archaeological and Native American monitoring should be required during any grading, trenching, excavation, or other earth-moving activities within 100 feet of the established boundaries of Site 07-002570.
- It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during the undertaking, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find.
- Additional surveys will be required if the project changes to include areas not previously surveyed.

Thank you for this opportunity to be of service.

Sincerely,

Bai "Tom" Tang, M.A.
Principal Investigator, CRM TECH

References:

Donaldson, Milford Wayne (State Historic Preservation Office, California)

2011 Hercules Intermodal Transit Center Project, City of Hercules, Contra Costa County, California. Letter to Leslie T. Rogers, Regional Administrator, Federal Transit Administration, U.S. Department of Transportation. November 9. In FTA and City of Hercules 2012:App. F (see below).

2012 Hercules Intermodal Transit Center Project, City of Hercules, Contra Costa County, California. Letter to Leslie T. Rogers, Regional Administrator, Federal Transit Administration, U.S. Department of Transportation. April 13 (see attachment).

FTA (Federal Transit Administration, U.S. Department of Transportation) and City of Hercules

2012 City of Hercules Intermodal Transit Center, Final Environmental Impact Statement. Prepared by the Federal Transit Administration, Region IX, San Francisco, and the City of Hercules. Http://www.ci.hercules.ca.us/index.aspx?page=604.

Kaijankoski, Philip

2012 Historic Property Survey Report: 04-CCO-TGR2DGL-5117(011), Hercules, California. Prepared by the Far Western Anthropological Research Group, Davis, California, for Caltrans District IV.

ATTACHMENT

SHPO CONCURRENCE LETTER REGARDING THE HERCULES INTERMODAL TRANSIT CENTER PROJECT

April 13, 2012

STATE OF CALIFORNIA -- THE RESOURCES AGENCY

EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

April 13, 2012

Reply in Reference To: FTA110927A

Leslie T. Rogers
Regional Administrator
US Department of Transportation
Federal Transit Administration
201 Mission Street, Suite 1650
San Francisco, CA 94105

Re: Hercules Intermodal Transit Center Project, City of Hercules, Contra Costa County, California

Dear Mr. Rogers:

Thank you for seeking my consultation regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Federal Transit Administration (FTA) is seeking my comments on the effects the proposed undertaking will have on historic properties.

The project consists of construction of a station building, extension of John Muir Parkway, including the construction of Bayfront Boulevard over Refugio Creek, a new bus terminal, Transit Loop Drive, Civic Plaza, and surface parking. The undertaking will also require restoration and realignment of a portion of Refugio Creek, constructing segments of a recreational trail along the shoreline, and a pedestrian walkway over the railroad tracks. The project will necessitate a grade separation and realignment of a portion of the existing railroad tracks and the relocation of existing utility and gas lines. The project currently includes two alternatives for track realignment. The Area of Potential Effects, as identified by FTA, consists of 54 acres, with a maximum depth of 5.5 feet, with the exception of boring at least ten feet deep for utilities extending under the railroad corridor and 50 piles which will be driven to a depth of 80 to 110 feet. In addition to your letters received September 27, 2011 and March 12, 2012, you have submitted the following documents as evidence of your efforts to identify historic properties in the APE:

- *Cultural Resources Survey Report for the Hercules Intermodal Transit Center* (Sandra Flint, HDR, June 2011)
- *Addendum Cultural Resources Survey Report of the Hercules Intermodal Transit Center* (Philip Kaijankoski et al, Far Western, February 2012)

The FTA has searched the records at the Northwest Information Center and identified that 15 previous studies have been conducted within a quarter mile of the APE. Approximately 10% of the APE had been previously surveyed resulting in the identification of one buried archaeological site, CA-CCO-750. Site CA-CCO-750 is a shell midden discovered during trenching roughly three feet below surface, with the

complete areal extent unknown at this time. Site CA-CCO-370 was originally located within the APE in 1978; however a 2000 survey failed to relocate the site. Site P-07-001006, the historic location of the Hercules Powder Company was previously identified as within the APE through historic documents, however no buildings are extant. The historic Southern Pacific Railroad Grade, currently in use as the Union Pacific Railroad Grade, was also identified by the records search as within the APE.

The APE was subject to a pedestrian survey via 15 meter transects. Several features, including foundations, wharf remnants, pipe channeling, culverts and bridges, retaining walls, and debris associated with the Hercules Powder Company (P-07-001006) were located within the APE during the survey. Additionally, several features associated with the historic railroad grade including foundations, signal markers, culverts, pipes, and a wooden railroad bridge were identified within the APE. No surface manifestation of site CA-CCO-370 was located during the survey.

The FTA has determined that site CA-CCO-750 will be avoided by conditioning that ground disturbing elements in the vicinity of the site not exceed two feet in depth. Additionally the FTA has determined that the various identified features of the Hercules Powder Company within the APE are not eligible for the National Register. The FTA has also determined that the Southern Pacific Rail Road grade and features are not eligible for the National Register of Historic Places. The FTA has determined that there will be No Adverse Effects to historic properties by this undertaking. FTA's consultant, HDR, sent letters to the Native American contacts listed by the NAHC regarding the project on December 3, 2010. One response was received by phone, from Ann Marie Sayers, requesting Native American monitoring during project implementation and specific actions to be taken in the event Native American remains are encountered.

Based on your identification efforts, I have the following comments:

1. I cannot concur that the Hercules Powder Company property, CA-CCO-818H, as a whole is not eligible for the National Register at this time, as the property extends outside the APE and was not fully recorded for this undertaking, **however**, I can concur that the features present within the APE lack integrity and cannot adequately represent those qualities for which the whole property may be eligible for the National Register.
2. I cannot concur that the whole of the Bayside trail (HER14) is not eligible, as only a segment of this long linear resource was recorded and described, **however** the argument and the lack of integrity of setting due to changes around the trail do not allow this segment to convey any of the qualities which may make the trail as a whole eligible, and therefore changes to this segment would not represent an adverse effect to the larger resource.
3. I have previously concurred that the various features within the APE (other than the existing railroad grade) are not contributors to the grade's potential eligibility
4. I concur that the segment of the Southern Pacific Railroad within the APE is not a contributor, as recording and properly evaluating the whole long linear resource is beyond the scope of this undertaking.
5. Pursuant to 36 CFR 800.4(c), I concur that the remains of the Northern Wharf (HER9/24), the recorded Steel Pipes (HER33), and Sewer Outfall(HER34) are not eligible for the National Register, however I encourage the preservation of the Northern Wharf remnants for interpretation about shipping and the Hercules Powder Company.

6. I concur that the FTA has made a reasonable and good faith effort to identify the subsurface extent of site CA-CCO-750 as it pertains to this undertaking, and given FTA's conditions of limited depth of ground disturbance should avoid the cultural components of the site.
7. Pursuant to 36 CFR 800.5(c)(1), I concur with the FTA's finding that the undertaking will have No Adverse Effects to historic properties., with the condition that an archaeological monitor be present during ground disturbance within and adjacent to the horizontal boundaries of site CA-CCO-750.

If you agree with the conditions that I have proposed, please evidence your agreement by signing the signature block below. Please return the letter to me as soon as possible. Alternatively, you may provide me with a separate letter concurring in the proposed conditions.

Thank you for seeking my comments and considering historic properties as part of your project planning. If you have any questions or concerns, please contact Trevor Pratt of my staff at (916) 445-7017 or at email at tpratt@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

AGREED Leslie Rogers
Leslie Rogers
Regional Administrator

DATE: 4/19/2012

APPENDIX 5d

Historic Property Survey Report for the SJC Amtrak California

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Route	Post Miles	Unit	E-FIS Project Number	Phase

District	*County*	*Funding Source*	*Federal-Aid Proj. No.*	*Location*	*E-FIS Proj. No*	*Phase*
6 and 10	San Joaquin, Merced, Fresno			Cities of Stockton, Merced, and Fresno		

`For Local Assistance projects off the highway system, use headers in italics)

Project Description:

The California Department of Transportation (Caltrans), Division of Rail, proposes a series of railway improvements collectively known as the San Joaquin Corridor Amtrak California Service Project. The project components covered by this study consist of the development of a new or rehabilitated passenger railway station in the City of Stockton, San Joaquin County, and of a layover facility in either the City of Merced, Merced County, or the City of Fresno, Fresno County (see Attachment A).

In Stockton, the undertaking calls for the construction of a new Amtrak station at the junction between the Burlington Northern Santa Fe Railway (BNSF) and the Union Pacific Railroad (UPRR) west of Pilgrim Street at Scotts Avenue, which would require the demolition of a manufacturing plant at 1110 East Scotts Avenue. The new station would conform to standard railway station design and features, including full-length platforms, passenger shelters, lighting, signage, schedules, leaning bars, information kiosks, ticket vending machines, and adequate space for loading, unloading, passenger pick-up, and vehicle drop-off. Alternatively, the project objective may be accomplished by rehabilitating and expanding one of the two existing Amtrak stations in the city, located at 735 South San Joaquin Street, on the BNSF, and 949 East Channel Street, on the UPRR. Expansion of the station on the BNSF would necessitate the demolition of buildings and structures on a commercial property adjacent to the north, at 711 South San Joaquin Street.

In Fresno, the proposed layover facility would extend along the existing BNSF line from Tulare Street in the north to Walker Avenue in the south, adjacent to the existing Amtrak station at 2650 Tulare Street. In Merced, the layover facility would also be located along the existing BNSF line and adjacent to the existing Amtrak station at 324 West 24th Street, extending from K Street in the north to 6th Avenue in the south. The new layover facility would include a storage yard, running maintenance and repair area, support shops, parts storage, mechanical and electrical rooms, and administrative offices.

2. AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the undertaking was established in consultation with_____, Caltrans Professionally Qualified Staff (PQS), and_____, on_____,_____, 2013. The APE maps are located in Attachment A to this Historic Property Survey Report.

The APE is delineated to encompass the maximum extent of ground disturbances currently projected for the proposed railway station and layover facility, and consists of five noncontiguous components scattered among the three cities involved, measuring approximately 33 acres in total. The City of Stockton contains the three alternative station sites within a mile of one another, all located in a portion of the Campo de los Franceses land grant lying within T1N R6E, Mount Diablo Baseline and Meridian (MDBM). The Fresno site for the layover facility is located in Sections 3 and 10, T14S R20E, MDBM, and the Merced site, in Sections 19 and 20, T7S R14E, MDBM. All five locations are situated in highly urbanized areas near the historic downtown cores of the three cities (see Attachment A, Maps 2a-2c, 3a-3e).

For the federal undertaking described in Part 1: To minimize redundancy and paperwork for the California Department of Transportation and the State Historic Preservation Officer, and in the spirit intended under the federal Paperwork Reduction Act (U.S.C. 44 Chapter 35), this document also satisfies consideration under California Environmental Quality Act Guidelines Section §15064.5(a) and, as appropriate, Public Resources Code §5024 (a)(b) and (d).

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

√ Local Government *(Head of local government, Preservation Office/Planning Department)*

The Ciy of Fresno Development and Resources Management Department, the City of Merced Development Services Department, and the City of Stockton Community Development Department were contacted. Karana Hattersley-Drayton, City of Fresno Historic Preservation Project Manager, responded and identified four known historical resources that she believed to be in or near the APE: the Santa Fe Depot, the Santa Fe Hotel, the Warehouse Row, and the Central Packaging Supply complex (see Attachment E).

√ Native American Tribes, Groups and Individuals

A total of 34 tribal representatives were contacted, and 13 have responded (see Attachment D for further information):

- David Alvarez, Chairperson of the Traditional Choinumni Tribe, stated that he had no concerns regarding the undertaking, but planned further review of the project information.
- John Davis, Chairperson of the Kings River Choinumni Farm Tribe, had no concerns regarding the undertaking, but wished to be notified of any inadvertent archaeological discoveries.
- Valentin Lopez, Chairperson of the Amah Mutsun Tribal Band, stated that the APE was out of the tribe's territory and recommended that Jerry Brown of the Chowchilla Tribe of Yokuts be contacted.
- Les James, Spiritual Leader of the Southern Sierra Miwuk Nation, stated that he did not have enough familiarity with the APE to offer a response.
- Shana Brum, Cultural Specialist for the Santa Rosa Tachi Rancheria, stated that she wished to defer to other tribes regarding the Stockton portion of the APE. Regarding the APE in Fresno and Merced, she requested formal government-to-government consultation with the lead agency to insure early involvement in the planning process as well as Native American monitoring during all ground-disturbing activities.
- Randy Yonemura, of Miwok ancestry, considered the APE to be culturally sensitive. He requested, and was sent, additional project information for further review.
- Robert George Ledger, Sr., Chairperson of the Dumna Wo-Wah Tribal Government, also found the APE to be culturally sensitive, and requested that Native American monitors from his group be present during all ground-disturbing activities in Merced and Fresno.
- Kenneth Woodrow, Chairperson of the Eshom Valley Band of Michahai and Wuksachi Indians, expressed concerns that there might be Native American sites and burials in the immediate vicinity of the APE. He said he would review the information and then contact Caltrans to request government-to-government consultation.
- Lawrence Bill, Chairperson of the Sierra Nevada Native American Coalition, stated his concerns that Native American cultural resources or human remains might be unearthed during the undertaking. He indicated that his group was opposed to the undertaking and wished to engage in formal government-to-government consultation with the lead agency.
- Roselynn Lwenya, Environmental Director for the Buena Vista Rancheria of Me-Wuk Indians of California, stated that her tribe wished to pursue government-to-government consultation with Caltrans regarding the undertaking in the City of Stockton, and requested copies of the completed reports and other pertinent documents.
- Silvia Burley, Chairperson of the California Valley Miwok Tribe, stated the tribe's concerns that Miwok artifacts and human remains might be unearthed during the undertaking, and requested notification of any discoveries of that nature.
- Tony Burris, Chairperson of the Cultural Committee for the Ione Band of Miwok Indians, stated that he planned to review the project information and respond after the tribe's upcoming Cultural Committee meeting.
- Katherine Erolinda Perez, Chairperson of the North Valley Yokuts Tribe, requested and was sent additional information regarding the undertaking.

√ Native American Heritage Commission

The commission was contacted in writing and replied that its sacred lands records indicated no Native American cultural resources in the immediate vicinity of the APE (see Attachment D).

√ Local Historical Society/Historic Preservation Group *(also if applicable, city archives, etc.)*

The Fresno Historical Society, the Merced County Historical Society, and the Stockton Historical Society were contacted, and the Fresno and Merced groups have responded. Sarah Lim, Director of the Merced County Courthouse Museum, responded on behalf of the Merced County Historical Society, stating that the organization had additional materials on file to aid historical research on the APE. Sharon Hiigel, Curator for the Fresno Historical Society, also indicated that her organization had resources available to aid the research (see Attachment E). Neither organization identified specific cultural resources concerns regarding the APE.

4. SUMMARY OF IDENTIFICATION EFFORTS

√ National Register of Historic Places 1979-2002 and supplemental information to date
√ California Register of Historical Resources 1992 and supplemental information to date
√ California Historical Resources Inventory
√ California Historical Landmarks 1997 and supplemental information to date
√ California Points of Historical Interest 1992 and supplemental information to date
_ State Historic Resources Commission
√ Caltrans Historic Highway Bridge Inventory 1989 and supplemental information to date
√ Archaeological Site Records [*List names of Institutions & date below*]

- Central California Information Center (CCIC), California State University, Stanislaus; November 3, 2011
- South San Joaquin Valley Information Center (SSJVIC), California State University, Bakersfiled; December 6, 2011

√ Other sources consulted *[e.g., historical societies, city archives, etc. List names and dates below]*

- Published literature in local and regional history;
- General Land Office land survey plat maps and U.S. Geological Survey topographical maps;
- City of Stockton building safety records;
- Published literature and maps on surface geology and soil types in the vicinity.

√ Results: *(provide a brief summary of records search and research results, as well as inventory findings)*

- The records search results indicate that except the new station site in Stockton and the southern portion of the layover facility site in Fresno, the rest of the APE was covered by previous surveys. Four historic-period sites were previously recorded within the APE: the Fresno Santa Fe Depot and freight office (10-004412) with a 1950s freight loading platform (10-005266), the Stockton Santa Fe Depot (39-002409), and a segment of the former Atchison, Topeka and Santa Fe (now BNSF) Railway (24-001881). Among these, 10-004412 is listed in the National Register of Historic Places, Site 39-002409 was found eligible for listing, while Sites 10-005266 and 24-001881 were determined ineligible for the National Register of Historic Places or the California Register of Historical Resources.
- At least 26 previous surveys were reported within a quarter-mile radius of the APE, and 47 additional sites were recorded within the scope of the records searches. The vast majority of these sites represented buildings, railroad features, and historic districts located outside the APE boundaries. All of these sites dated to the historic period, and no prehistoric archaeological resources were found within the quarter-mile radius.
- During the field survey it was discovered that one of the four previously recorded sites in the APE, 10-005266, had been removed, leaving no physical remains today. The other three sites, 10-004412, 24-001881, and 39-002409, were found to be intact. In the meantime, a circa 1958 commercial building (Marble Palace, Inc.), an early to mid-20th century industrial complex (Geiger Manufacturing, Inc.), and

the former Southern Pacific Railroad Stockton-Downtown Station (now the Robert J. Cabral Amtrak□ACE Station), all located in the City of Stockton, were identified and recorded in the APE as Sites 39-005141, 39-005142, and 39-005143, respectively. No archaeological features or artifact deposits, either prehistoric or historic in origin, were encountered during the survey.

- Geoarchaeological analysis suggests that, in light of the Pleistocene age of the exposed sediments and the extensively disturbed state of the surface soils, the APE appears relatively low in sensitivity for potentially significant archaeological remains in buried deposits, especially those from the prehistoric era. However, the Fresno portion of the APE constitutes a slight exception. Since the older sediments are mixed with Holocene sediments at that location, the potential for buried archaeological deposits is slightly higher.

□. □RO□ERTIES IDENTIFIED

√ □□□□□□□□□□□□□□□□□□□□□□□□□who meets the Professionally □ualified Staff Standards in Section □□□ Programmatic Agreement Attachment □ as a□n□□□□□□□□□□□□□□□□□□□

□ISTORIC □RO□ERTY SUR□EY RE□ORT

□. □□SR □□ S□□O

√ As assigned □y □H□ A□Caltrans has determined that there are □ro□erties evaluated as a result of the □ro□ect that are □□□□□□□□□ for inclusion in the National Register of Historic Places within the Pro□ect AP□□□nder Section □□□ PA Sti□ulation □III□C□Caltrans re□uests SHPO□s concurrence in this determination□

√ As assigned □y □H□ A□Caltrans has determined that there are □ro□erties evaluated as a result of the □ro□ect that are □□□□□□□ for inclusion in the National Register of Historic Places within the Pro□ect AP□□□nder Section □□□ PA Sti□ulation □III□C□Caltrans re□uests SHPO□s concurrence in this determination□

– As assigned □y □H□ A□Caltrans has determined a □inding of **N□ □□□□□□ □□□□□□□ A□□□□□□□** according to Section □□□ PA Sti□ulation I□□A and □□ C□R □□□□□d□□□□ is a□□ro□riate for this undertaking□and is here□y notifying the SHPO of this finding□

– As assigned □y □H□ A□Caltrans has determined a **F□□□□ □□N□ A□□□□□ E□□□□ □□ S□□□□□ C□□□□□□□ □ESA□□**according to Section □□□ PA Sti□ulation □B□□and □□ C□R □□□□□□□□ is a□□ro□riate for this undertaking□and is here□y notifying the SHPO of this finding□□□□□□□□□□□□ *[Name]*□who meets the Professionally □ualified Staff Standards in Section □□□ Programmatic Agreement □Section □□□ PA□Attachment □ as an□□□□□□□□□□□□□□□ *[Indicate applicable PQS level]*□has reviewed the attached documentation and determined that it is ade□uate□*(Include description of ESAs and enforcement measures below; attach ESA Action Plan as appropriate.)*

•

– As assigned □y □H□ A□Caltrans has determined a **F□□□□ □□N□ A□□□□□ E□□□□ □□ S□□□□□ C□□□□□□□ □R□□□□□□□□□□□**according to Section □□□ PA Sti□ulation □B□□and □□ C□R □□□□□□□□ is a□□ro□riate for this undertaking□and is here□y notifying the SHPO of this finding□ □□□□□□□□□□□ *[Name]*□who meets the Professionally □ualified Staff Standards in Section □□□ PA Attachment □ as Princi□al Architectural Historian□and has the a□□ro□riate education and e□□erience□has reviewed the reha□ilitation documentation and determined that the reha□ilitation meets the Secretary of the Interior□s Standards for the □reatment of Historic Pro□erties□*(Include description of rehabilitation below or indicate below the title of the HPSR attachment that contains the description.)*

•

□. F□□□□□□ □□□S□□□□O□ □□□ □□□□□□□□

√ Not a□□lica□le□□ro□ect does not involve Caltrans right□of□way or Caltrans□owned □ro□erty□

□□. CE□A IM□ACT FINDIN□S

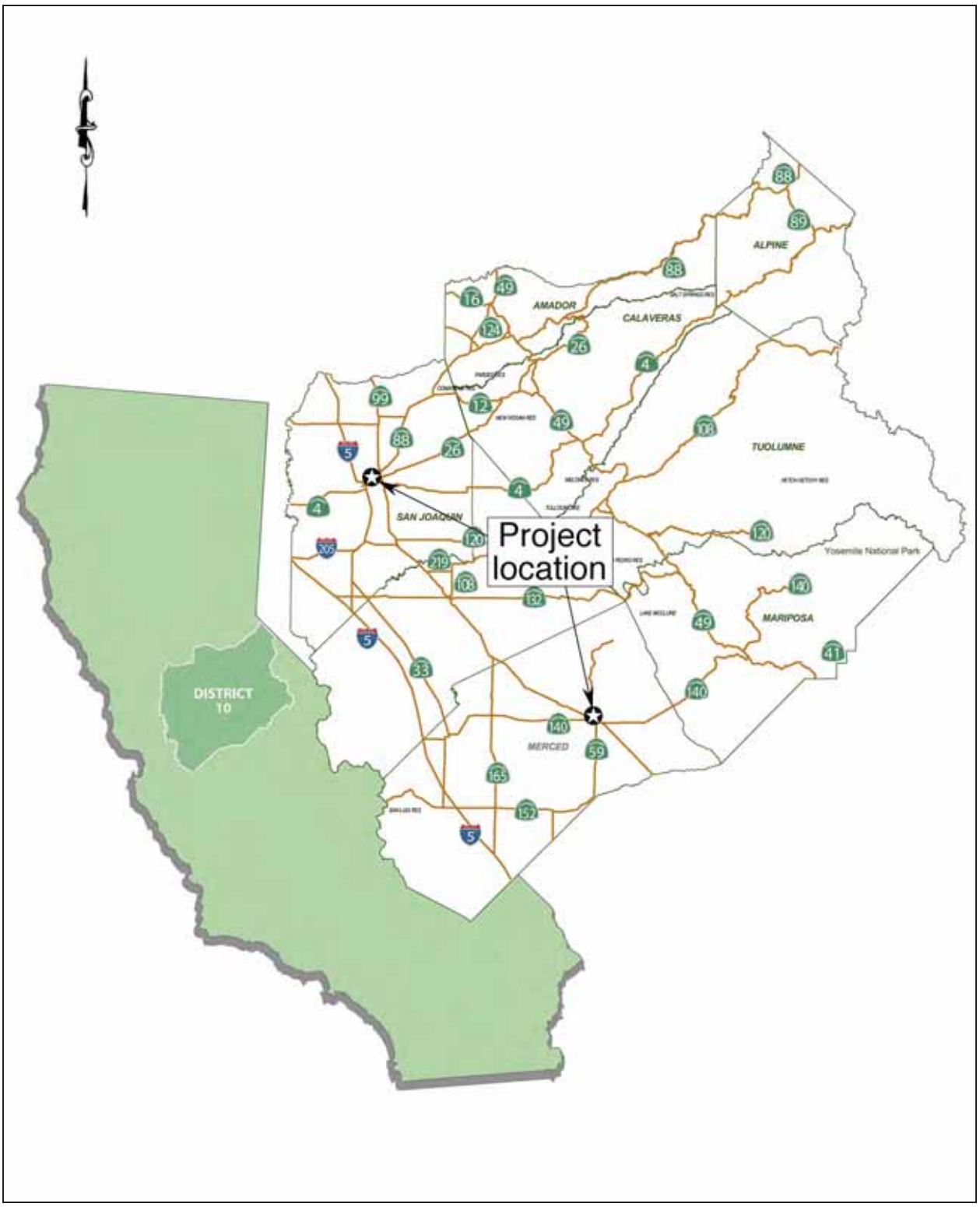
– Caltrans has determined a □□□□□ □□□□ □□ □□□□is a□□ro□riate □ecause there are no historical resources within the Pro□ect Area limits□or there are no im□acts to historical resource□s□□□ursuant to C□□A □uidelines □□□□□□□□□□□□□

– Caltrans has determined a □□□□□ □□□□ □□□□□□□□□□□□□□□□ □□□□□□ □ESA□□□ecause the im□acts to the following historical resources within the Pro□ect Area limits will □e mitigated to □elow the level of significance □y using the *Secretary of the Interior's Standards for the Treatment of Historic Properties With Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings (Standards)* □ursuant to C□□A □uidelines □□□□□□□□□□□□sta□lishment of □nvironmentally Sensitive Areas □□SA□□enforcement measures and conditions that utili□e the *Standards* are included in the attached documentation□□□□□□□□□□□□□ *[Name]*□who meets the Professionally □ualified Staff Standards in Section □□□ Programmatic Agreement □Section □□□ PA□ Attachment □ as an□□□□□□□□□□□□□□□ *[Indicate applicable PQS level]*□has reviewed the attached documentation and determined that it is ade□uate□*(Include description of ESAs and enforcement measures below; attach ESA Action Plan as appropriate.)*

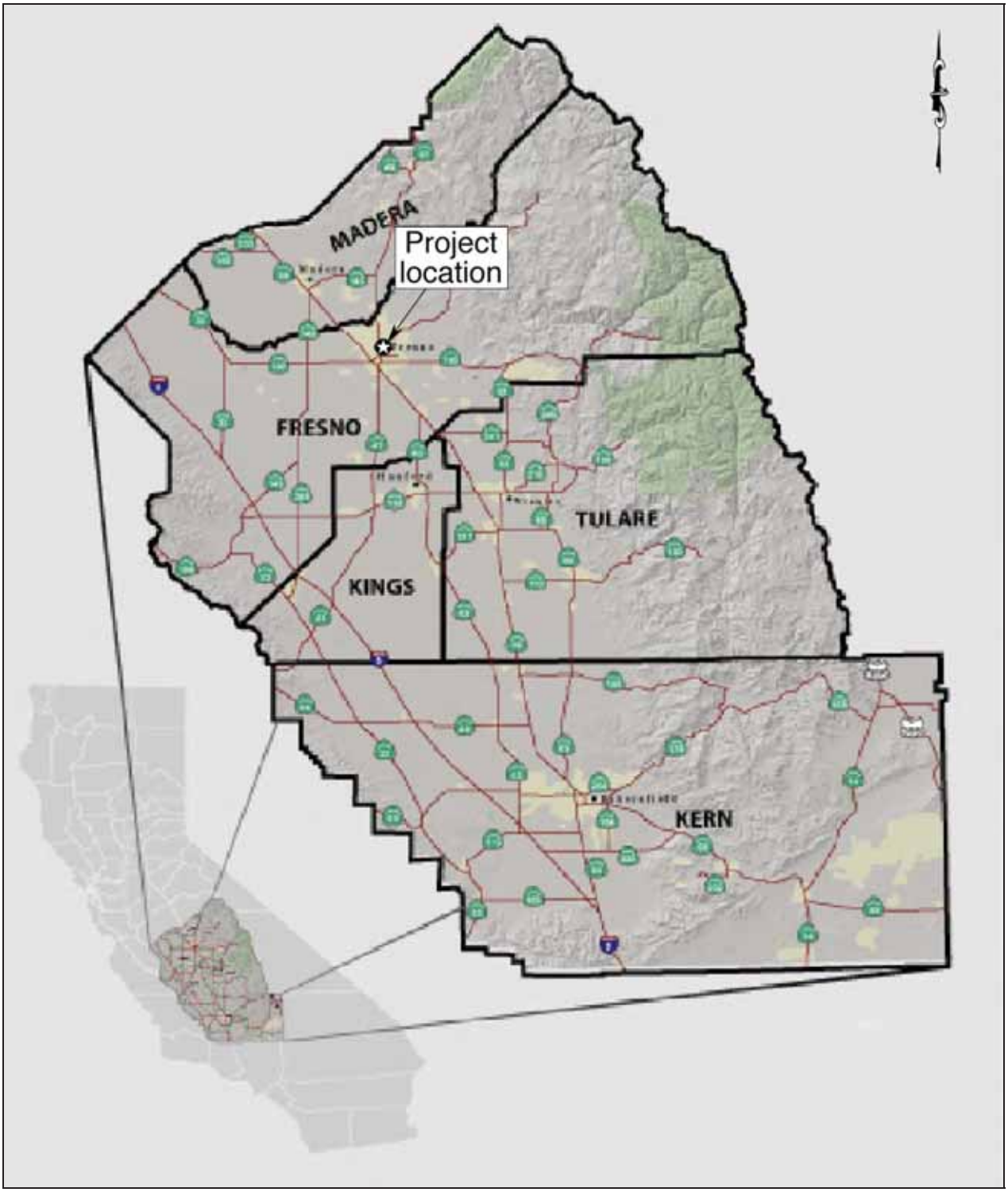
- Caltrans has determined a □□□□□ □□□□ □□□□□□□□□□□□□□□□ □□□□□□ □ □□□□□□□□□□□□ □□□□□□□□ □ □□□□□□□□□□ □□□□□□□□□□□□□□□□

ATTACHMENT A

PROJECT MAPS



Map 1a. Project vicinity, Stockton and Merced.



Map 1b. Project vicinity, Fresno.

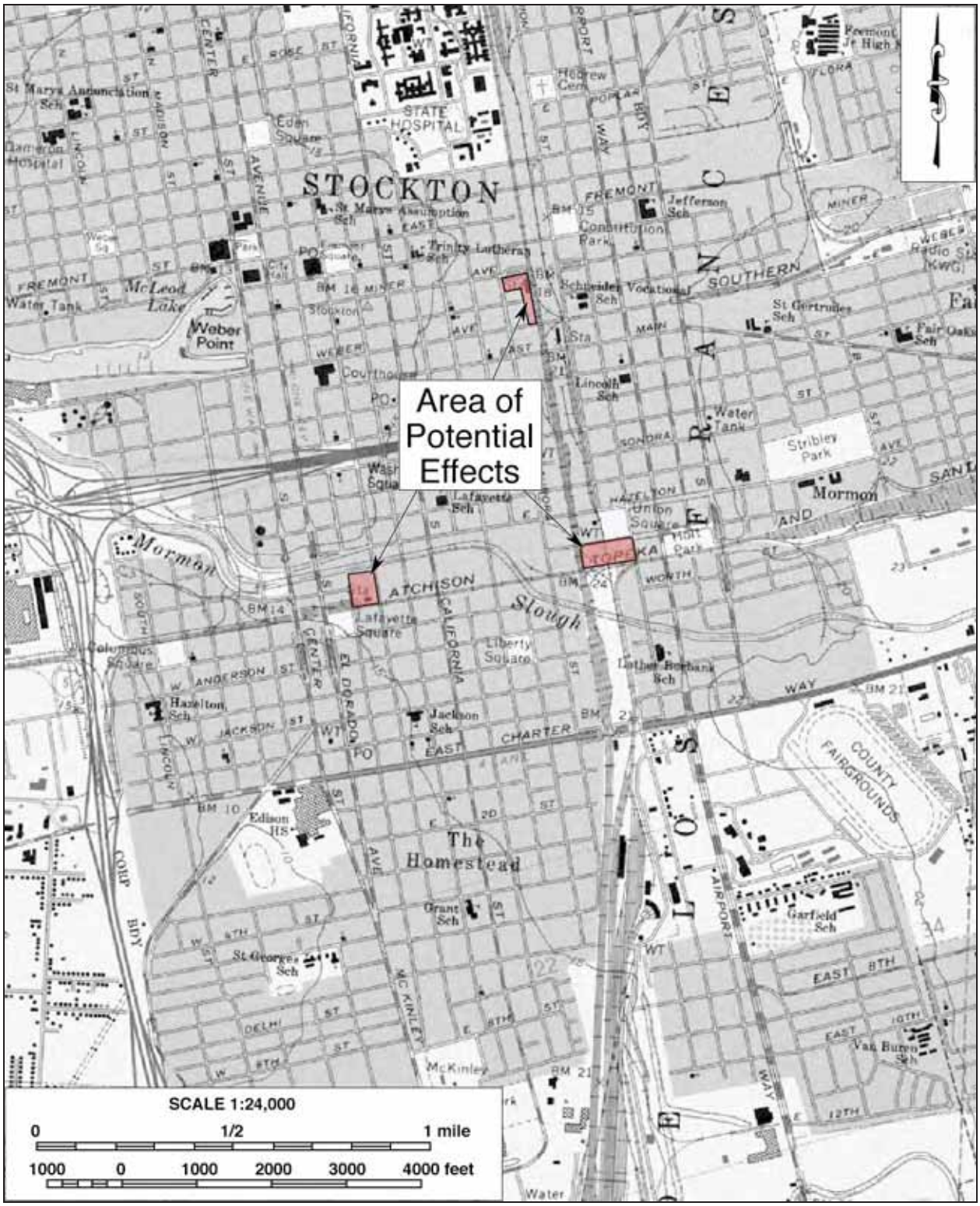


Figure 2a. Project location, Stockton. (Based on USGS Stockton West, Calif., 1:24,000 quadrangle, 1987 edition)

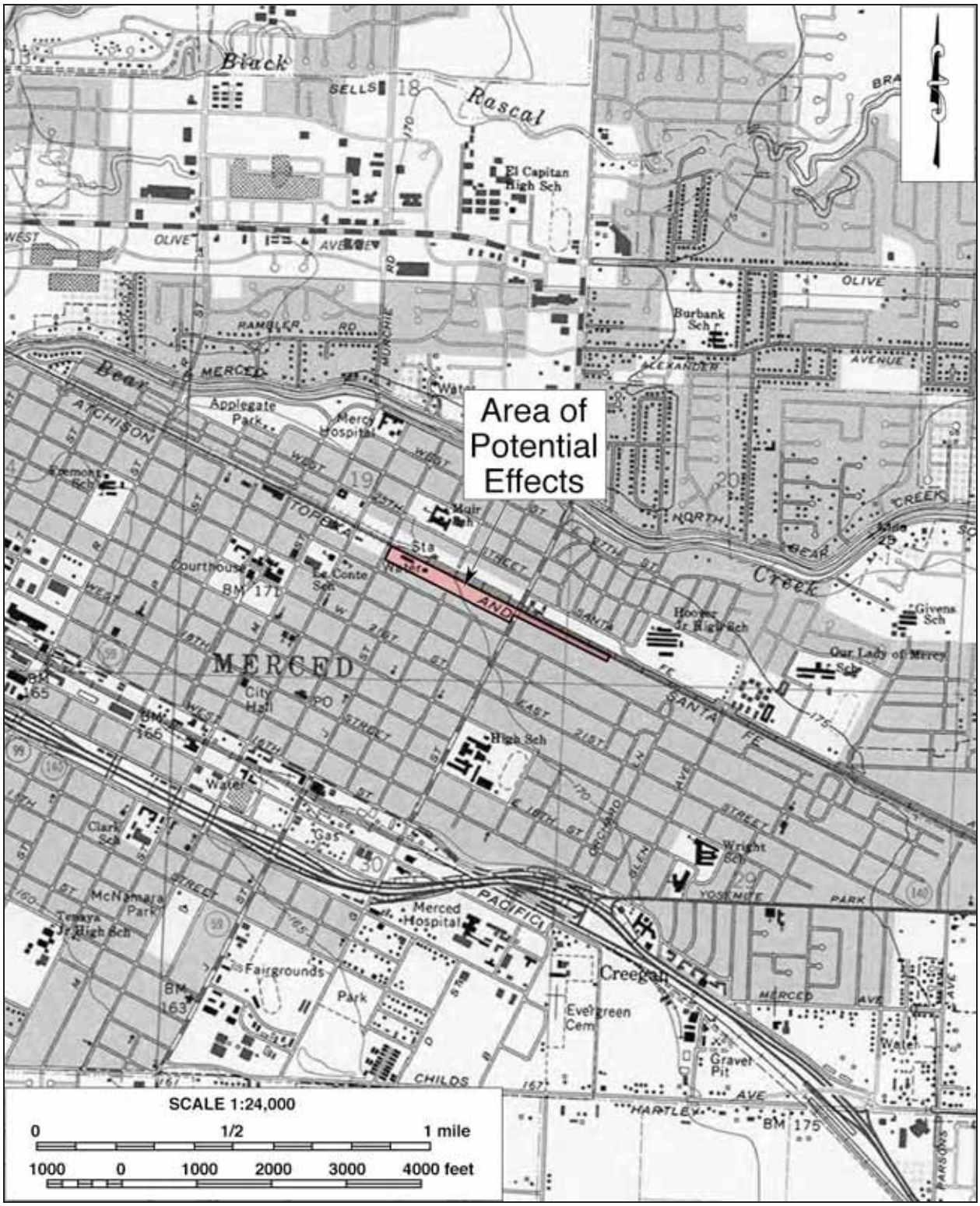


Figure 2b. Project location, Merced. (Based on USGS Merced, Calif., 1:24,000 quadrangle, 1987 edition)

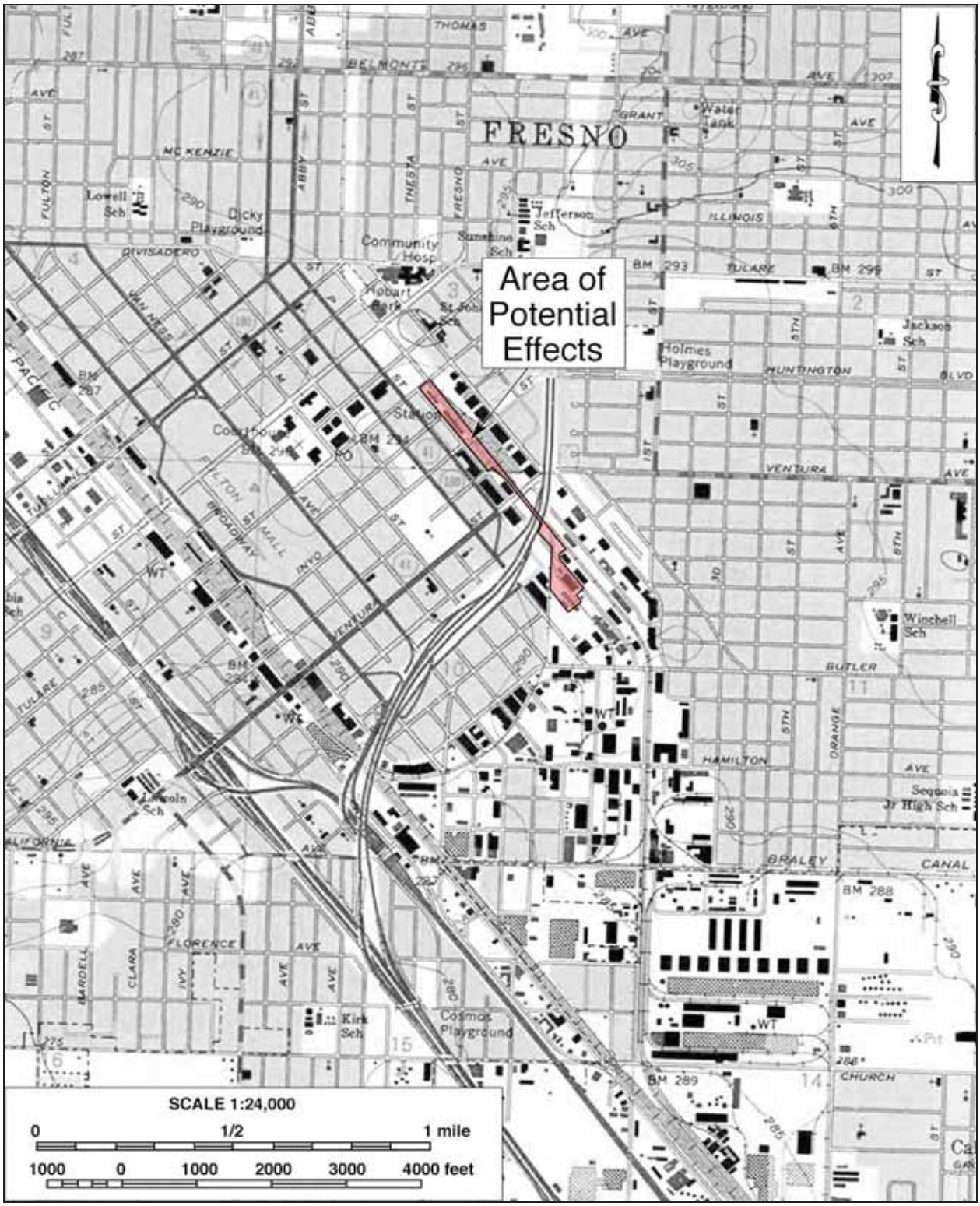


Figure 2c. Project location, Fresno. (Based on USGS Fresno North and Fresno South, Calif., 1:24,000 quadrangles, 1981 edition)

MAPS 3A-3E

AREA OF POTENTIAL EFFECTS

(Attached)

CALTRANS DIVISION OF RAIL
SAN JOAQUIN RAIL CORRIDOR EIR/EIS
BNSF STOCKTON SUBDIVISION

PROPOSED STOCKTON STATION
ALTERNATIVE 2

SIGNATURES:

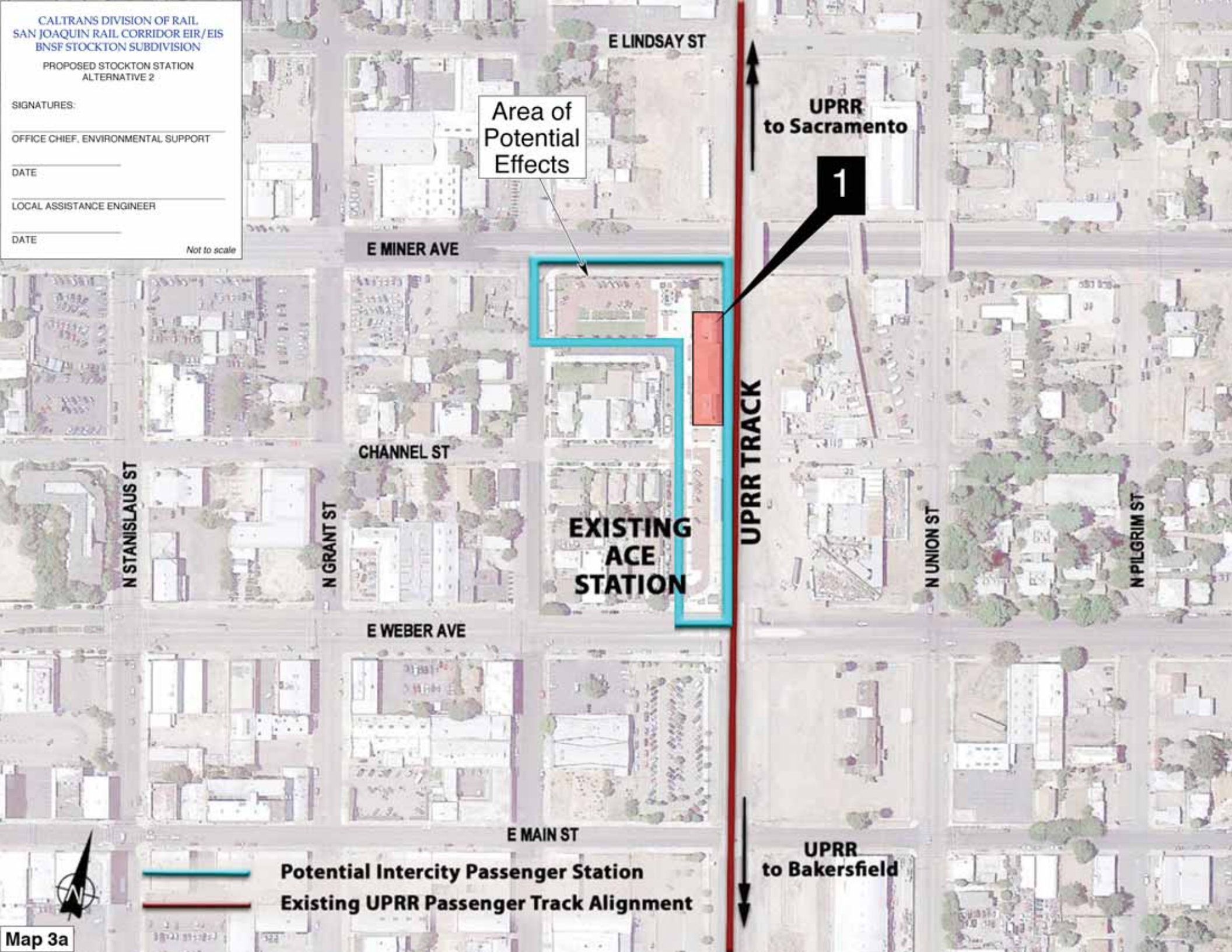
OFFICE CHIEF, ENVIRONMENTAL SUPPORT

DATE

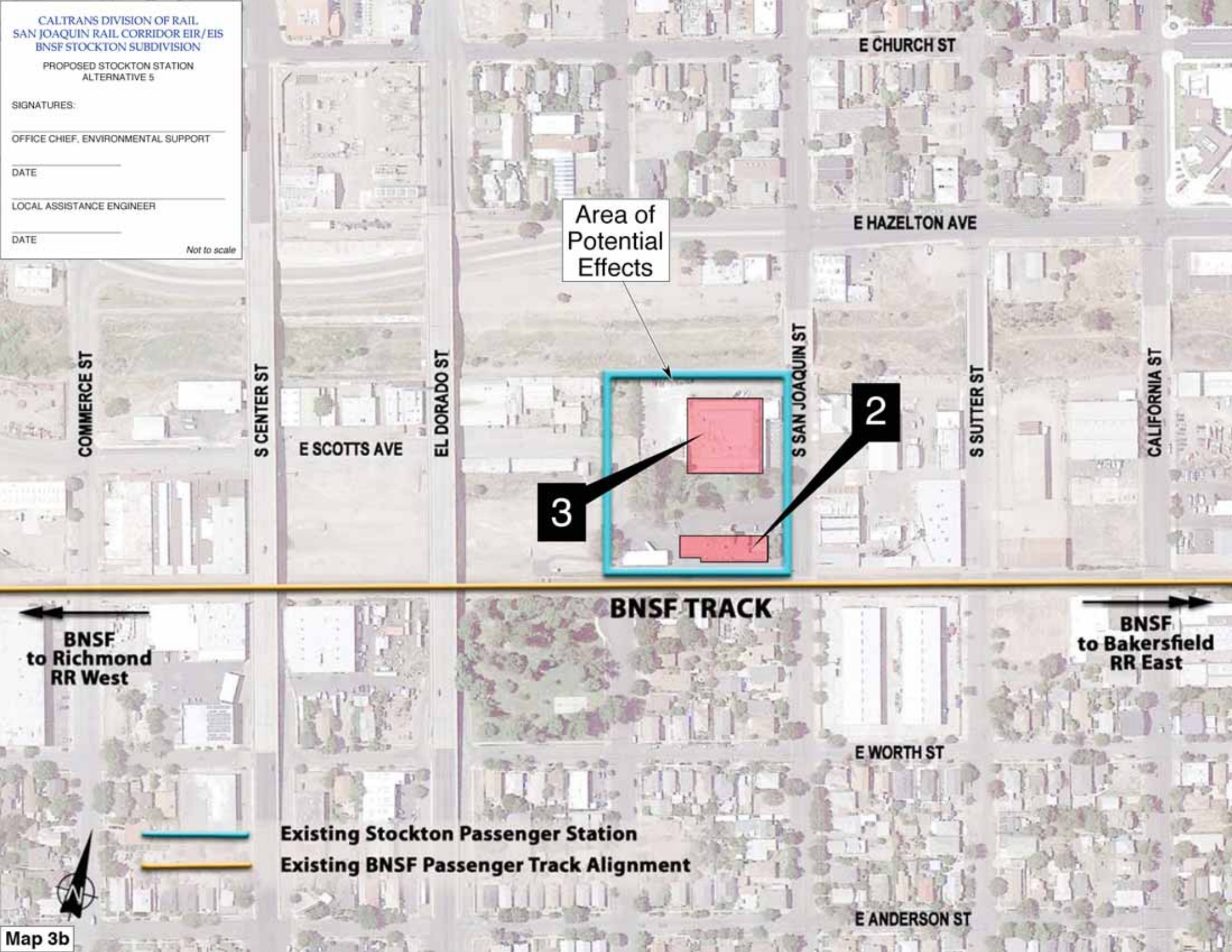
LOCAL ASSISTANCE ENGINEER

DATE

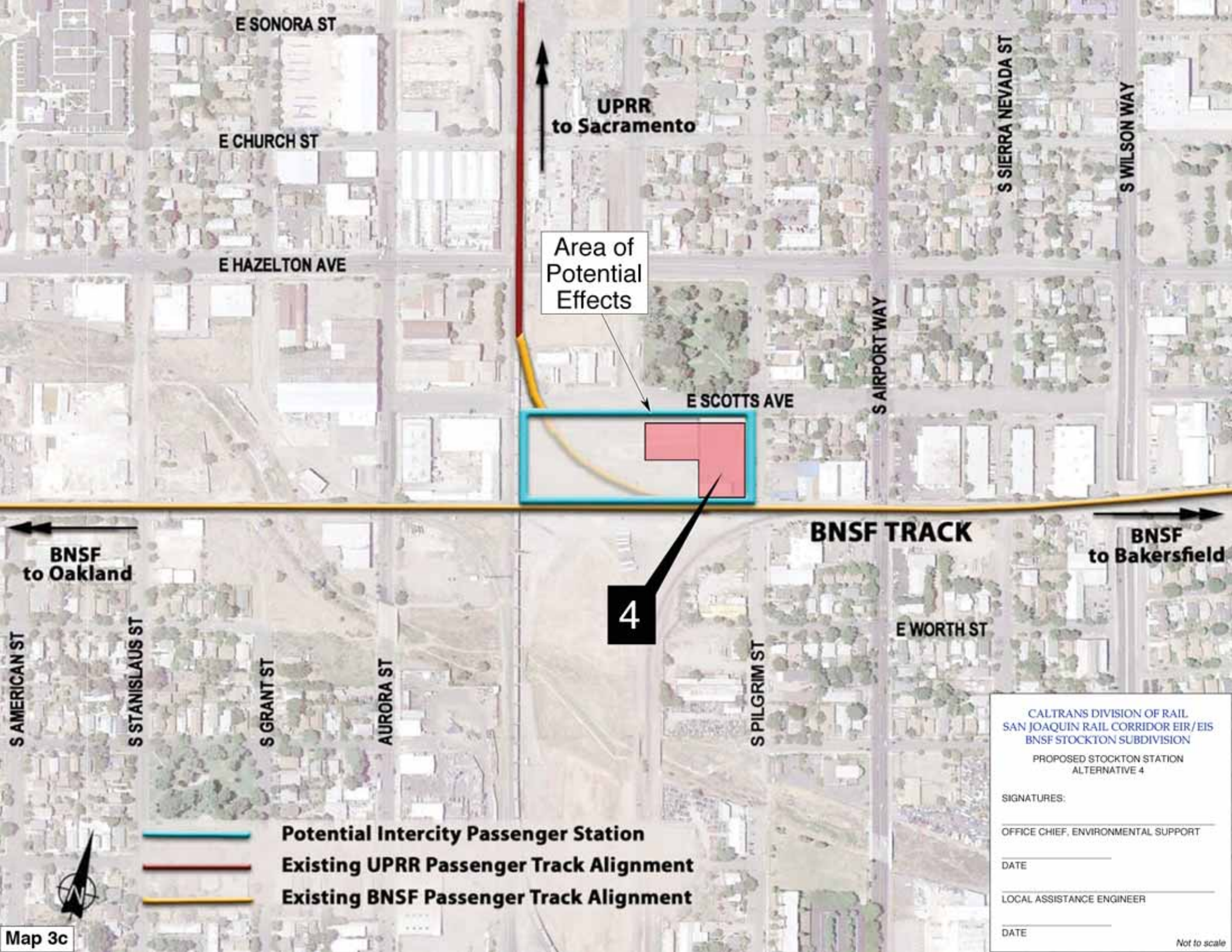
Not to scale

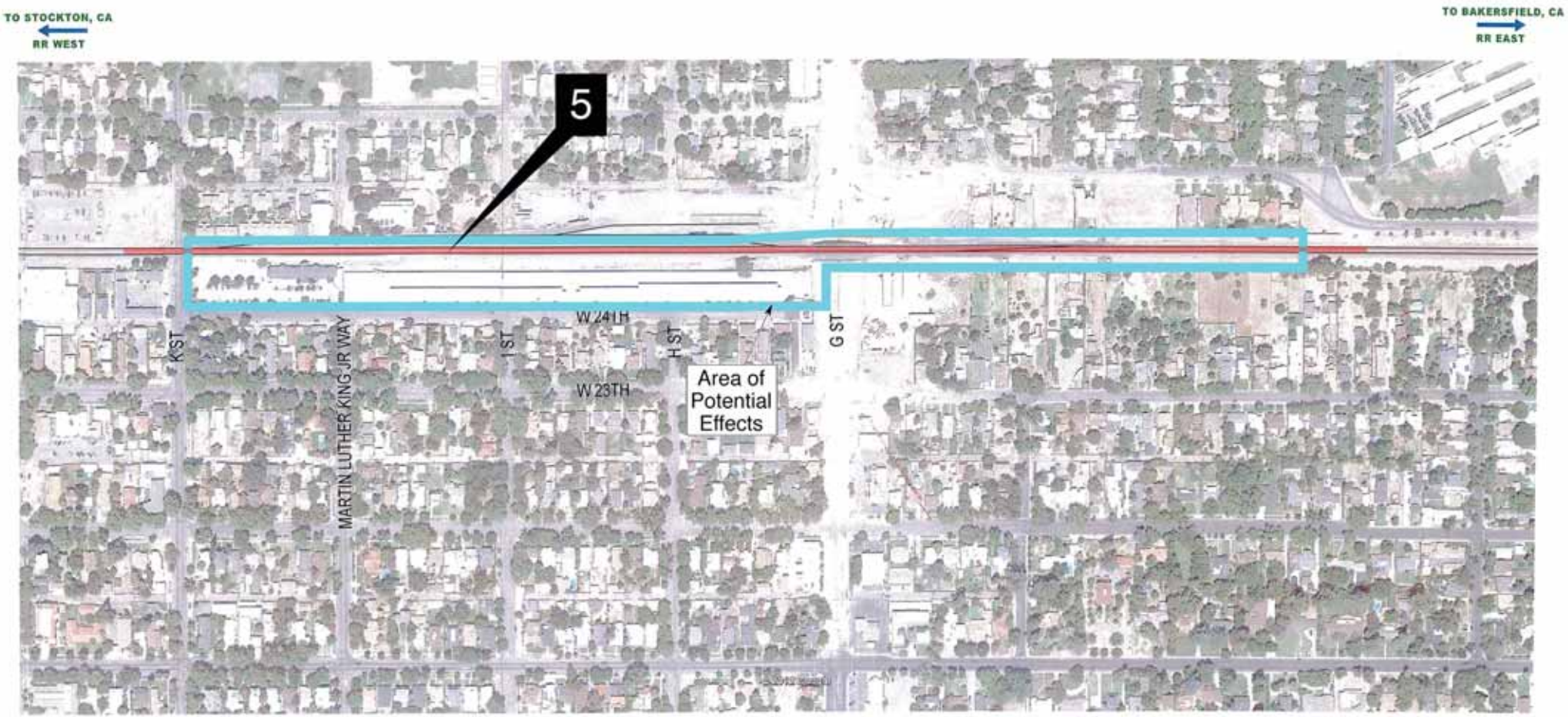


Map 3a


CALTRANS DIVISION OF RAIL
SAN JOAQUIN RAIL CORRIDOR EIR/EIS
BNSF STOCKTON SUBDIVISION
PROPOSED STOCKTON STATION
ALTERNATIVE 5
SIGNATURES:
OFFICE CHIEF, ENVIRONMENTAL SUPPORT
DATE
LOCAL ASSISTANCE ENGINEER
DATE
Not to scale
E CHURCH ST
E HAZELTON AVE
Area of Potential Effects
COMMERCE ST
S CENTER ST
E SCOTTS AVE
EL DORADO ST
S SAN JOAQUIN ST
S SUTTER ST
CALIFORNIA ST
2
3
BNSF TRACK
BNSF to Richmond RR West
BNSF to Bakersfield RR East
E WORTH ST
Existing Stockton Passenger Station
Existing BNSF Passenger Track Alignment
E ANDERSON ST

Map 3b


E SONORA ST
E CHURCH ST
E HAZELTON AVE
UPRR
to Sacramento
Area of
Potential
Effects
E SCOTTS AVE
S AIRPORT WAY
S SIERRA NEVADA ST
S WILSON WAY
BNSF TRACK
BNSF
to Oakland
BNSF
to Bakersfield
4
E WORTH ST
S AMERICAN ST
S STANISLAUS ST
S GRANT ST
AURORA ST
S PILGRIM ST
Potential Intercity Passenger Station
Existing UPRR Passenger Track Alignment
Existing BNSF Passenger Track Alignment
N
Map 3c
CALTRANS DIVISION OF RAIL
SAN JOAQUIN RAIL CORRIDOR EIR/EIS
BNSF STOCKTON SUBDIVISION
PROPOSED STOCKTON STATION
ALTERNATIVE 4
SIGNATURES:
OFFICE CHIEF, ENVIRONMENTAL SUPPORT
DATE
LOCAL ASSISTANCE ENGINEER
DATE
Not to scale



LEGEND

POTENTIAL LAYOVER FACILITY

EXISTING TRACK

150' 0 150' 300'

GRAPHIC SCALE: 1" = 150'

Map 3d

SIGNATURES

OFFICE CHIEF, ENVIRONMENTAL SUPPORT/CULTURAL STUDIES DATE

LOCAL ASSISTANCE ENGINEER DATE

DESIGNED BY J. FELIX

DRAWN BY J. FELIX

CHECKED BY M. CAÑAS

APPROVED BY M. CAÑAS

DATE JANUARY 02, 2013

Amtrak California

PATTERSON & ASSOCIATES, INC.

725 TOWN & COUNTRY RD
SUITE 300
ORANGE, CA 92868

Division of Rail

CALTRANS DIVISION OF RAIL
SAN JOAQUIN RAIL CORRIDOR EIR/EIS
BNSF STOCKTON SUBDIVISION

PROPOSED MERCED
LAYOVER FACILITY

CONTRACT NO.

DRAWING NO.

REVISION SHEET NO.

SCALE AS SHOWN

LEGEND

POTENTIAL LAYOVER FACILITY

EXISTING TRACK

150' 0 150' 300'

GRAPHIC SCALE: 1" = 150'

Map 3e

SIGNATURES

OFFICE CHIEF, ENVIRONMENTAL SUPPORT/CULTURAL STUDIES DATE

LOCAL ASSISTANCE ENGINEER DATE

DESIGNED BY J. FELIX
DRAWN BY J. FELIX
CHECKED BY M. CAÑAS
APPROVED BY M. CAÑAS

Amtrak California
PATTERSON & ASSOCIATES, INC.
725 TOWN & COUNTRY RD
SUITE 300
Division of Rail

CALTRANS DIVISION OF RAIL
SAN JOAQUIN RAIL CORRIDOR EIR/EIS
BNSF STOCKTON SUBDIVISION

PROPOSED FRESNO
LAYOVER FACILITY

CONTRACT NO.
DRAWING NO.
REVISION
SHEET NO.

ATTACHMENT B
ARCHAEOLOGICAL SURVEY REPORT

SAN JOAQUIN CORRIDOR AMTRAK CALIFORNIA SERVICE PROPOSED RAILWAY STATION AND LAYOVER FACILITY

In the Cities of Stockton, Merced, and Fresno
San Joaquin, Merced, and Fresno Counties, California

Prepared by:

Michael Hogan, Ph.D., Principal Investigator, Archaeology
Terri Jacquemain, M.A., Archaeologist / Historian
CRM TECH
1016 East Cooley Drive, Suite A / B
Colton, CA 92324

Approved by:

Caltrans District 7
Alex Kirkish, Associate Environmental Planner / Archaeologist
Division of Environmental Planning, MS 16A
100 South Main Street, Suite 100
Los Angeles, CA 90012

CRM TECH Contract #2561C
Approximately 33 acres at five locations
Sections 19 and 20, T7S R14E; Sections 3 and 10, T14S R20E; and
a portion of the Campo de los Franceses land grant in T1N R6E, MDBM
USGS Fresno South, Merced, and Stockton West, Calif., 7.5' (1:24,000) Quadrangles
Cultural resources identified in the APE: 10-004412 (Fresno Santa Fe Depot and freight office),
10-005266 (freight loading platform), 24-001881 (segment of Santa Fe Railway), 39-002409 (Stockton Santa Fe Depot),
39-005141(commercial building), 39-005142 (industrial complex), and 39-005143 (Stockton Southern Pacific Depot)

May 1, 2013

SUMMARY OF FINDINGS

In order to improve and expand passenger service between Sacramento, Oakland, and Los Angeles, the California Department of Transportation (Caltrans), Division of Rail, proposes a series of railway facility enhancements collectively known as the San Joaquin Corridor Amtrak California Service Project. The project components covered by this study consists of the development of a new or rehabilitated passenger railway station in the City of Stockton, San Joaquin County, and of a layover facility in either the City of Merced, Merced County, or the City of Fresno, Fresno County.

This Archaeological Survey Report (ASR), as a component of the Historic Property Survey Report (HPSR) for the undertaking, is prepared under the provisions of Section 106 of the National Historic Preservation Act, as implemented through federal regulations outlined in 36 CFR Part 800, and the California Environmental Quality Act (CEQA). The extent of the survey covers the entire Area of Potential Effects (APE) for this undertaking, which is delineated to encompass the maximum extent of ground disturbances as currently projected. All cultural resources investigations reported herein comply with the Section 106 Programmatic Agreement executed on January 1, 2004.

The purpose of the survey is to identify any archaeological resources within or immediately adjacent to the APE. The scope of the study included a standard historical/archaeological resources records search, historical and geoarchaeological background research, consultations with local community and Native American representatives, and a systematic field survey. A total of six built-environment features of historical origin were identified within or partially within the APE, as documented in the accompanying Historical Resources Evaluation Report (HRER), but no archaeological features or artifact deposits, either prehistoric or historic in origin, were encountered, and most of the subsurface sediments in the APE have been found to be relatively low in sensitivity for buried cultural remains.

Based on these findings, the present report concludes that no archaeological resources exist within or immediately adjacent to the APE. It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during the undertaking, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional surveys will be required if the project changes to include areas not previously surveyed.

TABLE OF CONTENTS

SUMMARY OF FINDINGS i
INTRODUCTION 1
PROJECT LOCATION AND DESCRIPTION 1
SOURCES CONSULTED 2
Records Search 2
Stockton 2
Merced 5
Fresno 5
Native American Consultation 8
Consultation with Local Community 10
Additional Research 10
BACKGROUND 10
Environment 10
Prehistory 14
Ethnography 15
Miwok 15
Northern Valley Yokuts 15
History 16
San Joaquin Valley 16
Stockton 17
Merced 18
Fresno 18
FIELD METHODS 18
STUDY FINDINGS AND CONCLUSIONS 19
REFERENCES 19

LIST OF FIGURES

Figure 1. Previous cultural resources studies in the vicinity (Stockton) 3
Figure 2. Previous cultural resources studies in the vicinity (Merced) 6
Figure 3. Previous cultural resources studies in the vicinity (Fresno) 7
Figure 4. The APE at 735 and 711 South San Joaquin Street, Stockton 11
Figure 5. The APE at 949 East Channel Street, Stockton 12
Figure 6. The APE near the BNSF and UPRR junction, Stockton 12
Figure 7. The APE in Merced 13
Figure 8. The APE in Fresno 14

LIST OF TABLES

Table 1. Previously Recorded Cultural Resources in the Vicinity (Stockton) 4
Table 2. Previously Recorded Cultural Resources in the Vicinity (Merced) 5
Table 3. Previously Recorded Cultural Resources in the Vicinity (Fresno) 8

INTRODUCTION

The present archaeological survey covers the Area of Potential Effects (APE) for a proposed railway station and layover facility project in the Cities of Stockton, Merced, and Fresno in San Joaquin, Merced, and Fresno Counties, California (see HPSR Attachment A). The survey was conducted under the provisions of Section 106 of the National Historic Preservation Act, as implemented through federal regulations outlined in 36 CFR Part 800, and the California Environmental Quality Act (CEQA). All cultural resources investigations reported herein comply with the Section 106 Programmatic Agreement executed on January 1, 2004.

The field survey of the APE was carried out on October 15-18, 2012, by project archaeologist / historian Terri Jacquemain, M.A., under the direction of principal investigator Michael Hogan, Ph.D. Hogan was awarded his doctorate degree in anthropology by the University of California, Riverside, in 1991, and has been working continuously in cultural resources management as field director, project archaeologist, ethnologist, and principal investigator since then. Jacquemain earned her bachelor's degree in anthropology in 2002 and master's degree in public history and cultural resource management in 2004, both from the University of California, Riverside. She has been engaged in archaeological studies, historical research, and cultural resources management in California for more than ten years.

In addition to the archaeological field survey, the scope of the study also included historical / archaeological resources records searches, historical and geoarchaeological background research, and consultations with Native American and local community representatives. The records search service was provided by the Central California Information Center (CCIC) and the South San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System. Terri Jacquemain conducted the historical research and the consultation with local community representatives. Project geologist Harry M. Quinn (M.S., geology, University of Southern California, 1968) performed the geoarchaeological analysis. Project archaeologist Laura H. Shaker (B.S., anthropology, University of California, Riverside, 1998) completed the Native American consultation.

PROJECT LOCATION AND DESCRIPTION

The California Department of Transportation (Caltrans), Division of Rail, proposes a series of railway improvements collectively known as the San Joaquin Corridor Amtrak California Service Project. The project components covered by this survey consist of the establishment of a primary Amtrak station in the City of Stockton, San Joaquin County, and a new layover facility in either the City of Merced, Merced County, or the City of Fresno, Fresno County (see HPSR Attachment A).

In Stockton, the undertaking calls for the construction of a new Amtrak station at the junction between the Burlington Northern Santa Fe Railway (BNSF) and the Union Pacific Railroad (UPRR) west of Pilgrim Street at Scotts Avenue, which would require the demolition of a manufacturing plant at 1110 East Scotts Avenue. The new station would conform to standard railway station design and features, including full-length platforms,

passenger shelters, lighting, signage, schedules, leaning bars, information kiosks, ticket vending machines, and adequate space for loading, unloading, passenger pick-up, and vehicle drop-off. Alternatively, the project objective may be accomplished by rehabilitating and expanding one of the two existing Amtrak stations in the city, located at 735 South San Joaquin Street, on the BNSF, and 949 East Channel Street, on the UPRR. Expansion of the station on the BNSF would necessitate the demolition of buildings and structures on a commercial property adjacent to the north, at 711 South San Joaquin Street.

In Fresno, the proposed layover facility would extend along the existing BNSF line from Tulare Street in the north to Walker Avenue in the south, adjacent to the existing Amtrak station at 2650 Tulare Street. In Merced, the layover facility would also be located along the existing BNSF line and adjacent to the existing Amtrak station at 324 West 24th Street, extending from K Street in the north to 6th Avenue in the south. The new layover facility would include a storage yard, running maintenance and repair area, support shops, parts storage, mechanical and electrical rooms, and administrative offices.

The APE is delineated to encompass the maximum extent of ground disturbances currently projected for the proposed railway station and layover facility, and consists of five noncontiguous components scattered among the three cities involved, measuring approximately 33 acres in total. The City of Stockton contains the three alternative station sites within a mile of one another, all located in a portion of the Campo de los Franceses land grant lying within T1N R6E, Mount Diablo Baseline and Meridian (MDBM). The Fresno site for the layover facility is located in Sections 3 and 10, T14S R20E, MDBM, and the Merced site, in Sections 19 and 20, T7S R14E, MDBM. All five locations are situated in highly urbanized areas near the historic downtown cores of the three cities (see HPSR Attachment A, Maps 2a-2c, 3a-3e).

SOURCES CONSULTED

RECORDS SEARCH

The records search on the APE in Stockton and Merced was completed on November 3, 2011, by the Central California Information Center (CCIC), and the records search on the APE in Fresno was completed on December 6, 2011, by the South San Joaquin Valley Information Center (SSJVIC). Sources consulted during the records searches include listings of California Historical Landmarks and Points of Historical Interest, the National Register of Historic Places, the California Register of Historical Resources, the California Historical Resources Inventory, local historical resources inventories or registers, the Caltrans Historic Bridge Inventory, and other pertinent materials on file at the information centers. The scope of the records searches extends to a quarter-mile radius of the APE at each of the five locations.

Stockton

According to CCIC records, a total of 14 cultural resources studies were previously completed within the scope of the records search in Stockton, including two that focused on the two existing Amtrak stations in the APE (Fig. 1). The Southern Pacific Stockton Downtown Station (now the Robert J. Cabral Amtrack / ACE Station) at 949 East Channel

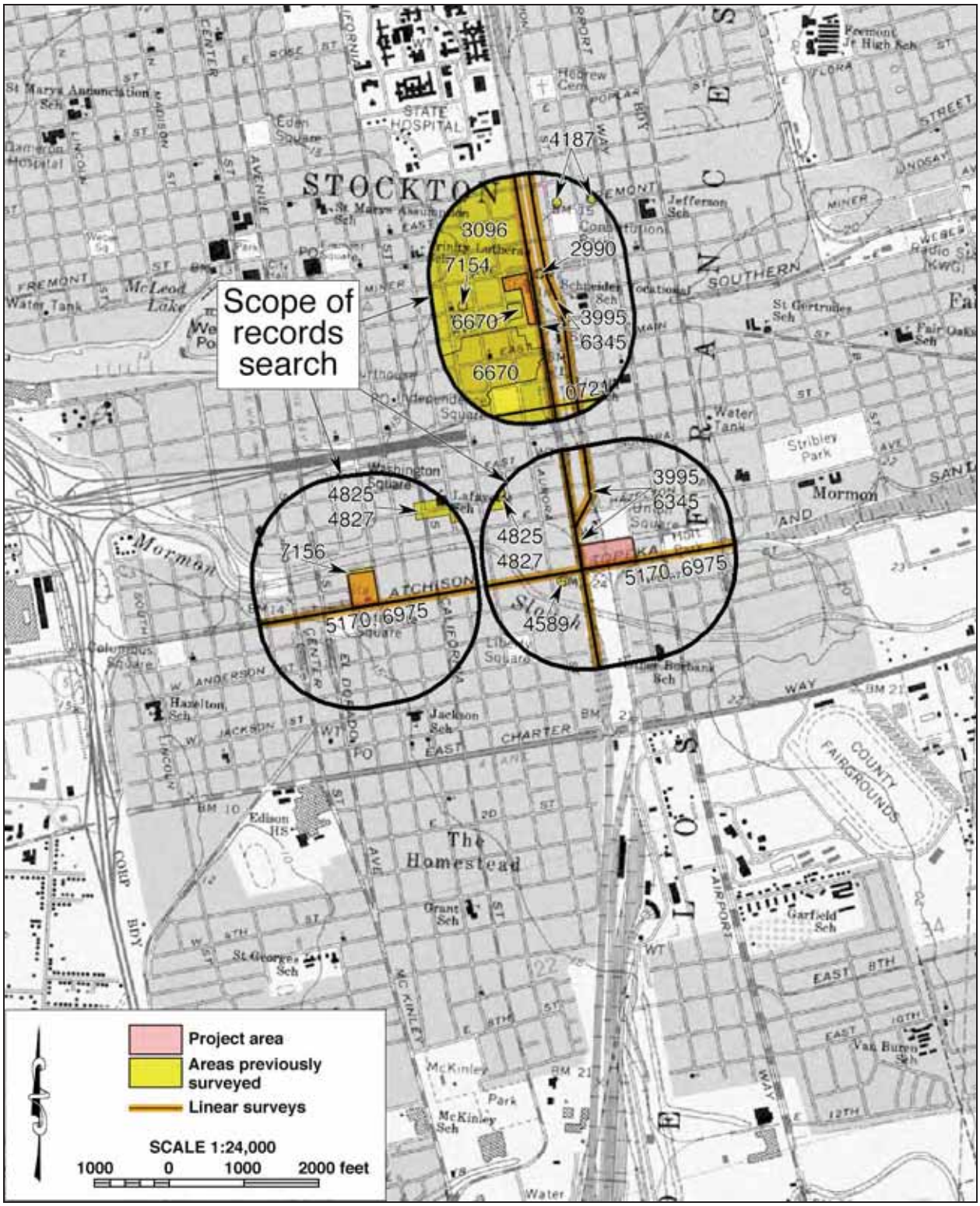


Figure 1. Previous cultural resources studies (in the vicinity of the APE (Stockton), listed by CCIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

Street was surveyed in 2003, prior to the restoration of the 1930 depot building. However, CCIC records yielded no evidence that the depot was formally recorded into the California Historic Resources Inventory or evaluated for historical significance during that study.

The Stockton Santa Fe Depot at 735 South San Joaquin Street was the subject of a 2005 study, also carried out in preparation for renovations and improvements to the building. The circa 1899 depot building, designated Site 39-002409, was listed in the City of Stockton's local historical resource register in 1972, and was found eligible for listing in the National Register of Historic Places in 1978 (Owen and Turkette 1978:1).

Also among the previous studies was a 2000 community-wide survey covering much of the downtown area. As a result of that study, the East Channel / North Aurora Historic District was recorded in close proximity to the APE and designated Site 39-004683, which encompasses a group of 1890s Queen Anne cottages located across Channel Street from the Robert J. Cabral Amtrak / ACE Station. Other previously recorded sites near the APE include segments of the Southern Pacific Railroad (39-000002 / 39-004643) and the Central California Traction Company Railroad (39-004457). Including the four sites noted above, a total of 28 historical / archaeological resources were recorded within the scope of the records search, as listed in Table 1. Additionally, the Caltrans Historic Bridge Inventory identifies at least seven bridges the records search scope.

Table 1. Previously Recorded Cultural Resources within the Scope of the Records Search (Stockton)

Site No.	Resource	Historical Designation/Evaluation
39-000002 / 39-004643	Southern Pacific Railroad	Not eligible for historic designation
39-001153	Katten Building, ca. 1913	Not evaluated
39-001159	Earl Hotel / Hotel Miner, ca. 1914	Not evaluated
39-002409*	Santa Fe Depot, ca. 1899	Local register; National Register-eligible
39-004164	Refuse deposit	Not evaluated
39-004165	Refuse deposit	Not evaluated
39-004457	Central California Traction Company Railroad	Not evaluated
39-004678	Four-plex, ca. 1913	Not eligible for historic designation
39-004679	Single-family residence, ca. 1950	Not eligible for historic designation
39-004683	East Channel / North Aurora Historic District	National Register-eligible
39-004720	Stockton Downtown Commercial Historic District	National Register-eligible
39-004727	Commercial building, ca. 1925	Contributor to a historic district
39-004728	Single-family residence, ca. 1900	Not eligible for historic designation
39-004729	Duplex, ca. 1890s	Not eligible for historic designation
39-004731	Single-family residence, ca. 1925	Eligible for local designation
39-004732	Single-family residence, 1890	Not eligible for historic designation
39-004733	Single-family residence, ca. 1920	Eligible for local designation
39-004734	Single-family residence, ca. 1890	Not eligible for historic designation
39-004735	Single-family residence, ca. 1895	Not eligible for historic designation
39-004736	Single-family residence, ca. 1910	Eligible for local designation
39-004738	Commercial building, ca. 1950	Eligible for local designation
39-004742	Auto repair shop, ca. 1940	Eligible for local designation
39-004746	Commercial building, ca. 1926	Contributor to a historic district
39-004748	Maria's Café, ca. 1909	Contributor to a historic district
39-004895	Western Pacific Railway Depot, ca. 1909	California Register-eligible, contributor to a district
39-004971	Schneider Vocational School, ca. 1932	Not evaluated
39-004974	Lafayette School site, ca. 1865	Undetermined
39-004997	Burbank (Luther) School, ca. 1925	Undetermined

*Located in the APE

While no prehistoric sites were formally recorded within the scope of the records search in Stockton, the CCIC records contain a 1996 report of four human skulls that were discovered east of the UPRR near the Robert J. Cabral Amtrak/ACE Station. Further investigation reveals that the skulls were likely part of a Native American artifact collection left behind by a prolific relic hunter and later found by amateur archaeologists seeking to uncover valuables in a suspected subsurface midden (Fitzgerald 1996). In 1997, per request of the designated Most Likely Descendent, the remains were re-buried where they had been discovered (Perez 1997; Bacon 1997).

Merced

In Merced, five surveys were reported to the CCIC within a quarter-mile radius of the APE, including a citywide historic building reconnaissance in 1985 and two surveys along segments of the BNSF (Fig. 2). Seven historical/archaeological sites were previously recorded within the scope of the records search, as listed in Table 2, all dating to the historic period. Of these seven, the only site lying partially within the APE consists of a 16.5-mile segment of the BNSF line (formerly the Atchison, Topeka, and Santa Fe Railway; Site 24-001881), which was found not to be eligible for listing in the National Register of Historic Places or the California Register of Historical Resource during a 2009 study (Smallwood 2009:3).

Among the other six known sites, the nearest to the APE are two residential historic districts delineated between G and Canal Streets. One of them lies between 18th and 23rd Streets (24-000838), and the other between 25th Street and 27th Street (24-000735), leaving an approximate one-block buffer between the districts and the APE. Both districts were determined to be eligible for the National Register of Historic Places in 1985 (Arguelles 1985:1). Also recorded near the APE was Site 24-001880, representing four date palm trees associated with the former site of the Merced Santa Fe Depot, located approximately 150 feet northwest of APE. A bridge in the APE, crossing G Street, was not found in the Caltrans Historic Bridge Inventory.

Table 2. Previously Recorded Cultural Resources within the Scope of the Records Search (Merced)

Site No.	Resource	Historical Designation/Evaluation
24-000626	Major George Beecher Cook House, ca. 1891	National Register
24-000629	Kaeler/Rector House, ca. 1891	National Register
24-000630	Legget House/Queen Anne Inn, ca. 1884	National Register
24-00735	Historic district (G to Canal Streets, 25th to 27th Streets)	Eligible for local designation
24-00838	Historic district (G to Canal Streets, 18th to 23rd Streets)	Eligible for local designation
24-001880	Date palm trees associated with the Merced Santa Fe Depot	Not eligible for historic designation
24-001881*	Atchison, Topeka, and Santa Fe Railway	Not eligible for historic designation

*Located partially in the APE

Fresno

According to SSJVIC records, portions of the APE in Fresno have been included in three prior surveys, two conducted in 1995 and the third in 2001, focusing on the Santa Fe Depot and other nearby historic buildings (Fig. 3). The main depot building and a former freight office were recorded as Site 10-004412, and a loading platform was recorded as Site 10-005266, all located within the APE. The circa 1899 depot building is currently listed in the National Register of Historic Places and the City of Fresno's local historical resources register (Hattersley-Drayton 2012).

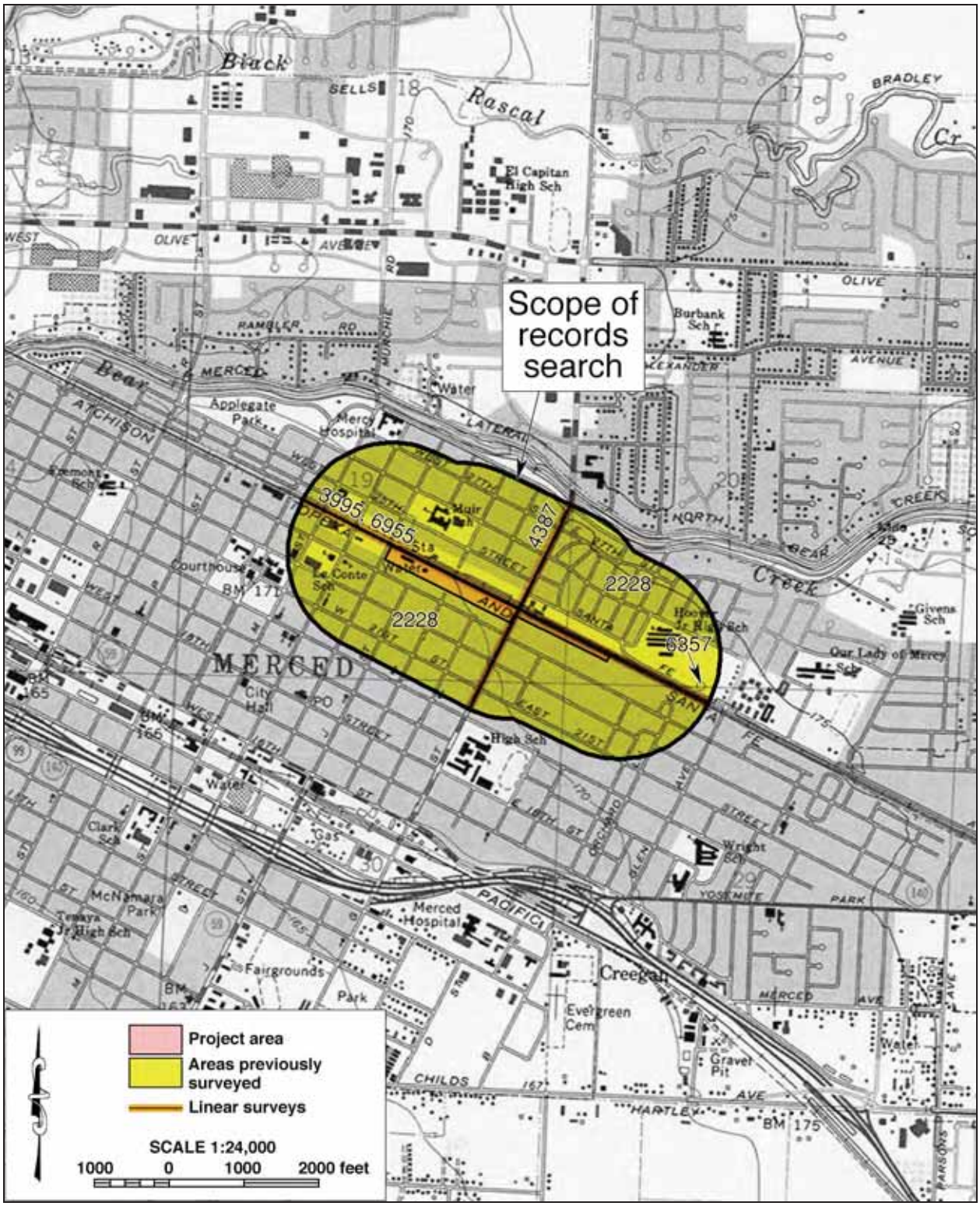


Figure 2. Previous cultural resources studies in the vicinity of the APE (Merced), listed by CCIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

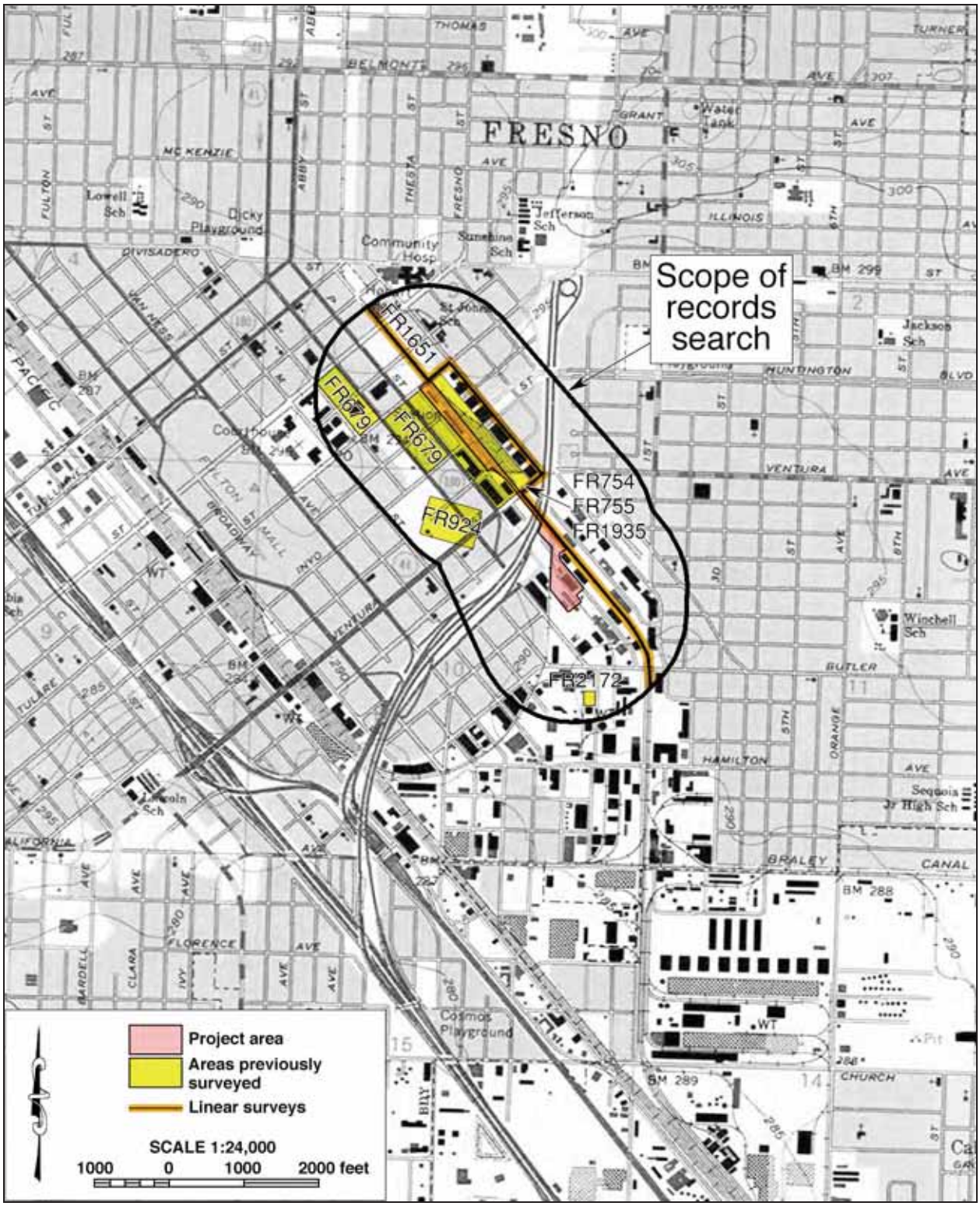


Figure 3. Previous cultural resources studies in the vicinity of the APE (Fresno), listed by SSJVIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

The freight office, dating to around 1926, was determined to meet the criteria for listing in the National Register with a local level of significance during the 2001 study (Bakic 2001:B10). That study further notes that both buildings may be contributors to the Santa Fe Warehouse District, a potentially National Register-eligible historic district proposed in 1995 but apparently yet to be recorded as such (*ibid.*). Site 10-005266 was described as a BNSF freight-loading platform on the north side of the depot, which was found not to qualify for any historical designation.

The SSJVIC records indicate four additional surveys within the quarter-mile scope of the records search, and a total of 16 previously recorded sites lying within the scope but outside the APE, as listed in Table 3. One other property of note within the quarter-mile radius is the circa 1920 Central Packaging Supply Company building at 2534 San Benito Street, near the southern end of the APE, which is listed in the City's historical resources register (Hattersley-Drayton 2012).

Table 3. Previously Recorded Cultural Resources within the Scope of the Records Search (Fresno)

Site No.	Resource	Historical Designation/Evaluation
10-004277	Water tower, ca. 1894	National Register
10-004278	Twining Laboratories, ca. 1930	National Register-eligible
10-004279	Civic Center Professional Building, ca. 1926	National Register
10-004346	Malmbridge Apartments, ca. 1911	National Register
10-004390	The Brix Home, ca. 1911	National Register
10-004394	The Meux Home, ca. 1889	National Register
10-004396	Rehorn Residence, ca. 1906	National Register
10-004408	Warehouse Row	Local designation; National Register
10-004411	Santa Fe Hotel	Local designation; National Register
10-004412*	Santa Fe Depot (ca. 1899) and freight office (ca. 1926)*	Local designation; National Register (depot); National Register-eligible (freight office)
10-004417	Southern Pacific passenger depot, ca 1889	National Register
10-005265	Railroad spurs	Not eligible for historic designation
10-005266*	BNSF freight loading platform	Not eligible for historic designation
10-005267	Basque French Bakery, ca. mid-1950s	Not eligible for historic designation
10-005268	American Ambulance building, ca. 1898-1906	Not eligible for historic designation
10-005269	Commercial building, ca. 1913	Not eligible for historic designation
10-005446	P Street Apartments, ca. 1940	Eligible for local designation

*Located in or partially in the APE

NATIVE AMERICAN CONSULTATION

On August 24, 2012, CRM TECH submitted a written request to the State of California's Native American Heritage Commission (NAHC) for a records search in the commission's sacred lands file. In response, the NAHC reports in a letter dated August 27 that the sacred lands record search identified no Native American cultural resources within a half-mile radius of the APE, but recommends that local Native American groups be contacted for further information. For that purpose, the commission provided a list of potential contacts in the region (see HPSR Attachment D).

Upon receiving the NAHC's response, CRM TECH initiated correspondence with all 31 individuals on the referral list and the organizations they represent. The initial written request for comments were sent to the tribal representatives on September 14, 2012, and follow-up telephone solicitations were carried out between November 27, 2012, and January 22, 2013 (see HPSR Attachment D). At the recommendation of these tribal

representatives, three additional contacts were added to the list, including Roselynn Lwenya, Environmental Director for the Buena Vista Rancheria of Me-Wuk Indians of California, Tony Burris, Cultural Committee Chairperson for the Ione Band of Miwok Indians, and Shana Brum, Cultural Specialist for the Santa Rosa Tachi Rancheria. As of this time, 13 of the tribal representatives have responded to the inquiry, as listed below:

- David Alvarez, Chairperson of the Traditional Choinumni Tribe, stated that he had no concerns regarding the undertaking, but planned further review of the project information.
- John Davis, Chairperson of the Kings River Choinumni Farm Tribe, had no concerns regarding the undertaking, but wished to be notified of any inadvertent archaeological discoveries.
- Valentin Lopez, Chairperson of the Amah Mutsun Tribal Band, stated that the APE was out of the tribe's territory and recommended that Jerry Brown of the Chowchilla Tribe of Yokuts be contacted.
- Les James, Spiritual Leader of the Southern Sierra Miwuk Nation, stated that he did not have enough familiarity with the APE to offer a response.
- Shana Brum, Cultural Specialist for the Santa Rosa Tachi Rancheria, stated that she wished to defer to other tribes regarding the Stockton portion of the APE. Regarding the APE in Fresno and Merced, she requested formal government-to-government consultation with the lead agency to insure early involvement in the planning process as well as Native American monitoring during all ground-disturbing activities.
- Randy Yonemura, of Miwok ancestry, considered the APE to be culturally sensitive. He requested, and was sent, additional project information for further review.
- Robert George Ledger, Sr., Chairperson of the Dumna Wo-Wah Tribal Government, also found the APE to be culturally sensitive, and requested that Native American monitors from his group be present during all ground-disturbing activities in Merced and Fresno.
- Kenneth Woodrow, Chairperson of the Eshom Valley Band of Michahai and Wuksachi Indians, expressed concerns that there might be Native American sites and burials in the immediate vicinity of the APE. He said he would review the information and then contact Caltrans to request government-to-government consultation.
- Lawrence Bill, Chairperson of the Sierra Nevada Native American Coalition, stated his concerns that Native American cultural resources or human remains might be unearthed during the undertaking. He indicated that his group was opposed to the undertaking and wished to engage in formal government-to-government consultation with the lead agency.
- Roselynn Lwenya, Environmental Director for the Buena Vista Rancheria of Me-Wuk Indians of California, stated that her tribe wished to pursue government-to-government consultation with Caltrans regarding the undertaking in the City of Stockton, and requested copies of the completed reports and other pertinent documents.
- Silvia Burley, Chairperson of the California Valley Miwok Tribe, stated the tribe's concerns that Miwok artifacts and human remains might be unearthed during the undertaking, and requested notification of any discoveries of that nature.
- Tony Burris, Chairperson of the Cultural Committee for the Ione Band of Miwok Indians, stated that he planned to review the project information and respond after the tribe's upcoming Cultural Committee meeting.
- Katherine Erolinda Perez, Chairperson of the North Valley Yokuts Tribe, requested and was sent additional information regarding the undertaking.

CONSULTATION WITH LOCAL COMMUNITY

Between August 20, 2012, and February 25, 2013, CRM TECH contacted staff members of the Cities of Stockton, Merced, and Fresno, as well as representatives of local historical societies and preservation organizations in these cities to inquire about cultural resources of local historic value or other cultural resources concerns regarding the APE. Records of correspondence with the local community representatives for each of the three cities are presented in HPSR Attachment E.

In the City of Stockton, the local community representatives contacted included Richard Larrouy, Planning Manager in the Community Development Department, and the Stockton Historical Society. To date, no response has been received from either Mr. Larrouy or the historical society. In the City of Merced, the City's Development Services Department and the Merced County Historical Society were contacted. In response for the City, Terri Lucas, Secretary III, indicated by e-mail that the inquiry had been forwarded to the Planning Manager for response. No further reply has been received. Responding for the Merced County Historical Society, Sarah Lim, Director of the Merced County Courthouse Museum, stated by e-mail that the organization had resource materials on file to aid historical research on the APE.

In the City of Fresno, Karana Hattersley-Drayton, the City's Historic Preservation Project Manager, and the Fresno Historical Society were contacted. After requesting and being provided additional project information, Ms. Hattersley-Drayton identified four known historical resources that she believed to be in or near the APE: the Santa Fe Depot, the Santa Fe Hotel, Warehouse Row, and the Central Packaging Supply complex (see HPSR Attachment E). Sharon Hiigel, Curator for the Fresno Historical Society, stated via e-mail that the organization had resources available to aid historical research. She indicated that she would forward the project information to the organization's board of trustees. No further response has been received since then.

ADDITIONAL RESEARCH

In conjunction with the research procedures outlined above, a historical background review was conducted on the basis of published literature in local and regional history and historic maps and aerial photographs of Stockton, Merced, and Fresno. In the meantime, a geoarchaeological analysis was conducted using existing literature on surface geology and soil types in the vicinity and pertinent geological and soil maps. The purpose of this analysis was to assess the APE's potential for the deposition and preservation of subsurface cultural deposits from the prehistoric period, which cannot be detected through a standard archaeological survey. Findings from the historical and geoarchaeological researches are incorporated into the discussion in the "Background" section below.

BACKGROUND

ENVIRONMENT

Home to the state's agricultural heartland, the San Joaquin Valley comprises the southern portion of California's Great Central Valley, extending from the Sacramento–San Joaquin

River Delta in the north to the Tehachapi Mountains in the south, and stretching between the Coastal Ranges in the west and the Sierra Nevada in the east. The climate in the region is characterized by a two-season annual cycle, with a wet season and a dry season, and displays increasingly semi-arid, Mediterranean characteristics toward the southern end. The rainy season, which is also attended by bouts of dense "tule fog," generally lasts from November to April but somewhat longer at the northern end. Average annual rainfall varies from approximately 16-12 inches in the north to 8-12 inches in the south (Beck and Haase 1974:5), rendering extensive irrigation works a necessity for successful agricultural development.

The various portions of the APE lie among industrial, commercial, as well as residential properties in the surrounding areas (Figs. 4-8). Within the APE boundaries, the ground surface at each location has been extensively disturbed, most notably by construction activities along the railroad. Where it is not paved or occupied by buildings, the ground surface consists mostly of compacted soil with scattered gravel and sporadic growth of weeds.

Geologically, Stockton, Merced, and Fresno are all located in the San Joaquin Valley portion of the Great Valley geomorphological province (Bailey 1966:253; Norris and Webb 1976:3). The province is bounded on the east by the Sierra Nevada and Cascade Range provinces, on the north by the Klamath Mountains province, and on the west and the south by the Coast Ranges province (*ibid.*). The San Joaquin Valley occupies the southern portion of the province and is filled with over 30,000 feet of Tertiary sediment (Norris and Webb 1976:294-299). The Sacramento Valley occupies the northern portion of this province and is filled with over 20,000 feet Tertiary of Cretaceous and Tertiary sedimentary rocks.

At the Stockton locations, Wagner et al. (1991) maps the surface geology as *Qm*, or arkosic alluvium of the Pleistocene-age Modesto Formation. Harden (2004:261-264) shows the Modesto Formation to be glacial outwash derived from the Sierra Nevada Range. Arkley (n.d.:3) shows the Modesto Formation to be late Pleistocene in age and to have a maximum thickness of 100 feet. Retzer and Glassey (1951:84-85) map the surface soils as *St*, belonging to the Stockton Series. These soils are described as mainly black clay (adobe) that form on nearly level or gently sloping areas, and appear to be expansive soils that swell when wet and shrink and crack when dry (*ibid.*).

Figure 4. The APE at 735 and 711 South San Joaquin Street in Stockton, views to the southeast and the west, respectively.

Figure 5. The APE at the 949 East Channel Street in Stockton, including the circa 1930 depot building (*top*) and two adjacent parking areas along Channel Street (*bottom right*) and Miner Avenue (*bottom left*).

The topography of the APE in Merced is downslope from Bear Creek and could have been in its flood plain during flood events. Wagner et al. (1991) maps the surface geology at the project location as *Qr*, or arkosic alluvium of the Pleistocene-age Riverbank Formation.

Figure 6. The APE near the BNSF and UPRR junction in Stockton, view to the west.

Figure 7. The APE in Merced. *Clockwise from top left*: Merced Amtrak station, view to south; area south of station, view to south; railroad bridge over G Street, view to southeast; the BNSF rail yard in the midsection of the APE, view to the north.

Harden (2004:261-264) shows the Riverbank Formation to be glacial outwash derived from the Sierra Nevada Range. Arkley (n.d.) shows the Riverbank Formation to be middle Pleistocene in age and to have a maximum thickness of 200 feet.

The surface geology at the Fresno APE is mapped by Matthews and Burnett (1965) as *Qf* and *Qc*. The *Qf* is identified as alluvial fan deposits of Holocene age and the *Qc* as continental alluvium of Pleistocene age. The *Qf* appears to be have been deposited by recent runoff from the Sierra Nevada Range that has dissected the older *Qc* alluvium, leaving them as isolated terrace deposits in the northwestern and southeastern portions of the APE, with the Pleistocene-age sediments in the central portion.

Based on the Pleistocene age of the exposed sediments and the extensively disturbed state of the surface soils, the APE generally appears to be relatively low in sensitivity for potentially significant archaeological remains in buried deposits, especially those from the prehistoric era. However, the Fresno portion of the APE constitutes a slight exception. Since the older sediments are mixed with Holocene sediments at that location, the potential for buried archaeological deposits is slightly higher.

Figure 8. The APE in Fresno. *Clockwise from top left*: midpoint of the APE, view to northwest; midpoint of the APE, view to northeast; southern end of APE, view to the northeast; the Fresno Amtrak station, view to the northeast.

PREHISTORY

The date of the earliest human occupation of North America, and California, is subject to much debate. However, it is widely acknowledged that by 12,000 to 8,000 years ago people inhabited North America, as evidenced by, in particular, the fluted points they left behind. In the Central Valley, according to Moratto (1984:88, 93), it is likely that the Fluted-Point Tradition gradually evolved into Western Pluvial Lakes Tradition, characterized by the absence of groundstone artifacts and by a distinctive chipped stone toolkit, as the native peoples adapted to the lake and marsh environment of the region. The former shorelines of Tulare Lake, not far from the APE, have yielded numerous artifacts ascribable to both the Fluted-Point Tradition and the Western Pluvial Lakes Tradition (*ibid.*:81).

Archaeological investigations in the Central Valley began in earnest in the 1930s and attempts were made to understand the temporal sequence of occupation in the area based on the archaeological record. In 1939, one of the most influential temporal schemes was proposed for the region (Lillard et al. 1939), defining three archaeological periods based on mortuary practices and associated ornamental artifacts: the Early Period, the Middle Period, and the Late Period (Moratto 1984:180). In the early 1950s, Beardsley (1954) refined

this earlier scheme, also on the basis of burial practices and associated grave goods, and established the three primary horizons—Early, Middle, and Late—of what is known as the Central California Taxonomic System (Nelson 2000:10).

More recently, archaeologists have been developing sequences for more localized areas, as well as concepts for dealing with cultural units without temporal implications (Moratto 1984:201). However, the three periods mentioned above, along with the earlier Archaic Period, still provide a useful framework as general indicators of cultural stability and change over time. According to Nelson (2000:10), the Early Period is now commonly recognized as dating from 2,500 to 500 BC, with the Middle Period from 500 BC to 300 AD and the Late Period from 300 to 1840 AD.

ETHNOGRAPHY

According to ethnographical literature, the Stockton area was once inhabited by the Miwok, while Merced and Fresno were part of the homeland of the Northern Valley Yokuts. The following ethnographic discussion of Miwok culture and history is based on Kroeber (1925) and Levy (1978), the basic reference sources on this subject. The discussion of Northern Valley Yokuts culture is based mainly on Wallace (1978).

Miwok

The Miwok, or Miwuk, comprised three territorially distinct groups: Coast, Lake, and Interior, or Plains. Their territory extended from Walnut Creek eastward to the Sacramento-San Joaquin River Delta. The Miwok depended on fishing but also on the abundant game available, as well as insects, such as grasshoppers and yellow-jacket larvae, and plant resources, including acorn, pinecones, roots, bulbs, seeds, berries and tobacco. Tule were used in the manufacture of many items, including baskets, floor mats, watercraft, and women's skirts. Salt and obsidian were major trade items from the Great Basin area, olivella and abalone were brought in from the coast, cedar bows were imported from the mountains, and baskets were traded back and forth among the groups.

The unit of ultimate political sovereignty among the Miwok was the tribelet. The population of a typical tribelet is estimated to have ranged around 300-500 persons. Each tribelet owned a territory with defined boundaries, and the rights to the resources within. The office of the chief was patrilineal in succession, although in the absence of a male heir, the position would pass to the chief's daughter. Due to their location near the navigable Sacramento-San Joaquin River Delta, the Miwok first came into contact with Spanish expplorers as early as the latter part of the 1700s. Many Miwok tribelets disappeared through the combined effects of missionization, disease, and the arrival of thousands of non-Native people in the 1840s. The early part of the 20th century witnessed the establishment of a few small reservations at the Indian *rancherías*, where many Miwok people still reside. In recent decades, there has been a renaissance of Native American activism and cultural revitalization among a number of groups of Miwok descent.

Northern Valley Yokuts

The territory of the Northern Valley Yokuts lies basically within the northern San Joaquin Valley, extending from the present-day Stockton-Lodi area southward to the Madera-

Fresno area. Most of the population lived near the San Joaquin River and its tributaries. Their main food staples were most likely fish, waterfowl, wild seeds, and tule roots, which were secured and processed with baskets and various tools made of stone, wood, or bone. Earthenware pots, produced by other Native American groups and obtained through trade, appear to have been used infrequently. The basis of the Northern Valley Yokuts' social unit was probably the biological family, with the society divided into totemic moieties. Tribal affiliation was based on sedentary village life, made possible by the abundance of natural resources, although travel and trade were also an important aspect of Northern Valley Yokuts culture.

The native lifeways of the Northern Valley Yokuts eroded gradually and the population declined progressively after the first casual contacts with Spanish colonizers in the late 1700s and early 1800s. Proselytizing and missionization in the area began in earnest in the early 1800s, with dramatic effects on the native society. During the Gold Rush years of 1849-1850, the Northern Valley Yokuts lost almost all of their traditional territory, and were eventually settled by the U.S. government on the Fresno and Tule River Reserve and other reservations. Today, the few remaining survivors of Northern Valley Yokuts descent live scattered among other Native Americans or the general population, with little manifestation of their ethnical identity.

HISTORY

San Joaquin Valley

In accounts of their 1770s expeditions, both Padro Fages and Francisco Garcés indicated that the San Joaquin Valley was a bleak and arid expanse of land, which undoubtedly deterred Spanish settlement of the region (Clough and Secrest 1984:25). Later, Spanish army officer Gabriel Moraga led a series of expeditions into the San Joaquin Valley between 1804 and 1810 in search of a mission site, followed in 1827 by famed trapper Jedediah Smith. Yet even after the U.S. annexation in 1848, almost the entire San Joaquin Valley was largely unpopulated except for the gold mining camps in the Mother Lode country. Indeed, it was because of its isolation and vastness that the San Joaquin Valley managed to keep its rural landscape intact and relatively unhindered by urbanization for the 250 years following the unflattering assessment by Fages and Garcia.

After the U.S. annexation of Alta California, Americans slowly began to migrate from the eastern states and settle in the northern San Joaquin Valley, some in search of gold in the nearby hills, and others interested in farming and ranching. Grain and cattle were the primary sources of industry through the 1870s and the population grew slowly during that time, as the whole nation was in a state of recession and California had little else but open land to offer.

Most towns in the San Joaquin Valley owe their origins primarily to the coming of the Southern Pacific (now Union Pacific) Railroad in the 1870s. However, increasingly high freight charges and passenger fares charged by the Southern Pacific were too exorbitant for most farmers and severely hampered the prosperity of the agricultural region. This would all change with the coming of a second transcontinental railroad to California, as rate wars between the railroad companies would provide a perfect opportunity for many Easterners to move westward into California.

Spurred by popular resentment to the Southern Pacific Company's transportation monopoly in California, a second railroad through the Central Valley, the San Francisco and San Joaquin Valley (SF&SJV) Railway, was constructed from Stockton to Bakersfield in 1895-1897 (Gustafson and Serpico 1996:159). Known popularly as "Valley Road," it merged into the Atchison, Topeka and Santa Fe (ATSF) Railway Company in 1898 and became the first ATSF line to reach the port of San Francisco (*ibid.*:11-13). Now a part of the BNSF, the former SF&SJV has remained in continuous service to the present time. It is this rail line that connects the project locations in Stockton, Merced, and Fresno.

Throughout the late 19th century, railroad and irrigation had a critical influence on the growth of the region. With its nearly level valley floor, the San Joaquin Valley boasted some of the richest agricultural land in the U.S. once large-scale irrigation began. Early farming on the plains was aided by the use of dams and weirs that transported water from the local rivers and streams, although these were mostly seasonal flows (Small and Smith 1926:567). Demand for a more reliable water supply resulted in the organization of various water districts, many of which continue to operate today. In the 20th century, San Joaquin Valley farmers have distinguished themselves as the leading agricultural producers in California, and in some instances the nation. Primary crops include raisin, cotton, barley, hay, nuts, vegetables, poultry, beef, and dairy products (Beck and Haase 1974:94-97; CDFA n.d.).

The post-WWII era brought prosperity to the American economy and a population explosion throughout the urban areas of central California, which left a lasting influence in regional growth. Although agriculture has remained the dominant factor in the region's economy as well as its cultural heritage, in most recent decades large stretches of farmland have become prime targets for tract home developers. The resulting housing boom, characterized by master-planned communities with attending urban amenities, has had a major impact on the landscape of the San Joaquin Valley, creating growing concerns regarding the preservation of it rural lifestyle.

Stockton

In 1846, the present-day Stockton area was included in the 48,747-acre Rancho del Campo de los Franceses ("French Camp Ranch") land grant, which the Mexican authorities awarded to German immigrant Charles M. Weber shortly after the U.S. declared war on Mexico. In 1850, when California obtained statehood in the aftermath of the Gold Rush, San Joaquin became one of the 27 original counties in the state. Since then, it has been among the leading agricultural producers among the counties for the past 160 years. The county received its earliest boost in growth, however, as a supply shipping ground for the southern mines of the Sierra Nevada gold field.

Dozens of communities sprang up on major transportation arteries leading into the gold country. Among the earliest, Stockton was founded in 1848-1849 on a one-square-mile townsite commissioned by Charles M. Weber on his vast domain, and named after Commodore Robert F. Stockton, a U.S. naval commander who had played a crucial role in the U.S. conquest of Alta California (Hillman 1985:3). Thanks to its location at the head of year-round navigation, the town grew rapidly. It incorporated as a city in 1850, and by 1854 had become the fourth largest city in California (*ibid.*:5). The end of the Gold Rush in the mid-1850s coincided with the beginning of agricultural development in the Central

Valley, which propelled Stockton into a commercial and industrial hub for the surrounding area. The coming of the Central/Southern Pacific Railway in the early 1870s, the SF&SJV in the 1890s, and the Tidewater Southern Railway (now also a part of the Union Pacific) in mid-1910s, as well as the opening of the Port of Stockton in 1933, further cemented its importance in regional economy.

Merced

By 1855, there was enough of a population to carve out an area from Mariposa County to create Merced County. Most of the settlement occurred along the Merced River, where some of the first irrigation systems were put in place (Hooper and Harris n.d.). The completion of the San Joaquin Valley Railroad through the county sparked the founding of the town of Merced in early 1872. The lots were sold fast, and construction of numerous commercial buildings near the train station began immediately. In the course of three months, the town boasted a four-story hotel with 175 rooms and claimed to be the most prosperous and flourishing town between Stockton and Los Angeles (*ibid.*).

In the early days, grains such as wheat, barley, and rye were the principal crops of the region, but the advent of the transcontinental railways in the valley made it possible to cultivate and transport fruits and vegetables as well (Hooper and Harris n.d.). Thus, orchards and fields of sweet potatoes began to crop up throughout the region in the 1880s (*ibid.*). Farming and cattle raising remained a prevalent part of the local economy throughout the late 19th century and majority of the 20th century.

Fresno

In 1849, at the height of the Gold Rush, a group of prospectors led by William R. Gardner became the first non-native settlers in what is now Fresno County. The county was created in 1856, at the time substantially larger than its present territory, with the county seat at the mining town of Millerton. Outside the Gold Rush country of the Sierra Nevada, the fertile plains around present-day Fresno remained largely unsettled until the late 1860s, when A. Y. Easterby purchased some 5,000 acres just to the east of what was soon to become the town of Fresno, and developed the land into a wheat farm (Clough and Secrest 1984:n.p.)

In 1869, the directors of the Central Pacific Railroad toured the valley in search of a place to create a new rail stop and a new town. Central Pacific director Leland Stanford selected the A.Y. Easterby ranch, a lush wheat field in the middle of the bleak prairie. The company purchased land for the station and railroad right-of-way, and by 1873 there was a small but thriving town. Named after the Spanish word for the ash tree, *fresno*, the new town became the county seat in 1874 and incorporated as a city in 1885. As elsewhere in the Central Valley, large-scale agricultural production has dominated economic growth in the unincorporated area and rural cities surrounding Fresno, which continues to serve as the economic hub of Fresno County.

FIELD METHODS

As stated above, Terri Jacquemain performed the archaeological field survey of the APE on October 15-18, 2012. Since the APE is located almost entirely within the extensively

disturbed railroad rights-of-way and fully developed urban areas, most of the survey was carried out at a reconnaissance level by inspecting on foot any area where the ground surface remained exposed. Relatively undisturbed open fields in the APE, such as the southern end of the Fresno location and near Pilgrim and Union Streets in Stockton, were surveyed at an intensive level by walking parallel east-west transects spaced 15 meters (approx. 50 feet) apart. Virtually the entire APE at the Robert J. Cabral Amtrak/ACE Station is covered with pavement, buildings, and introduced landscaping, with no undisturbed ground surface visible. Therefore, an intensive-level archaeological survey was determined to be unproductive and unnecessary for this location.

STUDY FINDINGS AND CONCLUSIONS

As a result of the field survey, it was discovered that one of the four previously recorded sites in the APE, 10-005266, a BNSF loading platform in Fresno, had been removed, leaving no physical remains behind. Meanwhile, the field survey verified the presence of the other three previously recorded sites, 24-001881 (ATSF Railroad), 10-004412 (Fresno Santa Fe Depot and freight office), and 39-002409 (Stockton Santa Fe Depot), and resulted in the recordation of two historic-period buildings (39-005141 and 39-005143) and an industrial complex (39-005142). Altogether, six non-archaeological cultural resources were identified within or partially within the APE, as documented in the accompanying Historical Resources Evaluation Report (see HPSR Attachment C).

No archaeological features or artifact deposits, either prehistoric or historic in origin, were encountered during the survey. Accordingly, the present report concludes that no archaeological resources exist within or immediately adjacent to the APE. If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

REFERENCES

Arkley, Rodney J.
n.d. The Geology, Geomorphology, and Soils of the San Joaquin Valley in the Vicinity of the Merced River, California. Http://www.nps.gov/history/history/online_books/geology/publications/state/ca/cdmg-bul-182.

Arguelles, Marcus
1985 California Historical Resource Inventory site record forms, 24-000838. On file, Central California Information Center, California State University, Stanislaus.

Bacon, Deborah
1997 Letter to Native American Heritage Commission, April 30. On file, Central California Information Center, California State University, Stanislaus.

Bailey, Edgar H. (ed.)
1966 *Geology of Northern California*. California Division of Mines and Geology Bulletin 190. Sacramento.

Bakic, T.
2001 California Historical Resource Inventory site record forms, 10-004412. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.
Beardsley, R. K.
1954 *Temporal and Areal Relationships in Central California Archaeology*. University of California Archaeological Survey Reports 24 and 25. Berkeley.
Beck, Warren A., and Ynez D. Haase
1974 *Historical Atlas of California*. University of Oklahoma Press, Norman.
CDFA (California Department of Food and Agriculture)
n.d. 2010 Crop Year, Agricultural Overview. Http://www.cdfa.ca.gov/statistics/.
Clough, Charles W., and William B. Secrest
1984 *Fresno County—The Pioneer Years*. Panorama West Books, Fresno.
Fitzgerald, Michael
1996 Amateur Archaeologists Dig Up Skulls, Trouble. *The Stockton Record* November 10:B1.
Gustafson, Lee, and Phil Serpico
1996 *Coast Lines Depots: Valley Division*. Omni Publications, Palmdale, California.
Harden, Deborah R.
2004 *California Geology*. Prentice Hall, Upper Saddle River, New Jersey.
Hattersley-Drayton, Karana (Historic Preservation Project Manager, City of Fresno)
2012 Letter to CRM TECH, August 23.
Hillman, Raymond W., and Leonard A. Covello
1985 *Cities and Towns of San Joaquin County since 1847*. Panorama West Books, Fresno.
Hooper, Peggy, and Michael Harris
n.d. Merced County History. Compiled from John Outcalt: *History of Merced County, California*, Historic Record Company, Los Angeles, California, 1925. Http://www.calarchives4u.com/history/merced/.
Kroeber, Alfred L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Washington, D.C.
Levy, Richard
1978 Eastern Miwok. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 398-413. Smithsonian Institution, Washington, D.C.
Lillard, J. B., R. F. Heizer, and F. Fenenga
1939 *An Introduction to the Archaeology of Central California*. Sacramento Junior College Department of Anthropology Bulletin 2. Sacramento.
Matthews, Robert A., and John L. Burnett
1965 Geologic Map of California, Fresno Sheet (1:250,000). California Division of Mines and Geology, Sacramento.
Moratto, Michael J. (ed.)
1984 *California Archaeology*. Academic Press, Orlando, Florida.
Nelson, Wendy J.
2000 Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project, Segment WS04: Sacramento to Bakersfield. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.
Norris, Robert M., and Robert W. Webb
1976 *Geology of California*. John Wiley and Sons, New York.

Owen, Kristen, and Linda Turkette
1985 California Historical Resource Inventory site record forms, 39-002409. On file, Central California Information Center, California State University, Stanislaus.
Perez, Katherine
1997 Letter to Southern Pacific Railroad Company, February 6. On file, Central California Information Center, California State University, Stanislaus.
Retzer, John L., and T. W. Glassey
1951 *Soil Survey of the Stockton Area, California*. U.S. Department of Agriculture, Washington, D.C.
Small, Kathleen Edwards, and J. Larry Smith
1926 *History of Tulare County, California, and Kings County, California*. The S. J. Clarke Publishing Company, Chicago.
Smallwood, Josh
2009 California Historical Resource Inventory site record forms, 24-001880. On file, Central California Information Center, California State University, Stanislaus.
Wagner, D. L., E. J. Bortuguno, and R. D. McJunkin
1991 Geologic Map of the San Francisco-San Jose Quadrangles (1:250,000). California Geological Survey Regional Map Series, No. 5A (Geology). Sacramento.
Wallace, William J.
1978 Northern Valley Yokuts. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 462-470. Smithsonian Institution, Washington, D.C.

ATTACHMENT C
HISTORICAL RESOURCES EVALUATION REPORT

SAN JOAQUIN CORRIDOR AMTRAK CALIFORNIA SERVICE PROPOSED RAILWAY STATION AND LAYOVER FACILITY

In the Cities of Stockton, Merced, and Fresno
San Joaquin, Merced, and Fresno Counties, California

Prepared by:

Bai "Tom" Tang, M.A., Principal Investigator
Terri Jacquemain, M.A., Historian / Architectural Historian
CRM TECH
1016 East Cooley Drive, Suite A / B
Colton, CA 92324

Prepared for:

Caltrans District 7
Claudia A. Harbert, Associate Environmental Planner / Architectural Historian
Division of Environmental Planning, MS 16A
100 South Main Street, Suite 100
Los Angeles, CA 90012

CRM TECH Contract #2561C
Sections 19 and 20, T7S R14E; Sections 3 and 10, T14S R20E; and
a portion of the Campo de los Franceses land grant in T1N R6E, MDBM
USGS Fresno South, Merced, and Stockton West, Calif., 7.5' (1:24,000) Quadrangles
Sites 10-004412 (Fresno Santa Fe Depot and freight office), 10-005266 (freight loading platform),
24-001881 (segment of Santa Fe Railway), 39-002409 (Stockton Santa Fe Depot), 39-005141(commercial building),
39-005142 (industrial complex), and 39-005143 (Stockton Southern Pacific Depot)

May 1, 2013

SUMMARY OF FINDINGS

The present Historical Resources Evaluation Report (HRER), as a component of the Historic Property Survey Report (HPSR), covers the Area of Potential Effects (APE) for a proposed railway station and layover facility project in the Cities of Stockton, Merced, and Fresno in San Joaquin, Merced, and Fresno Counties, California. It is prepared in compliance with Section 106 of the National Historic Preservation Act, as implemented through federal regulations outlined in 36 CFR 800, and with the California Environmental Quality Act (CEQA). All cultural resources investigations reported herein comply with the Section 106 Programmatic Agreement executed on January 1, 2004.

The purpose of this HRER is to document the identification and evaluation of historical/ architectural resources within the APE and determine whether any such resources qualify as "historic properties," as defined by 36 CFR 800.16(l), or "historical resources," as defined by Title 14 CCR §15064.5(a)(1)-(3). The scope of the study included a standard historical resources records search, historical background research, consultations with local community representatives, and a systematic field survey. The field inspections of the various components of the APE were carried out on October 15-18, 2012.

As a result of these research procedures, six historic-period built-environment sites were found to be present within or partially within the APE. Three of these, 10-004412 (Fresno Santa Fe Depot and freight office), 24-001881 (Santa Fe Railway in Merced County), and 39-002409 (Stockton Santa Fe Depot), were previously recorded into the California Historical Resources Inventory, and the other three, 39-005141 (Marble Palace, Inc.), 39-005142 (Geiger Manufacturing, Inc.), and 39-005143 (Stockton Southern Pacific Depot), were recorded during this study. Another site, 10-005266 (freight-loading platform at the Fresno Santa Fe Depot), was previously recorded in the APE, but is no longer extant today.

Of the six sites that currently exist in the APE, 39-002409 was previously determined eligible for listing in the National Register of Historic Places, and 39-005143 was found to be eligible during this study, with a local level of significance. At 10-004412, the Fresno Santa Fe Depot is currently listed in the National Register, while the freight office was previously deemed eligible for listing. By virtue of their National Register status, these three sites meet Section 106 definition of "historic properties" and CEQA definition of "historical resources." The destruction of or significant alteration to these sites, therefore, will potentially constitute an adverse effect on the significance and integrity of a historic property as well as a substantial adverse change in a historical resource.

Among the other three sites in the APE, 24-001881 was previously determined not to be eligible for any historical designation due to the lack of historic integrity. Sites 39-005141 and 39-005142 were evaluated during this study, and neither of them appears to qualify as a "historic property" or a "historical resource." No other historic-period buildings or structures, historic districts, historic landscapes, locally designated sites, or properties of traditional cultural value were encountered within or immediately adjacent to the APE.

It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey efforts will be required if the project changes to include areas not previously surveyed.

TABLE OF CONTENTS

SUMMARY OF FINDINGS i
PROJECT LOCATION AND DESCRIPTION 1
RESEARCH METHODS 1
Records Search 1
Historical Background Research 2
Consultation with Local Community 2
FIELD METHODS 3
HISTORICAL OVERVIEW 3
San Joaquin Valley 3
Stockton 4
Merced 5
Fresno 5
DESCRIPTION OF CULTURAL RESOURCES 6
FINDINGS AND CONCLUSIONS 7
Findings 7
Conclusions 8
REFERENCES 9
APPENDIX 1: PERSONNEL QUALIFICATIONS 10
APPENDIX 2: SITE RECORD FORMS 13

PROJECT LOCATION AND DESCRIPTION

The California Department of Transportation (Caltrans), Division of Rail, proposes a series of railway improvements collectively known as the San Joaquin Corridor Amtrak California Service Project. The project components covered by this survey consist of the establishment of a primary Amtrak station in the City of Stockton, San Joaquin County, and a new layover facility in either the City of Merced, Merced County, or the City of Fresno, Fresno County (see HPSR Attachment A).

In Stockton, the undertaking calls for the construction of a new Amtrak station at the junction between the Burlington Northern Santa Fe Railway (BNSF) and the Union Pacific Railroad (UPRR) west of Pilgrim Street at Scotts Avenue, which would require the demolition of a manufacturing plant at 1110 East Scotts Avenue. The new station would conform to standard railway station design and features, including full-length platforms, passenger shelters, lighting, signage, schedules, leaning bars, information kiosks, ticket vending machines, and adequate space for loading, unloading, passenger pick-up, and vehicle drop-off. Alternatively, the project objective may be accomplished by rehabilitating and expanding one of the two existing Amtrak stations in the city, located at 735 South San Joaquin Street, on the BNSF, and 949 East Channel Street, on the UPRR. Expansion of the station on the BNSF would necessitate the demolition of buildings and structures on a commercial property adjacent to the north, at 711 South San Joaquin Street.

In Fresno, the proposed layover facility would extend along the existing BNSF line from Tulare Street in the north to Walker Avenue in the south, adjacent to the existing Amtrak station at 2650 Tulare Street. In Merced, the layover facility would also be located along the existing BNSF line and adjacent to the existing Amtrak station at 324 West 24th Street, extending from K Street in the north to 6th Avenue in the south. The new layover facility would include a storage yard, running maintenance and repair area, support shops, parts storage, mechanical and electrical rooms, and administrative offices.

The APE is delineated to encompass the maximum extent of ground disturbances currently projected for the proposed railway station and layover facility, and consists of five noncontiguous components scattered among the three cities involved, measuring approximately 33 acres in total. The City of Stockton contains the three alternative station sites within a mile of one another, all located in a portion of the Campo de los Franceses land grant lying within T1N R6E, Mount Diablo Baseline and Meridian (MDBM). The Fresno site for the layover facility is located in Sections 3 and 10, T14S R20E, MDBM, and the Merced site, in Sections 19 and 20, T7S R14E, MDBM. All five locations are situated in highly urbanized areas near the historic downtown cores of the three cities (see HPSR Attachment A, Maps 2a-2c, 3a-3e).

RESEARCH METHODS

RECORDS SEARCH

The records search on the APE in Stockton and Merced was completed on November 3, 2011, by the Central California Information Center (CCIC), and the records search on the

APE in Fresno was completed on December 6, 2011, by the South San Joaquin Valley Information Center (SSJVIC). Sources consulted during the records searches include listings of California Historical Landmarks and Points of Historical Interest, the National Register of Historic Places, the California Register of Historical Resources, the California Historical Resources Inventory, local historical resources inventories or registers, the Caltrans Historic Bridge Inventory, and other pertinent materials on file at the information centers. The scope of the records searches extends to a quarter-mile radius of the APE at each of the five locations.

The records search results indicate that four historic-period sites were previously recorded within the APE: the Fresno Santa Fe Depot and freight office (10-004412) with a 1950s freight loading platform (10-005266), the Stockton Santa Fe Depot (39-002409), and a segment of the former Atchison, Topeka and Santa Fe (ATSF, now BNSF) Railway (24-001881). Among these, 10-004412 is listed in the National Register of Historic Places, Site 39-002409 was found eligible for listing, while Sites 10-005266 and 24-001881 were determined ineligible for the National Register of Historic Places or the California Register of Historical Resources.

HISTORICAL BACKGROUND RESEARCH

Historical research for this study was conducted by project archaeologist/historian Terri Jacquemain (see App. 1 for qualifications) in two phases. The preliminary historical background research on the entire APE was completed prior to the fieldwork on the basis of published literature in local, regional, and railroad history and historic maps of the project locations. Among maps consulted during this phase of the research were the U.S. General Land Office's (GLO) township plat maps dated 1852-1879 and the U.S. Geological Survey's (USGS) topographic maps dated 1913-1963.

After historic-period buildings were identified in the APE during the fieldwork, Jacquemain pursued more specific and in-depth research on the history of the properties. Additional sources consulted during this phase of the research included the archival records of the various counties and cities, local historical societies and preservation organizations, the local history collections of the pertinent public libraries, and oral historical interview Roger Haack, president of Geiger Manufacturing, Inc. Findings from these sources are presented in the "Historical Overview" section below, as well as in site record forms generated during this study (see App. 2).

CONSULTATION WITH LOCAL COMMUNITY

Between August 20, 2012, and February 25, 2013, CRM TECH contacted staff members of the Cities of Stockton, Merced, and Fresno, as well as representatives of local historical societies and preservation organizations in these cities to inquire about cultural resources of local historic value or other cultural resources concerns regarding the APE. Records of correspondence with the local community representatives for each of the three cities are presented in HPSR Attachment E.

In the City of Stockton, the local community representatives contacted included Richard Larrouy, Planning Manager in the Community Development Department, and the Stockton Historical Society. To date, no response has been received from either Mr. Larrouy or the

historical society. In the City of Merced, the City's Development Services Department and the Merced County Historical Society were contacted. In response for the City, Terri Lucas, Secretary III, indicated by e-mail that the inquiry had been forwarded to the Planning Manager for response. No further reply has been received. Responding for the Merced County Historical Society, Sarah Lim, Director of the Merced County Courthouse Museum, stated by e-mail that the organization had resource materials on file to aid historical research on the APE.

In the City of Fresno, Karana Hattersley-Drayton, the City's Historic Preservation Project Manager, and the Fresno Historical Society were contacted. After requesting and being provided additional project information, Ms. Hattersley-Drayton identified four known historical resources that she believed to be in or near the APE: the Santa Fe Depot, the Santa Fe Hotel, Warehouse Row, and the Central Packaging Supply complex (see HPSR Attachment E). Sharon Hiigel, Curator for the Fresno Historical Society, stated via e-mail that the organization had resources available to aid historical research. She indicated that she would forward the project information to the organization's board of trustees. No further response has been received since then.

FIELD METHODS

On October 15-18, 2012, Terri Jacquemain performed the systematic field inspection of the APE, located almost entirely within the extensively disturbed railroad rights-of-way and fully developed urban areas near the historic downtown core of each city. As part of the survey, Jacquemain attempted to locate and inspect all previously recorded sites within the APE, and completed field-recording procedures on all unrecorded buildings and built-environment features encountered within the APE that appeared to be more than 45 years old, including detailed notations and preliminary photo-documentation of their characteristics and current conditions. The information from these procedures was used to compile DPR 523 forms for inclusion in the California Historical Resources Inventory (see App. 2). In conjunction with the field inspection, Jacquemain also conducted a reconnaissance-level survey of the surrounding area to assess the physical context of the APE.

HISTORICAL OVERVIEW

SAN JOAQUIN VALLEY

In accounts of their 1770s expeditions, both Padro Fages and Francisco Garcés indicated that the San Joaquin Valley was a bleak and arid expanse of land, which undoubtedly deterred Spanish settlement of the region (Clough and Secrest 1984:25). Later, Spanish army officer Gabriel Moraga led a series of expeditions into the San Joaquin Valley between 1804 and 1810 in search of a mission site, followed in 1827 by famed trapper Jedediah Smith. Yet even after the U.S. annexation in 1848, almost the entire San Joaquin Valley was largely unpopulated except for the gold mining camps in the Mother Lode country. Indeed, it was because of its isolation and vastness that the San Joaquin Valley managed to keep its rural landscape intact and relatively unhindered by urbanization for the 250 years following the unflattering assessment by Fages and Garcia.

After the U.S. annexation of Alta California, Americans slowly began to migrate from the eastern states and settle in the northern San Joaquin Valley, some in search of gold in the nearby hills, and others interested in farming and ranching. Grain and cattle were the primary sources of industry through the 1870s and the population grew slowly during that time, as the whole nation was in a state of recession and California had little else but open land to offer.

Most towns in the San Joaquin Valley owe their origins primarily to the coming of the Southern Pacific (now Union Pacific) Railroad in the 1870s. However, increasingly high freight charges and passenger fares charged by the Southern Pacific were too exorbitant for most farmers and severely hampered the prosperity of the agricultural region. This would all change with the coming of a second transcontinental railroad to California, as rate wars between the railroad companies would provide a perfect opportunity for many Easterners to move westward into California.

Spurred by popular resentment to the Southern Pacific Company's transportation monopoly in California, a second railroad through the Central Valley, the San Francisco and San Joaquin Valley (SF&SJV) Railway, was constructed from Stockton to Bakersfield in 1895-1897 (Gustafson and Serpico 1996:159). Known popularly as "Valley Road," it merged into the ATSF in 1898 and became the first ATSF line to reach the port of San Francisco (*ibid.*:11-13). Now a part of the BNSF, the former SF&SJV has remained in continuous service to the present time. It is this rail line that connects the project locations in Stockton, Merced, and Fresno.

Throughout the late 19th century, railroad and irrigation had a critical influence on the growth of the region. With its nearly level valley floor, the San Joaquin Valley boasted some of the richest agricultural land in the U.S. once large-scale irrigation began. Early farming on the plains was aided by the use of dams and weirs that transported water from the local rivers and streams, although these were mostly seasonal flows (Small and Smith 1926:567). Demand for a more reliable water supply resulted in the organization of various water districts, many of which continue to operate today. In the 20th century, San Joaquin Valley farmers have distinguished themselves as the leading agricultural producers in California, and in some instances the nation. Primary crops include raisin, cotton, barley, hay, nuts, vegetables, poultry, beef, and dairy products (Beck and Haase 1974:94-97; CDFA n.d.).

The post-WWII era brought prosperity to the American economy and a population explosion throughout the urban areas of central California, which left a lasting influence in regional growth. Although agriculture has remained the dominant factor in the region's economy as well as its cultural heritage, in most recent decades large stretches of farmland have become prime targets for tract home developers. The resulting housing boom, characterized by master-planned communities with attending urban amenities, has had a major impact on the landscape of the San Joaquin Valley, creating growing concerns regarding the preservation of it rural lifestyle.

STOCKTON

In 1846, the present-day Stockton area was included in the 48,747-acre Rancho del Campo de los Franceses ("French Camp Ranch") land grant, which the Mexican authorities awarded to German immigrant Charles M. Weber shortly after the U.S. declared war on

Mexico. In 1850, when California obtained statehood in the aftermath of the Gold Rush, San Joaquin became one of the 27 original counties in the state. Since then, it has been among the leading agricultural producers among the counties for the past 160 years. The county received its earliest boost in growth, however, as a supply shipping ground for the southern mines of the Sierra Nevada gold field.

Dozens of communities sprang up on major transportation arteries leading into the gold country. Among the earliest, Stockton was founded in 1848-1849 on a one-square-mile townsite commissioned by Charles M. Weber on his vast domain, and named after Commodore Robert F. Stockton, a U.S. naval commander who had played a crucial role in the U.S. conquest of Alta California (Hillman 1985:3). Thanks to its location at the head of year-round navigation, the town grew rapidly. It incorporated as a city in 1850, and by 1854 had become the fourth largest city in California (*ibid.*:5). The end of the Gold Rush in the mid-1850s coincided with the beginning of agricultural development in the Central Valley, which propelled Stockton into a commercial and industrial hub for the surrounding area. The coming of the Central/Southern Pacific Railway in the early 1870s, the SF&SJV in the 1890s, and the Tidewater Southern Railway (now also a part of the Union Pacific) in mid-1910s, as well as the opening of the Port of Stockton in 1933, further cemented its importance in regional economy.

MERCED

By 1855, there was enough of a population to carve out an area from Mariposa County to create Merced County. Most of the settlement occurred along the Merced River, where some of the first irrigation systems were put in place (Hooper and Harris n.d.). The completion of the San Joaquin Valley Railroad through the county sparked the founding of the town of Merced in early 1872. The lots were sold fast, and construction of numerous commercial buildings near the train station began immediately. In the course of three months, the town boasted a four-story hotel with 175 rooms and claimed to be the most prosperous and flourishing town between Stockton and Los Angeles (*ibid.*).

In the early days, grains such as wheat, barley, and rye were the principal crops of the region, but the advent of the transcontinental railways in the valley made it possible to cultivate and transport fruits and vegetables as well (Hooper and Harris n.d.). Thus, orchards and fields of sweet potatoes began to crop up throughout the region in the 1880s (*ibid.*). Farming and cattle raising remained a prevalent part of the local economy throughout the late 19th century and majority of the 20th century.

FRESNO

In 1849, at the height of the Gold Rush, a group of prospectors led by William R. Gardner became the first non-native settlers in what is now Fresno County. The county was created in 1856, at the time substantially larger than its present territory, with the county seat at the mining town of Millerton. Outside the Gold Rush country of the Sierra Nevada, the fertile plains around present-day Fresno remained largely unsettled until the late 1860s, when A. Y. Easterby purchased some 5,000 acres just to the east of what was soon to become the town of Fresno, and developed the land into a wheat farm (Clough and Secrest 1984:n.p.)

In 1869, the directors of the Central Pacific Railroad toured the valley in search of a place to create a new rail stop and a new town. Central Pacific director Leland Stanford selected

the A.Y. Easterby ranch, a lush wheat field in the middle of the bleak prairie. The company purchased land for the station and railroad right-of-way, and by 1873 there was a small but thriving town. Named after the Spanish word for the ash tree, *fresno*, the new town became the county seat in 1874 and incorporated as a city in 1885. As elsewhere in the Central Valley, large-scale agricultural production has dominated economic growth in the unincorporated area and rural cities surrounding Fresno, which continues to serve as the economic hub of Fresno County.

DESCRIPTION OF CULTURAL RESOURCES

As stated previously, four historic-period built-environment sites, 10-004412, 10-005266, 24-001881, and 39-002409, were previously recorded within the APE. The results of the present survey reveal that 10-005266 is no longer extant, while the other three sites remain intact. In the meantime, two historic-period buildings and one industrial complex, all located in the City of Stockton, were identified and recorded in the APE as Sites 39-005141, 39-005142, and 39-005143, respectively (see App. 2).

Among the six sites that currently exist in the APE, 10-004412 represents the Fresno Santa Fe Depot and freight office at 2650 Tulare Street. The Mission Revival-style depot was built around 1899 and is listed in the National Register of Historic Places as well as the city's local historical resources register (Hattersley-Drayton 2012). The freight office was added about 100 feet to the east of the depot around 1926. It was found eligible for listing in the National Register with a local level of significance during a study in 2001, prior to a seven-million-dollar restoration and renovation project on the depot.

The 2001 study further noted that these two buildings would be considered contributors to the Santa Fe Warehouse District, a potentially National Register-eligible historic district proposed in 1995 but apparently yet to be recorded or designated as such by the time of that study (Bakic 2001:B10; Johnson Architecture n.d.). The renovation project evidently resulted in the removal of Site 10-005266, a freight loading platform added to the depot in the mid-1950s and recorded as a site during the 2001 study, and an overhead passenger walkway to the fright office, which was of modern origin (*ibid.*). The depot remains busy with passenger traffic, but the freight office is not in use at the present time.

Site 39-002409, the circa 1900 Stockton Santa Fe Depot at 735 South San Joaquin Street, has been found eligible for the National Register and designated as City of Stockton Historical Landmark No. 12. Like the Fresno depot, the Mission-Revival-style depot has been renovated, although the 2005 renovation, which included painting and many interior upgrades, was not as extensive as on the Fresno depot. Site 24-001881 represents a segment of the ATSF Railway in the Merced County that remains operational today. When recorded in 2009, 24-001881 was determined not to qualify for any historical designation due to a lack of historic integrity.

Of the three sites recorded during this study, 39-005141 represents a circa 1958 commercial building at 711 South San Joaquin Street (Marble Palace, Inc.), within the portion of the APE adjacent to Site 39-002409, and 39-005142 consists of an early to mid-20th century industrial complex at 1110 East Scotts Street (Geiger Manufacturing, Inc.), in the portion of the APE at the BNSF and UPRR junction. These two sites were evaluated against the

criteria for listing in the National Register and the California Register, and were found to be ineligible. Neither of them, thus, meets the definitions of a "historic property" or a "historical resource."

Site 39-005143 represents the circa 1930 Southern Pacific Stockton Downtown Station at 949 East Channel Street, now the Robert J. Cabral AMTRAK/ACE Station. Despite being the focus of a cultural resources study prior to a restoration project in 2003, this two-story red brick building with Italian Renaissance and Spanish Revival design elements apparently had not been formally recorded into the California Historical Resources Inventory prior to the present survey. Because its architectural merits and close association with the crucial role that railroad transportation played in the development of Stockton in the late 19th and early 20th centuries, and in light of the faithful restoration of the building to its 1930s appearance, Site 39-005143 was found to be eligible for listing in the National Register, under Criteria A and C, as well as the California Register under Criteria 1 and 3, with a local level of significance.

FINDINGS AND CONCLUSIONS

FINDINGS

- Properties listed in the National Register:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
10-004412	Fresno Santa Fe Depot, 2650 Tulare Street	Fresno	1S	#6, Map 3e

- Properties previously determined eligible for the National Register:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
10-004412 (portion)	Freight office at Fresno Santa Fe Depot, 2650 Tulare Street	Fresno	3B	#6, Map 3e
39-002409	Stockton Santa Fe Depot, 735 S. San Joaquin Street	Stockton	3S	#2, Map 3b

- Properties previously determined ineligible for the National Register:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
24-001881	BNSF Railway in Merced County	Merced	6Z	#5, Map 3d

- Properties determined eligible for the National Register as a result of the current study:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
39-005143	Stockton Southern Pacific Depot, 949 E. Channel Street	Stockton	3S	#1, Map 3a

- Properties determined ineligible for the National Register as a result of the current study:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
39-005141	Marble Palace, Inc., 711 S. San Joaquin Street	Stockton	6Z	#3, Map 3b
39-005142	Geiger Mfg., Inc., 1110 E. Scotts Avenue	Stockton	6Z	#4, Map 3c

- Properties for which further study is needed: None.

- Properties that are historical resources for the purpose of CEQA:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
10-004412	Fresno Santa Fe Depot and freight office, 2650 Tulare Street	Fresno	1S/3B	#6, Map 3e
39-002409	Stockton Santa Fe Depot, 735 S. San Joaquin Street	Stockton	3S	#2, Map 3b
39-005143	Stockton Southern Pacific Depot, 949 E. Channel Street	Stockton	3S	#1, Map 3a

- Properties that are not historical resources under CEQA:

Name	*Address/Location*	*Community*	*OHP Status Code*	*Map Reference No.*
24-001881	BNSF Railway in Merced County	Merced	6Z	#5, Map 3d
39-005141	Marble Palace, Inc., 711 S. San Joaquin Street	Stockton	6Z	#3, Map 3b
39-005142	Geiger Mfg., Inc., 1110 E. Scotts Avenue	Stockton	6Z	#4, Map 3c

CONCLUSIONS

Of the six sites that currently exist in the APE, 39-002409 was previously determined eligible for listing in the National Register of Historic Places, and 39-005143 was found to be eligible during this study, with a local level of significance. At 10-004412, the Fresno Santa Fe Depot is currently listed in the National Register, while the freight office was previously deemed eligible for listing. By virtue of their National Register status, these three sites meet Section 106 definition of "historic properties" and CEQA definition of "historical resources." The destruction of or significant alteration to these sites, therefore, will potentially constitute an adverse effect on the significance and integrity of a historic property as well as a substantial adverse change in a historical resource.

Among the other three sites in the APE, 24-001881 was previously determined not to be eligible for any historical designation due to the lack of historic integrity. Sites 39-005141 and 39-005142 were evaluated during this study, and neither of them appears to qualify as a "historic property" or a "historical resource." No other historic-period buildings or structures, historic districts, historic landscapes, locally designated sites, or properties of traditional cultural value were encountered within or immediately adjacent to the APE.

It is Caltrans' policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey efforts will be required if the project changes to include areas not previously surveyed.

REFERENCES

Bakic, T.
2001 California Historical Resource Information System site record, 10-004417. On file, Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Beck, Warren A., and Ynez D. Haase
1974 *Historical Atlas of California*. University of Oklahoma Press, Norman.

Clough, Charles W., and William B. Secrest
1984 *Fresno County—The Pioneer Years*. Panorama West Books, Fresno.

CDFA (California Department of Food and Agriculture)
n.d. 2010 Crop Year, Agricultural Overview. Http://www.cdfa.ca.gov/statistics/.

Gustafson, Lee, and Phil Serpico
1996 *Coast Lines Depots: Valley Division*. Omni Publications, Palmdale, Calif.

Hattersley-Drayton, Karana (Historic Preservation Project Manager, City of Fresno)
2012 Letter to CRM TECH, August 23.

Hillman, Raymond. W., and Leonard A. Covello
1985 *Cities and Towns of San Joaquin County since 1847*. Panorama West Books, Fresno.

Hooper, Peggy, and Michael Harris
n.d. Merced County History. Compiled from John Outcalt: *History of Merced County, California*, Historic Record Company, Los Angeles, 1925. Http://www.calarchives4u.com/history/merced/.

Johnson Architecture
n.d. Santa Fe Depot, Fresno, California. Http://www.johnsonarchitecture.com/html/pages/depot.html.

Small, Kathleen Edwards, and J. Larry Smith
1926 *History of Tulare County, California, and Kings County, California*. The S. J. Clarke Publishing Company, Chicago.

APPENDIX 1

PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN/ARCHITECTURAL HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History / Historic Preservation, University of California, Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside / Colton, California.
1993-2002	Project Historian / Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, U.C. Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, U.C. Riverside.
1988-1993	Research Assistant, American Social History, U.C. Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Honors and Awards

1988-1990	University of California Graduate Fellowship, U.C. Riverside.
1985-1987	Yale University Fellowship, Yale University Graduate School.
1980, 1981	President's Honor List, Northwestern University, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (with Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

Membership

California Preservation Foundation.

HISTORIAN/ARCHITECTURAL HISTORIAN
Terri Jacquemain, M.A.

Education

2004 M.A., Public History and Historic Resource Management, University of California, Riverside.
- M.A. thesis: Managing Cultural Outreach, Public Affairs and Tribal Policies of the Cabazon Band of Mission Indians, Indio, California; internship served as interim Public Information Officer, Cabazon Band of Mission Indians, June-October, 2002.

2002 B.S., Anthropology, University of California, Riverside.
2001 Archaeological Field School, University of California, Riverside.
1991 A.A., Riverside Community College, Norco Campus.

Professional Experience

2003- Historian / Architectural Historian / Report Writer, CRM TECH, Riverside / Colton, California.
- Author / co-author of legally defensible cultural resources reports for CEQA and NHPA Section 106;
- Historic context development, historical / archival research, oral historical interviews, consultation with local communities and historical organizations;
- Historic building surveys and recordation, research in architectural history; architectural description

2002-2003 Teaching Assistant, Religious Studies Department, University of California, Riverside.
2002 Interim Public Information Officer, Cabazon Band of Mission Indians.
2000 Administrative Assistant, Native American Student Programs, University of California, Riverside.
1997-2000 Reporter, *Inland Valley Daily Bulletin*, Ontario, California.
1991-1997 Reporter, *The Press-Enterprise*, Riverside, California.

Membership

California Preservation Foundation.

APPENDIX 2

CALIFORNIA HISTORICAL RESOURCE INVENTORY SITE RECORD FORMS

UPDATE

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-10-004412
HRI#
Trinomial
NRHP Status Code 1S, 4S1, 6Z, 3D

Other Listings
Review Code Reviewer Date

Page P1 of P9 *Resource Name or #: (Assigned by recorder) 1

P1. Other Identifier: Fresno Atchison, Topeka, and Santa Fe (ATSF) Railroad Property

*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County Fresno
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Fresno South Date 1963, photorevised 1981 T 14S R 20E; SE¼ of SW¼ of Sec. 3; MDM

c. Address 2650 Tulare Street City Fresno Zip 93721

d. UTM: (Give more than one for large and/or linear resources) Zone 11 ; See continuation sheet

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
Assessor's Parcel No. 468-350-45U

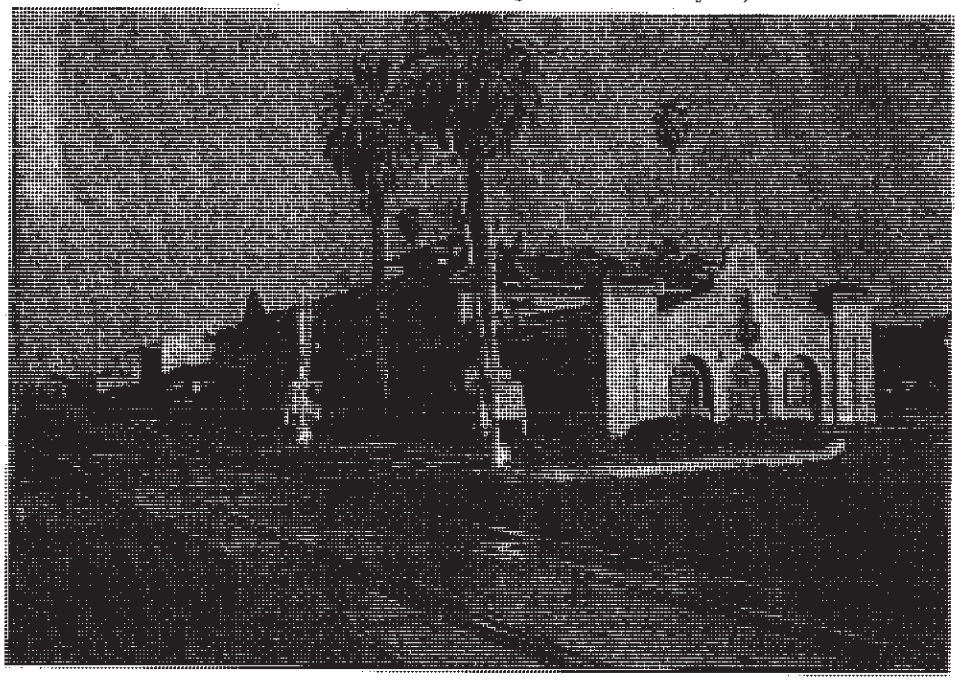
*P3a. Description: (Describe resource and its major elements. Include design, materials condition, alterations, size, setting and boundaries) This property includes three buildings and two structures that date from 1899 to 1985. All buildings and structures are set directly east of the Burlington Northern and Santa Fe (BNSF; former ATSF) railroad alignment. The three buildings on the property are the Santa Fe Passenger Depot (1a), former ATSF Dispatch Office (1b), and former ATSF Freight Office [1d]). The associated structures on the property are a pedestrian bridge (1c) and a passenger shelter (1e).

(continued)

*P3b. Resource Attributes: (List attributes and codes) HP17. Railroad Depot

*P4. Resources Present: ☒ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures and objects.)



P5b. Description of Photo: (View, date, accession #) Santa Fe Passenger Depot; View South, 7/11/2001, Frame 5, Accession #01-910-BW-3

*P6. Date Constructed/Age and Sources: ☒Historic ☐Prehistoric ☐Both
See continuation sheet

*P7. Owner and Address:
Burlington Northern & Santa Fe Rail Co., Attn. Administrative Office, 2500 Menk Drive, Fort Worth, TX 76131-2830

*P8. Recorded by: (Name, affiliation and address) Tracy Bakic
PAR Environmental Services, Inc.
PO Box 160756
Sacramento, CA 95816-0756

*P9. Date Recorded: 7/11/2001

*P10. Survey Type: (Describe)
Intensive Survey and Evaluation

*P11. Report Citation: (Cite survey report and other sources, or enter "None")
Historic Architectural Survey Report for the Santa Fe Depot Renovation Project, City of Fresno, Fresno County, California (PAR 2001)

*Attachments: ☐NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☒ Other (List) 1978 DPR form for Santa Fe Depot

DPR 523A (1/95) *Required Information

P2d.
Santa Fe Passenger Depot, 251600 mE/4069280 mN
ATSF Dispatch Office, 251600 mE/4069250 mN
ATSF Freight Office, 251660 mE/4069200 mN

P3a.
Santa Fe Passenger Depot. The Mission Revival style Santa Fe Passenger Depot (1a), constructed by ATSF in 1899, has an overall footprint that measures approximately 280 feet north-south by 75 feet east-west. It is a long building with a foundation and walls that are constructed of brick. The exterior of the walls is plaster-coated. The major portion of the building is two stories high with a north end that is single-story and a tower that is three-story. Additions and alterations made to the building between 1909 and 1925 were carried through in a manner complimentary to the original design. Mission Revival style elements on the building include rounded clay tile hipped roofing, an arcade (east side), parapets, quatrefoil-framed openings, arched fenestration, balconet (north side), and towers.

Largely between 1953 and 1976 many of the original windows and doors on the depot were removed and infilled or replaced with modern fenestration, including smaller aluminum slider windows; these modification are most evident in the original 1899 section and the 1910s additions. Original windows include those located on the second and third stories of the tower area (wood sash multipaned windows), the northern 1925 addition (arched wood sash fixed and one-over-one windows [with extended stiles]), and on the first floor of the southern 1910s additions (wood sash windows). The glazing of some original windows has been replaced with safety glass or mirrored glass. Extant original paneled wood doors on the building include those on the first floor level of the 1910s southern additions (i.e., pedestrian doors and loading bay doors, all with upper glazed areas).

The majority of the interior spaces were modified within the past 50 years. However, some original elements are evident inside, such as original wood panel doors, an original brick fireplace, chair rails, window and door surrounds in the 1925 addition, and a built-in desk and cabinets in the tower area. In 1985 a pedestrian bridge (discussed below) was built and attached to the south side of the depot in order to create a connection between the depot and the ATSF Freight Office (discussed below) to the south. The major landscaping elements associated with this building is palm trees. The extant palms are original or very early elements of the property. A probable carob tree is to the west side of the building; if it is a carob tree it is an original landscaping element (Patnaude 1978c). A stone planter along the west side's porte-cochere may be an original or early landscaping element of the depot (Gustafson and Serpico 1997:165).

ATSF Dispatch Office. The rectangular, two-story ATSF Dispatch Office (1b), completed between 1952 and 1956, has a concrete foundation, concrete walls, and a shed-type roof that has a slight upward slope to the eastern side of the building. The roof has a wide overhang to the western side and includes a parapet along the full eastern side. A concrete quarter turn stairway, with metal railings, extends up the southern side of the building to the second floor. A continuous band is part of the design of the building's walls and accentuates the lower sills of the upper story windows. The lower story windows have individual pronounced sills. The majority of windows on the building appear to be metal sash multi-pane and extant doors are paneled wooden doors. The north end of the first floor is open and shaded by the enclosed second floor above; concrete corner posts support the second floor of this section. The overall measurement of the building in 70 feet north-south by 21 feet east-west. The southern 50-foot length of the building represents the 1952 construction and the northern 20-foot length represents the 1956 construction. An enclosed second story walkway, at the eastern side of the building, connects the dispatch building to the Santa Fe Passenger Depot. The walkway is constructed of concrete and includes a wooden paneled door and what appear to be wood sash three-paned windows.

Pedestrian Bridge. This structure (1c), built in 1985, is approximately 100 feet long and connects the Santa Fe Passenger Depot with the ATSF Freight Office (1d; described below). The concrete pedestrian bridge is supported by three stuccoed columns are part of a structure of three and one-half stuccoed arches. The side walls of the walkway are surfaced to the exterior with modern rounded clay tiles and topped with metal copings.

(continued)

P3a.

ATSF Freight Office. The rectangular, two-story, Mission Revival style ATSF Freight Office (1d; now an Amtrak Station), completed in 1926, has a concrete basement foundation, concrete walls, and composition gabled roofing with concrete parapeted north and south ends. The footprint of the building measures 42 feet east-west by 70 feet north-south. The east and west sides of the building have wide overhanging eaves, and a metal sign that reads "Santa Fe" is affixed to the western side of the gabled roof. The north parapet includes molded copings and a central symmetrical curvilinear portion; set within the parapet is a rectangular roof vent that is fronted by molded quatrefoil framed, which is infilled with a grid of metal bars. A wooden sign that reads "FRESNO" is set just below the roof vent. The south parapet has a much simpler gabled form with simple copings; a pair of round louvered roof vents is centered within the parapet.

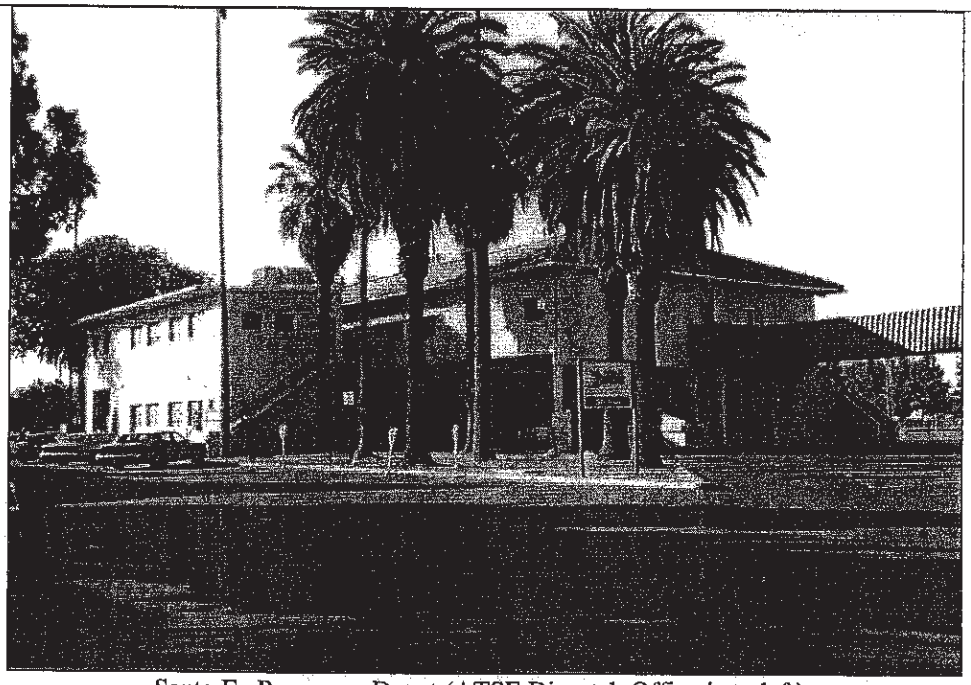
It appears that the majority of original fenestration below the roofline has been removed and the majority of the original openings have been infilled with concrete (or other material) and smaller modern windows and doors. However, insetting the face of the infilled portion has retained the arched or rectangular form and size of each original fenestrative opening. Original windowsills are pronounced at the exterior of the building. The north elevation of the building includes two aluminum slider windows and a metal door at the upper story and a metal main entry door and a modern window fronted by bars. The main entry door is entered from an elevated concrete porch, which is accessed from a curved corner stairway (probably a later addition) to the eastern side, a modern concrete handicapped ramp to the western side, and an original concrete side stair at the west end. The porch, stairway, and ramp include modern metal railings. The second story door on the north side has exterior access from the pedestrian bridge (described above) that was added in 1985 to connect the freight office and the Santa Fe Passenger Depot (described above).

The upper story of the east (railroad-facing) elevation of the building has a central wooden double door (each door with an upper area with four light glazing), four concrete infilled window openings, and one infilled original window opening that includes a modern aluminum slider window. The double door (probably original) appears to have an overstory window opening that has been infilled. The metal stairway and landing, both with metal railings, may be an original element of the building. The lower story of the east elevation shows four infilled original openings, three of which are partially infilled with smaller modern windows; a small bay opening with a modern roll-up door is added to the southern end. The south elevation of the building does not appear to show signs of any significant original fenestration. There is a louvered double door that appears modern and two small openings just west of the door.

The west (Santa Fe Avenue) elevation consists of three levels of the fenestration – the basement and the first and second stories. The upper (second) story has five infilled original openings, two include modern metal louvered openings and one includes a modern metal door. The door is accessed from a non-original exterior concrete stairway with closed stuccoed railings. The first story consists of at least four original openings that have been infilled with concrete. Between the first story and the basement level, beneath the aforementioned exterior stairway, is a small concrete extension that appears original to the 1926 building. The extension has a Mission Revival style parapeted west side with an arched wood sash, double-hung window (with extended stiles); the small roof is gabled and surfaced with composition shingles. The basement level is accessed from the exterior by a concrete ramp; the ramp area is surrounded on ground level by a concrete post and metal railings with a metal gate on the north side (entry). Fenestration on the basement level includes metal sash, multi-paned hopper or awning windows that may be original and an inset entry area with two modern doors and one paneled wood door (with upper glazed area) that appears original.

Passenger Shelter. To the east (railroad-facing) side of the ATSF Freight Office, approximately 25 feet to the east, is an associated passenger shelter (1e) that measures 22 feet east-west by 65 feet north-south. The passenger shelter was built in 1939 in Bakersfield, California as part of a corrugated iron umbrella shed. It was moved to its current location in Fresno in 1966. This structure is set into a concrete pad and consists of four steel Y-shaped supports that hold up a wide V-shaped corrugated metal roof/shade.

P5b.



Santa Fe Passenger Depot (ATSF Dispatch Office is to left);
View North, 7/11/2001, Frame 0, Accession #01-910-BW-3

North end of Santa Fe Passenger Depot;
View East, 7/11/2001, Frame 4, Accession #01-910-BW-3

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary P-10-004412
HRI#
Trinomial

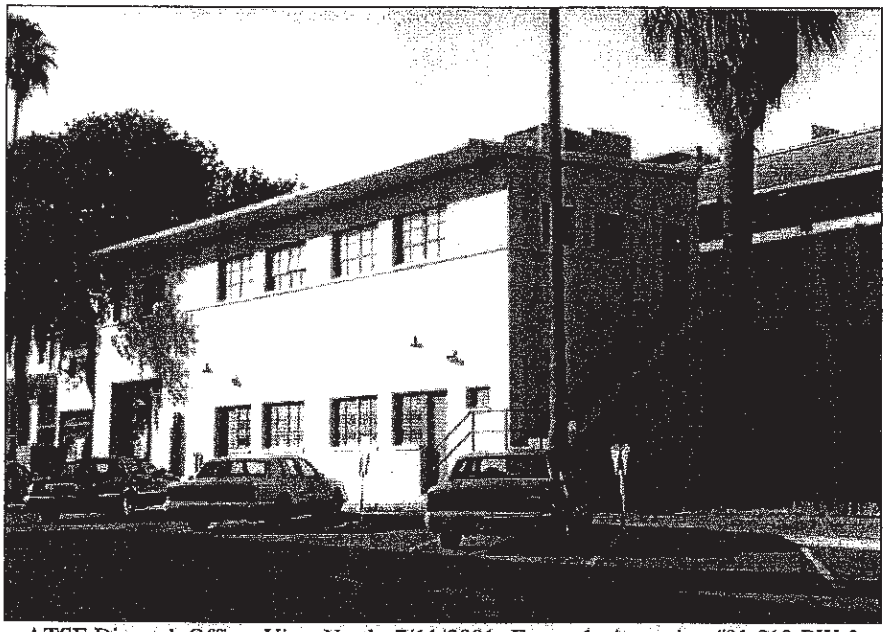
Page P5 of P9 *Resource Name or #: (Assigned by recorder) 1
*Recorded by: Tracy Bakic *Date 7/11/2001 ☒ Continuation ☐ Update

P5b.

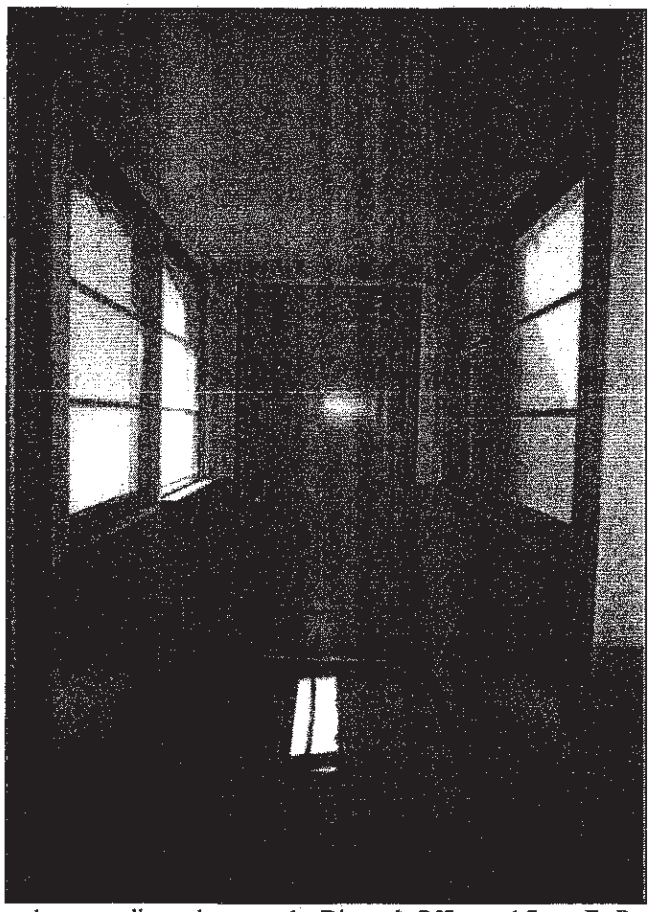
West side of Santa Fe Passenger Depot, focusing on tower area;
View Northeast, 7/11/2001, Frame 2, Accession #01-901-BW-3

East side of Santa Fe Passenger Depot, focusing on tower area;
View Southwest, 7/11/2001, Frame 9, Accession #01-910-BW-3

P5b.

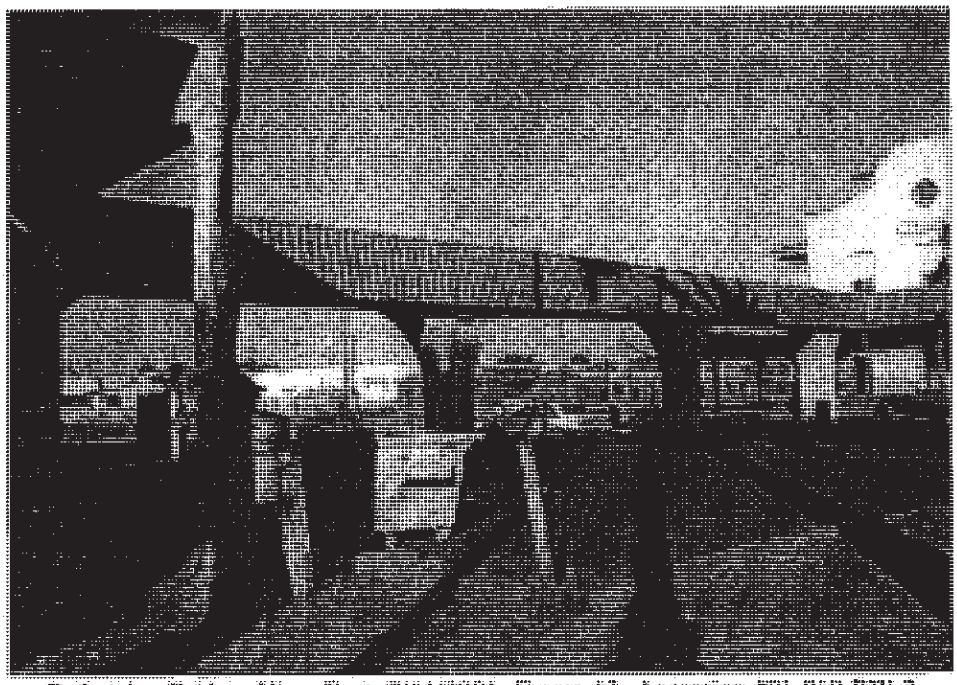


ATSF Dispatch Office; View North, 7/11/2001, Frame 1, Accession #01-910-BW-3



Interior of second story walkway between the Dispatch Office and Santa Fe Passenger Depot; View West (taken from depot side), 7/10/2001, Frame 5, Accession #01-901-BW-1

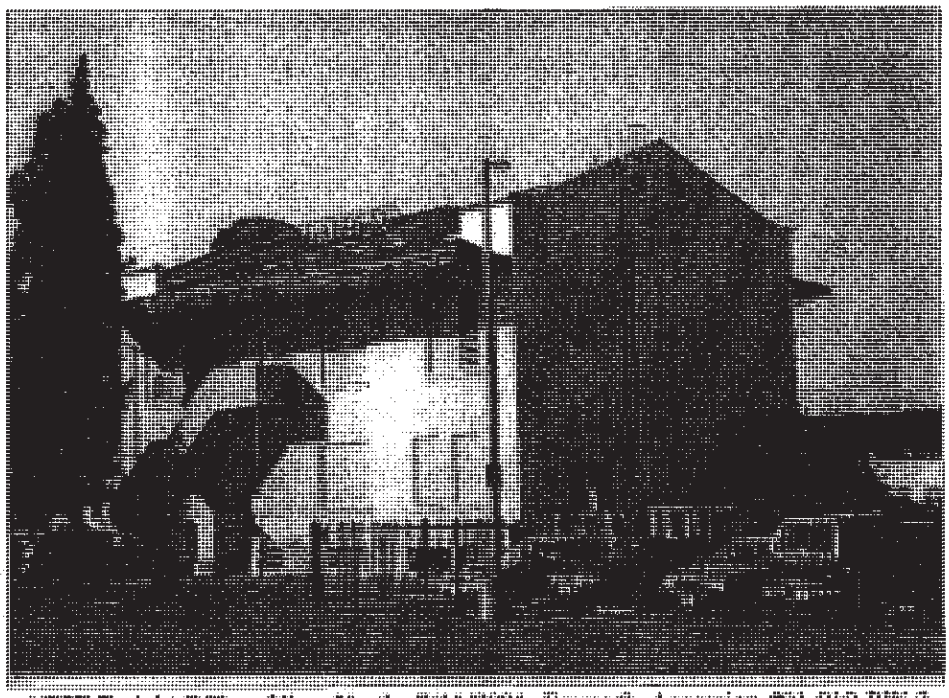
P5b.



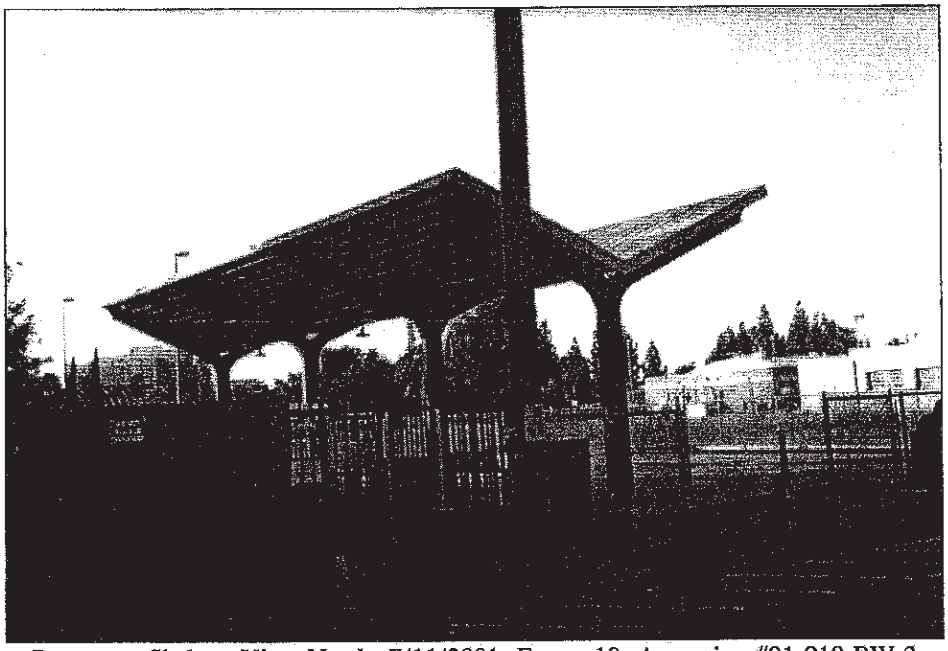
Pedestrian Bridge; View East, 7/11/2001, Frame 12, Accession #01-910-BW-2

ATSF Freight Office; View South, 7/11/2001, Frame 10, Accession #01-910-BW-2

P5b.



ATSF Freight Office; View North, 7/11/2001, Frame 4, Accession #01-910-BW-3



Passenger Shelter; View North, 7/11/2001, Frame 10, Accession #01-910-BW-3

P6.

Santa Fe Passenger Depot - 1899-1940; Amtrak Station - 1926; Dispatch Building - 1952-1956; Passenger Shelter – 1939 (moved to property in 1966); Pedestrian Bridge – 1985

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-10-004412
HRI #
Trinomial

Page P9 of P9 * Resource Name or # (Assigned by recorder) 1

*Map Name: Fresno South 7.5 Minute USGS quadrangle *Scale 1:24,000 * Date of map: 1963, Photorevised 1981

DPR 523K (1/95)

* Required Information

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # P-10-004412
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 1S, 4S1, 6Z, 3D

Page B1 of B8 *Resource Name or #: (Assigned by recorder) 1

B1. Historic Name: Fresno Atchison, Topeka, and Santa Fe (ATSF) Railroad Property

B2. Common Name:: N/A

B3. Original Use: Railroad property B4. Present Use: City and Railroad property

*B5. Architectural Style: Mission Revival Style (Depot and ATSF Freight Office); International Style (Dispatch Office; Early Twentieth Century Railroad Loading Dock

*B6. Construction History: (Construction date, alterations, and date of alterations)

Santa Fe Passenger Depot (1a). NRHP Status Code 4S1. The depot was constructed by ATSF in 1899 using architectural plans developed by W. B. Storey, Chief Engineer for the railroad and later ATSF President. Additions and alterations made to the building between 1909 and 1925 were carried through in a manner complimentary to the original design. In 1909 an addition was made to the south end of the building which enlarged the original baggage room and added an express office. An office unit was added to the south side in 1912. By 1918, other alterations and additions were made, including a west side addition that created expanded second story space. In 1925, a single-story extension was made to the north side of the building to add more office space; this addition brought the footprint of the depot to the north property line along Tulare Street. The interior's waiting room, ticket office and baggage rooms were completely remodeled in 1940. In 1967 the interior offices were modernized to become the operating, engineering and communications department. Many of the original windows and doors on the depot were removed and infilled or replaced with smaller aluminum sash windows primarily between 1953 and 1976 (Gustafson and Serpico 1997:166; Sanborn Map Company 1906, 1918, 1948, 1950; Seeger 1976; Thompson & Associates et al. 2000).

ATSF Regional Dispatch Office (1b). NRHP Status Code 6Z. The Regional Dispatch Office is located directly west of the main depot building. Construction of the initial 21-foot by 50-foot section of this building appears to have started in 1951 and was completed in 1952. The northern 21-foot by 20-foot section was added in 1956 (Fresno, City of 2001; Thompson & Associates 2000). The enclosed second story walkway that connects this building with the Santa Fe Passenger Depot was probably built in 1956 as well.

Pedestrian Bridge (1c). NRHP Status Code 6Z. In 1985 a pedestrian bridge (1c) was attached to the south side of the depot in order to create a connection between the Santa Fe Passenger Depot and the ATSF Freight Office (present Amtrak Station) to the south (Gustafson and Serpico 1997:166; Thompson & Associates et al. 2000).

ATSF Freight Office (1d). NRHP Status Code 4S1. Original architectural drawings for this former freight office (1d; now an Amtrak Station) date to 1925 (Burlington Northern and Santa Fe Railroad [BNSF] 2001b). Construction of the building was completed in 1926 (Gustafson and Serpico 1997:163). A circa 1953 photograph shows that no major renovations occurred to this building by that time (Gustafson and Serpico 1997:166). The building appears to have been renovated between 1966 and 1985. In 1966 ATSF passenger operations were moved from the 1899 depot to the first floor of the freight office. By 1985 Amtrak had taken over use of the building for passenger service and attached to the building (Gustafson and Serpico 1997:167). Modifications to the building include the infilling of original window and door openings to included smaller aluminum sliding aluminum sash windows and modern doors. The outside metal stairs on the west side were removed and replaced with a reinforced steel and concrete stairway. Adjacent fenced-in storage and parking areas were probably added in the late 1980s.

Passenger Shelter (1e). NRHP Status Code 6Z. The passenger shelter, located east of the ATSF Freight Office (1d), was set in this location in 1966. It apparently was part of a corrugated iron umbrella shed, initially built in 1939 in Bakersfield, California (Gustafson and Serpico 1997:167).

*B7. Moved? ☐No ☒Yes ☐Unknown Date: 1966 Original Location: Passenger Shelter moved from Bakersfield, CA to Fresno, CA

*B8. Related Features:

The ATSF Freight Office (1d; now an Amtrak Station) was associated with a larger ATSF freight complex that included a freight house and platform areas. The freight complex was at one time known as the National Warehouse. The first ATSF freight house was built as part of the San Francisco & San Joaquin Valley Railroad (SFSJV) in 1897. Other loading platforms and buildings were also built between 1905 to 1936. In 1936 the final section of platform (with an open-sided storage shed) was constructed at the southern end of the complex (BNSF 2001b; Gustafson and Serpico 1997:163; Sanborn Map Company 1918).

(continued)

*B8.

The majority of the National Warehouse freight complex was removed in 1985, with only the 1936 platform section (with shed), a small part an earlier platform section, and the associated but separately built ATSF Freight Office building remaining. The National Warehouse and the remaining platform section are further discussed on separate California State Department of Parks and Recreation forms that were completed for the remaining freight platform section (Bakic 2001).

B9a. Architect: Depot - William B. Storey, Jr.; architects for the rest of the buildings/structures on the ATSF property are unknown

B9b. Builder: ATSF Reg. Dispatch Office - Harris Construction (1952 portion); Midstate Construction (1956 portion); ATSF Freight Office - Sumner Sollit Contractors

***B10. Significance: Theme** ATSF Railroad Properties **Area** Fresno, California

Period of Significance	**Property Type**	**Applicable Criteria**
ATSF RR Property, 1899-1946	Railroad	A, C
Warehouse District, 1894-1931	Industrial	A, C

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity).

In 1872 the Central Pacific Railroad (CPRR) laid out and established the community of Fresno. Fresno quickly grew around the CPRR rails and economically relied heavily on the company for transportation of its freight. By the 1880s, pressure was growing to break the monopoly of the CPRR. In the early 1890s a separate railroad company, which the San Francisco and San Joaquin Valley Railroad (SFSJV) called "The People's Railroad" was formed. While the CPRR attempted to stifle the new competition, the SFSJV secured a parcel of undeveloped land from the Sisters of the Holy Cross (Carter ca. 1980:62). This land had two wood-framed dwellings located on it (on City Block 144) but was otherwise empty (Sanborn Map Company 1888).

The first train arrived at the new Fresno stop of the SFSJV on October 5, 1896. The first freight to come to this stop was a carload of sugar for Kutner & Goldstein, who in turn loaded the first outgoing freight – wheat (Carter ca. 1980:64; Winchell 1933:117). In 1897, SFSJV built a freight house and a small wood-framed passenger waiting room/baggage room on extant City Block 143. By 1898, the previously mentioned two old wood-framed buildings were removed from City Block 144 and a water closet was erected at the north corner of that block. Meanwhile, five houses, the Valley Lumber Company building, and the Producer's Warehouse Company were built nearby (Gustafson and Serpico 1997: 161, 163; Sanborn-Perris Map Company, Limited 1898).

By 1899, the Atchison Topeka and Santa Fe Railroad (ATSF), underwriter of the SFSJV, bought out the system and proceeded to develop their Fresno Station. Soon more railroad and industrial facilities, including warehouses and packing sheds, began to develop around the tracks (Van Bueren 1995:3). The new depot was designed by William B. Storey, Jr. and constructed in 1899. Storey had been chief engineer and general superintendent for the SFSJV Railroad and later became president of the Santa Fe Railroad. This handsome depot reflected a simple California Mission Revival architectural style with the added details of a large clock and porte-cochere (Gustafson and Serpico 1997:165). The first Santa Fe transcontinental train came into the new Fresno depot in July 1900. Thirty passenger trains arrived daily, with at least one freight train a week (Fresno County Centennial Committee 1956:136).

The ATSF railroad's arrival coincided with the maturation of Fresno County into one of the richest agricultural counties in America. As the county nearly doubled in population, from 37,862 in 1900 to 75,657 in 1910, Fresno became an increasingly important trading center. The surge in trade, especially associated with agriculture, led to the construction of larger industrial and commercial properties near the ATSF tracks (Enns-Rempel 2001). This rise in commercial and industrial activity added to the success of the ATSF station both for passenger use and freight. Between 1905 and 1940, this success led to various additions and renovations to the ATSF property, including enlarging the passenger depot and reworking some of its interior spaces, extending the freight house and its loading platforms, and adding a separate freight office building (BNSF 2001b; Gustafson and Serpico 1997:163, 166; Sanborn Map Company 1906, 1918, 1948, 1950; Seeger 1976; Thompson & Associates et al. 2000)

After World War II, Fresno's largely agricultural economy was increasingly balanced with industrial, retailing, office, and professional services. The ATSF area retained its mixture of light industrial, manufacturing, and warehousing uses, just as these similar kinds of uses are found near the present Union Pacific Railroad (UPRR) facilities in Fresno (Carter ca. 1980:3-5). (The UPPR facility is the old CPRR/Southern Pacific Railroad [SPRR] property.) While originally considered on the outskirts of town, by 1949 ATSF's operation in the growing Fresno community was becoming a heated local issue. Newspaper editorials complained of the long traffic delays as automobiles waited for Santa Fe trains to cross streets and of neighborhoods shaken by the rumbling freight cars. The City Public Works Department started talks on how to possibly merge Santa Fe's lines into the SPRR's, eliminating the extra train route through town (*Fresno Bee* 1949). However, the merge did not occur.

(continued)

*B10.

As California's post-World War II affluence led to the development of improved highways and personal automobile ownership, passenger train use began to decline (Reutter 1994:10-37). In 1967, the original passenger depot was converted to ATSF offices, with the passenger depot function having been transferred to the freight depot the previous year. In the early 1970s Amtrak took control of passenger rail service for most railroads, and in 1974 Amtrak took over use of the freight depot building as its passenger ticket office. In 1995, Santa Fe Pacific Corporation (parent company of ATSF) merged with Burlington Northern Inc. (parent company of Burlington Northern Railroad) to create the Burlington Northern Santa Fe Corporation. Since the merger, the functioning rails through the project area have been considered part of the Burlington Northern Santa Fe Railway. Today, Fresno is served by the UPRR (merged with SPRR in 1996) and the BNSF. The Amtrak station (1926 freight office) in the project area, with five northbound and southbound trains daily, is one of the most active on the San Joaquin route, thanks to improved train schedules and increasing passenger use. The 1899 Santa Fe Passenger Depot, however, is largely unused except by a small BNSF staff (BNSF 2001a; Johnson Architecture 2001:3).

Significance of the Fresno ATSF Railroad Property. This property's period of significance extends from the 1899, when the extant depot was constructed, to 1946, when the local importance of the Santa Fe Railroad began to decline due to post World War II changes in transportation patterns, specifically in the increased reliance on automobiles and trucks and the decreased use of trains. The Santa Fe Railroad Depot is listed on the National Register of Historic Places (National Register). The Freight Office, now an Amtrak ticket office, appears to meet the criteria for eligibility to the National Register at a local level , especially once the integrity of the property's contributing elements have been restored. The property would be eligible under Criterion A as the hub of the ATSF's success associated with transportation and commerce in and out of Fresno, and under Criterion C for its excellent representation of the Mission Revival style in railroad architecture. As such, the property would be an historical resource for the purposes of CEQA. Other elements mentioned above do not appear to meet the criteria for the National Register nor would they be an historical resource under the California Environmental Quality Act (CEQA).

The Fresno ATSF Railroad Property is also within the boundaries of the Santa Fe Warehouse District, proposed by Powell and McGuire (1994) and the California Department of Transportation (Caltrans [1995]). The district is bounded by: Tulare Street to the north, R Street to the east, Ventura Street to the south, and P Street to the west. A previous assessment by Caltrans of the proposed district conclude that it meets the criteria for eligibility to the National Register at a local level with a period of significance of 1894-1931 in the areas of transportation, architecture, and commerce (Snyder 1995). The period of significance appears to represent the peak years for industry and industrial build-up associated with the Santa Fe Railroad in Fresno. (This district has not yet been documented on California State Department of Parks and Recreation forms). The contributing elements of the Fresno ATSF Railroad Property may become eligible for listing in the National Register and become an historical resource for the purposes of the CEQA as a contributor to the Santa Fe Warehouse District, if the integrity of the property's contributing buildings is restored.

The Frenso ATSF Railroad Property's non-contributing building (dispatch building) and structures (pedestrian bridge, passenger shelter) do not appear to be contributors to the Santa Fe Warehouse District primarily because they are built after the district's period of significance. Although the ATSF Regional Dispatch Building retains an excellent degree of integrity, its lacks individual architectural or historical significance. As an individual resource, the dispatch building does not appear to meet the criteria for eligibility to the National Register, nor does it appear to be an historical resource for the purposes of CEQA. Since the pedestrian bridge and passenger shelter have been in their present locations for less than 50 years, they individually do not appear to meet the criteria for eligibility to the National Register or to be historical resources for the purposes of the CEQA.

The success of ATSF in Fresno led to alterations and additions on the subject Fresno ATSF Railroad Property. Today, there are three buildings and two structures on the property. These buildings and structures are discussed and evaluated below.

(continued)

*B10.

Santa Fe Passenger Depot. The Santa Fe Passenger Depot (1a) was constructed by ATSF in 1899. It was designed by William B. Storey, Chief Engineer for the railroad and later ATSF President. The Santa Fe Passenger Depot was added to and its interior remodeled between 1909 and 1940; these changes are outlined above in Section B6. "Construction History." In 1967, the depot was converted for use as ATSF offices, with passenger service transferred to the freight office (now an Amtrak Station) in the previous year. In 1995, Santa Fe Pacific Corporation (parent company of ATSF) merged with Burlington Northern Inc (parent company of Burlington Northern Railroad) to create the Burlington Northern Santa Fe Corporation. Since the merger, the depot and the property on which it sits have been owned by BNSF. Today, the depot building is largely unused except for some first floor space that is used by BNSF staff (BNSF 2001a; Gustafson and Serpico 1997:166; Sanborn Map Company 1906, 1918, 1948; Seeger 1976; Thompson & Associates et al. 2000).

The Santa Fe Passenger Depot was included the National Register as an individual property in 1976 (Attachment C; USDI 2001). "It is listed at the local level of significance. Under Criterion A, it is associated with the development of the SFSJV (later purchased by ATSF) which was important for providing distribution of valley goods to markets outside the Fresno area. The station is also important under Criterion B, as it was designed and erected under the direction of W. B. Storey, Jr., who later became president of the Santa Fe Railway System. Finally, the building is listed under Criterion C as a very good example of the Mission Revival style and is representative of some of the best railroad depot architecture of that era" (Caltrans 1995:5). Subsequent to its National Register status, the depot is also recognized as a historical resource for the purposes of CEQA. The Santa Fe Passenger Depot was recorded in 1978 on a State DPR form completed by William E Patnaude as part of his Historic Survey of the City of Fresno (Attachment B [Patnaude 1978a, 1978d]). It is listed on the City of Fresno's Local Register (Enns-Rempel 2001). This building has been previously assessed as meeting the criteria for eligibility to the National Register as a contributor to the proposed Santa Fe Warehouse District, discussed below (Caltrans 1995; Powell and McGuire 1994).

Although the building exhibits modifications (i.e., infill of original windows, some replaced with aluminum slider windows), no major changes occurred after the 1976 determination of eligibility. The property's 1985 pedestrian bridge, which links the depot and freight office, is a reversible change. Although modifications have diminished the building's integrity, the changes appear reversible and it appears that the building's integrity of design, materials, workmanship can be restored in conjunction with the Secretary of the Interiors Standards for Rehabilitation & Guidelines for Rehabilitating Historic Buildings (1992). Circa 1899 architectural elevation plans for the depot are on file at the Fresno City and County Historical Society. Historical photographs can be viewed in several books, including those by Gustafson and Serpico (1997), Krieger and Icanberry (1983), Jerome Laval (1975, 1976), and M. T. Kearney (1903). Postcards of the depot that date to the early 1900s, are on file at the California History and Genealogy Room of the Fresno County Library (Visalia, CA). This building is considered a contributor to the Fresno ATSF Railroad Property.

ATSF Freight Office. This building (1d) was originally the ATSF Freight Office (and Auditorium) and, although a separate building, was part of the ATSF freight complex known as the National Warehouse. The original 1897 freight house, which was directly south of the ATSF Freight Office, burned down and was rebuilt in 1905. Subsequently, other building and platform additions were made to extend from the freight house between 1905 and 1936 (Bakic 2001). By the mid-1920s, ATSF had outgrown this freight complex (National Warehouse), and the ATSF Freight Office was designed in 1925 and completed by 1926 to provide additional office space for the freight operations. The basement level initially contained record storage rooms and the heating plant for all of the ATSF facilities in Fresno. The second story level was an auditorium for Santa Fe Railroad employees (BNSF 2001b; Fresno, City of 2001; Gustafson and Serpico 1997:167; Patnaude 1978b).

In 1966, the first floor of the freight office was converted for use as the ATSF passenger station and the 1899 passenger depot was converted to ATSF offices by 1967. In the early 1970s Amtrak took control of passenger rail service for most railroads, and in 1974 Amtrak took over use of the freight depot building as its passenger ticket office; however ATSF still owned the building. Since ATSF's 1995 merger with Burlington Northern Inc., the freight office and the property on which it sits have been owned by BNSF (BNSF 2001a; Gustafson and Serpico 1997:166, 167; Johnson Architecture 2001:3).

(continued)

***B12. References:**

Bakic, T.
2001 State of California Department of Parks and Recreation Forms: Primary and Building, Structure, Object Record for the BNSF Freight Loading Platform. On file, Southern San Joaquin Valley Information Center, Bakersfield, California.

Bucher, W.
1996 *Dictionary of Building Preservation*. John Wiley & Sons, Inc., New York.

Burlington Northern and Santa Fe Railway (BNSF)
2001a Company Profile. BNSF web site. www.bnsf.com/media/html/company_profile.html.

2001b Documentation on file at BNSF, Fresno, California.

California Department of Transportation (Caltrans)
1995 *Historic Property Clearance Report for the Proposed New Fresno Amtrak Station in Fresno, CA*. Prepared for Caltrans District 06. On file, City of Fresno, Department of Housing and Neighborhood Revitalization, City Hall, Fresno.

Carter, B. M.
ca. 1980*Historic Districts Plan, Historic Structures Plan*. Fresno Planning Department, Fresno. On file, City of Fresno, Department of Housing and Neighborhood Revitalization, City Hall, Fresno.

Enns-Rempel, R.
2001 *A Guide to Historic Architecture in Fresno, California*. Fresno Pacific University. Http://sunfive.fresno.edu/courses/preserve/.

Fresno Bee
1949 It Was Welcomed Then But It is a Nuisance Now. *Fresno Bee*, July 10, 1949. Ben Walker History Files (3" x 5" box no. 51/Russo – Schl), Fresno City and County Historical Society, Sacramento, California.

Fresno, City of
2001 Building Permits. On file, City of Fresno, Development Department, City Hall, Fresno, California.

Fresno County Centennial Committee
1956 *Fresno County Centennial Almanac*. Fresno County Centennial Committee, Fresno, California.

Gustafson, K. and P. Serpico
1997 *San Francisco Coast Line Depots: Valley Division*. Omni Publications, Palmdale, California.

Kearney, M. T.
1903 *Fresno, California and the Evolution of the Fruitvale Estate, Illustrated, Souvenir Edition 1904*. M. T. Kearney.

Johnson Architecture
2001 *The Great American Station Foundation Year 2001 Grant Application*. Prepared and Submitted by Johnson Architecture on behalf of The City of Fresno. City of Fresno, Department of Housing and Neighborhood Revitalization, City Hall, Fresno.

Laval, J.
1975 *As "Pop" Saw It, Volume II*. Graphic Technology Company, Fresno.

1976 *As "Pop" Saw It, Volume II*. Graphic Technology Company, Fresno.

McAlester, V., and L. McAlester
1984 *A Guide to American Houses*. Alfred A. Knopf, Inc., New York.

Form No. 10-300 (Rev. 10-74)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED
DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC
Santa Fe Passenger Depot

AND/OR COMMON
Santa Fe Depot

2 LOCATION (Within Section 3 of Township 14 South Range 20 East, Mt. Diablo Base and Meridian)

STREET & NUMBER
2650 Tulare Street — NOT FOR PUBLICATION

CITY, TOWN
Fresno — VICINITY OF — CONGRESSIONAL DISTRICT 15th

STATE
California — CODE 06 — COUNTY Fresno — CODE 019

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
__DISTRICT	__PUBLIC	X OCCUPIED	__AGRICULTURE	__MUSEUM
X BUILDING(S)	X PRIVATE	__UNOCCUPIED	X COMMERCIAL	__PARK
__STRUCTURE	__BOTH	__WORK IN PROGRESS	__EDUCATIONAL	__PRIVATE RESIDENCE
__SITE	PUBLIC ACQUISITION	ACCESSIBLE	__ENTERTAINMENT	__RELIGIOUS
__OBJECT	__IN PROCESS	X YES: RESTRICTED	__GOVERNMENT	__SCIENTIFIC
	__BEING CONSIDERED	__YES: UNRESTRICTED	__INDUSTRIAL	X TRANSPORTATION
		__NO	__MILITARY	__OTHER:

4 OWNER OF PROPERTY

NAME
Atchison, Topeka & Santa Fe Railway Co.

STREET & NUMBER
80 E. Jackson Blvd.

CITY, TOWN
Chicago — VICINITY OF — STATE Illinois 60604

5 LOCATION OF LEGAL DESCRIPTION (see continuation sheet)

COURTHOUSE, REGISTRY OF DEEDS, ETC.
Fresno County Recorder's Office, Hall of Records

STREET & NUMBER
2281 Tulare Street, Room 302

CITY, TOWN
Fresno — STATE California

6 REPRESENTATION IN EXISTING SURVEYS

TITLE
List of Historic Sites and Buildings in Fresno County

DATE
January 1975 — __FEDERAL __STATE __COUNTY X LOCAL

DEPOSITORY FOR SURVEY RECORDS
Fresno County Historical Society

CITY, TOWN
7160 Kearney Blvd.
Fresno — STATE California

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
X EXCELLENT	__DETERIORATED	__UNALTERED	X ORIGINAL SITE
__GOOD	__RUINS	X ALTERED	__MOVED DATE_____
__FAIR	__UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Description

Foundation:	Solid grouted brick
Exterior Walls:	Plaster on solid grouted brick walls
Roof:	Red mission tile over wood framed roof structure
Interior Walls:	Plaster on wood lath and studs
Ceilings:	Lath and plaster over wood lath
Trim and Details:	Simple picture mouldings - no particular style
Fireplace:	Brick with simple wood mantlepiece
Floors:	Wood over floor joist installed on asphalt paving material on first floor. Wood on second floor.
Exterior Arches:	Simple arches, no impost.

Architectural Significance

The Fresno Depot of the Santa Fe Railroad was designed and erected in 1899 under the direction of W.B. Storey, Jr., Engineer, who later became presiden of the Santa Fe Railway System. Alterations and additions were made at the south end in 1909 and an office unit added in 1912. Additional alterations and additions were made in 1917. The waiting room, ticket office and baggage room were completely remodeled in 1940. In 1966 the station was abandoned for passenger use and the waiting room was converted into a communications center. The entire second floor was converted into electroni and computer control areas along with related offices.

The building is a simple California Mission style. Arches and tiled roofs comprise the general architectural features. The arches are simple and many of the windows are framed with segmental arched openings. All of the arches are free of an impost. The roofs are of medium pitch and nearly all are hipped. There is a single tower and quite a few turrets all capped with pyramidal tiled roofs. There are a few shaped gable ends of curvilinear outline. There are only a few sculptural ornaments with the most prominent one located at the tower on the west elevation. Otherwise the building is nearly completely free of any sculptural ornamentations.

Unfortunately, during the process of building additions and remodeling the exterior and interior of the Fresno Santa Fe station, only the exterior retains most of the original architectural concepts of the Mission style. Many of the exterior arched or rectangular windows have been filled in and plastered over, both on the exterior and interior.

In the interior of the building all traces of even the simplest details have been completely covered over with plaster including the simple but dignified fireplace which was the focal architectural feature in the main waiting room. All of the ceilings on both the first and second floors have suspended acoustical tile ceilings completely covering all traces of possible interesting ceiling details. No trace of the original building is left on the interior. Only the exterior of the Santa Fe station expresse the simple Mission style. Much of this expression is maintained with its

continued

simple arches at the arcades and windows, the tower and turrets capped with pyramidal red tile and a small exposed portion of a shaped gable end of curvilinear outline.

Conclusion

The Santa Fe Railroad Station in Fresno, while having little architectural significance, does however give an expression of a style common in California and identifies the simple Mission style in each community as the railroad station. They often became the principal landmark in communities in which the railroad stations were located.

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
__PREHISTORIC	__ARCHEOLOGY-PREHISTORIC	__COMMUNITY PLANNING	__LANDSCAPE ARCHITECTURE	__RELIGION
__1400-1499	__ARCHEOLOGY-HISTORIC	__CONSERVATION	__LAW	__SCIENCE
__1500-1599	X AGRICULTURE	__ECONOMICS	__LITERATURE	__SCULPTURE
__1600-1699	__ARCHITECTURE	__EDUCATION	__MILITARY	__SOCIAL/HUMANITARIAN
__1700-1799	__ART	__ENGINEERING	__MUSIC	__THEATER
X 1800-1899	X COMMERCE	__EXPLORATION/SETTLEMENT	__PHILOSOPHY	X TRANSPORTATION
X 1900-	__COMMUNICATIONS	__INDUSTRY	__POLITICS/GOVERNMENT	__OTHER (SPECIFY)
		__INVENTION		

SPECIFIC DATES 1899 to present BUILDER/ARCHITECT W.B. Storey, Jr., and Santa Fe

STATEMENT OF SIGNIFICANCE

The city of Fresno, with a current population of 180,000 and located in the center of the state of California, owes much to the railroads for its founding and growth. In 1872 the Central Pacific Railroad, later to become the Southern Pacific, selected the site for its Fresno Station a few miles south of the San Joaquin River in the center of barren plains, but within sight of the luxurious grain fields of two early residents, A.Y. Easterby and M.J. Church. Two years later Fresno became the county seat of Fresno County, and the little town was well on its way to becoming a strategically important community in the San Joaquin Valley in agricultur mining and lumbering.

In the 1880's, Fresno held importance as a railroad center, although the Southern Pacific was the only major line in the valley. Santa Fe was in southern California and was seemingly on its way through the San Joaquin Valley north to San Francisco. Threatened, Southern Pacific leaders encouraged "ill-visioned independent railroad competition." (Walker p. 165) A number of (rival) lines were proposed, and some gained support, but all were later forgotten. The immense costs of rights of way and terminals were prohibitive, and without local subsidy, no road could bear them. As a result, Southern Pacific retained a monopoly in the San Joaquin Valley.

The monopoly "...hampered the growth of business, held back development of farm lands and raised prices of a thousand kind of things the great Valley of the San Joaquin and [San Francisco] Bay cities had to have." (Marshall, p. 252)

> "The San Joaquin people were especially hard hit. It cost more to ship goods to them the few miles from San Francisco to their towns, than it did to ship the same goods from North Atlantic ports to the Golden Gate. For example, it cost sixty-five cents to ship 100 pounds of canned goods from New York to San Francisco (1,000 miles) but it cost eighty-two cents to roll the same 100 pounds down to Bakersfield, only 350 miles away. Eastbound freight rates were so high that the Valley, capable of producing thousands of tons of food a season, shipped hardly any. Grocers fought bitterly." (Marshall, p. 255)

In the 1890's resentment against this monopoly took a number of forms, both socially and commercially. A series of train robberies seemed to show popular hatred of the railroad, and many persons openly sympathized with the maraudery. Other effects were attempts at water transportation up the San Joaquin River to Fresno, and some merchants used mule teams to ship goods to San Francisco.

continued

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Fresno Bee. "Santa Fe Depot Gets Roof Job." McClatchy Newspapers, Fresno, California, October 17, 1967, p. 10-D.

Fresno County Historical Society. List of Historic Sites and Buildings in Fresno County. Fresno, California, 1975.

Fresno Morning Republican. "Thousands Greet the Valley Road." Fresno Republican Publishing Company, Fresno, California, Vol. XII, No. 83, October 6, 1896, p. 1,3.

continued

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 1.01 acres

UTM REFERENCES

	ZONE	EASTING	NORTHING
A	11	251600	4069260
B			
C			
D			

VERBAL BOUNDARY DESCRIPTION

That property bounded by Tulare Street on the northwest, S. Santa Fe Avenue on the southwest, Kern Street right-of-way on the south east, and the Atchison, Topeka & Santa Fe Railway Company railroad tracks on the northeast.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE: Dianne E. Seeger

DATE: May 28, 1976

ORGANIZATION: as an individual

STREET & NUMBER: 3345 E. Fairmont Apt. B

TELEPHONE: (209) 227-0531

CITY OR TOWN: Fresno

STATE: California 93726

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL ___ STATE ___ LOCAL ___

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST: DATE

KEEPER OF THE NATIONAL REGISTER

But the most important opposition to the policies of the Southern Pacific was the encouragement given in the middle of the 1890's to the enterprise that was usually called the "Valley Road" - a railroad to be built down the center of the Valley.

An organization named the Traffic Association of California was formed in San Francisco in 1891 to secure rate adjustments so San Francisco could develop as a point of distribution. To achieve this goal, a railroad had to be built down the Valley. A few attempts were made by the Association to solicit subscriptions, but little progress was made. Finally in January 1895 the association met to decide once and for all if the railroad would be built or if it would not. Leading merchants and capitalists were in attendance, including Claus Spreckels, the sugar king. He announced he would give $50,000 and the other men, knowing Spreckels rarely failed in business ventures, followed the magnate's lead. Spreckels later gave $500,000. On February 25, papers were filed for the incorporation of the San Francisco and San Joaquin Valley Railway. This railway was incorporated later into the Santa Fe line.

Unprecedented enthusiasm followed. The Traffic Association and newspapers in the Valley declared it was a patriotic duty for Californians to support the venture. Newspapers printed subscription blanks, house-to-house canvasses were conducted, and right-of-way, grounds and depots were obtained at favorable rates.

Construction began on the "People's Road" on July 22, 1895 in Stockton. The road built south to Fresno, where it was opened October 5, 1896. The first train left Stockton at 8:07 a.m. and after numerous stops along the way for people to inspect the cars and engine, reached Fresno at 1:30 p.m. With the arrival of the "Emancipator," as the train was called, the town went wild, with parades, speeches, bands, banquets and fireworks. Signs were put up by vineyards nearby: "Ready to Ship on the Valley Road."

The FRESNO MORNING REPUBLICAN, Tuesday October 6, 1896, stated: "...the celebration yesterday of the arrival of the first passenger train over the San Francisco and San Joaquin Valley Railroad [later to be bought by Santa Fe] marked the beginning of an era of development and prosperity for the San Joaquin Valley in general and Fresno county in particular. The 'octopus' whose tentacles have strangled commerce, industry and agriculture in this great basin, has been deprived of its power to do any further harm to these great interests. No more will the 'all-the-traffic-will-bear' club be swung over the heads and laid on the backs of our farmers, merchants and manufacturers. The agriculturist will no longer suffer under the burden of exorbitant freight charges, the merchant's business will no longer languish, and capitalists will no longer avoid Fresno county because of the unfavorable prospects of deriving fair profits from their investments. ...wherefore there dwelt an oppressed and despondent people there now dwells a people whose hope

continued

has been revived and who by thrift and renewed energy will make the San Joaquin Valley what it might have been years ago - one of the richest regions on the globe."

From the same article, Arthur R. Briggs, president of the Chamber of Commerce, stated "...that the occasion is not local in its interest or significance - in the sense of Fresno County alone - is shown by the large numbers present who have come from other towns, and from the adjoining counties, to participate in this demonstration.... This is substantial indication that good fellowship obtains in this part of the State and that the fact is recognized, that whatever affects Fresno county and promotes its welfare, by reason of close relation commercially, interests also the people of the whole valley."

The Valley Road went on to other towns, such as Reedley, Del Rey, Oleander, Laton, Parlier, and Orosi, but the depots established in many of these towns have since been demolished. Thus the Fresno depot is of additional significance because it is still standing and is still in use.

The Santa Fe depot, at Tulare and Santa Fe Streets, was designed and built by Santa Fe forces under the direction of W.B. Storey, Jr., engineer, who later became president of the Santa Fe Railway System. The depot is symbolic of the growth of Fresno and the enterprise of its people. Freight and passenger trains still arrive near the old depot, but it is a nearby building that is being used for Amtrak purposes, as the original depot (the subject of this nomination) was long ago converted to other railroad purposes, primarily executive offices, two-way communication equipment, and a center for electronic switching.

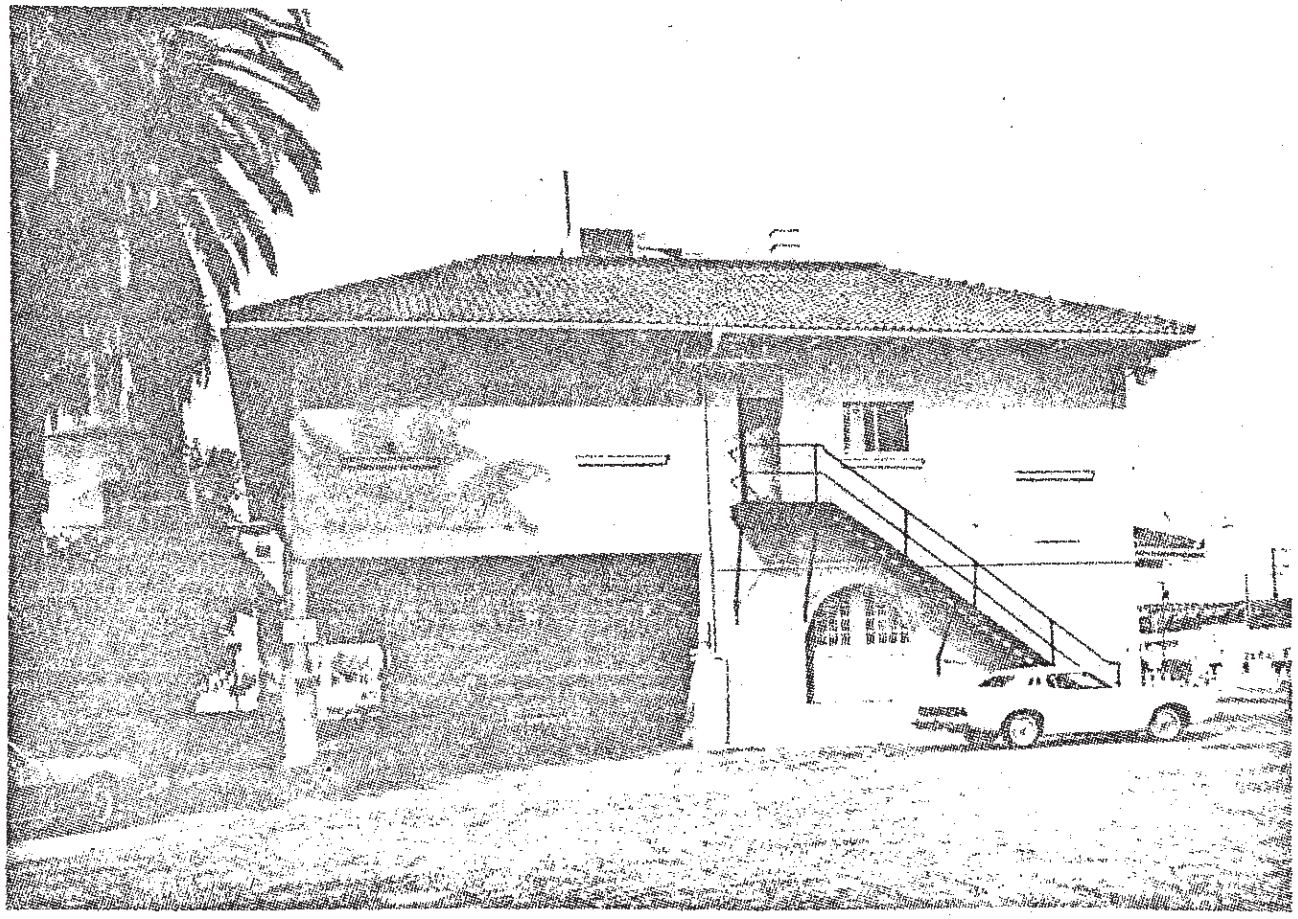
Legal description of the Santa Fe Passenger Depot property:

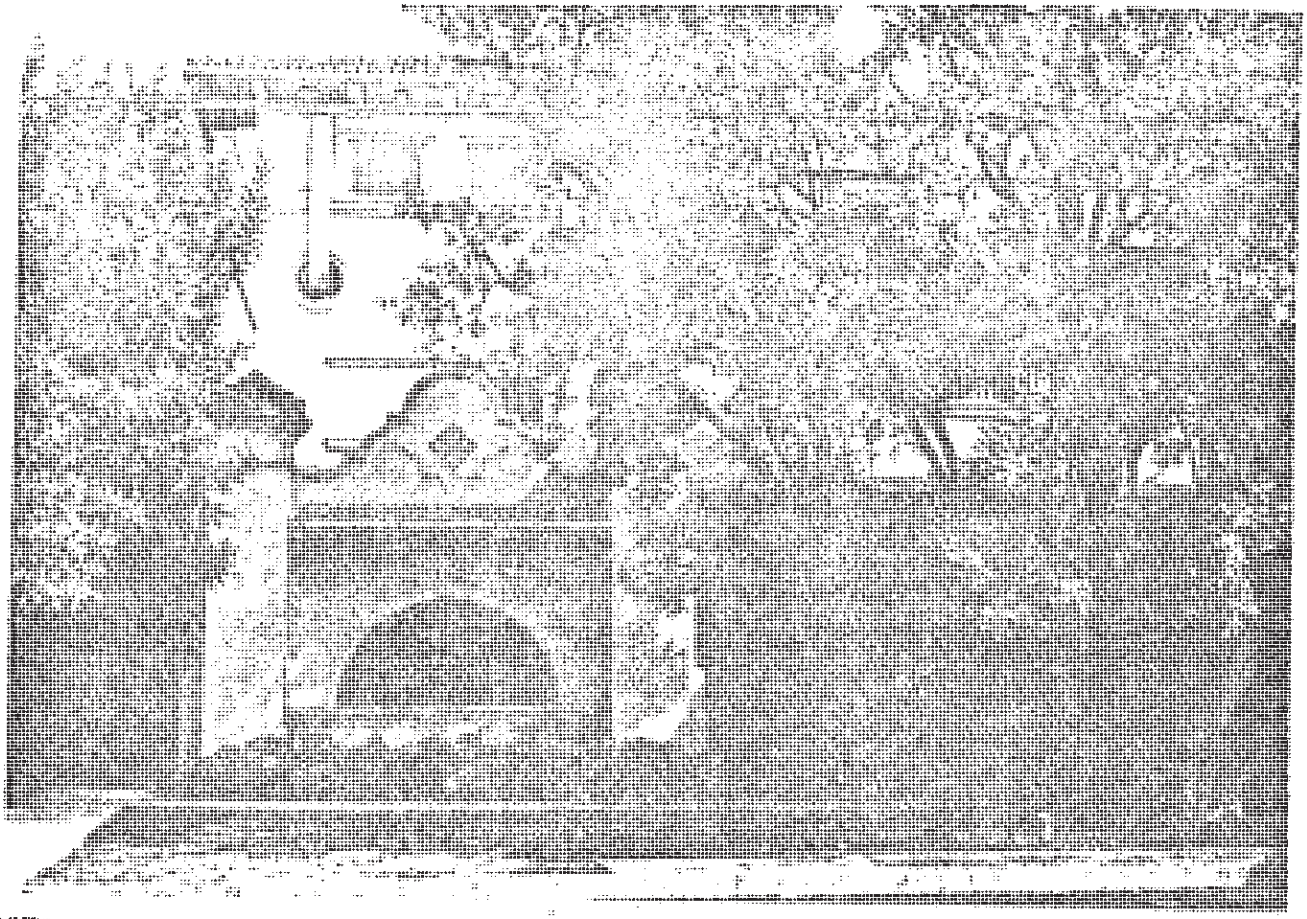
All of block 144 with lots 1 through 16 inclusive, as designated on the map entitled "Map of the Town of Fresno, Fresno Co., California" which map was filed in the Office of the Recorder of the County of Fresno, State of California, on September 8, 1888 in Plat Book 1, Page 2.

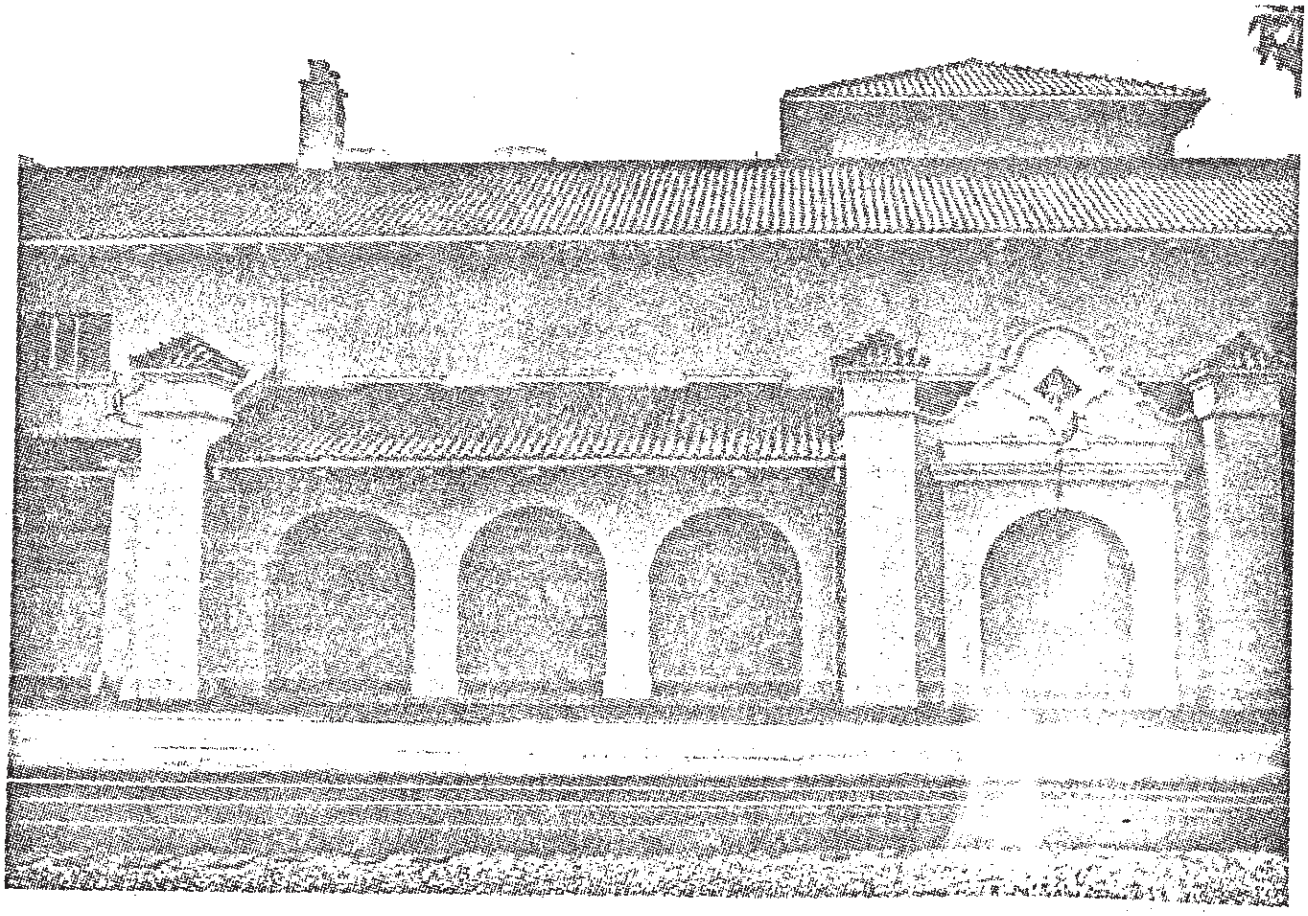
Fresno Republican. Imperial Fresno. Fresno Republican Publishing Company, Fresno, California, 1897.
Fresno Weekly Republican. Fresno Republican Publishing Company, Fresno, California, Vol. XX, No. 30, July 24, 1896, p. 3.
Marshall, James Leslie. Santa Fe - The Railroad That Built an Empire. Random House, New York, 1945.
Walker, Ben R. The Fresno County Blue Book. Arthur H. Cawston, Fresno, California, 1941.
Wash, Robert. An Outline History of Fresno County. The Fresno Guide, Fresno, California, October, 1966.
Waters, Lawrence Leslie. Steel Trails to Santa Fe. University of Kansas Press, Lawrence, Kansas, 1950.

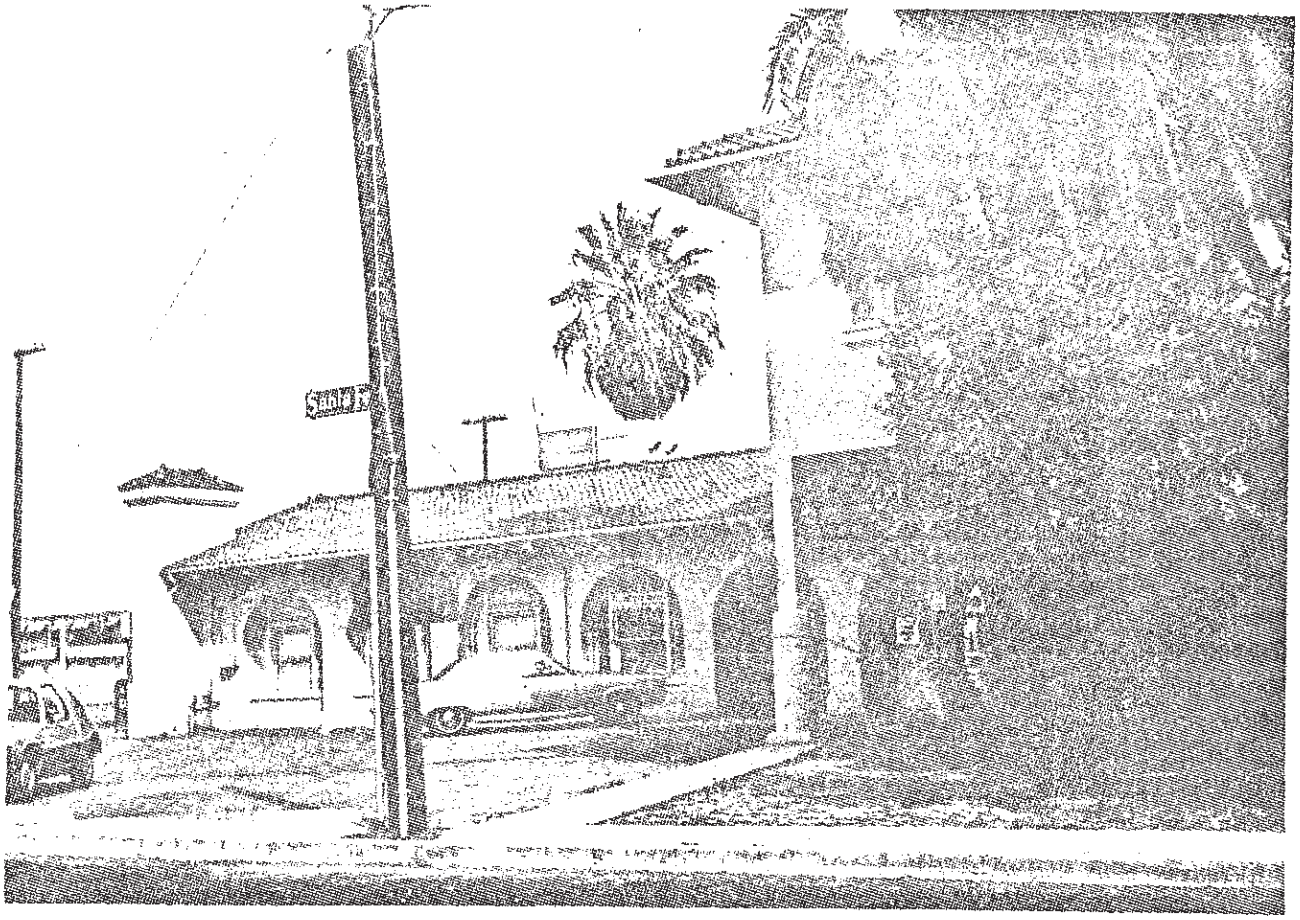
Resource Persons:

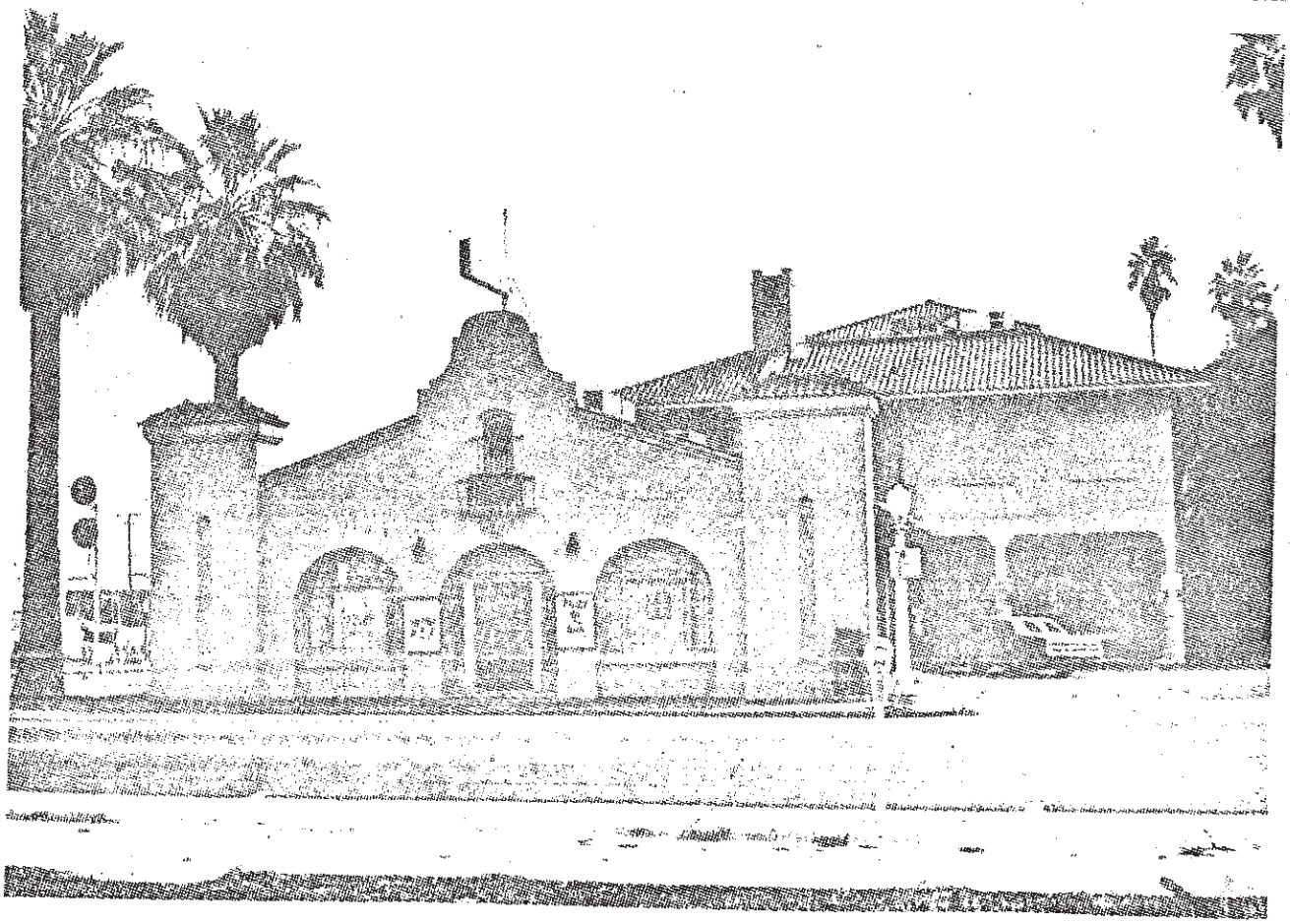
Nargis, James J., A.I.A. architect, Fresno, California; architectural statement.
Staff, Public Information Office, Atchison, Topeka and Santa Fe Railway Company, San Francisco, California.











DEPARTMENT OF PARKS AND RECREATION

HISTORIC RESOURCES INVENTORY

(State use only) UTM ____ Q ____ NR ____ SHL ____
Lat ____ Lon ____ Era 11/9/76 Sig ____
Adm ____ T2 ____ T3 ____ Cat ____ HABS ____ HAER ____ Fed ____
DISTRICT E

IDENTIFICATION P 10-004412

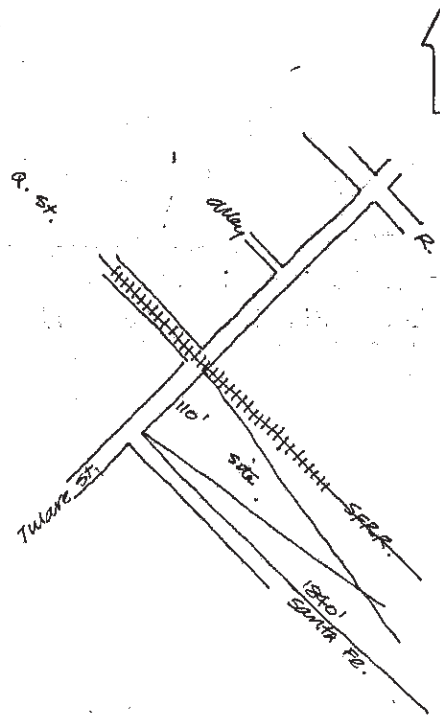
1. Common name: Santa Fe Depot 10-3771-173
2. Historic name, if known: Same
3. Street or rural address 2650 Tulare Street
   City: Fresno ZIP: 93721 County: Fresno
4. Present owner, if known: Santa Fe Address: ____
   City: ____ ZIP: ____ Ownership is: Public ☐ Private ☐
5. Present Use: Train station Original Use: Same
   Other past uses: None

DESCRIPTION

6. Briefly describe the present physical appearance of the site or structure and describe any major alterations from its original condition:

Simple white stucco building in California Mission style. One and two stories with a red barrel-tile roof and arched openings. A fine example of an architectural style very popular at the turn of the century.

7. Locational sketch map (draw and label site and surrounding streets, roads, and prominent landmarks):



8. Approximate property size:
   Lot size (in feet) Frontage 110 ';
   Depth 1840 ';
   or approx. acreage 3.36.
9. Condition: (check one)
   a. Excellent ☐ b. Good ☒ c. Fair ☐
   d. Deteriorated ☐ e. No longer in existence ☐
10. Is the feature a. Altered? ☐ b. Unaltered? ☒
11. Surroundings: (Check more than one if necessary)
   a. Open land ☐ b. Scattered buildings ☐
   c. Densely built-up ☒ d. Residential ☒
   e. Commercial ☒ f. Industrial ☒
   g. Other ☐ ____
12. Threats to site:
   a. None known ☒ b. Private development ☐
   c. Zoning ☐ d. Public Works project ☐
   e. Vandalism ☐ f. Other ☐ ____
13. Date(s) of enclosed photograph(s): 1978

OPR 523 (Rev. 7/75) 468-035-04

P 10-004412

NOTE: The following (Items 14-19) are for structures only.

14. Primary exterior building material: a. Stone ☐ b. Brick ☐ c. Stucco ☒ d. Adobe ☐ e. Wood ☐
    f. Other ☐ _____

15. Is the structure: a. On its original site? ☒ b. Moved? ☐ c. Unknown? ☐

16. Year of initial construction 1896 This date is: a. Factual ☒ b. Estimated ☐

17. Architect (if known): Unknown

18. Builder (if known): Unknown

19. Related features: a. Barn ☐ b. Carriage house ☐ c. Outhouse ☐ d. Shed(s) ☒ e. Formal garden(s) ☐
    f. Windmill ☐ g. Watertower/tankhouse ☐ h. Other ☐ _____ i. None ☐

SIGNIFICANCE

20. Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site when known):

This building is listed on the National Register of Historic places. This mission style building has been in constant use since its opening. The first Santa Fe train arrived in Fresno on October 5, 1896 at 1:30 p.m., and the town had a wild celebration. Amtrak began service through this depot on March 6, 1974. Huge Carob trees stand beside the station. They have grown from seeds planted in 1898 by Johannes Reimeks brought from Arabia. This building has played an important role in the development of the City of Fresno.

21. Main theme of the historic resource: (Check only one): a. Architecture ☒ b. Arts & Leisure ☐
    c. Economic/Industrial ☐ d. Exploration/Settlement ☐ e. Government ☐ f. Military ☐
    g. Religion ☐ h. Social/Education ☐

22. Sources: List books, documents, surveys, personal interviews, and their dates:

City of Fresno
Chamber of Commerce

23. Date form prepared: 6/27/78 By (name): William E. Patnaude
    Address: 1050 "S" Street City Fresno, California ZIP: 93721
    Phone: (209) 486-8150 Organization: Allen Y. Lew & William E. Patnaude, Inc.

(State Use Only)

P 10-004412

DEPARTMENT OF PARKS AND RECREATION

HISTORIC RESOURCES INVENTORY

(State use only) UTM [illegible] Q ____ NR 1 SHL ____
Lat ____ Lon ____ Era 11/5/70 Sig ____
Adm ____ T2 ____ T3 ____ Cat ____ HABS ____ HAER ____ Fed ____
DISTRICT E Fresno South

IDENTIFICATION Listed NRHP-1S

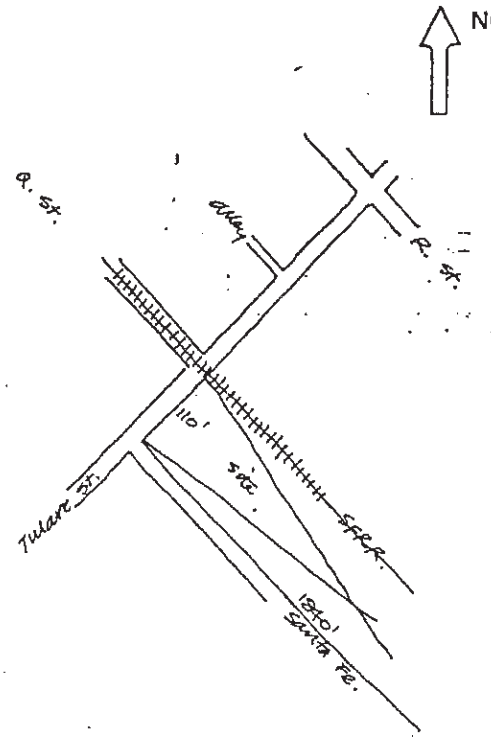
1. Common name: Santa Fe Depot 10-3771-173
2. Historic name, if known: Same
3. Street or rural address 2650 Tulare Street
   City: Fresno ZIP: 93721 County: Fresno
4. Present owner, if known: Santa Fe Address: ____
   City: ____ ZIP: ____ Ownership is: Public ☐ Private ☐
5. Present Use: Train station Original Use: Same
   Other past uses: None

DESCRIPTION

6. Briefly describe the present physical appearance of the site or structure and describe any major alterations from its original condition:

Simple white stucco building in California Mission style. One and two stories with a red barrel-tile roof and arched openings. A fine example of an architectural style very popular at the turn of the century.

7. Locational sketch map (draw and label site and surrounding streets, roads, and prominent landmarks):



8. Approximate property size:
   Lot size (in feet) Frontage 110 ';
   Depth 1840 ';
   or approx. acreage 3.36.
9. Condition: (check one)
   a. Excellent ☐ b. Good ☒ c. Fair ☐
   d. Deteriorated ☐ e. No longer in existence ☐
10. Is the feature a. Altered? ☐ b. Unaltered? ☒
11. Surroundings: (Check more than one if necessary)
   a. Open land ☐ b. Scattered buildings ☐
   c. Densely built-up ☒ d. Residential ☒
   e. Commercial ☒ f. Industrial ☒
   g. Other ☐ ____
12. Threats to site:
   a. None known ☒ b. Private development ☐
   c. Zoning ☐ d. Public Works project ☐
   e. Vandalism ☐ f. Other ☐ ____
13. Date(s) of enclosed photograph(s): 1978

NOTE: The following (Items 14-19) are for structures only.

14. Primary exterior building material: a. Stone ☐ b. Brick ☐ c. Stucco ☒ d. Adobe ☐ e. Wood ☐
    f. Other ☐ _____

15. Is the structure: a. On its original site? ☒ b. Moved? ☐ c. Unknown? ☐

16. Year of initial construction 1896 This date is: a. Factual ☒ b. Estimated ☐

17. Architect (if known): Unknown

18. Builder (if known): Unknown

19. Related features: a. Barn ☐ b. Carriage house ☐ c. Outhouse ☐ d. Shed(s) ☒ e. Formal garden(s) ☐
    f. Windmill ☐ g. Watertower/tankhouse ☐ h. Other ☐ _____ i. None ☐

SIGNIFICANCE

20. Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site when known):

This building is listed on the National Register of Historic places. This mission style building has been in constant use since its opening. The first Santa Fe train arrived in Fresno on October 5, 1896 at 1:30 p.m., and the town had a wild celebration. Amtrak began service through this depot on March 6, 1974. Huge Carob trees stand beside the station. They have grown from seeds planted in 1898 by Johannes Reimeks brought from Arabia. This building has played an important role in the development of the City of Fresno.

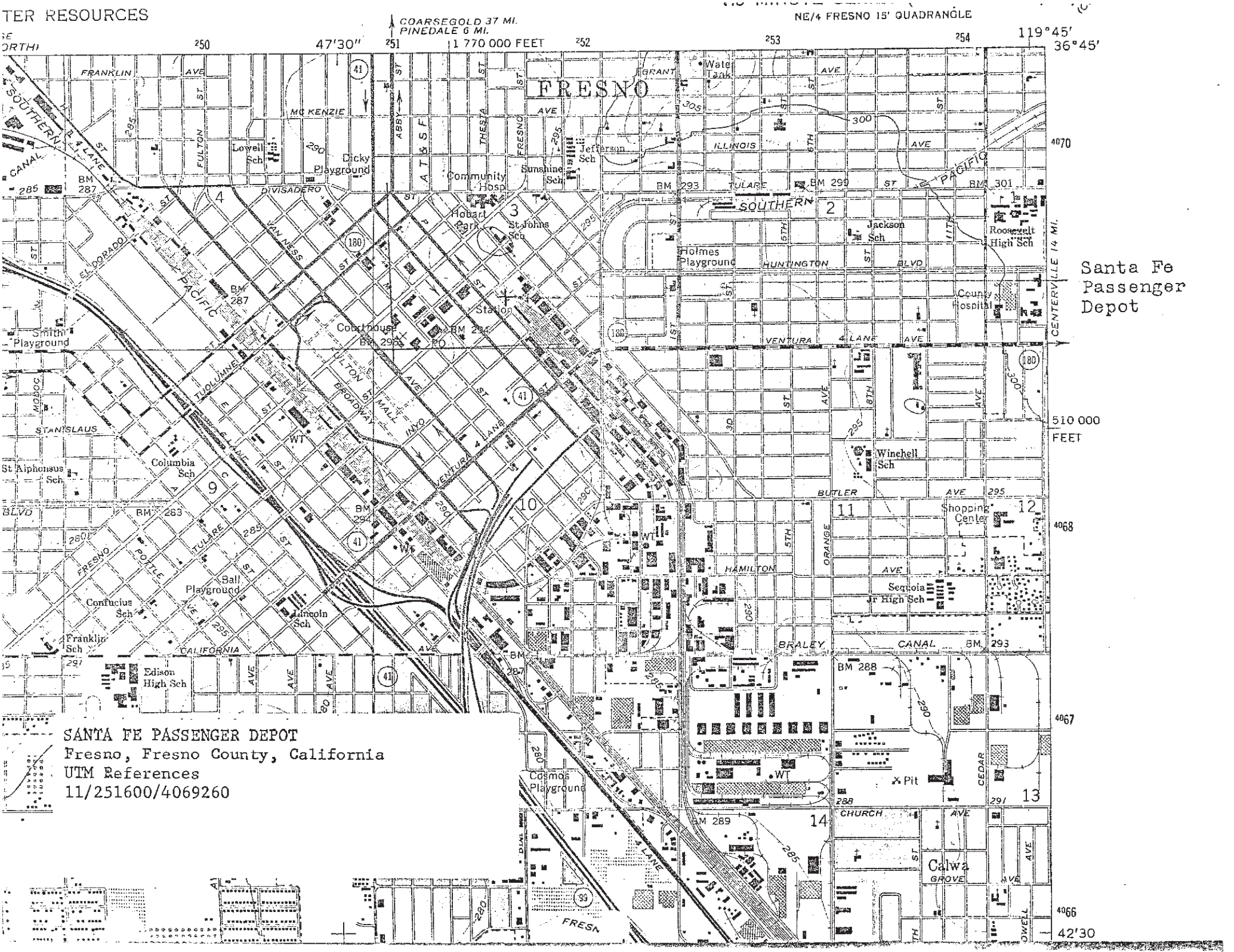
21. Main theme of the historic resource: (Check only one): a. Architecture ☒ b. Arts & Leisure ☐
    c. Economic/Industrial ☐ d. Exploration/Settlement ☐ e. Government ☐ f. Military ☐
    g. Religion ☐ h. Social/Education ☐

22. Sources: List books, documents, surveys, personal interviews, and their dates:

City of Fresno
Chamber of Commerce

23. Date form prepared: 6/27/78 By (name): William E. Patnaude
    Address: 1050 "S" Street City Fresno, California ZIP: 93721
    Phone: (209) 486-8150 Organization: Allen Y. Lew & William E. Patnaude, Inc.

(State Use Only)


TER RESOURCES
NE/4 FRESNO 15' QUADRANGLE
COARSEGOLD 37 MI.
PINEDALE 6 MI.
47'30"
1 770 000 FEET
119°45'
36°45'
FRESNO
Santa Fe Passenger Depot
510 000 FEET
42'30
SANTA FE PASSENGER DEPOT
Fresno, Fresno County, California
UTM References
11/251600/4069260

Santa Fe Passenger Depot

Comment on Integrity:

The original building has undergone remodeling and a number of additions. The interior has been completely altered. The exterior has suffered some alterations but remains largely intact, and representative of a handsome Mission style structure.

National Register Criteria of Evaluation: (Opinion)

Events ------- strong, site of an event of major state impact, enabled subsequent agricultural development of the valley.

Persons ------ strong on a statewide basis, the depot was designed and built by a subsequently nationally prominent business man. It was also associated with individuals of statewide prominence.

Type or Period a very good example, representative of some of the best railroad depot architecture of this era.

Information -- minor
Yield

General Comments:

The depot retains its original character and impact as an example of Mission Revival style architecture despite extensive interior alterations. The structure has high local and regional historic and architectural significance as well as statewide significance. It reflects a vital era in the development of California and particularly exemplifies the aura of Southern California around the turn of the century. Recommended for placement on the National Register at the local level of signifiance.

PJR

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-10-005266
HRI#
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page P1 of P4 *Resource Name or #: (Assigned by recorder) 2

P1. Other Identifier: BNSF Freight Loading Platform

*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County Fresno
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*b. USGS 7.5' Quad Fresno South Date 1963, photorevised 1981 T 14S R 20E; SE¼ of SW¼ of Sec. 3; MDM

c. Address Santa Fe Avenue City Fresno Zip 93721

d. UTM: (Give more than one for large and/or linear resources) Zone 10 ; 251780 mE/ 4069040 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
Located within Assessor's Parcel No. 468-350-49T.

*P3a. Description: (Describe resource and its major elements. Include design, materials condition, alterations, size, setting and boundaries) This loading platform has a maximum length and width of approximately 420 feet long by 50 feet wide and is constructed of at least eight courses of six-inch-wide-board-formed poured concrete. It is probably dirt filled with a concrete cap and sides. The structure curves slightly to the southeast at the southerly end. The midsection of the platform measures about 50 feet east-west by 130 feet north-south. The southern "tail" measures approximately 25 feet east-west by 90 feet north-south and the northern "tail" measures about 12 feet east-west by 200 feet north-south. These three sections are aligned on their eastern sides, which leaves the midseetion to jut out the furthest to the east of all the sections. A ramp is at the northern end of the bumped-out midsection; the ramp is constructed of a concrete base, timber railroad tie side walls, and an asphalt surface. There is an inlet, approximately four-foot-deep by two-foot-high, with a 10-foot-wide opening, at the southern end of the jutted-out section; an alignment of railroad track stops at this inlet. A seven-riser concrete stair is at the southern end of the southern "tail."

(continued)

*P3b. Resource Attributes: (List attributes and codes) HP17. Railroad Depot: loading platform

*P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures and objects.)

P5b. Description of Photo: (View, date, accession #) View East, 7/11/2001, Frame 0, Accession #01-910-BW-2

*P6. Date Constructed/Age and Sources: ☒Historic ☐Prehistoric ☐Both
1936

*P7. Owner and Address:
City of Fresno, Public Works
Fresno City Hall
2600 Fresno Street
Fresno, CA 93721

*P8. Recorded by: (Name, affiliation and address) Tracy Bakic
PAR Environmental Services, Inc.
P.O. Box 160756
Sacramento, CA 95816-0756

*P9. Date Recorded: 7/11/2001

*P10. Survey Type: (Describe)
Intensive Survey and Evaluation

*P11. Report Citation: (Cite survey report and other sources, or enter "None") *Historic Architectural Survey Report for the Santa Fe Depot Renovation Project, City of Fresno, Fresno County, California* (PAR 2001)

*Attachments: ☐NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet ☒ Building, Structure and Object Record
☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record
☐ Artifact Record ☐ Photograph Record ☐ Other (List)

DPR 523A (1/95) *Required Information

***P3a.**

Three-inch by three-inch angle sections provide an edging around the perimeter of the concrete slab floor; some of the edging has fallen from the structure. The full lengths of the east side of the northern "tail" and the west side of the midsection have four-inch-high by two-inch-deep inlets into which one-inch-diameter metal electrical conduit is set into; some of the conduit has fallen or has been removed from the inlets. Connections between electrical conduit sections are formed by pipe fittings or by what appear to be electric boxes. Inserted into the platform floor of the midsection are two rectangular areas, which are located just south of an extant rectangular open-sided shed. The larger of the two rectangular areas measures approximately eight feet north-south by 13 feet east-west; it is framed with three-inch wide angle iron and is infilled with concrete. The smaller of these rectangular areas is located between the shed and the larger rectangular area and measures about one foot, six inches north-south by two feet east-west; it is framed by three-inch-wide angle iron and its opening is covered with a metal plate. These rectangular areas are probably related to original recessed scales.

The aforementioned open-sided shed measures about 84 feet long by 25 feet wide and is constructed of steel framing members. It includes eight H-columns, four evenly spaced on the eastern and western sides, I-beam top plates on the 84-foot sides, channel beam top plates on the 25-foot sides, and low-pitched metal trusses. The low-pitched gable roof is surfaces with corrugated metal. The H-column supports are secured to the concrete platform; L-sections are riveted to two sides of the H-column which are then bolted square metal base plate and the base plated is bolted into the concrete platform floor. Metal-shaded industrial light fixtures are attached along the central length of the interior of the structure and along the western side of the exterior. Electrical/utility boxes are located at the northern end of the east side of the shed.

Standard gauge railroad tracks are associated with the platform. A pair of tracks extends close to the east side of the platform and terminates at a wooden bumper at the northern end of the platform. The wooden bumper is constructed of between 90 and 100 seven-inch by seven-inch timber ties that are set into the ground and extend above ground approximately three feet. The bumper has a total length of approximately 26 feet and a total width of four feet. A single length of railroad track terminates at the four-foot-deep by two-foot-high inlet at the southern end of the midsection.

P5b.

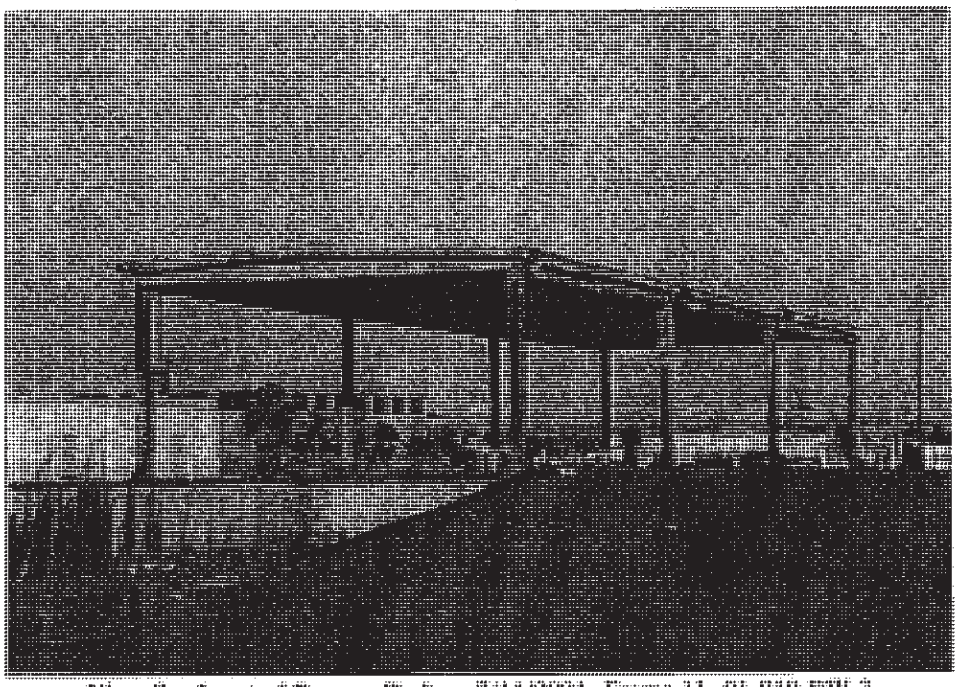
View Northwest, 7/11/2001, Frame 6, 01-910-BW-2

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-10-005266
HRI#
Trinomial

Page P3 of P4 *Resource Name or #: (Assigned by recorder) 2
*Recorded by: Tracy Bakic *Date 7/11/2001 ☒ Continuation ☐ Update

P5b.



View Southeast of Storage Shelter, 7/11/2001, Frame 11, 01-910-SW-3

DPR 523L (1/95)

P-10-005266

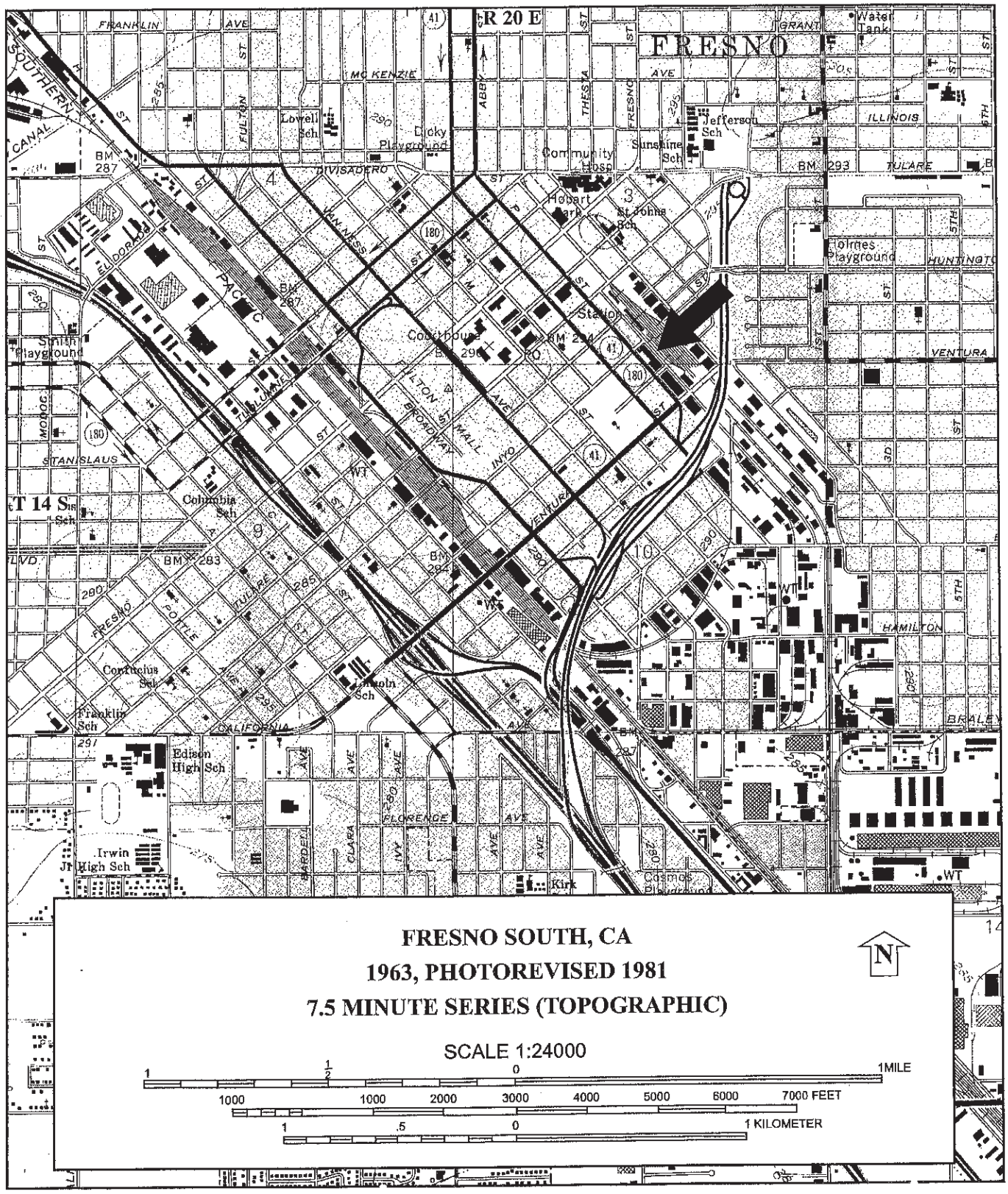
State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI #
Trinomial

Page P4 of P4 * Resource Name or # (Assigned by recorder) 2

*Map Name: Fresno South 7.5 Minute USGS quadrangle *Scale 1:24,000 * Date of map: 1963, Photorevised 1981



DPR 523K (1/95)

* Required Information

P-10-005266

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # P-10-005266
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 6Z

Page B1 of B2 *Resource Name or #: (Assigned by recorder) 2

B1. Historic Name: Atchison, Topeka, & Santa Fe Railroad Co. Auto Loading Dock

B2. Common Name: Burlington Northern & Santa Fe Railroad Freight Loading Platform

B3. Original Use: Freight Loading Platform B4. Present Use: Freight Loading Platform

*B5. Architectural Style: Early Twentieth Century Railroad Loading Dock

*B6. Construction History: (Construction date, alterations, and date of alterations)

According to building records on file at Burlington Northern and Santa Fe Railway Company (BNSF) this loading platform, including the open-side shed, was built in 1936 (BNSF 2001b). The northern "tail" of the platform may be a remaining portion of an earlier loading platform that was set in place by 1918 (Sanborn Map Company 1906, 1918, 1948, 1950).

*B7. Moved? ☒No ☐Yes ☐Unknown Date: _____ Origiual Location: _____

*B8. Related Features:

Three spurs of the Atchison Topeka and Santa Fe (ATSF) railroad are associated with this platform. By 1918 the two parallel spurs that extend along the east side of the platform appear to have been in place (Sanborn Map Company 1906, 1918). Along with the platform, these two spurs are still being used by BNSF. At the junction point of these two spurs (where they join to become one track heading south) there is a manually operated switching gear set into the ground and attached to the tracks. By 1948, the spur that terminates at the south end of the southern "tail" of the platform was installed (Sanborn Map Company 1918, 1948). This railroad spur, although no longer in use, is still apparent in association with the platform.

This platform appears to have been part of a larger ATSF freight complex that included a freight house and earlier platform areas. The original ATSF freight house was built at part of the San Francisco & San Joaquin Valley Railroad (SFSJV) in 1897. This freight house burned and was rebuilt in 1905. A new northern end was added to the building in 1905 as well. In 1915 the original rebuilt portion was demolished and a new southern section was added to the building (Gustafson & Serpico 1997:163). BNSF files include drawings for this freight complex that are dated April 1915, some of them executed by G. W. Harris, Chief Engineer (BNSF 2001b). By 1918 a U-shaped platform extension was added to the southern end of the complex. Apparently in 1930 some other additions occurred, as well as the removal of a platform cover. Finally, in 1936 the subject platform was constructed (BNSF 2001b; Gustafson and Serpico 1997:163; Sanborn Map Company 1918). Except for the 1936 platform and a part of the earlier U-shaped platform, the freight complex was removed in 1985 (Gustafson and Serpico 1997:163). Directly west of where the 1915 addition was built is an extant parallel pair of long, thin concrete pads, each about 110-foot-long by two-foot, six-inch-wide. The pads are about 10 feet apart and their use is unknown.

B9a. Architect: Unknown b. Builder Trewitt, Shield, and Fisher (shed)

*B10. Significance: Theme N/A Area Fresno, California

Period of Significance N/A Property Type Loading platform Applicable Criteria N/A

(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity).

The extant loading platform at this site was constructed in 1936. A 1939 document labels the platform as an auto loading dock and describes it as having a recessed scale and a steel shed that was installed by the contracting firm of Trewitt, Shield and Fisher (BNSF 2001b). The subject property (eastern half of City Block 142) was acquired by SFSJV in 1896, and the only elements built there by 1898 were standard gauge railroad spurs. By 1906, there were also two warehouses, an icehouse, and a hand ear house on the property. By 1918, the previous four buildings were gone and more tracks and a platform were added. The platform appears to extend off of, and have been related to, the ATSF freight house (later known as National Warehouse) that was built-up between 1897 and 1930 on the eastern half of City Block 143 (Gustafson and Serpico 1997:163; Patnaude 1978; Sanborn Map Company 1906, 1918; Sanborn-Perris Map Company, Limited 1898). The northern "tail" of the extant platform may be a remaining part of this earlier platform. Although the freight house was removed in 1985, the extant loading platform continued to be used by ATSF (Gustafson and Serpico 1997:163). Since a 1995 merger, the platform has been used by BNSF (BNSF 2001a).

(continued)

***B10.**

Since the earlier-built freight house (National Warehouse) and majority of its platforms, with which the ATSF Freight Office was associated, have been removed, the freight office building's setting, feeling, and association have been altered. However, the building's Mission Revival style reflects and compliments the earlier-built Mission Revival-style Fresno Santa Fe Depot and thus speaks of the close association of ATSF's passenger and freight services and company's desire to visually strengthen their presence, despite the architectural style's loss of popularity by 1926 (McAlester & McAlester 1984:409).

B11. Additional Resource Attributes: (List attributes and codes) N/A

***B12. References:**

Burlington Northern and Santa Fe Railway (BNSF)

2001a Company Profile. BNSF web site. www.bnsf.com/media/html/company_profile.html.

2001b Documentation on file at BNSF, Fresno, California.

Gustafson K., and P. Serpico

1997 *San Francisco Coast Line Depots: Valley Division*. Omni Publications, Palmdale, California.

Patnaude, W. E.

1978 State of California Department of Parks and Recreation Forms: Historic Resources Inventory form for the National Warehouse. On file, City of Fresno, Department of Housing and Neighborhood Revitalization, City Hall, Fresno.

Sanborn Map Company

1906 *Insurance Maps of Fresno, Calif.* Sanborn Map Company, New York. On file, California State Library, California History Room, Sacramento.

1918 *Insurance Maps of Fresno, Calif.* Sanborn Map Company, New York. On file, California State Library, California History Room, Sacramento.

1948 *Insurance Maps of Fresno, Calif.* Sanborn Map Company, New York. On file, California State Library, California History Room, Sacramento.

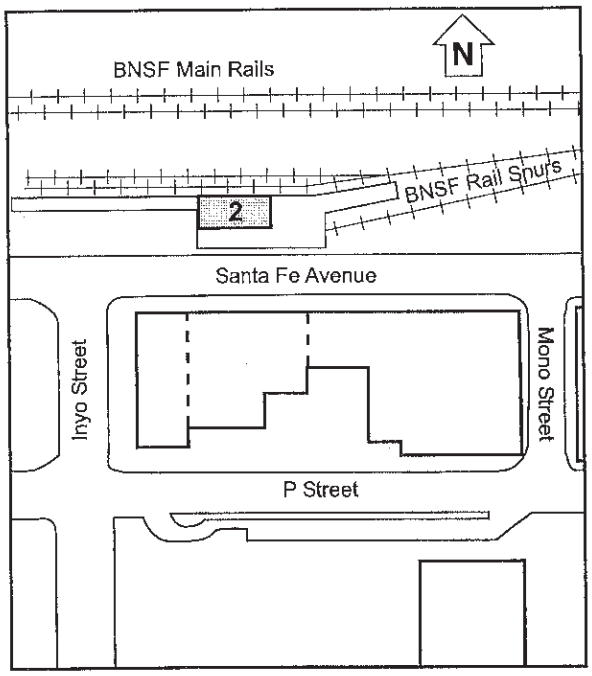
Sanborn-Perris Map Company, Limited

1898 *Insurance Maps of Fresno, Calif.* Sanborn-Perris Map Company, Limited, New York. On file, California State Library, California History Room, Sacramento.

B13. Remarks: None

***B14. Evaluator:** Tracy Bakic
PAR Environmental Services, Inc., PO Box 160756,
Sacramento, CA 95816-0756
Date of Evaluation: 7/20/2001

(This space reserved for official comments.)



State of California--The Resources Agency DEPARTMENT OF PARKS AND RECREATION **CONTINUATION SHEET**	Primary # 10-005266 (Update) HRI # Trinomial

Page 1 of 1 Resource name or # (Assigned by recorder)

Recorded by Terri Jacquimain Date October 15, 2012 ____ Continuation √ Update
Affiliation: CRM TECH, Colton Project No: CRM TECH 2561

A field inspection of the site area on October 15, 2012, revealed that the freight loading platform had been removed, evidently during a restoration and renovation project on the Santa Fe depot (Site 10-004412, which encompasses Site 10-005266) in 2001-2005, leaving no physical remains today.

Report Citation:

Bai "Tom" Tang and Terri Jacquemain
2013 Historical Resources Evaluation Report: San Joaquin Corridor Amtrak California Service, Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno, San Joaquin, Merced, and Fresno Counties, California

State of California □□□□e Re□our□e □□en□□
D□P□R□□ □□□ □□P□R□□ □□D R□CR□□□□□□
PR□□ □R□ R□C□RD

Primar□ □ 24-001881
□R□□
□rinomia□
□R□P □tatu□Code 6Z
□t□er Li□tin□□
Re□ie□ Code_____ Re□ie□er_____ Date_____

Pa□e 1 of 12 *Re□our□e □ame or □ (Assigned by recorder) CRM TECH 2312-1H

P1□ □t□er □dentifier: Burlington Northern Santa Fe (BNSF, formerly Atchison, Topeka and Santa Fe) Railway

***P2□** Lo□ation: _____ □ot for Pu□□i□ation √ □nre□tri□ted *a□Count□ Merced
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*□□ □□□□ □5□□uad□ Merced, Calif. Date 1961, photo-revised 1987
Planada, Calif. Date 1961, photo-inspected 1973
Plainsburg, Calif. Date 1960, photo-inspected 1976
Le Grand, Calif. Date 1961, photo-revised 1981
□7S; R14E; □e□tion□ 19, 20, 25, 26, 27, 28, and 29; M.D. □□□
□7S; R15E, □e□tion□ 27, 28, 29, 30, 34, and 35; M.D. □□□
□8S; R15E, □e□tion□ 1, 2, 12, and 29; M.D. □□□
□8S; R16E, □e□tion□ 7, 17, 18, 20, and 21; M.D. □□□
□□e□ation: Approx. 170-260 feet above mean sea level
□□ □ddre□□ N/A Cit□ N/A □ip Code N/A
d□ □□□: □one 10; □: 745,878 m□/ 4,122,346 m□□
□: 723,222 m□/ 4,132,128 m□
□□□ Deri□ation: ____USGS Quad √ GPS (NAD 1983)
e□ □t□er Lo□ationa□Data: (e.g., parcel #, directions to resource, etc., as appropriate) The recorded segment of the railroad (BNSF Mile Post 1039.9 to 1056.4) extends from near Ipsen Avenue in the community of Le Grand northwesterly to near M Street in the City of Merced.

***P3a□** De□□ription: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The site consists of a 16-mile segment of the BNSF line situated between MP 1039.9 and MP 1056.4. This line was originally constructed by the San Francisco and San Joaquin Valley (SF&SJV) Railway
(Continued on p. 3)

***P3□□** Re□our□e □ttri□ute□: (List attributes and codes) HP37: Railroad

***P□□** Re□our□e □Pre□ent:____Building √ Structure____Object____Site____District____Element of District
Other (isolates, etc.)

P5a□ P□oto□rap□ or Dra□in□ (Photograph required for buildings, structures, and objects.)

(See pp. 10-12)

P5□□De□□ription of P□oto: (view, date, accession #) Photos taken on February 2, 2009

***P□□ Date Con□tru□ted/□□e of □our□e□:** √ Historic____Prehistoric____Both

***P□□ □□ner and □ddre□□:** Burlington Northern Santa Fe Railway Company, 2650 Lou Menk Drive, Fort Worth, TX 76131

***P□□ Re□orded □□:** (Name, affiliation, and address) Josh Smallwood, CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324

***P9□ Date Re□orded:** February 2, 2009

***P1□□ur□e□ □□pe:** Project-related survey for compliance with CEQA and Section 106 of the NHPA (intensive-level)

***P11□ Report Citation:** (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang and Josh Smallwood (2009): Historical Resource Evaluation Report: Le Grand to Merced, CA Double Track Project, BNSF Railway Company Mainline Track (MP 1039.9 to 1056.4), Merced County, California. On file, Central California Information Center, California State University, Stanislaus.

***□tta□□ment□:** _____None √ Location Map √ Continuation Sheet √ Building, Structure, and Object Record
_____Archaeological Record_____District Record_____Linear Resource Record_____Milling Station Record
_____Rock Art Record_____Artifact Record_____Photograph Record_____Other (List):_____

B□. Historic Name: San Francisco & San Joaquin Valley Railway; Atchison, Topeka and Santa Fe Railway

B2. Common Name: Burlington Northern Santa Fe Railway

B□. Original Use: Railroad B□. Present Use: Railroad

*□5□ □r□□ite□tura□□t□□e: N/A

*□□□ **Con□tru□tion □i□tor□:** (Construction date, alterations, and date of alterations) The SF&SJV Railway was constructed from Stockton to Bakersfield in 1895-1897, along with a private telegraph line that served the railroad's needs. The line was acquired by the ATSF in 1899 and became a part of the ATSF's first line to reach the port of San Francisco. The rails, ties, and ballast have been replaced numerous times as part of upgrades and maintenance since its original construction in the late 1890s.

*□□□ □o□ed□ √ No ____ □es _____ Unknown **Date:**_____ □ri□ina□Lo□ation:_____

*□□□ **Re□ated □eature□:** Bridges, culverts, and other common railroad features (see pp. 11-12)

B□a. Architect: N/A b. Builder: San Francisco & San Joaquin Valley Railway Company

*□1□□ □i□nifi□an□e: □□eme Railroad transportation □rea California

Period of □i□nifi□an□e 1890s **Propert□ □□pe** Railroad **□pp□i□a□□e Criteria** N/A

(Discuss importance in terms of historical or architectural conte□t as defined by theme, period, and geographic scope. Also address integrity.) This segment of railroad line appears to meet Criterion A for the National Register of Historic Places and Criterion 1 for the California Register of Historical Resources because it is closely associated with an important event in 19th-century California history, namely the arrival of a second transcontinental railroad system in the Central Valley. The ATSF "invasion" spelled the end of the Southern Pacific Railway Company's virtual monopoly on modern transportation in California, which left profound and far-reaching impacts on the political, economic, and social life of the state. Most directly, the coming of a competing rail system served as a major boost to the growth of the Central Valley and the entire state.

(Continued on p. 5)

B□□. Additional Resource Attributes: (List attributes and codes) HP19: Bridges; HP20: Culverts

*□12□ **Referen□e□:** Lee Gustafson and Philip Serpico (1996): *Santa Fe Coast Lines Depots, Valley Division* (Omni Publications, Palmdale, California).

B□□. Remarks:_____

*□1□□ □□a□uator: Josh Smallwood

*Date of □□a□uation: February 2009

(Sketch Map with north arrow required.)

(See pp. 4-9)

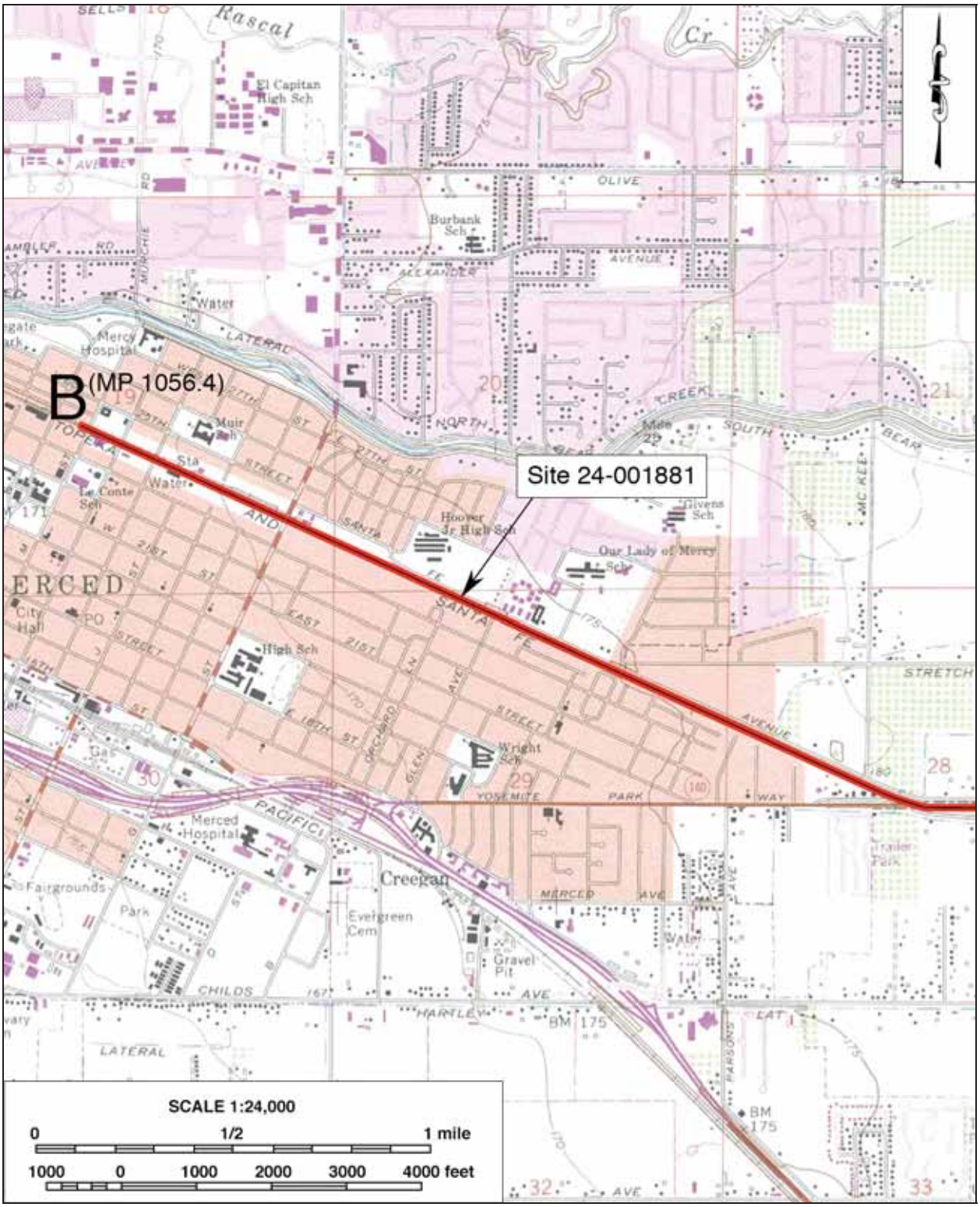
(This space reserved for official comments.)

***P3a□ De□□ription** (continued): Company in 1895-1897, and acquired by the Atchison Topeka-Santa Fe Railroad Company in 1899. The recorded segment is located between the community of Le Grand and the City of Merced, in Merced County. The rail line consists of a single standard gauge track laid on a raised bed of earth and crushed rock ballast. Some portions of this segment include sidings for passing trains. A single, abandoned telegraph pole was encountered near MP 1046.1.

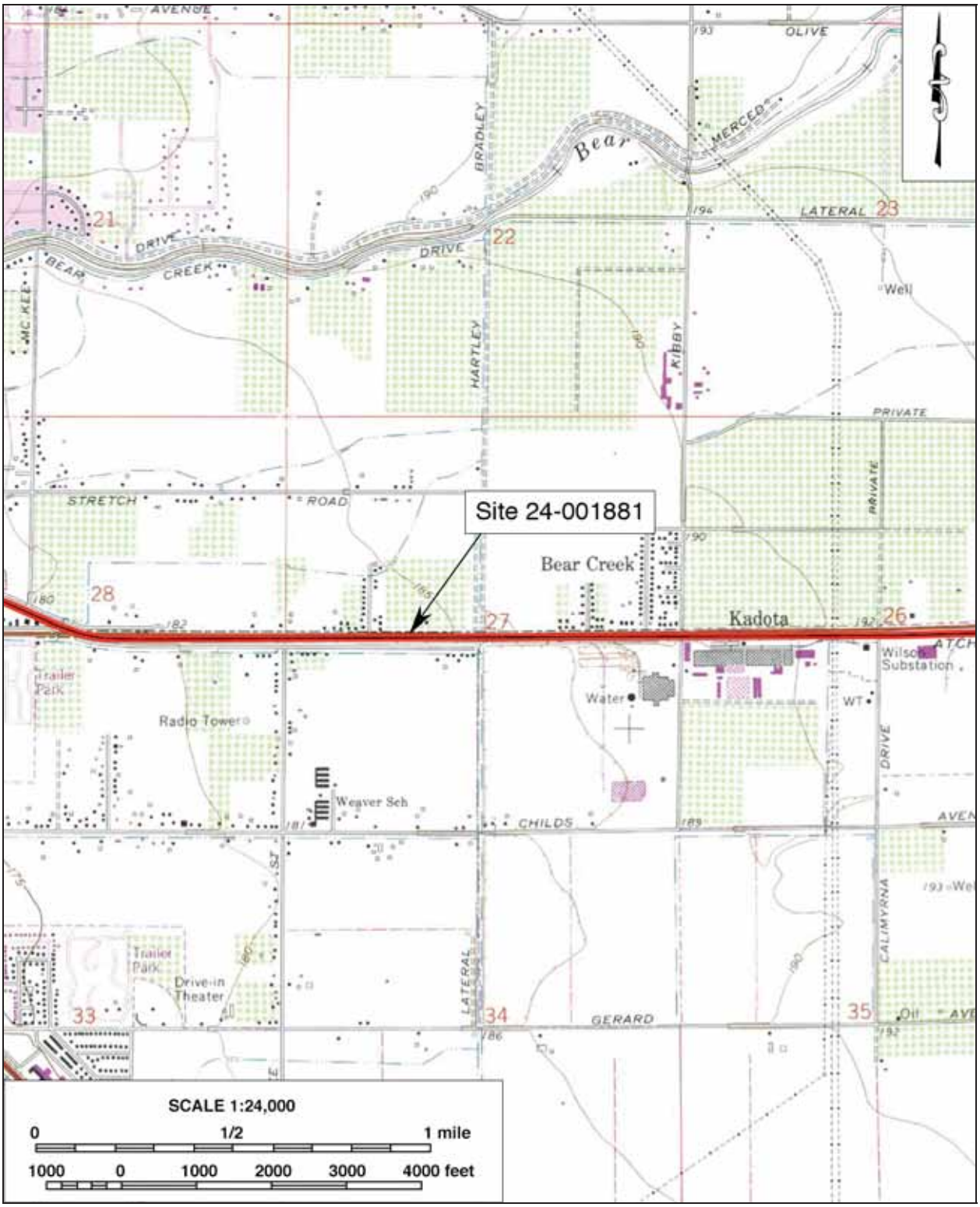
Two historic-period concrete culverts, one stamped with a date of 1920 and the other 1923, were observed crossing beneath the track, as were a total of five minor concrete or wood bridges over small drainages. These structures are considered associated features of the railway, and are all relatively minor components of standard design and construction, with no special architectural or engineering merits to set them apart from the many similar features found along other segments of the railroad.

Since its construction in the 1890s, the physical features associated with the railway have all been replaced and upgraded over the years, and many of them are evidently modern in origin. Consequently, the existing rail line, which is the principal feature of the site, exhibits no particular historic characteristics, as can be expected from an active line that remains in use today.

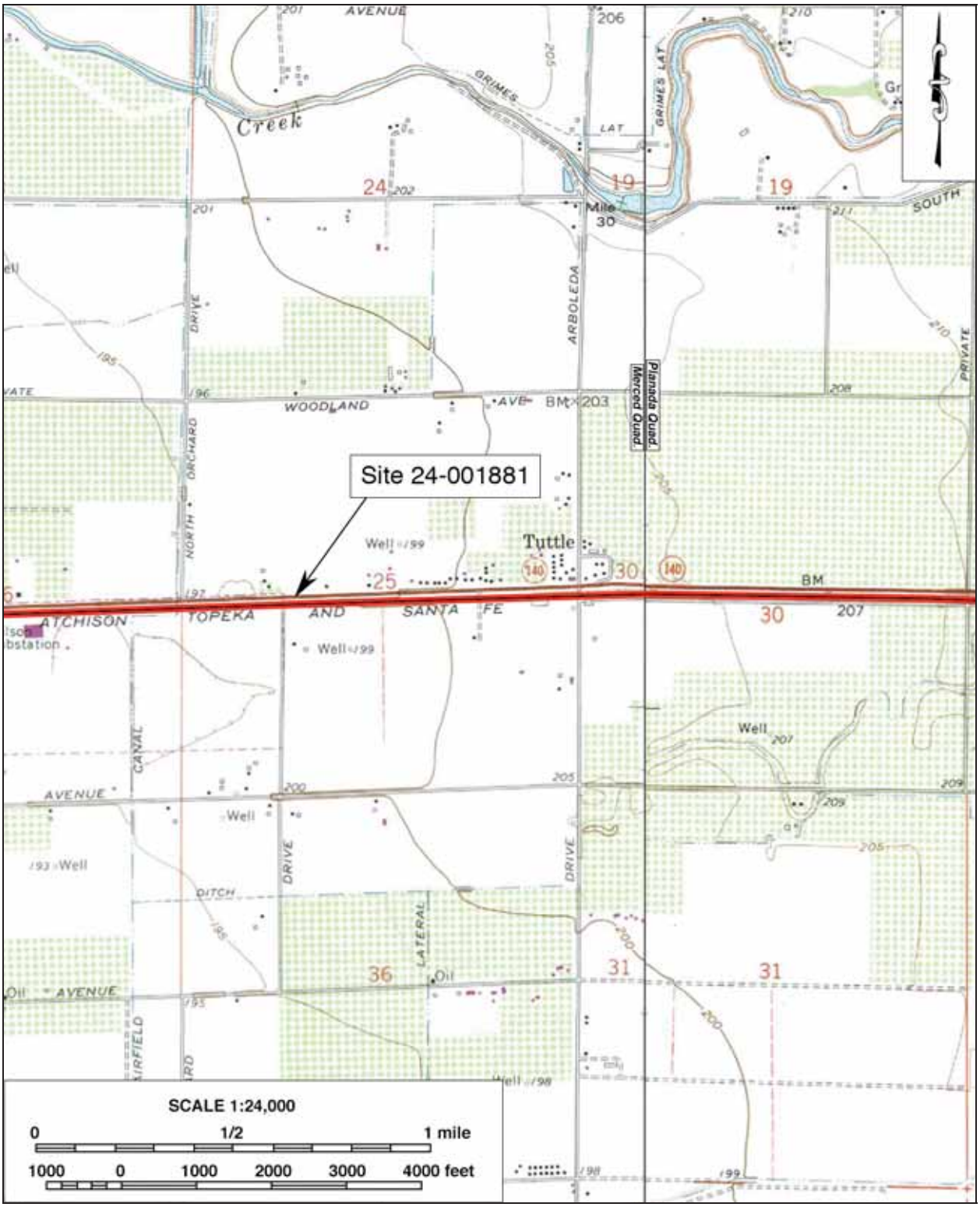
***□1□□ □i□nifi□an□e** (continued): However, as stated above, most of the physical components of the site have since been replaced or upgraded repeatedly in order to sustain continuous service through the past 110 years. As a result, other than the aspect of location, the existing railway and its associated features, as working components of the modern transportation infrastructure, do not retain sufficient historic integrity to relate to the site's period of significance. In addition, this segment of railway is not known to be an important or notable example of a type, period, region, or method of construction, it is not directly associated with the life of an important person, and it demonstrates little potential for any important archaeological data.


B (MP 1056.4)
Site 24-001881
SCALE 1:24,000
0 1/2 1 mile
1000 0 1000 2000 3000 4000 feet

*□ap □ame: Merced, Calif. *□□a□e: 1:24,000 *Date of □ap: 1961, photo-revised 1987

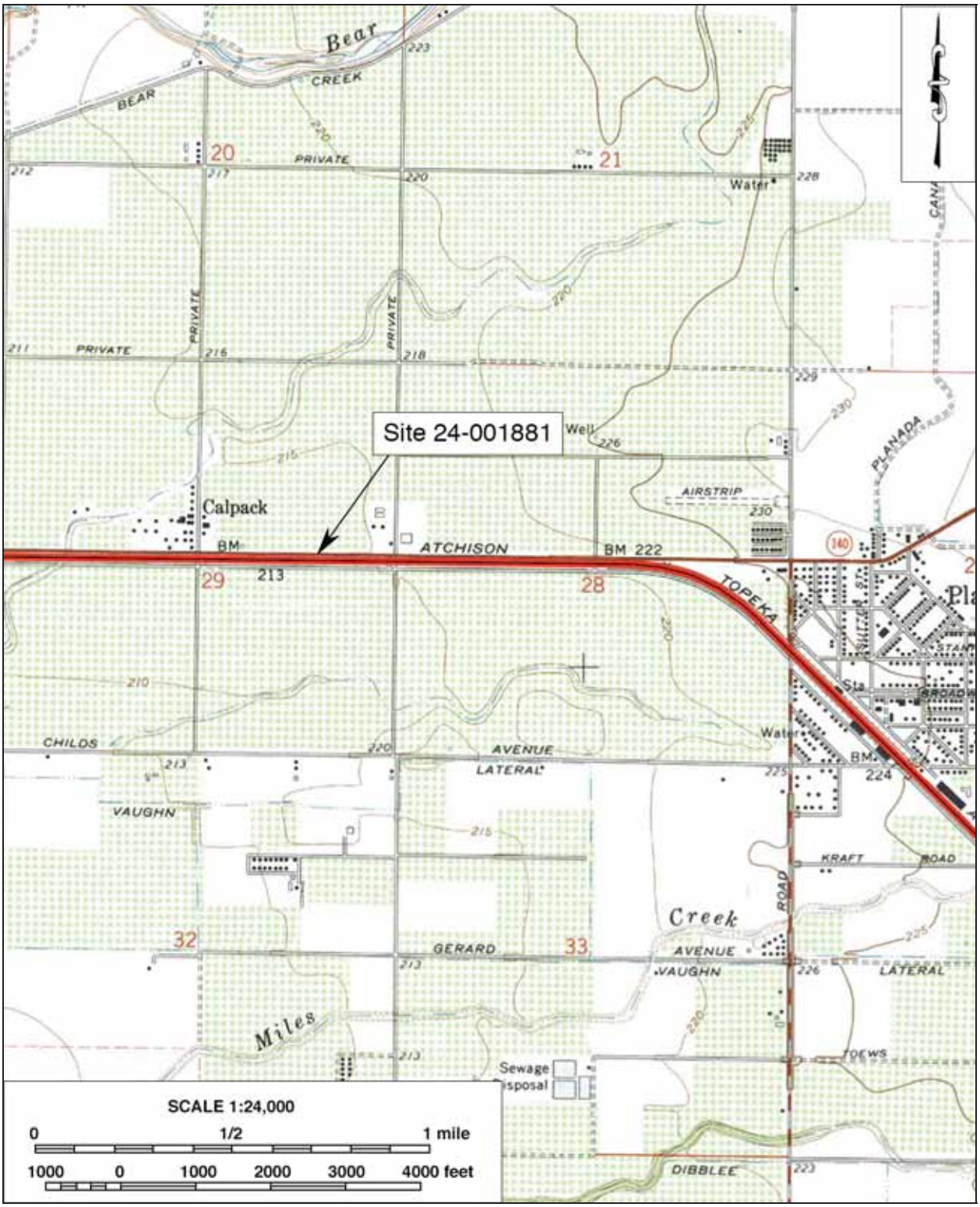


*□ap □ame□: Merced, Calif./Planada, Calif. *□□a□e: 1:24,000
*Date of □ap□: 1973 and 1987 editions



*Re□our□e □ame or □ (Assigned by recorder) CRM TECH 2312-1H

*□ap □ame: Planada, Calif. *□□a□e: 1:24,000 *Date of □ap: 1961, photo-inspected 1973



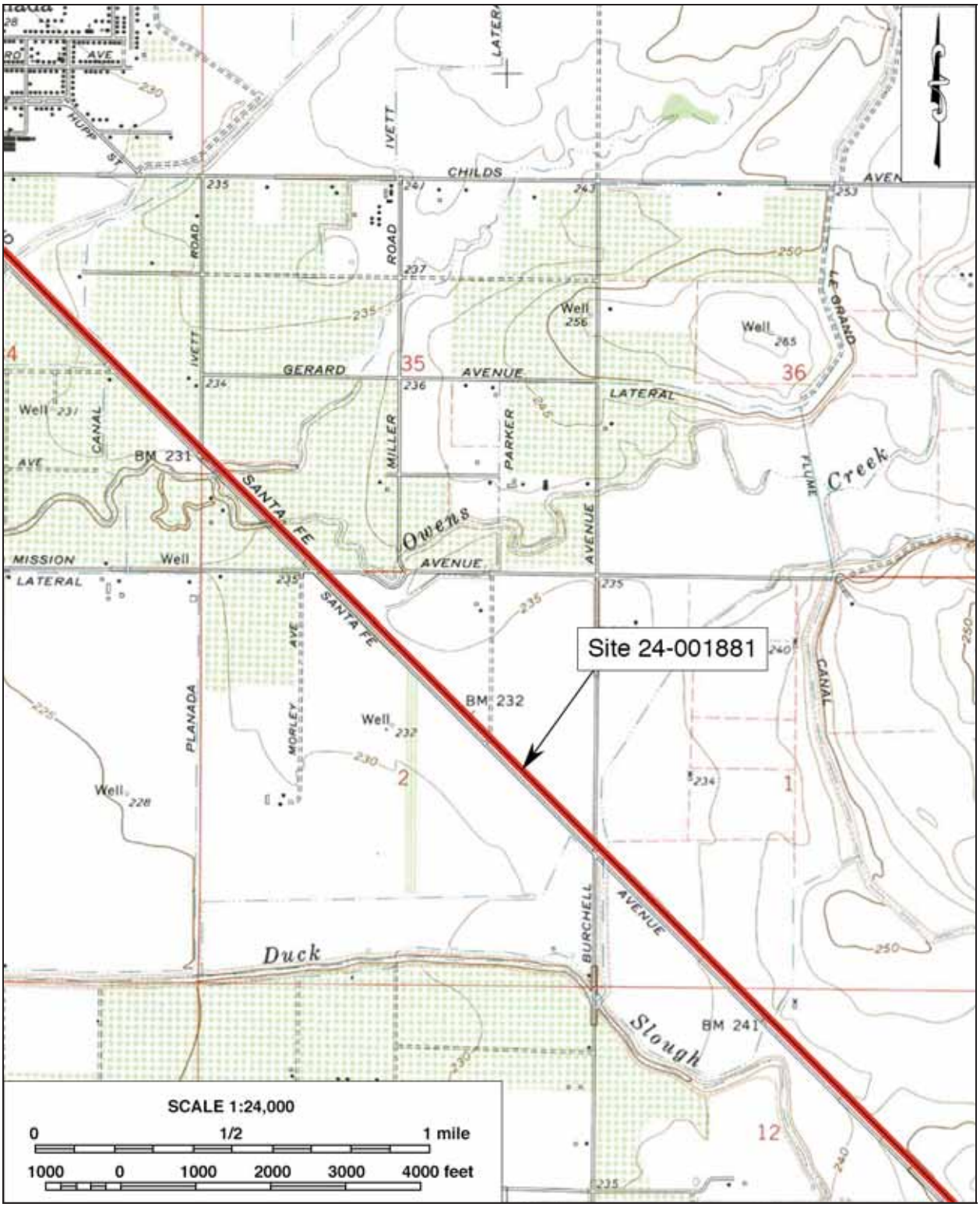
*Required information

□tate of Ca□ifornia□□□e Re□our□e□ □□en□□
D□P□R□□ □□□ □□P□R□□ □□D R□CR□□□□□□
L□C□□□□ □ □P

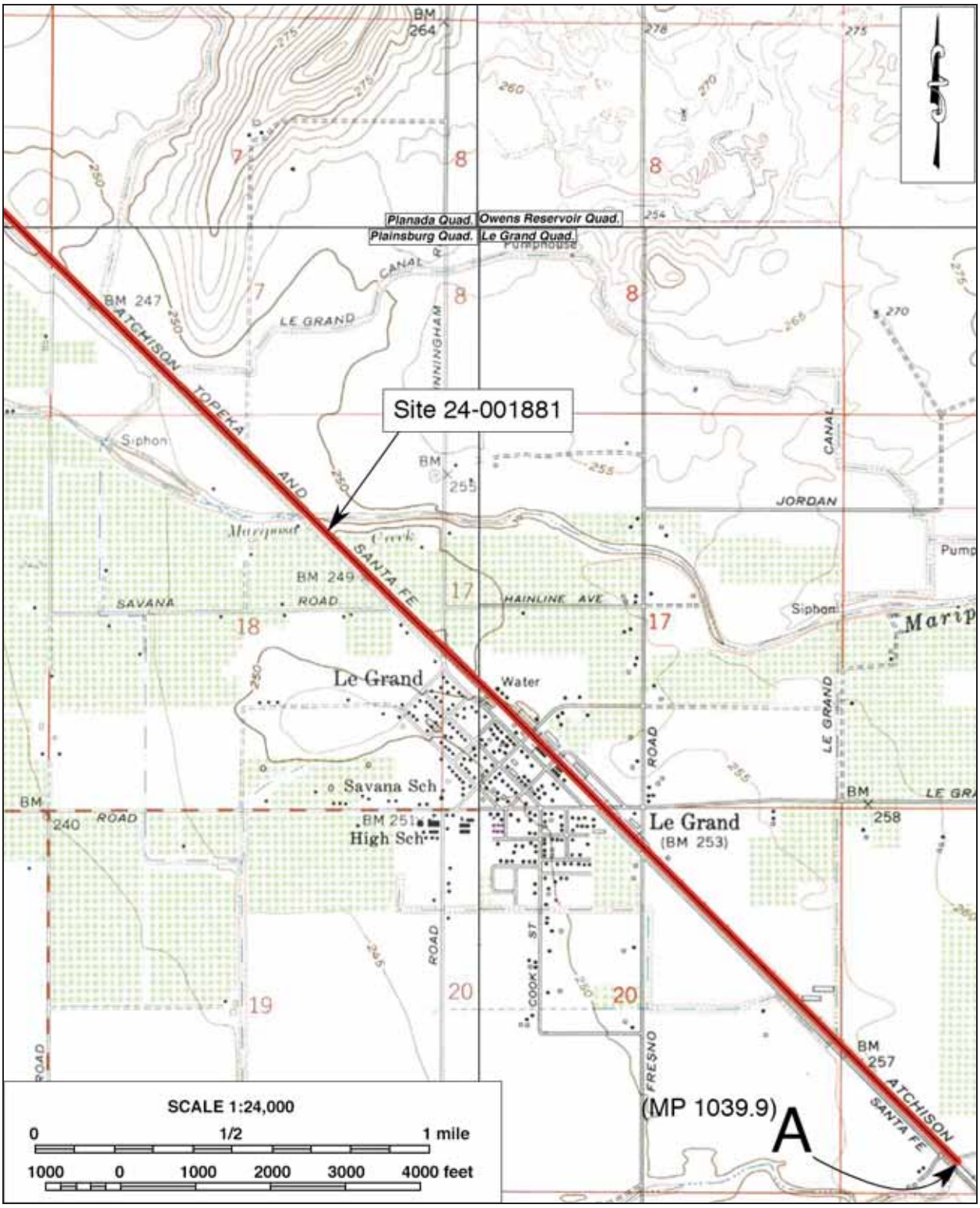
Primar□ □ 24-001881
□R□□
□rinomia□

Pa□e 8 **of** 12 ***Re□our□e □ame or □** (Assigned by recorder) CRM TECH 2312-1H

***□ap □ame:** Planada, Calif. ***□□a□e:** 1:24,000 ***Date of □ap:** 1961, photo-inspected 1973



*Map Name: Le Grand, Calif./Plainsburg, Calif./Planada, Calif. *Scale: 1:24,000
*Date of Map: 1973, 1976, and 1981 editions



Typical view of the existing railroad line (MP 1048.47)

P□oto □a□en □□ Josh Smallwood *Date February 2, 2009 √ Continuation ___Update

Abandoned isolated telegraph pole along the south side of the track (MP 1046.1)

Re□our□e name or □(Assigned by recorder) CRM TECH 2312-1H

P□oto □a□en □□ Josh Smallwood *Date February 2, 2009 √ Continuation ___Update

Concrete culvert with date stamp of 1923 (MP 1041.5)

P-39-002409

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

HISTORIC RESOURCES INVENTORY

(State use only)
Ser ____ Site ____ Mo. ____ Yr. ____
UTM ____ Q ____ NR 3 SHL ____
Lat ____ Lon ____ Era ____ Sig ____
Adm ____ T2 ____ T3 ____ Cat ____ HABS ____ HAER ____ Fed ____
U.T.M. 10/650730/4200940

IDENTIFICATION

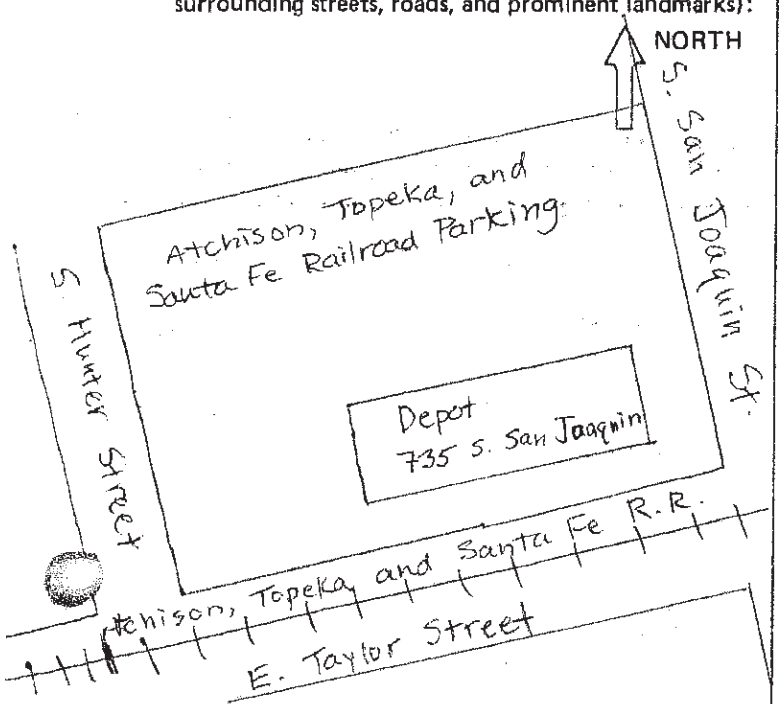
1. Common name: Santa Fe Station 39-5208-1525 Stockton, West 7.5
2. Historic name, if known: ----------
3. Street or rural address 735 south San Joaquin St.
   City: Stockton ZIP: 95206 County: San Joaquin
4. Present owner, if known: Atchison Topeka Santa Fe Address: ____
   City: Same ZIP: ---- Ownership is: Public ☐ Private ☒
5. Present Use: Railroad Station Original Use: Same
   Other past uses: ---------

DESCRIPTION

6. Briefly describe the present physical appearance of the site or structure and describe any major alterations from its original condition:

The Mission Revival train depot located at 735 S. San Joaquin Street has an espadana gable on the east end of the structure and a low pitched hipped roof with composition shingles in a diamond pattern. The building also has boxed eaves with modillions. The basic structural material is stucco. The windows are set in archway patterns. The building is three levels. The upper (third) level is the tower, the next lower is probably offices. This second level does not incorporate the whole building. The ground floor is the ticket office and waiting area. The tower has eight square windows with nine smaller panes in each, and, two bulls eye windows. The south side of the building has an arcade, two large arched wooden doors, and decorative ironwork over the windows. Also on this same side is a smaller espadana which is the main entrance to the interior of the station from the south side. The north facade of the building has a carriage porch with an espadana design. This faces the parking lot. This station is very typical of the Santa Fe stations along the line.

7. Locational sketch map (draw and label site and surrounding streets, roads, and prominent landmarks):



8. Approximate property size:
   Lot size (in feet) Frontage 200 ',
   Depth 300 ';
   or approx. acreage 1.38.
9. Condition: (check one)
   a. Excellent ☐ b. Good ☒ c. Fair ☐
   d. Deteriorated ☐ e. No longer in existence ☐
10. Is the feature a. Altered? ☐ b. Unaltered? ☒
11. Surroundings: (Check more than one if necessary)
    a. Open land ☐ b. Scattered buildings ☐
    c. Densely built-up ☐ d. Residential ☐
    e. Commercial ☒ f. Industrial ☐
    g. Other ☐ ____
12. Threats to site:
    a. None known ☒ b. Private development ☐
    c. Zoning ☐ d. Public Works project ☐
    e. Vandalism ☐ f. Other ☐ ____

RECEIVED FEB 16 2012

3/28/78

P-39-002409

NOTE: The following (Items 14-19) are for structures only.

14. Primary exterior building material: a. Stone ☐ b. Brick ☐ c. Stucco ☒ d. Adobe ☐ e. Wood ☐
    f. Other ☐ _____

15. Is the structure: a. On its original site? ☒ b. Moved? ☐ c. Unknown? ☐

16. Year of initial construction 1899 This date is: a. Factual ☒ b. Estimated ☐

17. Architect (if known): Unknown

18. Builder (if known): Unknown

19. Related features: a. Barn ☐ b. Carriage house ☐ c. Outhouse ☐ d. Shed(s) ☐ e. Formal garden(s) ☐
    f. Windmill ☐ g. Watertower/tankhouse ☐ h. Other ☐ _____ i. None ☒

SIGNIFICANCE

20. Briefly state historical and/or architectural importance (include dates, events, and persons associated with the site when known):

Atchison, Topeka, and Santa Fe Railroad was one of the first (along with Southern Pacific) to build Mission Revival stations in California and the Southwest. The first ones constructed were in San Juan Capistrano (AT and SF) and Burlingame (SP) in 1893-94. Only a few other stations were designed in the new style prior to 1900--one of these was the elaborate Santa Fe station in Stockton. Begun in 1899, this depot was illustrated several times in pamphlet literature of the San Joaquin Valley and in California Architect and Engineer. During the first decade of the twentieth century almost all new California railroad stations were Mission Revival in design. The choice was made in order to promote the state and to encourage tourism. In October 1896, the first train was operated from Stockton to Fresno. At this time the line was the Santa Fe-San Joaquin Valley Railroad, called the "Valley Road." This line when completed in 1898 was the only railroad competing with the Southern Pacific monopoly in this area. It is registered as a local landmark.

21. Main theme of the historic resource: (Check only one): a. Architecture [1] b. Arts & Leisure ☐
    c. Economic/Industrial [2] d. Exploration/Settlement [3] e. Government ☐ f. Military ☐
    g. Religion ☐ h. Social/Education ☐

22. Sources: List books, documents, surveys, personal interviews, and their dates:

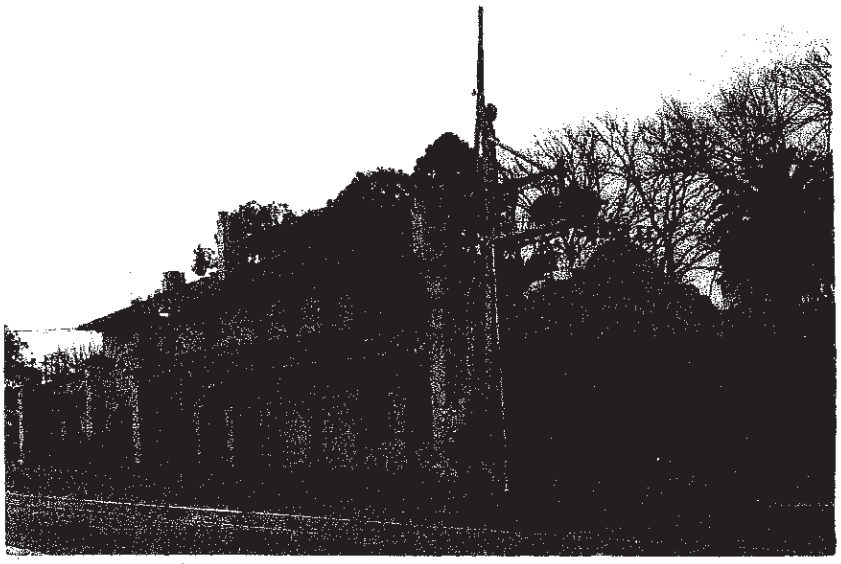
Stockton Record (8-7-1954, p. 11 and 9-22-59, p. 7) at Stockton Public Library, Plat Books (1897-1920) and Sanborn Maps (1917-1964 and 1972) at Historical Building Survey office, City Directories (1912-1930) at Stockton Public Library, and tax assessor records (current) at City Hall Annex.

23. Date form prepared: 11029-79 By (name): Kristin Owen Linda Turkette
    Address: 445 W. Weber City Stockton Zip 95202
    Phone: (209) 4625583 Organization: Historical Building Survey

(State Use Only)

P-39-002409

DEC • 79



• DEC • 79

State of California □□□□e Re□our□e □□en□□
D□P□R□□ □□□ □□P□R□□ □□D R□CR□□□□□□

PR□□ □R□ R□C□RD

Primar□ □ 39-005141
□R□□
□rinomia□
□R□P □tatu□Code 6Z
□t□er Li□tin□□
Re□ie□ Code_____ Re□ie□er_____ Date_____

*Re□our□e □ame or □ (Assigned by recorder) CRM TECH 2561-1

P1□ □t□er □dentifier: Marble Palace, Inc.

***P2□ Lo□ation:** ____□ot for Pu□□i□ation √ □nre□tri□ted *a□Count□ San Joaquin
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*□□ □□□□ □5□□uad Stockton West, Calif. **Date** 1987 (photorevised)
□1N R□E; M.D. □□□ (within the Campo de los Franceses land grant)
□e□ation: Approximately 17 feet above mean sea level
□□ □ddre□□ 711 S. San Joaquin Street **Cit□** Stockton **□ip** 95203
d□ □□□: (Give more than one for large and/or linear resources) □one 10 ; 650624 m□/ 4201207 m□
□□□ **Deri□ation:** ____USGS Quad √ GPS
e□ □t□er Lo□ationa□Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 149-070-32; on the western side of San Joaquin Street ande south of Hazelton Avenue

***P3a□ De□□ription:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The main mass of this three-story industrial warehouse is square in shape, with a one-story addition attached near the northern end of the east-facing primary façade. Painted dark tan, the building is flat-roofed, but has a ventilation/monitor loft with sloping sides and a flat top over most of the roof area. A ribbon of divided-pane windows, both fixed and hinged, line the non-sloping sides of the loft on the north and the south. Attached to the addition and extending to the end of the building is a wide *(Continued on p. 3)*

***P3□□ Re□our□e □ttri□ute□:** (List attributes and codes) HP8: Industrial building

***P□□ Re□our□e□Pre□ent:** √ Building ____Structure ___Object ____Site ____District ____Element of District
Other (isolates, etc.)

P5a□ P□oto□rap□ or Dra□in□ (Photograph required for buildings, structures, and objects.)

P5□□De□□ription of P□oto: Photo taken on October 17, 2012, 2011; view to the west

***P□□ Date Con□tru□ted/□□e of □our□e□:** √ Historic ____Prehistoric ____Both
Ca. 1958 (see Items B6 and B12 for details)

***P□□ □□ner and □ddre□□:** Marble Palace, Inc. (on site)

***P□□ Re□orded □□** (Name, affiliation, and address): Terri Jacquemain, CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324

***P9□ Date Re□orded:** October 17, 2012

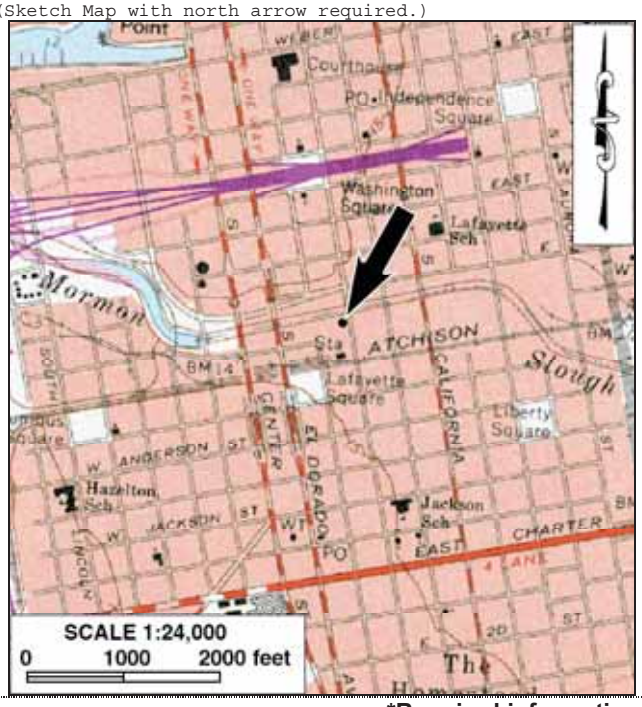
***P1□□ur□e□ □□pe:** Intensive-level survey for Section 106 and CEQA compliance purposes

***P11□ Report Citation:** (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang and Terri Jacquemain (2013): Historical Resources Evaluation Report: San Joaquin Corridor Amtrak California Service Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno, San Joaquin, Merced, and Fresno Counties, California

***□tta□□ment□:** _____None _____Location Map √ Continuation Sheet √ Building, Structure, and Object Record
_____Archaeological Record _____District Record _____Linear Resource Record _____Milling Station Record
_____Rock Art Record _____Artifact Record _____Photograph Record _____Other (List):_____

B□. Historic Name: W.P. Fuller & Co. B2. Common Name: Marble Palace, Inc.
B□. Original Use: Industrial B□. Present Use: Industrial
*□5□ □r□□ite□tura□□t□□e: Modern
*□□□ **Con□tru□tion □i□tor□:** (Construction date, alterations, and date of alterations) According to City records, a new construction permit for an office and warehouse was issued in April 1958 to W.P. Fuller & Co., which contracted Shepard & Green of Stockton for the construction. W.P. Fuller & Co. traces its origins to Fuller & Heather, formed in Sacramento by William Parmer Fuller and Seton Heather, "Importers and Wholesale Dealers in Paints, Oils, French Window Glass,
(Continued on p. 3)
*□□□ □o□ed□ √ No ____□es ____Unknown **Date:**_____ □ri□ina□Lo□ation:_____
*□□□ **Re□ated □eature□:** See Item P3a.
B□a. Architect: Unknown b. Builder: Shepherd & Green
*□1□□ □i□nifi□an□e: □□eme Mid-20th century industrial development
□rea Stockton **Period of □i□nifi□an□e** Post-WWII
Propert□ □□pe Industrial warehouse □pp□i□a□e Criteria N/A
(Discuss importance in terms of historical or architectural conte□t as defined by theme, period, and geographic scope. Also address integrity.) A fairly common specimen of a mid-20th century industrial warehouse built in the then-popular Modernist architecture, this plain-looking, utilitarian building is not known as an important or particularly notable example of its style, type, period, region, or method of construction. No persons of recognized historic significance have been
(Continued on p. 3)
B□□. Additional Resource Attributes: (List attributes and codes)_____
*□12□ **Referen□e□:** City of Stockton building safety records; California Historial Society: Guide to the W.P. Fuller & Co. (San Francisco, Calif.) Records, 1896-1921 (Online Archive of California, http://www.oac.cdlib.org/findaid/ark:/13030/tf7s2005dh/); Betty McComb: Building of the New St. Mary's Church in Stockton, California (*San Joaquin Historian* XI:2, April-June 1975); website of Marble Palace, Inc. (http://www.marblepalaceinc.com/).
□□. Remarks:_____
*□1□□ □□a□uator: Terri Jacquemain
*Date of □□a□uation: April 2013

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

Re□orded □□ Terri Jacquemain Date October 17, 2012 √ Continuation ___ Update

***P3a□ De□□ription** (continued): metal sunshade supported by square metal poles, which shelters a concrete walkway leading to a roll-up aluminum door and a sliding double-size aluminum door, which are partially concealed behind fences fenced. A narrower sunshade, set lower, wraps around the northern, eastern, and southern sides of the addition. Sporting a less utilitarian appearance with its large plate-glass windows, steel-framed glass doors, and generous signage, the addition accommodates public access to the showroom.

The southern façade features a centered two-story entry, narrow for its height, with an attached metal frame, presumably for lifting large or heavy loads. The eastern third of the northern façade features fixed windows with divided panes on the ground floor and aluminum-framed sliders on the second floor. The exterior walls of the building are otherwise windowless, but there is a sealed window opening at the northwestern corner, near the top of the rear façade. The building is surrounded by concrete pavement and enclosed by a chain link fence. The property is bounded by the Stockton Amtrak Station on the south and the Mormon Slough on the north, within an area of light industry, with residential housing to the south. It is currently occupied by Marble Palace, Inc., and is in good condition.

***□□□ Con□tru□tion □i□tor□** (continued): Brushes, Varnishes, Turpentine, Glue, Gold Leaf, Artists' materials, etc.," in 1857. In 1862, Fuller & Heather expanded, with Heather remaining in Sacramento to manage what would become a branch operation while Fuller established new headquarters in San Francisco. The W.P. Fuller & Co. warehouse in San Francisco is now listed in the National Register.

The contractor, Shepard & Green, is a longtime Stockton firm, evidently most noted for building the circa 1942 St. Mary's Church on Rose Street in Stockton, today called the Cathedral of the Annunciation. According to available records the firm remains in business as of 2012, with John Shepherd as president.

The building was remodeled in 1965 to add an industrial laundry and a boiler room, but was otherwise left relatively unaltered through the beginning of the 1980s. At that time, the building underwent extensive renovations, resulting in additional storage area, offices, a turbine power generator building, evaporative coolers, and new roofing. Around 1986, a few years after these alterations, Marble Palace, Inc., the current owner and occupant, acquired the property. More recently, two sheds on the property were removed in 1991, and minor improvements and repairs were made in 1996-1998, including a new roof, partial replacement of the fence, new heating and cooling equipment, a new exit door and landing, repairs to the front canopy, and the addition of a mixing room.

***□1□□ □i□nifi□an□e** (continued): identified in association with its history, nor have any important historical events. The designer of the building is unknown, and there is no evidence that the builder, Shepard & Green of Stockton, received wide recognition for significant contributions to the field, or that this building represents an outstanding example of the firm's work. Based on these considerations, this building is determined not to be eligible for listing in the National Register of Historic Places or the California Register of Historical Resources.

State of California □□□□e Re□our□e □□en□□
D□P□R□□ □□□ □□P□R□□ □□D R□CR□□□□□□

PR□□ □R□ R□C□RD

Primar□□ 39-005142
□R□□
□rinomia□
□R□P □tatu□Code 6Z
□t□er Li□tin□□
Re□ie□ Code_____ Re□ie□er_____ Date_____

*Re□our□e □ame or □ (Assigned by recorder) CRM TECH 2561-2

P1□ □t□er □dentifier: Geiger Manufacturing, Inc.

***P2□ Lo□ation:** ____ □ot for Pu□i□ation √ □nre□tri□ted *a□Count□ San Joaquin
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*□□ □□□□ □5□□uad Stockton West, Calif. **Date** 1987 (photorevised)
□1N R□E; M.D. □□□ (within the Campo de los Franceses land grant)
□e□ation: Approximately 19 feet above mean sea level
□□ □ddre□□ 1110 E. Scotts Avenue **Cit□** Stockton **□ip** 95205
d□ □□□: (Give more than one for large and/or linear resources) □one 10 ; 651640 m□/ 4201405 m□
□□□ **Deri□ation:** ____USGS Quad √ GPS
e□ □t□er Lo□ationa□Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 151-030-05; on the southwestern corner of Scotts Avenue and Pilgrim Street

***P3a□ De□□ription:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The Geiger Manufacturing complex consists of six buildings organized around an open area at the center of the property. Two of them, a two-story brick-and-steel building with wood cladding and long rectangular metal storage building, are evidently of modern origin, the former known to have been built around 1980, and do not possess any extraordinary architectural, or aesthetic merits to contribute to the site. The north-facing, one-story red brick building at the northeastern corner of the property is surmounted by medium-pitched side-gable roof that flattens at *(Continued on p. 3)*

***P3□□ Re□our□e □ttri□ute□:** (List attributes and codes) HP8: Industrial building complex

***P□□ Re□our□e □Pre□ent:** √ Building ____Structure ___Object ____Site ____District ____Element of District
Other (isolates, etc.)

P5a□ P□oto□rap□ or Dra□in□ (Photograph required for buildings, structures, and objects.)

See p. 5

P5□□De□□ription of P□oto: Photos taken on October 16, 2012

***P□□ Date Con□tru□ted/□□e of □our□e□:**
√ Historic ____Prehistoric ____Both
Ca. 1913-1945 (see Items B6 and B12 for details)

***P□□ □□ner and □ddre□□:** Geiger Manufacturing, Inc. (on site)

***P□□ Re□orded □□** (Name, affiliation, and address): Terri Jacquemain, CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324

***P9□ Date Re□orded:** October 16, 2012

***P1□□ur□e□ □□pe:** Intensive-level survey for Section 106 and CEQA compliance purposes

***P11□ Report Citation:** (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang and Terri Jacquemain (2013): Historical Resources Evaluation Report: San Joaquin Corridor Amtrak California Service Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno, San Joaquin, Merced, and Fresno Counties, California

***□tta□□ment□:** ____None ____Location Map √ Continuation Sheet √ Building, Structure, and Object Record
____Archaeological Record ____District Record ____Linear Resource Record ____Milling Station Record
____Rock Art Record ____Artifact Record ____Photograph Record ____Other (List):_____

State of California □□□e Re□our□e □□en□□ Primar□□ 39-005142
D□P□R□□ □□□ □□P□R□□ □□D R□CR□□□□□□ □R□□

□□□LD□□ □□□□R□C□□R□□□□D □□□□C□R□C□RD

*□R□P □tatu□ Code 6Z
*Re□our□e □ame or □ (Assigned by recorder) CRM TECH 2561-2

B□. Historic Name: Geiger Iron Works B2. Common Name: Geiger Manufacturing, Inc.
B□. Original Use: Industrial B□. Present Use: Industrial
*□5□ □r□□ite□tura□□t□□e: Vernaculer
*□□□ **Con□tru□tion □i□tor□:** (Construction date, alterations, and date of alterations) Four of the six structures comprising the Geiger Manufacturing complex were evidently constructed between the 1910s and 1945, while the other two are of modern origin. As early as 1913, a rectangular building was known to stand by the railroad tracks, along the southern property boundary. By 1917, the monitor-style main building, occupied by Geiger Iron Works, was present at the northwestern corner of the property, and the red brick building was also in

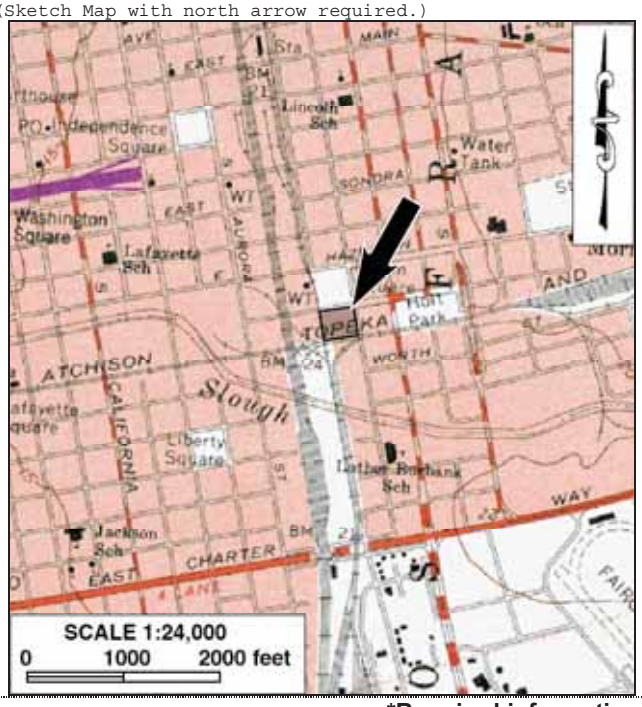
(Continued on p. 3)

*□□□ □o□ed□ √ No ____ □es ____ Unknown **Date:**_____ □ri□ina□Lo□ation:_____
*□□□ **Re□ated □eature□:** See Item P3a.
B□a. Architect: Unknown b. Builder: Unknown
*□1□□ □i□nifi□an□e: □□eme Early to mid-20th century industrial development
□rea Stockton **Period of □i□nifi□an□e** 1900-1945
Propert□ □□pe Industrial complex **□pp□i□a□□e Criteria** N/A
(Discuss importance in terms of historical or architectural conte□t as defined by theme, period, and geographic scope. Also address integrity.) The four historic-period buildings in the Geiger complex have been home to a distinguished local manufacturer for at least nearly a century, and are also associated with members of a prominent local family of

(Continued on p. 4)

B□□. Additional Resource Attributes: (List attributes and codes)_____
*□12□ **Referen□e□:** USGS topographic map, Stockton quadrangle (1:31,680; 1913); Sanborn Insurance Maps of Stockton, California (1917); *The Byron Times*, 12th Development Edition (1930-1931); City of Stockton building safety records; *The Stockton Record*: "Mother Superior" Retiring: Stockton Company Chooses First Non-Family Leader (January 3, 1988:B5); Roger Haack, President of Geiger Manufacturing, Inc., telephone interview on October 18, 2012; website of Geiger Manufacturing, Inc. (http://www.geigermfg.com/ about us.htm).
□□. Remarks:_____
*□1□□ □□a□uator: Terri Jacquemain
*Date of □□a□uation: April 2013

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

***P3a Description** (continued): the northern and southern edges and ends in a low parapet surrounding the roof, with a narrow metal coping atop. Five large divided-pane windows line the plain primary façade, with the main entrance to the building set at the western end, filled with a steel-framed glass double door surrounded by transom and sidelights. The windows and the entrance are secured with steel bars and screens. Two more of these large windows are found on the north half of the western façade, next to a vehicular entrance with a sliding metal door. A smaller but similar window is on the other side of this entrance. At the eastern end, a vehicular entrance with a metal rollup door is flanked by two large window openings that have been sealed with boards. Other than some door and window replacements, the building appears to be relatively unaltered, and is in good condition.

The main building in the Geiger complex, located on the northwestern corner of the property, is a rectangular-shaped, monitor-style shop surmounted by a low-pitched roof with wide eaves. The exterior walls consist of three bands of corrugated metal sheets fastened to the wood frame. A series of narrow, untrimmed window openings punctuate the north-facing primary façade. Stretching above these openings, "Geiger Manufacturing" is written in blue and white paint. Like the red brick building, an office entrance is found near the western end of the main façade, filled with a single door and sheltered by a small metal canopy. The western façade is windowless and has no entry, while the eastern façade has a centered, oversized entrance with a sliding metal door and a small window to the south of the entrance. The eastern end of the gabled monitor sports a ribbon of fixed windows, a few of which appear to have been sealed.

Adjacent to the southern side of the main building is a three-story, barrel-roofed corrugated metal building with straight sides. Wide openings, one-story tall, are centered on the eastern and western façades of the rectangular building, accompanied on the eastern façade by a regular entryway. Three large, divided-pane windows are set at the second-story level on the eastern façade, and matching window openings on the western façade have been sealed with corrugated metal panels.

Immediately to the south of this building is slightly smaller corrugated metal building, also built on an elongated rectangular plan. It is surmounted by a modified shed roof lined with 10 tall vent stacks at the apex. An oversized entryway with a sliding metal door is centered on the eastern side of this utilitarian structure. Two large window openings on the western façade have been sealed with corrugated metal sheets. The complex is bounded by Scotts Avenue to the north, Pilgrim Street on the east, the Burlington Northern Santa Fe Railway on the south, and vacant land on the west, in a mixed residential and industrial area.

***P3b Construction History** (continued): place on the northeastern corner, identified as a "stock warehouse." The barrel-roofed building adjacent to south of the main building was erected in 1945, and smaller building adjacent to it on the south may have been a part of the building originally extant in 1913.

Geiger Iron Works was founded by Joe Geiger, Sr., in 1904 in a small shop on West Weber Avenue in Stockton. With a local economy increasingly driven by agriculture, Geiger focused on specialized equipment for large-scale farming operations, such as celery cleaning machines, potato diggers, *(Continued on p. 4)*

Re□orded □□ Terri Jacquemain Date October 16, 2012 √ Continuation ___Update

*□□ **Con□tru□tion □i□tor□** (continued): beet cultivators, and olive and fruit graders, among other uniquely suited machines. Over the years, Geiger Manufacturing, Inc., adapted its production to both local and global changes. In 1930, as the ever-increasing number of automobiles demanded more and better roads, the company fabricated a semi-portable asphalt mixer, at the time the largest of its kind, that helped set a record for highway construction in the state. During World War II, it produced bomb casings and submarine doors. In more recent times, insulation panels for the NASA space shuttles, machines capable of extract trace gold from gravel, military rocket cones, and even a tortilla maker for a restaurant are among the projects completed.

Joe Geiger, Sr., was active in local civic affairs among those who championed for the deep-channel dredging to enhance the Port of Stockton, and was also active in local business circles. He died in 1930, after which his wife, Cora, stepped in until Joe Geiger, Jr., took over the operations. Also community-oriented, Geiger Jr. served as president of the Stockton Manufacturing Association during World War II and was instrumental in consolidating local manufacturing to serve the war effort more efficiently. When he died in 1970, his wife, Caroline, became company president until retiring in 1988, succeeded by longtime employee Roger Haack, who still holds the position today.

*□1□□ **□i□nifi□an□e** (continued): business leaders. However, there is no evidence that the four most notable persons in the family who oversaw the company's operations at this site, Joe Geiger, Sr., Cora Geiger, Joe Geiger, Jr., and Caroline Geiger, attained the level of historic significance required by Criterion B for the National Register of Historic Places or Criterion 2 for the California Register of Historical Resources, according to guidelines set forth by the National Park Service. Furthermore, no historic events of recognized significance have been identified in association with these buildings.

The four buildings retain sufficient historic integrity in design, materials, workmanship, and feeling to relate to their period of origin. Architecturally, however, none of them stands out as an important example of a style, type, period, region, or method of construction, nor are they known to represent the work of an important architect, designer, or builder. Consequently, the four historic-period buildings in the Geiger complex may be of local historic interest, but do not appear eligible for listing in the National Register or the California Register, either individually or collectively.

Re□orded □□ Terri Jacquemain Date October 16, 2012 √ Continuation ___ Update

Geiger Manufacturing, Inc., complex at 1110 East Scotts Avenue. *Clockwise from top left*: brick building, ca. 1913-1917; monitor-roofed main building, ca. 1913-1917; barrel-roofed metal building, ca. 1945, and shed-roofed metal building, ca. 1910s; overview of the complex (view to the northeast); interior of the main building.

State of California □□□□e Re□our□e □□en□□
D□P□R□□ □□□ □□P□R□□ □□D R□CR□□□□□□

PR□□ □R□ R□C□RD

Primar□ □ 39-005143
□R□□
□rinomia□
□R□P □tatu□Code 3S
□t□er Li□tin□□
Re□ie□ Code_____ Re□ie□er_____ Date_____

Pa□e 1 of 5 *Re□our□e □ame or □ (Assigned by recorder) CRM TECH 2561-3

P1□ □t□er □dentifier: Robert J. Cabral Amtrak/ACE Station

*P2□ Lo□ation: ____□ot for Pu□i□ation √ □nre□tri□ted *a□Count□ San Joaquin
and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*□□ □□□□ □5□□uad Stockton West, Calif. Date 1987 (photorevised)
□1N R□E; M.D. □□□ (within the Campo de los Franceses land grant)
□e□ation: Approximately 18-19 feet above mean sea level
□□ □ddre□□ 949 E. Channel Street Cit□ Stockton □ip 95202
d□ □□□: (Give more than one for large and/or linear resources) □one 10 ; 651114 m□/ 4202472 m□□
□□□ Deri□ation: ____USGS Quad ____GPS √ Google Earth
e□ □t□er Lo□ationa□Data: (e.g., parcel #, directions to resource, etc., as appropriate) APN 151-140-017; between Channel Street and Miner Avenue, and between Aurora Street and the Union Pacific Railroad

*P3a□ De□□ription: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The overall design of this red brick building borrows heavily from Italian Renaissance and Spanish Revival design elements and follows a classical Palladian five-part plan featuring a center block connected to two end wings by hyphens. Although the entire structure is two stories, the center block is slightly higher than the other parts and thus *(Continued on p. 3)*

*P3□□ Re□our□e □ttri□ute□: (List attributes and codes) HP17: Railroad depot

*P□□ Re□our□e□ Pre□ent: √ Building____Structure____Object___Site____District___Element of District___Other (isolates, etc.)

P5a□ P□oto□rap□ or Dra□in□ (Photograph required for buildings, structures, and objects.)

P5□□De□□ription of P□oto: View to the west (also see page 5)

*P□□ Date Con□tru□ted/□□e of □our□e□: √ Historic____Prehistoric____Both
Ca. 1930, restored in 2003 (see Items B6 and B12 for details)

*P□□ □□ner and □ddre□□: San Joaquin Regional Rail Commission (on site)

*P□□ Re□orded □□ (Name, affiliation, and address): Terri Jacquemain, CRM TECH, 1016 E. Cooley Drive, Suite A/B, Colton, CA 92324

*P9□ Date Re□orded: March 4, 2013

*P1□□ur□e□ □□pe: Intensive-level survey for Section 106 and CEQA compliance purposes

*P11□ Report Citation: (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang and Terri Jacquemain (2013): Historical Resources Evaluation Report: San Joaquin Corridor Amtrak California Service Proposed Railway Station and Layover Facility in the Cities of Stockton, Merced, and Fresno, San Joaquin, Merced, and Fresno Counties, California

*□tta□□ment□: _____None_____Location Map √ Continuation Sheet √ Building, Structure, and Object Record
_____Archaeological Record_____District Record_____Linear Resource Record_____Milling Station Record
_____Rock Art Record_____Artifact Record_____Photograph Record_____Other (List):_____

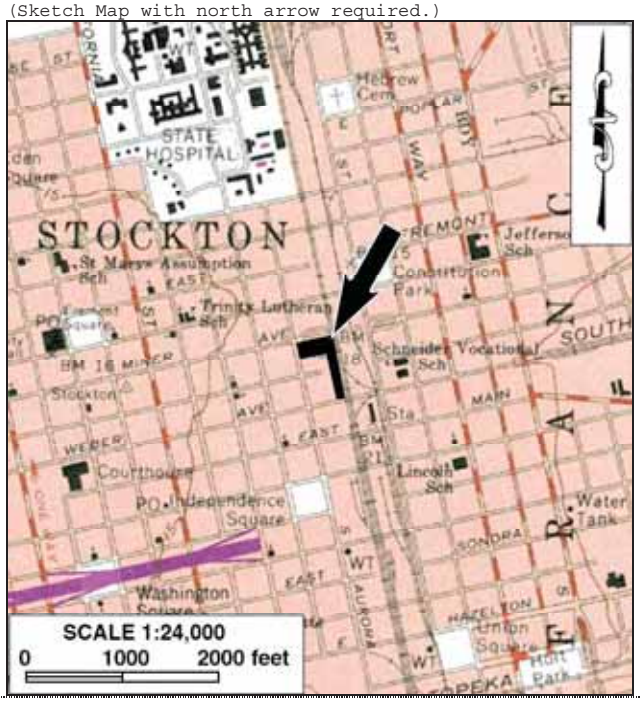
State of California □□□□e Re□our□e □□en□□ Primar□□ 39-005143
D□P□R□□ □□□ □□P□R□□ □□D R□CR□□□□□□ □R□□

□□□LD□□ □□□□R□C□□R□□□□D □□□□C□R□C□RD

*□R□P □tatu□ Code 3S
*Re□our□e □ame or □ (Assigned by recorder) CRM TECH 2561-3

B□. Historic Name: Southern Pacific Stockton-Downtown Station
B2. Common Name: Robert J. Cabral Amtrak/ACE Station
B□. Original Use: Railroad depot B□. Present Use: Railroad depot
*□5□ □r□□ite□tura□□t□□e: Italian Renaissance and Spanish Revival influence
*□□□ Con□tru□tion □i□tor□: (Construction date, alterations, and date of alterations) Constructed in 1930 by the Southern Pacific Railway Company, the Stockton-Downtown Station replaced a smaller depot a few blocks to the south. The architect and builder for the construction could not be identified despite a diligent search of available historical sources. As with railroad depots throughout the U.S., the Southern Pacific Stockton-Downtown Station was a focal point of the community's socio-economic life until passenger service on the railroads *(Continued on p. 3)*
*□□□ □o□ed□ √ No ____ □es _____ Unknown Date:_____ □ri□ina□Lo□ation:_____
*□□□ Re□ated □eature□: See Item P3a.
B□a. Architect: Unknown Builder: Unknown
*□1□□ □i□nifi□an□e: □□eme 20th century railroad architecture
□rea Stockton Period of □i□nifi□an□e 1918-1945
Propert□ □□pe Railroad depot □pp□i□a□e Criteria A, C
(Discuss importance in terms of historical or architectural conte□t as defined by theme, period, and geographic scope. Also address integrity.) The end of the Gold Rush in the mid-1850s coincided with the beginning of agricultural development in the Central Valley, which propelled Stockton into a commercial and industrial hub for the surrounding area. The completion of the Central/Southern Pacific (now a part of Union Pacific) Railway in the early 1870s and other, competing railroads over the ensuing *(Continued on p. 3)*
B□□. Additional Resource Attributes: (List attributes and codes)_____
*□12□ Referen□e□: The Great American Stations: Stockton-Cabral Station, CA (http://www.greatamericanstations.com/Stations/SKT/Station_view); San Joaquin County Assessor's property information database; City of Stockon building safety records.
□□. Remarks:_____
*□1□□ □□a□uator: Terri Jacquemain
*Date of □□a□uation: April 2013

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

***P3a Description** (continued): dominates the composition. The hyphens are slightly recessed, thereby clearly articulating the five parts of the structure. A hipped red tile roof with deep eaves caps the center block and throws a strong shadow line onto the walls. Four full-height, round-arched windows dominate the street and trackside façades, bordered by stylized rope detailing executed in buff-colored terracotta that compliments the color tones of the bricks. The two middle arches have doors at the ground level to access to the waiting room. At either end of the window group are two arches of a lesser width that feature wrought iron balconies on the second floor. A marquee on the street façade and a full-length canopy along the platform protect passengers from inclement weather as they enter or exit the station or wait for a train.

Terracotta is also employed in a wide frieze that runs around the structure and prominently displays "Southern Pacific Lines" in script over the main entrance. Trackside, the frieze is punctuated by flat circular panels placed on the centerline of the arched windows, and the space between them is filled with ornate scrollwork designs. The hyphens display pairs of windows on both levels, and terracotta is again used in the columns dividing the round-arched windows on the second story as well as in a belt course running between the two floors. On the principal facades of the end wings, the archway and balcony arrangement of the center block is repeated for visual consistency. The restored waiting room features marble floors, decorative moldings, original metal chandeliers, and a high ceiling supported by square columns with gilded capitals. The large floor-to-ceiling windows allow light to flood the space, which has numerous wooden benches. (Description adapted from "The Great American Stations: Stockton-Cabral Station, CA"; see item B12).

***Construction History** (continued): began to decline rapidly with the coming of the automobile age. In 1972, all passenger service at the depot was terminated, and the building was used by the Southern Pacific Railway Company for storage until it was finally abandoned in the early 1980s. Subsequently, it fell into disrepair. Photographs from the early 1990s show some of the windows boarded up while others are missing numerous panes of glass.

After the Altamonte Commuter Express (ACE) regional rail service began operation in 1998, the increased ridership resulted in a need for a new, permanent station. In 2001, the San Joaquin Regional Rail Commission purchased the property for $236,000. Within a year, plans were in place for a $6.5 million restoration project, which was completed in 2003. VBN Architects, an Oakland-based architectural firm, carried out the project. The clock tower, entry monuments, parking lot, and landscaping improvements were completed in 2008. The station was renamed Robert J. Cabral Station in honor of a former San Joaquin County supervisor who was instrumental in establishing the ACE.

***B1 Significance** (continued): decades, coupled with the opening of the Port of Stockton in 1933, further cemented its importance in regional economy.

With the dawn of the automobile age, the trucking industry, and ultimately the rise of civilian airlines, the once powerful railroad companies fell rapidly from their dominant position in long-distance *(Continued on p. 4)*

*□1□□ □i□nifi□an□e (continued): transportation in the U.S. during the first half of the 20th century, particularly in the arena of passenger service. By the 1960s-1970s, the once glamorous passenger trains had been largely reduced to the status of relics. Nevertheless, the significance of the railroads on social and economic development in American history can hardly be overstated, and passenger rail stations such as this embody a clear and important association with this event that has made a significant contribution to the broad patterns of U.S., California, as well as regional and local history.

Today Stockton is unique in that it is home to three historic passenger train stations (Santa Fe, Western Pacific, and Southern Pacific), all of which are still standing, with two of them used in their original function. While the others were built in 1900-1910 in the Mission Revival style, the Southern Pacific Stockton-Downtown Station stands today as a faithful restoration of its original 1930 Italian Renaissance and Spanish Revival design, most notably the hipped tile roof, full height arched windows and entryways. As such, the building provides one of the best links in the city to this historic theme, or pattern of events, of recognized significance.

The Italian-Spanish influences in the station's design represent a movement away from the once popular Mission Revival architecture, which was beginning to be viewed as lacking sophistication and out of step with a growing attraction to opulence and display that gathered steam in the 1920s. In the early 20th century, California boosters often promoted romantic notions of the state as the "American Riviera," and equated the mild and fertile climate with a romanticized notion of Spain and Italy in order to attract settlers. The design of the Stockton-Downtown Station is certainly consistent with that trend.

The 2003 restoration was comprehensive, and included the refurbishment of interior elements such as marble floors and metal chandeliers and the retention of almost all of the exterior elements. As a result, except for the removal of an open porch originally attached to the eastern end of the building, the Southern Pacific Stockton-Downtown Station appears today much as it did in 1930. Its integrity sufficiently intact, the station retains the distinctive characteristics of its style, type, and period as a building conceived, designed, or fabricated by the people or culture of a past period, despite that the original architect and builder remain unknown.

Based on these considerations, the Southern Pacific Stockton-Downtown Station appears to be eligible for listing in the National Register of Historic Places under Criteria A and C, as well as in the California Register of Historical Resources under Criteria 1 and 3, with a local level of significance.

Re□orded □□ Terri Jacquemain **Date** March 4, 2013 √ Continuation ___Update

Additional photos: views of the Southern Pacific Stockton Station in 1930, left, and in 2007, right, prior to landscaping, parking, and other improvements. (Sources: 1930 photo from Trainweb.org; 2007 photo by Ron Reiring)

ATTACHMENT D

CORRESPONDENCE WITH NATIVE AMERICAN REPRESENTATIVES*

* A total of 34 local Native American representatives were contacted; a sample letter is included in this attachment.

Subject: NAHC request
Date: Friday, August 24, 2012 2:29 PM
From: Laura Shaker <lshaker@crmtech.us>
To: Dave Singleton <ds_nahc@pacbell.net>

Hello Dave,

I hope that all is well with you.
I would like to request a Sacred Lands records search for maintenance facilities on the Merced, Stockton, and Fresno South quads for the San Joaquin Corridor project (CRM TECH project #2561C.

Name of project:
Merced, Stockton, and Fresno Maintenance Facilities for the San Joaquin Corridor Project (CRM TECH #2561C)

USGS 7.5' quad sheet data:
Merced, Calif.
T7S, R13 and 14E, Sections 19 and 20, Merced, Calif., MDBM

Fresno South, Calif.
T14S, R20E, Sections 3 and 10, Fresno South, Calif., MDBM

Stockton, Calif.
T1N, R6E, Rancho Campo de Los Franceses, Stockton West, Calif., MDBM

Please call if you need more information or have any questions. Results may be faxed to the number below. I appreciate your assistance in this matter.

Maps included.

Thanks,

Laura Hensley Shaker
(909) 824-6400 Phone
(909) 824-6405 Fax
CRM TECH
1016 E. Cooley Drive, Ste. A/B
Colton, CA 92324

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

August 27, 2012

Ms. Laura Shaker, RPA
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Sent by FAX to: 909-824-6405
No. of Pages: 7

Re: Sacred Lands File Search and Native American Contacts list for the proposed "Sacred Lands File Search and Native American Contacts list for the proposed **"Maintenance Facilities Project (CRM #2561C) of the San Joaquin Corridor Project;"** located in San Joaquin, Merced and Fresno counties, California

Dear Ms. Shaker:

The Native American Heritage Commission (NAHC) conducted a Sacred Lands provided and **Native American cultural resources were not identified** within one-half mile of the project site, the 'area of potential effect' (e.g. APE): you specified.. Also, please note; the NAHC Sacred Lands Inventory is not exhaustive and does not preclude the discovery of cultural resources during any project groundbreaking activity..

California Public Resources Code §§5097.94 (a) and 5097.96 authorize the NAHC to establish a Sacred Land Inventory to record Native American sacred sites and burial sites. These records are exempt from the provisions of the California Public Records Act pursuant to. California Government Code §6254 (r). The purpose of this code is to protect such sites from vandalism, theft and destruction.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources, impacted by proposed projects including archaeological, places of religious significance to Native Americans and burial sites

The California Environmental Quality Act (CEQA – CA Public Resources Code §§ 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. CA Government Code §65040.12(e) defines "environmental justice" provisions and is applicable to the environmental review processes.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Local Native Americans may have knowledge of the religious and cultural significance of the historic properties of the proposed project for the area (e.g. APE). Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). We urge consultation with those tribes and interested Native Americans on the list that the NAHC has provided in order to see if your proposed project might impact Native American cultural resources. Lead agencies should consider avoidance as defined in §15370 of the CEQA Guidelines when significant cultural resources as defined by the CEQA Guidelines §15064.5 (b)(c)(f) may be affected by a proposed project. If so, Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "substantial," and Section 2183.2 which requires documentation, data recovery of cultural resources.

The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

Partnering with local tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 4(f), Section 110 and (k) of the federal NHPA (16 U.S.C. 470 *et seq*), Section 4(f) of the Department of Transportation Act of 1966 (23 CFR 774); 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The NAHC remains concerned about the limitations and methods employed for NHPA Section 106 Consultation.

Also, California Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery', another important reason to have Native American Monitors on board with the project.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. An excellent way to reinforce the relationship between a project and local tribes is to employ Native American Monitors in all phases of proposed projects including the planning phases.

Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be

advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibility threatened by proposed project activity.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton

Attachment: Native American Contact List

Native American Contacts
San Joaquin, Merced and Fresno Counties
August 27, 2012

Wilton Rancheria
Andrew Franklin, Chairperson
9300 W. Stockton, Suite 200 Miwok
Elk Grove , CA 95758
916-683-6000
916-683-6015

California Valley Miwok Tribe
Silvia Burley, Chairperson
10601 N Escondido PL Miwok
Stockton , CA 95212
office@cvmt.net
209-931-4567
209-931-4333

Ione Band of Miwok Indians
Yvonne Miller, Chairperson
PO Box 699 Miwok
Plymouth , CA 95669
(209) 274-6753
(209) 274-6636 Fax

North Valley Yokuts Tribe
Katherine Erolinda Perez
PO Box 717 Ohlone/Costanoan
Linden , CA 95236 Northern Valley Yokuts
(209) 887-3415 Bay Miwok
canutes@verizon.net

Randy Yonemura
4305 - 39th Avenue Miwok
Sacramento , CA 95824
honortraditions@mail.com
(916) 421-1600
(916) 601-4069-cell

Southern Sierra Miwuk Nation
Anthony Brochini, Chairperson
P.O. Box 1200 Miwok
Mariposa , CA 95338 Pauite
tony_brochini@nps.gov Northern Valley Yokut
209-379-1008
209-628-0085 cell

Buena Vista Rancheria
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200 Me-Wuk / Miwok
Sacramento , CA 95811
rhonda@buenavistatribe.
916 491-0011
916 491-0012 - fax

Ione Band of Miwok Indians
Pamela Baumgartner, Tribal Administrator
PO Box 699 Miwok
Plymouth , CA 95669
pam@ionemiwok.org
(209) 274-6753
(209) 274-6636 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed Maintenance Facilities in the San Joaquin Corridor: San Joaquin, Merced and Fresno counties for which Sacred Lands File searches and Native American Contacts lists were requested.

Native American Contacts
San Joaquin, Merced and Fresno Counties
August 27, 2012

Ione Band of Miwok Indians
Tina Reynolds, Executive Secretary
PO Box 699 Miwok
Plymouth , CA 95669
tina@ionemiwok.org
(209) 274-6753
(209) 274-6636 Fax

Wilton Rancheria
Steven Hutchason, Director of Cultural
9300 W. Stockton, Suite 200 Miwok
Elk Grove , CA 95758
miwoksteve@gmail.com
916-683-6000
916-683-6015

Southern Sierra Miwuk Nation
Les James, Spiritual Leader
PO Box 1200 Miwok
Mariposa , CA 95338 Pauite
209-966-3690 Northern Valley Yokut

Ione Band of Miwok Indians Cultural Committee
Ms Billie Blue, Chairperson
604 Pringle Ave, #42 Miwok
Galt , CA 95632
bebluesky@softcom.net
(209) 745-7112

Briana Creekmore
PO Box 84 Miwok
Wilseyville , CA 95257
209-298-7158

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed Maintenance Facilities in the San Joaquin Corridor: San Joaquin, Merced and Fresno counties for which Sacred Lands File searches and Native American Contacts lists were requested.

Native American Contacts
San Joaquin, Merced and Fresno Counties
August 27, 2012

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas , CA 93906
kwood8934@aol.com
831-443-9702

Foothill Yokuts
Mono
Wuksache

Santa Rosa Tachi Rancheria
Lalo Franco, Cultural Coordinator
P.O. Box 8
Lemoore , CA 93245
(559) 924-1278 - Ext. 5
(559) 924-3583 - FAX

Tachi
Tache
Yokut

Chowchilla Tribe of Yokuts
Jerry Brown
10553 N. Rice Road
Fresno , CA 93720
559-434-3160

North Valley Yokuts

Dumna Wo-Wah Tribal Goverment
Eric Smith, Cultural Resource Manager
2216 East Hammond Street
Fresno , CA 93602
nuem2007@yahoo.com
559-519-1742 - office

Dumna/Foothill
Mono

The Choinumni Tribe of Yokuts
Rosemary Smith, Chairperson
1505 Barstow
Clovis , CA 96311
monoclovis@yahoo.com

Choinumni
Foothill YoKut

Dumna Wo-Wah Tribal Goverment
John Ledger, Assistant Cultural Resource Manager
2216 East Hammond Street
Fresno , CA 93602
ledger17bonnie@yahoo.com
559-519-1742 - office

Dumna/Foothill
Mono

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue
Fresno , CA 93720
davealvarez@sbcglobal.net

(559) 323-6231
(559) 292-5057 FAX

Choinumni

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed Maintenance Facilities in the San Joaquin Corridor: San Joaquin, Merced and Fresno counties for which Sacred Lands File searches and Native American Contacts lists were requested.

Native American Contacts
San Joaquin, Merced and Fresno Counties
August 27, 2012

Big Sandy Rancheria of Mono Indians
Elizabeth Hutchins Kipp, Chairperson
P.O. Box 337 / 37302 Western Mono
Auberry , CA 93602
ck@bigsandyrancheria.com
(559) 855-4003
(559) 855-4129 Fax

Sierra Nevada Native American Coalition
Lawrence Bill, Interim Chairperson
P.O. 125 Mono
Dunlap , CA 93621 Foothill Yokuts
(559) 338-2354 Choinumni

Cold Springs Rancheria of Mono Indians
Robert Marquez, Chairperson
P.O. Box 209 Mono
Tollhouse , CA 93667
(559) 855-5043
559-855-4445 - FAX

Table Mountain Rancheria
Bob Pennell, Cultural Resources Director
P.O. Box 410 Yokuts
Friant , CA 93626-0177
(559) 325-0351
(559) 217-9718 - cell
(559) 325-0394 FAX

North Fork Mono Tribe
Ron Goode, Chairperson
13396 Tollhouse Road Mono
Clovis , CA 93619
rwgoode911@hotmail.com
(559) 299-3729 Home
(559) 355-1774 - cell

Kings River Choinumni Farm Tribe
John Davis, Chairman
1064 Oxford Avenue Foothill Yokuts
Clovis , CA 93612-2211 Choinumni
(559) 307-6430

Dumna Wo-Wah Tribal Goverment
Robert Ledger SR., Tribal Chairperson
2216 East Hammond Street Dumna/Foothill
Fresno , CA 93602 Mono
ledgerrobert@ymail.com
559-519-1742 - office

Dunlap Band of Mono Historical Preservation Soc
Mandy Marine, Board Chairperson
P.O Box 18 Mono
Dunlap , CA 93621
mandy_marine@hotmail.com
559-274-1705

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed Maintenance Facilities in the San Joaquin Corridor: San Joaquin, Merced and Fresno counties for which Sacred Lands File searches and Native American Contacts lists were requested.

Native American Contacts
San Joaquin, Merced and Fresno Counties
August 27, 2012

Amah MutsunTribal Band
Valentin Lopez, Chairperson
PO Box 5272 Ohlone/Costanoan
Galt , CA 95632
vlopez@amahmutsun.org
916-743-5833

Southern Sierra Miwuk Nation
Les James, Spiritual Leader
PO Box 1200 Miwok
Mariposa , CA 95338 Pauite
209-966-3690 Northern Valley Yokut

Amah MutsunTribal Band
Edward Ketchum
35867 Yosemite Ave Ohlone/Costanoan
Davis , CA 95616 Northern Valley Yokuts
aerieways@aol.com

Southern Sierra Miwuk Nation
Anthony Brochini, Chairperson
P.O. Box 1200 Miwok
Mariposa , CA 95338 Pauite
tony_brochini@nps.gov Northern Valley Yokut
209-379-1008
209-628-0085 cell

Choinumni Tribe; Choinumni/Mono
Lorrie Planas
2736 Palo Alto Choinumni
Clovis , CA 93611 Mono

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed Maintenance Facilities in the San Joaquin Corridor: San Joaquin, Merced and Fresno counties for which Sacred Lands File searches and Native American Contacts lists were requested.

September 14, 2012

Anthony Brochini, Chairperson
Southern Sierra Mikuk Nation
P. O. Box 1200
Mariposa, CA 95338

RE: Proposed improvements along the San Joaquin Corridor Program
Located in the Cities of Stockton, Merced, and Fresno, California
CRM TECH Contract #2561C

Dear Mr. Brochini:

Caltrans is proposing a railroad improvement project on the San Joaquin Corridor in order to accommodate existing and future passenger rail demand and projected increases in ridership through 2035. In addition to the new trackage that will be installed adjacent to the existing main rail, the plan proposes various improvements of existing structures and facility developments along the track. CRM TECH is currently doing separate study on these portions of the undertaking. This letter addresses some of these potential improvements.

The first of these is either a new rail station or refurbishment of the existing Amtrak station located at 735 South San Joaquin Street in the City of Stockton. The site for the new station, if chosen, would be at the corner of East Scotts Avenue and Pilgrim Street, in the City of Stockton, within the BNSF right-of-way. Implementation of this alternative would include the demolition of a manufacturing plant. If refurbishment of the existing station is implemented, the improvement efforts would be an expansion of existing facilities and demolition of commercial uses currently located on the southern portion of the site to accommodate expansion. The accompanying map, based on the USGS Stockton West, Calif. 7.5' quadrangle, depicts the location of the Area of Potential Effects (APE) in the Rancho Campo de Los Franceses land grant, T1N, R6E, MDBM.

The other is the construction of a rail layover facility at one of two potential locations, one of which is located in the City of Merced, Merced County, while the other alternative is located in the City of Fresno, in Fresno County. The Merced alternative would extend along the existing train tracks from K Street in the north to 6th Avenue in the south, adjacent to the existing Merced Amtrak station. The location of alternative is depicted on the Merced, Calif. 7.5' quadrangle, in Sections 19 and 20, T7S, R13 and 14E, MDBM. If the alternative for the Fresno layover facility is chosen, it would extend along the existing train tracks from Tulare Street in the north to Walker Avenue in the south, adjacent to the existing Fresno Amtrak station. Implementation of this alternative would include the construction of a storage yard; running maintenance and repair area; support shops; parts storage; mechanical and electrical rooms; and administrative offices. The proposed location of this alternative is depicted in Sections 3 and 10 of the Fresno South, Calif. 7.5' quadrangle, T14S, R20E, MDBM.

In a letter dated August 27, 2012, the Native American Heritage Commission reports that the sacred lands record search identified no Native American cultural resources within a one-half mile of the APE, but recommends that local Native American groups be contacted

for further information. Therefore, as part of the cultural resources study for this project, I am writing to request your input on potential Native American cultural resources in or near the APE. In addition to Native American scoping, the scope of the study includes a historical / archaeological resources records search, historical background research, and a systematic field survey, which will be conducted in the near future.

Please respond at your earliest convenience if you have any specific knowledge of sacred / religious sites or other sites of Native American traditional cultural value within or near the APE. Any information or concerns regarding Native American cultural resources or sacred sites in the vicinity of the APE may be forwarded to CRM TECH by telephone, e-mail, facsimile, or standard mail. Requests for documentation or information we cannot provide will be forwarded to our client and / or Caltrans. We would also like to clarify that CRM TECH, as the cultural resources consultant for the project, is not the appropriate entity to initiate government-to-government consultations. Thank you for the time and effort in addressing this important matter.

Respectfully,

Laura Hensley Shaker
CRM TECH

Encl.: APE maps

CALIFORNIA VALLEY MIWOK TRIBE

10601 N. Escondido Pl., Stockton, CA 95212 Ph: (209) 931.4567 Fax: (209) 931.4333

http://www.californiavalleymiwoktribe-nsn.gov

Sept.-26-2012

Ms. Laura Hensley Shaker
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, California 92324
Fax: (909) 824-6405

RE: Proposed improvements along the San Joaquin Corridor Program located in the Cities of Stockton, Merced, and Fresno, California - CRM TECH Contract #2561C

Dear Ms. Hensley;

This letter is in response to your letter (dated 09/14/2012) in regards to the proposed improvements along the San Joaquin Corridor Program located in the Cities of Stockton, Merced, and Fresno, California - CRM TECH Contract #2561C - Project Description: Caltrans is proposing a railroad improvement project on the San Joaquin Corridor in order to accommodate existing and future passenger rail demand and projected increases in ridership through 2035. The Tribe is of the understanding that, "In addition to the new trackage that will be installed adjacent to the existing main rail, the plan proposes various improvements of existing structures and facility developments along the undertaking."

The first of these is either a new rail station or refurbishment of the existing Amtrack station located at 735 South San Joaquin Street in the City of Stockton. The site for the new station, if chosen, would be at the corner of East Scotts Avenue and Pilgrim Street, in the City of Stockton. The other is the construction of a rail layover facility at one of two potential locations, one of which is located in the City of Merced, Merced County, while the other alternative is located in the City of Fresno, in Fresno County. The Merced alternative would extend along the existing train tracks from K Street in the north to 6th Avenue in the south, adjacent to the existing Merced Amtrack station. If the alternative for the Fresno layover facility is chosen, it would extend along the existing train tracks from Tulare Street in the north to Walker Avenue in the south, adjacent to the existing Fresno Amtrack station.

The California Valley Miwok Tribe's concerns with the proposed project areas is that since ground disturbance will take place at the proposed sites, Miwok artifacts or human remains may be discovered. The Tribe is requesting that it be notified if any Miwok artifacts or human remains are found at the project sites during ground disturbance. Also, the Tribe is requesting that you provide an email address as to where you can be reached. Thank you!

Sincerely,

Silvia Burley

Silvia Burley, Chairperson
s.burley@californiavalleymiwoktribe-nsn.gov

From: Laura Shaker <lshaker@crmtech.us>
To: Robert Ledger <ledgerrobert@ymail.com>
Cc: ledger17bonnie@yahoo.com; nuem2007@yahoo.com
Sent: Tuesday, November 27, 2012 4:49 PM
Subject: San Joaquin Corridor Program

Hello Mr. Ledger,
It was a pleasure speaking with you earlier this afternoon. As a follow up to our conversation I wanted to pass along the contact information for the Lead Agency for the San Joaquin Corridor Program.

The Caltrans Division of Rails is the Official Lead Agency / project proponent for this project (I do not have the name of the contact there). Because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish,RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Have a good rest of your week,
Laura Hensley Shaker
CRM TECH
909-376-7844

From: "Laura Shaker" <lshaker@crmtech.us>
To: "honortraditions" <honortraditions@gmail.com>, anthonyhburris@gmail.com, tony@ionemiwok.org
Sent: Tuesday, November 27, 2012 5:58:10 PM
Subject: San Joaquin Corridor Facilities in the cities of Stockton, Merced, and Fresno

Hello Sirs,
The attached letter and associated maps are for the Proposed Facilities for the San Joaquin Corridor Program in the cities of Stockton, Merced, and Fresno. I will give you a follow-up call to this email on Friday of this week. Please feel free to contact me before if you have any questions before then.

Sincerely,
Laura Hensley Shaker
CRM TECH
909-376-7844

From: Laura Shaker [mailto:lshaker@crmtech.us]
Sent: Tuesday, November 27, 2012 6:04 PM
To: Roselynn Lwenya
Subject: San Joaquin Corridor Facilities in the cities of Stockton, Merced, and Fresno

Hello Ms. Lwenya,

I left a message earlier today regarding the San Joaquin Corridor Project for both the letters regarding the Sacramento Maintenance Facility (which we discussed a few weeks ago), as well as the proposed improvements along the San Joaquin Corridor in the cities of Fresno, Stockton, and Merced.

The attached letter and associated maps are for the Proposed Facilities for the San Joaquin Corridor Program in the cities of Stockton, Merced, and Fresno.
I will give you a follow-up call to this email on Friday of this week to see if you have any comments regarding either of these projects.

Please feel free to contact me before if you have any questions before then.

Sincerely,
Laura Hensley Shaker
CRM TECH
909-376-7844

From: "Laura Shaker" <lshaker@crmtech.us>
To: tony@ionemiwok.org, anthonyhburris@gmail.com
Cc: "honortraditions" <honortraditions@gmail.com>
Sent: Tuesday, November 27, 2012 6:33:03 PM
Subject: San Joaquin letters

Mr. Burris,
Please use the attached letter specifically addressed to the Ione Band of Miwok Indians

Thanks,
Laura

From: "Robert Ledger" <ledgerrobert@ymail.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Tuesday, November 27, 2012 7:31:03 PM
Subject: Re: San Joaquin Corridor Program

Thank you Ms. Laura it was great speaking with you as well. Robert

---

From: Eric Smith < nuem2007@yahoo.com >
To: Laura Shaker < lshaker@crmtech.us >
Sent: Wed, 28 Nov 2012 14:34:27 -0000 (UTC)
Subject: Re: San Joaquin Corridor Program

Could you please give the list of scientist involved also please.

From: Laura Shaker < lshaker@crmtech.us >
To: Eric Smith < nuem2007@yahoo.com >
Cc: 'Robert Ledger' < ledgerrobert@ymail.com >
Sent: Wednesday, November 28, 2012 3:13 PM
Subject: Re: San Joaquin Corridor Program

Mr. Smith,

Are you referring to the Environmental firm who we have been contracted through? CRM TECH has been subcontracted by Tom Dodson of Tom Dodson and Associates. Other than that and the contact information for the Archeologist over at Caltrans, I do not have any further information such as biologist who may be involved etc.
Please let me know if there is anything else that I can help you with.

Thank you,
Laura

From: "Eric Smith" < nuem2007@yahoo.com >
To: "Laura Shaker" < lshaker@crmtech.us >
Cc: "Robert Ledger" < ledgerrobert@ymail.com >
Sent: Friday, November 30, 2012 10:42:33 AM
Subject: Re: San Joaquin Corridor Program

whomever handles the environmental impact to traditional cultural properties and discharges and adverse effects to human health consumption to water and plant usages.

From: Laura Shaker <lshaker@crmtech.us>
To: Eric Smith <nuem2007@yahoo.com>
Cc: Robert Ledger <ledgerrobert@ymail.com>; B. Tom Tang <ttang@crmtech.us>; tda@tdaenv.com
Sent: Friday, November 30, 2012 12:00 PM
Subject: Re: San Joaquin Corridor Program

Hello Mr. Smith,

For anything concerning archaeology and Native American cultural resources you may either contact me directly at 909-376-7844, or Alex Kirkish, the Caltrans District 7 Archeologist who is handling this project (his contact information is included below in my original email to Mr. Ledger). For issues not pertaining to archaeology, such as biology or other environmental issues, you may contact Tom Dodson and Associates at 909-882-3612.

Thanks,
Laura Hensley Shaker

From: "Roselynn Lwenya" <rlwenya@buenavistatribe.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Friday, November 30, 2012 1:45:47 PM
Subject: RE: San Joaquin Corridor Facilities in the cities of Stockton, Merced, and Fresno

Hello Ms Shaker,

I am sorry I missed your call and was not able to get to you back sooner due to other duties out of town.

I want to thank you for your email and the documents you sent for review regarding the San Joaquin Corridor Project. Buena Vista Rancheria wishes to consult on this project for the cities of Stockton and Sacramento. However, your letter indicates that CRM TECH is not the appropriate entity to initiate government to government consultation. Kindly send me the contact information of the entity to contact to arrange for a meeting regarding this project.

Once more, we thank you for sending the information

Roselynn Lwenya, Ph.D
Environmental Resources Director / THPO
Buena Vista Rancheria
1418 20th Street, Suite 200
Sacramento, CA 95811
TEL: 916.491.0011
FAX: 916.491.0012
roselynn@buenavistatribe.com

From: "Laura Shaker" <lshaker@crmtech.us>
To: "Roselynn Lwenya" <rlwenya@buenavistatribe.com>
Cc: "alex kirkish" <alex_kirkish@dot.ca.gov>
Sent: Friday, November 30, 2012 2:22:28 PM
Subject: Re: San Joaquin Corridor Facilities in the cities of Stockton, Merced, and Fresno

Ms. Lwenya,

It was a pleasure speaking with you earlier this afternoon. I will note in our report that the Buena Vista Rancheria of Me-Wuk Indians of California is concerned about Native American cultural resources in the cities of Stockton and Sacramento and wishes to consult directly with Caltrans during official government-to-government consultation. It will also be noted that your tribe requests a copy of CRM TECH's report and any other pertinent reports or documentation concerning Native American cultural resources be forwarded to you by the Lead Agency / Project Proponents so that effective consultation may be conducted. Below is the information that you requested regarding the proper entities to consult with during government-to-government consultation for this program.

The Caltrans Division of Rails is the Official Lead Agency / project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish,RPA
Associate Environmental Planner
Archaeologist

State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Have a nice weekend,
Laura Hensley Shaker
CRM TECH
909-376-7844

From: "Eric Smith" <nuem2007@yahoo.com>
To: "Laura Shaker" <lshaker@crmtech.us>
Cc: "Robert Ledger" <ledgerrobert@ymail.com>
Sent: Sunday, December 2, 2012 12:39:41 PM
Subject: Re: San Joaquin Corridor Program

Our way of life is not a separation from biology and archaeology, we have to have both to make determination to what has to be been done with artifacts. as archaeologist should know that when preservation exposes air to artifacts, it loses the integrity and if soil is contaminated then adverse effect towards preservation will be done financially to preserve and that includes cost for handling artifact thru hazmat handling, etc.....

From: "Laura Shaker" <lshaker@crmtech.us>
To: kwood8934@aol.com
Sent: Thursday, December 13, 2012 10:08:13 AM
Subject: San Joaquin Corridor Program

Hello Mr. Woodrow,

So, the Caltrans Division of Rails is the Official Lead Agency / project proponent for this project. However, because the San Joaquin Corridor program is so large, it is being reviewed by Caltrans-District 7 (Los Angeles). The Caltrans archaeologist over at District 7 is Alex Kirkish. His contact information is as follows:

Alex Kirkish,RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation
District 7 -MS 16A
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

I will resend you the project letters and associated maps in separate emails.
Please do not hesitate to give me a call if you have any questions. Also once you look over the letters can you please let me know where your major areas of concern are. I would like to note them in the report if you do not mind.

Sincerely,
Laura Hensley Shaker
CRM TECH
909-376-7844

From: "Laura Shaker" <lshaker@crmtech.us>
To: kwood8934@aol.com
Sent: Thursday, December 13, 2012 10:37:08 AM
Subject: San Joaquin Corridor Program improvements in the cities of Stockton Merced, and Fresno (CRM TECH #2561C)

Hello Mr. Woodrow,
Attached is the letter and the three maps for the proposed improvements.

Laura

From: Laura Shaker <lshaker@crmtech.us>
To: canutes <canutes@verizon.net>
Sent: Friday, January 11, 2013 7:54 PM
Subject: STockton, Merced, Fresno Maintainance Facilities

Hello Ms. Perez,

Attached are the maps and the project letter for the proposed facilities along the San Joaquin Corridor in the cities of Merced, Stockton, and Fresno.

If you have any questions please feel free to give me a call.

Laura Hensley Shaker
CRM TECH
909-376-7844

From: "Katherine Perez" <canutes@verizon.net>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Wednesday, January 16, 2013 8:17:32 PM
Subject: Re: STockton, Merced, Fresno Maintainance Facilities

Can you tell me if there has ever been any archaeological subsurface/survey work done on any of these locations and their findings.

Katherine Perez

From: "Laura Shaker" <lshaker@crmtech.us>
To: sbrum@tachi-yokut-nsn.gov

Sent: Friday, January 18, 2013 5:24:43 PM
Subject: San Joaquin Corridor Program- proposed improvements Fresno, Madera, Stockton

Shana,

Attached letter and associated maps contains the information pertaining to the proposed improvements in the cities of Stockton, Madera, and Merced.

The archaeological field survey has been conducted for the proposed improvements/facilities concerning these areas. I will attach the findings as a result of the survey.

Have a good weekend,
Laura Hensley Shaker
CRM TECH
909-376-7844

From: "Laura Shaker" <lshaker@crmtech.us>
To: "Katherine Perez" <canutes@verizon.net>
Sent: Monday, January 21, 2013 9:12:51 AM
Subject: Re: STockton, Merced, Fresno Maintenance Facilities

Hello Katherine,

As far as I know there has not been any subsurface work done at these locations. I have attached the information regarding the field survey that was recently conducted by CRM TECH.

Laura Shaker
909-376-7844

From: Laura Shaker <lshaker@crmtech.us>
Sent: Monday, January 21, 2013 10:02 AM
To: Shana Brum
Subject: NAHC response for the proposed Stockton, Fresno, Merced Facilities along the San Joaquin Corridor program

(Contents attached to the email)

From: "Laura Shaker" <lshaker@crmtech.us>
To: "s burley" <s.burley@californiavalleymiwoktribe-nsn.gov>
Sent: Tuesday, January 22, 2013 7:10:32 AM
Subject: San Joaquin Corridor Projects

Hello Ms. Burley,
I want to thank you again for your response letters in regards to the San Joaquin Corridor project. I wanted to make sure that you still had my contact information as well as that of the contact person at Caltrans.

Alex Kirkish,RPA
Associate Environmental Planner
Archaeologist
State of California, Department of Transportation District 7 -MS 16A Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012-3712
(213) 897-2795 office
(213) 897-9572 fax
alex_kirkish@dot.ca.gov

Thanks,
Laura Hensley Shaker

From: "Shana Brum" <SBrum@tachi-yokut-nsn.gov>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Tuesday, January 22, 2013 9:30:20 AM
Subject: RE: NAHC response for the proposed Stockton, Fresno, Merced Facilities along the San Joaquin Corridor program

Thank you for sharing all of this information.

From: Laura Shaker <lshaker@crmtech.us>
Sent: Tuesday, January 22, 2013 9:51 AM
To: Shana Brum
Subject: Re: NAHC response for the proposed Stockton, Fresno, Merced Facilities along the San Joaquin Corridor program

Sure thing.
For the Stockton, Fresno, Merced facilities I said that you requested additional information regarding records search information, as well as information regarding the contact information for the Lead Agency. The tribe requested early involvement in the planning process, as well as to be included in any future archaeological surveys, and ground-disturbing activities, such as testing and monitoring.
Did you need to include NA monitoring for these sites as well, or just for those in the proposed alignment?

Laura

From: Shana Brum <SBrum@tachi-yokut-nsn.gov>
To: Laura Shaker <lshaker@crmtech.us>
Sent: Tue, 22 Jan 2013 19:13:56 -0000 (UTC)
Subject: RE: NAHC response for the proposed Stockton, Fresno, Merced Facilities along the San Joaquin Corridor program

We believe that as we move forward, Tribal monitoring with be a crucial component of this proposed action, and we have a professional staff which is ready to be of assistance. Exactly when, where, and to what degree Native American Monitors will be needed, will be dependent upon the EIR and the finalize route and plan of action.

Thank you,
Shana Brum

From: "Laura Shaker" <lshaker@crmtech.us>
To: "Shana Brum" <SBrum@tachi-yokut-nsn.gov>
Sent: Tuesday, January 22, 2013 2:36:52 PM
Subject: RE: NAHC response for the proposed Stockton, Fresno, Merced Facilities along the San Joaquin Corridor program

Thank you Shana!

From: "Katherine Perez" <canutes@verizon.net>
To: "Laura Shaker" <lshaker@crmtech.us>
Sent: Thursday, January 24, 2013 9:19:50 AM
Subject: Re: San Joaquin Corridor Program

Laura,

I received all of your emails and phone messages. I will take a look them as soon as I get a minute.

Thank you

From: "Laura Shaker" <lshaker@crmtech.us>
To: "Katherine Perez" <canutes@verizon.net>
Sent: Saturday, January 26, 2013 12:23:05 PM
Subject: Re: San Joaquin Corridor Program

Katherine,

Thank you for letting me know. Please feel free to contact me either by telephone or by email with any areas of concern that you may have.

Thanks,
Laura Shaker
CRM TECH
909-376-7844

TELEPHONE LOG

Name and Tribe/Affiliation	Telephone Contacts	Comments
Edward Ketchum, Amah Mutsun Tribal Band	No number listed	Valentin Lopez responded on behalf of the tribe (see below).
Valentin Lopez, Chairperson, Amah Mutsun Tribal Band	3:16 pm, November 27, 2012	Mr. Lopez stated that the APE was out of the tribe's territory and recommended that Jerry Brown of the Chowchilla Tribe of Yokuts be contacted. Mr. Brown did not respond at the telephone number provided.
Elizabeth Hutchins Kipp, Chairperson, Big Sandy Rancheria of Mono Indians	3:36 pm, November 27, 2012 1:42 pm, November 30, 2012	Left messages; no response to date.
Roselynn Lwenya, Environmental Director, Buena Vista Rancheria of Me-Wuk Indians of California	3:45 pm, November 27, 2012 1:45 pm, November 30, 2012 9:46 am, December 14, 2012	Ms. Lwenya stated the tribe wished to consult directly with Caltrans on a formal government-to-government basis on the portion of the project in the City of Stockton, and requested copies of the completed reports and any other documents concerning cultural resources to facilitate in the consultation process. Ms. Lwenya reiterated the requests via e-mail on November 27-30, 2012 (copy attached).
Rhonda Morningstar Pope, Chairperson, Buena Vista Rancheria of Me-Wuk Indians of California	None	Roselynn Lwenya is the designated contact person for the tribe (see above).
Silvia Burley, Chairperson, California Valley Miwok Tribe	None	Ms. Burley responded in a letter dated September 26, 2012 (copy attached).
Lorrie Planas, Choinumni Tribe	No number listed	
Rosemary Smith, Chairperson, Choinumi Tribe of Yokutes	4:28 pm, December 14, 2012 4:48 pm, January 11, 2013	(No number listed. CRM TECH found a possible number for the tribe on a previous NAHC list, but it was no longer valid.)
Jerry Brown, Chowchilla Tribe of Yokuts	3:32 pm, November 27, 2012 4:03 pm, November 30, 2012 9:54 am, December 14, 2012	No answer.
Robert Marquez, Chairperson, Cold Springs Rancheria of Mono Indians	4:14 pm, November 27, 2012 4:03 pm, November 30, 2012	Left a messages; no response to date.

John Ledger, Assistant Cultural Resource Manager, Dumna Wo-Wah Tribal Government	4:17 pm, November 27, 2012	Robert Ledger responded on behalf of the tribe (see below).
Robert George Ledger, Sr., Chairman, Dumna Wo-Wah Tribal Government	4:17 pm, November 27, 2012	Mr. Ledger stated that the APE was culturally sensitive and requested that Native American monitors from his group be present during all ground-disturbing activities in Merced and Fresno. Mr. Ledger requested, and was sent, contact information for the lead agency via e-mail on November 27, 2012 (copies attached). As per his request, Eric Smith and John Ledger were copied on the e-mail.
Eric Smith, Cultural Resource Manager, Dumna Wo-Wah Tribal Government	4:17 pm, November 27, 2012	Robert Ledger responded on behalf of the tribe (see above).
Mandy Marine, Board Chairperson, Dunlap Band of Mono Historical Preservation Society	4:52 pm, November 27, 2012 9:31 am, December 13, 2012	Left messages; no response to date.
Kenneth Woodrow, Chairperson, Eshom Valley Band of Michahai and Wuksachi Indians	4:55 pm, November 27, 2012 9:31 am, December 13, 2012	Mr. Woodrow was concerned that there might be Native American sites and burials in the immediate vicinity of the APE. He said he would review the information and contact Caltrans to request government-to-government consultation. He requested, and was sent, contact information for the proper staff member at Caltrans via e-mail on December 13, 2012 (copy attached).
Pamela Baumgartner, Tribal Administrator, Ione Band of Miwok Indians	None	Tony Burris is the designated contact person for the tribe (see below).
Billie Blue, Former Chairperson, Ione Band of Miwok Indians	None	Tony Burris is the designated contact person for the tribe (see below).
Tony Burris, Chairperson, Cultural Committee, Ione Band of Miwok Indians	2:18 pm, November 8, 2012 4:59 pm, November 27, 2012 5:08 pm, November 27, 2012 12:18 pm, December 13, 2012 11:28 am, January 21, 2013	Mr. Burris requested, and was sent, additional information via e-mail on November 27, 2012. He asked that Randy Yonemura be copied on all correspondence. Mr. Burris said he planned to review the information and respond after the tribe's upcoming Cultural Committee meeting. CRM TECH left follow-up messages, but received no further response.
Yvonne Miller, Chairperson, Ione Band of Miwok Indians	None	Tony Burris is the designated contact person for the tribe (see above).

Tina Reynolds, Executive Secretary, Ione Band of Miwok Indians	None	Tony Burris is the designated contact person for the tribe (see above).
John Davis, Chairman, Kings River Choinumni Farm Tribe	5:04 pm, November 27, 2012	Mr. Davis stated he had no concerns but wished to be notified of any inadvertent archaeological discoveries.
Ron Goode, Chairperson, North Fork Mono Tribe	11:45 am, December 13, 2012 5:30 pm, December 13, 2012 11:45 am, December 14, 2012 4:35 pm, January 11, 2013	Left messages; no response to date.
Katherine Erolinda Perez, Chairperson, North Valley Yokuts Tribe	11:48 am, December 13, 2012 11:48 am, January 11, 2013 8:27 am, January 21, 2013 10:43 am, January 21, 2013 9:28 am, January 22, 2013	Ms. Perez called to request additional information regarding the undertaking, which was sent via e-mail on January 11, 2013, with further discussion on January 21 (copy attached).
Shana Brum, Cultural Specialist, Santa Rosa Tachi Rancheria	2:30 pm, January 18, 2013 9:10 am, January 22, 2013 11:00 am, January 22, 2013	Ms. Brum stated that he wished to defer to other tribes regarding the Stockton portion of the APE. For the Fresno and Merced locations, she requested formal government-to-government consultation with the lead agency to insure early involvement in the planning process. She further requested Native American monitoring by reprsentatives of his tribe during ground-disturbing activities in Merced and Fresno. Ms. Brum followed up by e-mails on January 18-22, 2013, reiterating the importance of Native American monitoring (copy attached).
Lalo Franco, Cultural Coordinator, Santa Rosa Tachi Rancheria	12:02 pm, December 13, 2012 4:40 pm, December 14, 2012 1:47 pm, January 11, 2013	Left messages; no response to date.
Lawrence Bill, Chairperson, Sierra Nevada Native American Coalition	12:05 pm, December 13, 2012	Mr. Bill stated his concerns that Native American cultural resources or human remains may be unearthed during ground-disturbing activities. He said that the Sierra Nevada Native American Coalition was opposed to the undertaking, and that the coalition wished to engage in formal government-to-government consultation with the lead agency.
Anthony Brochini, Chairperson, Southern Sierra Miwuk Nation	12:18 pm, December 13, 2012 10:43 am, January 21, 2013	Left messages; no response to date.
Les James, Spiritual Leader, Southern Sierra Miwuk Nation	12:45 pm, December 13, 2012	Mr. James stated he did not have enough familiarity with the APE to offer a response.

Bob Pennell, Cultural Resources Director, Table Mountain Rancheria	5:17 pm, November 30, 2012 12:49 pm, December 13, 2012	Left messages; no response to date.
David Alvarez, Chairperson, Traditional Choinumni Tribe	5:15 pm, November 30, 2012 1:50 pm, December 13, 2012	Mr. Alvarez stated he had no concerns regarding the undertaking but planned further review of the project information.
Andrew Franklin, Chairperson, Wilton Rancheria Indian Tribe	None	Steven Hutchason is the designated contact person for the tribe (see below).
Steven Hutchason, Executive Director, Cutural Preservation, Wilton Rancheria Indian Tribe	3:54 pm, November 6, 2012 2:50 pm, November 7, 2012 12:39 pm, November 9, 2012 2:40 pm, December 13, 2012	Left messages; no response to date.
Brianna Creekmore, Miwok	4:58 pm, November 30, 2012 2:44 pm, December 13, 2012	Left messages; no response to date.
Randy Yonemura, Miwok	4:57 pm, November 30, 2012 2:52 pm, December 13, 2012	Mr. Yonemura stated that the APE was culturally sensitive and had concerns that Native American cultural resources or human remains might be unearthed during ground-disturbing activities. Mr. Yonemura requested, and was sent, project information for further review via e-mail on November 27, 2012 (copy attached).

ATTACHMENT E

CORRESPONDENCE WITH LOCAL COMMUNITY REPRESENTATIVES

CORRESPONDENCE WITH THE CITY OF FRESNO

From: tjacquemain@crmtech.us
Sent: Monday, August 20, 2012 2:50 PM
To: Trai Her <Trai.Her@fresno.gov>
Subject: From Web Form: Cultural compliance / resources inquiry

Dear City of Fresno Development and Resource Management Planning,

I am currently preparing a cultural resources report for construction of new rail layover facility, one alternative location for which is in the City of Fresno. The layover facility would extend along the existing train tracks from Tulare Street in the north to Walker Avenue in the south, adjacent to the existing Fresno Amtrak station. Implementation of this alternative would include the would include construction of a storage yard; running maintenance and repair area; support shops; parts storage; mechanical and electrical rooms; and administrative offices. I am writing to ask if the City has any cultural resources concerns in regards to the proposed project. Preliminary research indicates that of these the existing station is a National Register Property, and in addition it appears there may be an historic packing house adjacent to rails east of the freeway, at 239 Santa Fe Avenue. Responses will be included in the "Local Consultation" section, a required component of the final report for the project's lead agency, CalTrans.

Other research procedures for our cultural resources study will include a standard historical / archaeological records search at the North Central Information Center, Native American consultation, and a systematic field survey. My contact information is listed below. I sincerely appreciate any time and effort taken to respond to my inquiry.

Thanks!

Terri Jacquemain

Subject: RE: From Web Form: Cultural compliance / resources inquiry
Date: Tuesday, August 21, 2012 11:52 AM
From: Karana Hattersley-Drayton <Karana.Hattersley-Drayton@fresno.gov>
To: tjacquemain@crmtech.us
Cc: Mike Sanchez <Mike.Sanchez@fresno.gov>, Scott Mozier <Scott.Mozier@fresno.gov>, Trai Her <Trai.Her@fresno.gov>, Keith Bergthold <Keith.Bergthold@fresno.gov>

Ms. Jacquemain:

Thank you for your inquiry regarding potential impacts to historic resources for a proposed rail layover facility on the current BNSF right-of-way, Tulare to Walker. It is preferable to respond to a request like this with a formal APE map attached and a complete operational statement. A point of confusion is that I do not see “Walker Avenue” in the immediate area of the Amtrak Station. What is also not clear from your description below is whether the project would include demolition of any existing resources, or not.

Thus in order to answer your query we will need additional information (as above).

Please note that the Santa Fe Depot is indeed on the National Register of Historic Places as well as the Local Register of Historic Resources. Several warehouse properties and a one hotel in this corridor are on the National and/or Local Registers. Again, without a map it is difficult to be clear about the project area and thus the impacts.

I look forward to receiving an APE map and project description at your convenience and will be happy to work with you on any questions you may have.

Sincerely,

Karana Hattersley-Drayton, M.A.
Historic Preservation Project Manager
City of Fresno
(559) 621-8520

From: Terri Jacquemain <tjacquemain@crmtech.us>
Sent: Tuesday, August 21, 2012 12:40 PM
To: Karana Hattersley-Drayton <Karana.Hattersley-Drayton@fresno.gov>
Subject: Re: From Web Form: Cultural compliance/resources inquiry

Hi there Karana Hattersley-Drayton, M.A.,

Thank you for your response! Here is the information you requested, including a project description for the Fresno component of the SJVC program, and the USGS location map and an aerial with project overlays. It appears the APE is mostly open land, though the overlay APE on the aerial looks a bit preliminary to me.

San Joaquin Corridor Program EIR/EIS Project Description

1.2.3.3 Layover Facilities
Within the 25-year planning period, Caltrans proposes initiating two train operations from the middle of the San Joaquin Corridor, either from Merced or Fresno. The objective would be to start a train early in the morning that would head north to Sacramento and south to Bakersfield. This would allow mid-route passengers to reach the Bay Area, or Bakersfield, at the start of the work day. The train would return to the layover facility at the end of the day. The new layover facility would include a storage yard; running maintenance and repair area; support shops; parts storage; mechanical and electrical rooms; and administrative offices. Such a facility would reduce the need to run “deadhead” trains (i.e., trains without passengers), which will reduce the cost of operation and improve the utilization of train crews. The facility will be designed and built to accommodate planned and future service requirements.

Descriptions of the potential layover locations are as follows:
• Fresno Layover Facility Alternative (See Figures 1-19 and 1-20): This Alternative would include the development of a layover facility located in the City of Fresno that would extend along the existing train tracks from Tulare Street in the north to Walker Avenue in the south. The layover facility would be located adjacent to the existing Fresno Amtrak station. This site is constrained by its small size and ability to meet the layover objective.

In addition to the local consultation, other research procedures for our cultural resources study will include a standard historical/archaeological records search at the North Central Information Center, Native American consultation, historical background research, and a systematic field survey. The findings will be included in the final report prepared in compliance with Section 106 and CEQA guidelines for submittal to the project's lead agency, CalTrans. Also, I'd like to reiterate that the purpose of the local consultation portion of the report to help identify any cultural resources of local historical interest that may be present within or adjacent to the APE, and to solicit comment from the local community and agencies regarding any cultural resources issues. The responses will be included in the local consultation portion of the report.

Sincerely,

Terri Jacquemain

Subject: RE: From Web Form: Cultural compliance/resources inquiry
Date: Tuesday, August 21, 2012 1:21 PM
From: Karana Hattersley-Drayton <Karana.Hattersley-Drayton@fresno.gov>
To: Terri Jacquemain <tjacquemain@crmtech.us>
Cc: Mike Sanchez <Mike.Sanchez@fresno.gov>, Craig Scharton <Craig.Scharton@fresno.gov>, Scott Mozier <Scott.Mozier@fresno.gov>

Thanks for the quick response. I am on deadline now for our next Historic Preservation Commission meeting. I will review the attached maps and project description, hopefully by Friday.

Best,

khd

Subject: Letter of Response, San Joaquin Corridor Layover Facilities
Date: Thursday, August 23, 2012 2:14 PM
From: Karana Hattersley-Drayton <Karana.Hattersley-Drayton@fresno.gov>
To: Terri Jacquemain <tjacquemain@crmtech.us>
Cc: Scott Mozier <Scott.Mozier@fresno.gov>, Mike Sanchez <Mike.Sanchez@fresno.gov>, Keith Bergthold <Keith.Bergthold@fresno.gov>

Ms. Jacquemain- Per your request of August 21st, attached is a letter which identifies designated historic properties within or adjacent to the APE (Area of Potential Effects) for a proposed San Joaquin Corridor Layover Facility.

Please let me know if you have additional questions.

Sincerely,

Karana Hattersley-Drayton
Historic Preservation Project Manager
City of Fresno
(559) 621-8520

City of FRESNO

Development and Resource Management Department

2600 Fresno Street, Third Floor, Room 3065
Fresno, California 93721-3604
(559) 621-8003, FAX (559) 498-1012

Mark Scott
Interim Director

August 23, 2012

Re: SJ Corridor PEIR-EIS

Mr. Terri Jacquemain, M.A.
Historian
CRM Tech
1016 East Colley Drive, Suite A/B
Colton, CA 92324

Dear Ms. Jacquemain:

Thank you for your inquiry regarding historic and cultural resources within the Area of Potential Effects (APE) of the proposed San Joaquin Corridor Layover Facilities. The proposed project would include numerous new facilities including a storage yard, running maintenance and repair area, support shops, an administrative office and would occupy a footprint from Tulare Street in the north to Walker Avenue in the south. As you noted in your e-mail response of August 21st, the APE map appears to be preliminary and thus difficult to connect to actual parcels.

However, per your request the following designated historic properties appear to be within or adjacent to the project footprint/APE:

HP# 10: The Santa Fe Depot (1899), Local as well as a National Register property.
HP# 94: The Santa Fe Hotel (1926) 935 Santa Fe Avenue, Local and National Register
HP# 03: Warehouse Row, 702-764 P Street, Local and National Register
HP# 60: Central Packaging Supply Co. (1920) 2534 San Benito, Local Register

In addition, properties which are not designated may still be, upon evaluation, eligible for listing on Fresno's Local Register of Historic Resources and thus be a historical resource for the purposes of CEQA. Fresno has a proactive demolition review policy which requires that all properties proposed for demolition are first reviewed for their potential eligibility for the Local Register of Historic Resources.

Please do not hesitate to call me should you have additional questions.

Sincerely,

Karana Hattersley-Drayton, M.A.
Historic Preservation Project Manager
City of Fresno
(559) 621-8520

CORRESPONDENCE WITH THE FRESNO HISTORICAL SOCIETY

Subject: Fresno cultural resources inquiry
Date: Monday, August 20, 2012 12:51 PM
From: Terri Jacquemain <tjacquemain@crmtech.us>
To: FrHistSoc@aol.com

Dear Fresno Historical Society,

I am currently preparing a cultural resources report for construction of new rail layover facility, one alternative location for which is in the City of Fresno. The layover facility would extend along the existing train tracks from Tulare Street in the north to Walker Avenue in the south, adjacent to the existing Fresno Amtrak station. Implementation of this alternative would include the would include construction of a storage yard; running maintenance and repair area; support shops; parts storage; mechanical and electrical rooms; and administrative offices.

Preliminary research indicates that of these the existing station is a National Register Property, and in addition it appears there may be an historic packing house adjacent to rails east of the freeway, at 239 Santa Fe Avenue. I am writing to ask about further historical background information on this location, and to inquire whether your organization has any cultural resources concerns in regards to the proposed project. Any response you wish to confer will be included in the "Local Consultation" section as a required component of the final report. My contact information is listed below. I sincerely appreciate any time and effort you may have to devote to my inquiry.

Thanks!

Terri Jacquemain

The above e-mail was resent on 9/27/2012

Subject: Fresno Research Req
Date: Monday, October 1, 2012 9:33 AM
From: Sharon Hiigel <shiigel@valleyhistory.org>
To: tjacquemain@crmtech.us

Hello Terri --

In response to your 9/27 email requesting information on the Fresno's Santa Fe Railroad depot and a packing house at 239 Santa Fe Avenue:

Do you have a copy of the National register nomination for the Depot? That document would, of course, contain the core of info about the building, plus images. There are sections of local history books that have material. I believe there will be some news clippings in our Walker History File.
Are you coming to Fresno to do research?

As for the packing house: Our files are generally organized by name. I will check with our City Preservation Officer about this structure.

FYI: I service the archival research requests. Any "cultural resources concerns in regards to the proposed project" would come from our board of Trustees.

Best regards,
Sharon
Sharon Hiigel, Curator
Fresno Historical Society
559-441-0862

Subject: Re: Fresno Research Req
Date: Tuesday, October 2, 2012 9:09 AM
From: Terri Jacquemain <tjacquemain@crmtech.us>
To: Sharon Hiigel <shiigel@valleyhistory.org>

Hi Sharon,

Thanks for your response. I do have the NR papers for the ATSF depot, thank,s and thanks for asking around about the warehouse. I will be looking at the properties coming up soon, but not pinned down for sure without some more coordination efforts on other aspects -- it's a really big project, extending from Sacramento to Los Angeles. I was wondering if you could supply me with an e-mail address for the Fresno Historical Society president so that I could re-send the inquiry regarding any concerns associated with the Fresno portion of the project, or possibly you could forward the one sent to you?

Thanks for your help!

Terri

Subject: Re: Fresno Research Req
Date: Tuesday, October 2, 2012 5:29 PM
From: Sharon Hiigel <shiigel@valleyhistory.org>
To: Terri Jacquemain <tjacquemain@crmtech.us>

Hello Terri --

Re the warehouse on Santa Fe Avenue: there was nothing in the files of the City's Office of Historic Preservation on this address. I will be able to do some sleuthing in city directories in early November. (Our entire staff has now focused on our annual fundraiser and living history event -- the Civil War Revisited -- coming up at the end of October.)

I did forward your first email on to our Director of Administration / Operations, Ruth Lang, and she is consulting with an appropriate member of our Board of Trustees regarding any concerns the Fresno Historical Society would wish to voice about the Fresno portion of the project.

Sharon

CORRESPONDENCE WITH THE CITY OF MERCED

From: Terri Jacquemain <tjacquemain@crmtech.us>
Sent: Monday, August 20, 2012 1:41 PM
To: planningweb@cityofmerced.org
Subject: Cultural resources compliance inquiry

Dear City of Merced Planning,

I am currently preparing a cultural resources report for construction of a rail layover facility at one of two potential locations, one of which is located in the City of Merced. The project area would extend along the existing train tracks from K Street in the north to 6th Avenue in the south, adjacent to the existing Merced Amtrak station.

I am writing to ask if the City has any cultural resources concerns in regards to the proposed project. Preliminary research indicates that the project area may adjoin a historic district (Site 24-000838) that encompasses some 25 blocks of residential housing on the southwest side of the BNSF tracks, defined as G to Canal Streets, West 18th to West 23rd Streets. Other recorded sites in the project area include the railway itself (24-001881) and a row of Palm trees associated with the former Merced rail depot (24-001880).

Responses will be included in the "Local Consultation" section, a required component of the final report for the project's lead agency, CalTrans. Other research procedures for our cultural resources study will include a standard historical/archaeological records search at the North Central Information Center, Native American consultation, and a systematic field survey. My contact information is listed below. I sincerely appreciate any time and effort taken to respond to my inquiry.

Thanks!

Terri Jacquemain

Subject: RE: Cultural resources compliance inquiry
Date: Tuesday, August 21, 2012 7:09 AM
From: Lucas, Terri <Lucast@cityofmerced.org>
To: Terri Jacquemain <tjacquemain@crmtech.us>

Hi Terri - I have forwarded your email to our Planning Manager. She will respond (or have one of the other Planners do so). In the meantime, if you need anything else, please let me know.
Good name. And spelled correctly too!

Terri Lucas
Secretary III
City of Merced
Development Services
678 W. 18th Street
Merced, CA 95340
(209) 385-6954

CORRESPONDENCE WITH THE MERCED COUNTY HISTORICAL SOCIETY

From: Terri Jacquemain <tjacquemain@crmtech.us>
Sent: Monday, August 20, 2012 1:34 PM
To: info@mercedmuseum.org
Subject: Cultural resources compliance Information / concerns

Dear Merced County Historical Society,

I am currently preparing a cultural resources report for construction of a rail layover facility at one of two potential locations, one of which is located in the City of Merced. The project area would extend along the existing train tracks from K Street in the north to 6th Avenue in the south, adjacent to the existing Merced Amtrak station.

Preliminary research indicates that the project area may adjoin a historic district (Site 24-000838) that encompasses some 25 blocks of residential housing on the southwest side of the BNSF tracks, defined as G to Canal Streets, West 18th to West 23rd Streets. Other recorded sites in the project area include the railway itself (24-001881) and a row of Palm trees associated with the former Merced rail depot (24-001880).

I am writing to ask about these cultural resources, and to inquire whether your organization has any cultural resources concerns in regards to the proposed project. Any response you wish to confer will be included in the "Local Consultation" section as a required component of the final report. My contact information is listed below. I sincerely appreciate any time and effort you may have to devote to my inquiry.

Thanks!

Terri Jacquemain

Subject: RE: Cultural resources compliance Information / concerns
Date: Monday, August 20, 2012 12:52 PM
From: Sarah Lim <info@mercedmuseum.org>
To: 'Terri Jacquemain' <tjacquemain@crmtech.us>

Terri,

Yes, the area you are researching is rich in Merced history. We have plenty of information for your project. Please make arrangement to visit our archives.

Sarah Lim, Museum Director
Merced County Courthouse Museum
209-723-2401

CORRESPONDENCE WITH THE CITY OF STOCKTON AND THE STOCKTON HISTORICAL SOCIETY

Subject: Historical research inquiry
Date: Monday, August 20, 2012 11:27 AM
From: Terri Jacquemain <tjacquemain@crmtech.us>
To: stocktonhistoricalsociety@gmail.com

Dear Stockton Historical Society,

I am currently preparing a cultural resources report for construction of new rail station or refurbishment of the existing Amtrak station at 735 South San Joaquin Street in Stockton. The site for the new station, if chosen, would be at the corner of East Scotts Avenue and Pilgrim Street, within the BNSF right-of-way. Implementation of this alternative would include the demolition of a manufacturing plant. If refurbishment of the existing station is implemented, the improvement efforts would an expansion of existing facilities and demolition of commercial uses currently located on the southern portion of the site to accommodate expansion.

Preliminary research indicates that of these two alternatives, the existing station is a National Register Property and a designated local landmark (No. 12). In addition it appears the manufacturing and commercial buildings involved my be 50 years or older. I am writing to ask about further historical background information on these properties, and to inquire whether your organization has any cultural resources concerns in regards to the proposed project. Any response you wish to confer will be included in the "Local Consultation" section as a required component of the final report. My contact information is listed below. I sincerely appreciate any time and effort you may have to devote to my inquiry.

Thanks!

Terri Jacquemain

Subject: Cultural resources compliance inquiry
Date: Monday, August 20, 2012 12:59 PM
From: Terri Jacquemain <tjacquemain@crmtech.us>
To: Richard.Larrouy@Stocktongov.com

Dear Mr. Richard Larrouy, City of Stockton Community Development Department, (Cultural Heritage Board contact)

I am currently preparing a cultural resources report for construction of new rail station or refurbishment of the existing Amtrak station at 735 South San Joaquin Street in the City of Stockton. The site for the new station, if chosen, would be at the corner of East Scotts Avenue and Pilgrim Street, within the BNSF right-of-way. Implementation of this alternative would include the demolition of a manufacturing plant. If refurbishment of the existing station is implemented, the improvement efforts would an expansion of existing facilities and demolition of commercial uses currently located on the southern portion of the site to accommodate expansion.

I am writing to ask if the City has any cultural resources concerns in regards to the proposed project. Preliminary research indicates that of these two alternatives, the existing station is a National Register Property and a designated local landmark (No. 12). In addition it appears the manufacturing and commercial buildings involved may be 50 years or older. Responses will be included in the "Local Consultation" section, a required component of the final report for the project's lead agency, CalTrans. Other research procedures for our cultural resources study will include a standard historical/archaeological records search at the North Central Information Center, Native American consultation, and a systematic field survey. My contact information is listed below. I sincerely appreciate any time and effort taken to respond to my inquiry.

Thanks!

Terri Jacquemain

Subject: Cultural resources compliance inquiry
Date: Friday, February 22, 2013 1:45 PM
From: Terri Jacquemain <tjacquemain@crmtech.us>
To: stocktonhistoricalsociety@gmail.com, Richard.Larrouy@Stocktongov.com

Subject: Historical research inquiry

I am currently preparing a cultural resources report for a railway improvement project at the existing Robert J. Cabral Altamont Commuter Express (ACE) train station located at 949 East Channel Street in the City of Stockton. As proposed, the project may require demolition of several buildings that are more than 50 years old along Channel Street, and possibly some on Weber Avenue and Aurora Street. As a component of the report, I am writing to ask local civic agencies and historical organizations for input regarding any cultural resources concerns or additional information that you may have. All responses received will be included the final report, which will be completed in about three weeks. I thank you in advance for any time and effort you may have to devote to my inquiry.

Sincerely,

Terri Jacquemain

TELEPHONE LOG

Name and Affiliation	Telephone Contacts	Comments
Karana Hattersley-Drayton, Historic Preservation Project Manager, City of Fresno	None	Ms. Hattersley-Drayton responded via e-mail and in a letter dated August 23, 2012 (copies attached).
Sharon Hiigel, Curator, Fresno Historical Society	None	Ms. Hiigel responded via e-mail (copy attached).
City of Merced Development Services Department	None	Terri Lucas, Secretary III, responded via e-mail (copy attached).
Merced County Historical Society	None	Sarah Lim, Director of the Merced County Courthouse Museum, responded via e-mail (copy attached).
Richard Larrouy, Planning Manager, City of Stockton	1:59 pm, August 20, 2012 3:18 pm, October 2, 2012 3:20 pm, February 25, 2013	Left messages; no response to date.
Stockton Historical Society	The organization only accepts e-mail inquiries through its website; no telephone number listed.	

APPENDIX 5e

Letter Report Re:
Paleontological Sensitivity Assessment
for SJC Amtrak California

CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

February 23, 2014

Tom Dodson, President
Tom Dodson and Associates
2150 North Arrowhead Avenue
San Bernardino, CA 92405

Re: Paleontological Sensitivity Assessment
San Joaquin Corridor Amtrak California Service Programmatic EIR
Alameda, Contra Costa, Fresno, Kern, Kings, Los Angeles, Madera, Merced, Sacramento, San Joaquin, Stanislaus, and Tulare Counties, California
CRM TECH Project No. 2778

Dear Mr. Dodson:

At your request, we have completed a paleontological sensitivity assessment on the area of potential effects for the project referenced above. The study, and the EIR it is associated with, are necessitated by a proposed railroad transportation expansion program to improve and enhance passenger rail service between Sacramento, Oakland, Bakersfield, Los Angeles, and other communities in between through the year 2035. The project area consists of approximately 660 linear miles of the Burlington Northern Santa Fe Railway (BNSF), Union Pacific Railroad (UPRR), and Southern California Regional Rail Authority (SCRRA) rights-of-ways, extending from the San Francisco Bay and Sacramento-San Joaquin River Delta area in northern California across the San Joaquin Valley to the Los Angeles Basin area in Southern California (Fig. 1).

The purpose of this study is to identify, on a programmatic level, areas along the project route that appear to have a high potential for significant, nonrenewable paleontological resources to be encountered during ground-disturbing activities associated with the proposed project, as indicated by the geologic formations present at each location. Sources consulted for this purpose included primarily the Geologic Maps of California series published by the California Division of Mines and Geology (now the California Geological Survey) at a scale of 1:250,000. In some areas, the data from these maps were compared to and supplemented by those from the Dibblee Geologic Map series, which were printed at scales of 1:62,500 and 1:24,000.

With the exception of the segment of the project route from Palmdale to Los Angeles, no major discrepancies were observed between the two sets of geologic maps, and those differences that were noted appear to have stemmed, at least partially, from the different map scales. Because of the configuration of the project area, the region-by-region assessment was conducted in two linear patterns, one from Oakland to Stockton and the other from Sacramento to Los Angeles. Only the areas resting on sediments that are considered potentially fossiliferous are listed specifically in the discussion below. The other portions of the project area appear to be low in sensitivity for significant paleontological remains because of their locations upon Holocene-age sediments, geologic formations of igneous origin, or metamorphic rocks.

Tel: 909 824 6400 Fax: 909 824 6405

Figure 1. Project alignment across the State of California.

Oakland to Stockton

Along this generally east-west alignment in the San Francisco Bay and Sacramento-San Joaquin River Delta area, the following segments of the project route are found to be situated in areas of high potential for paleontological resources:

- From San Pablo to the north, for approximately two miles the project route runs through **Pmlc**, namely rocks of Pliocene age.
- From the northern end of the previous segment to the area near Martinez, the southern branch of the project route runs through Tertiary sedimentary rocks.
- In the same area, the northern branch of the project route runs along the shoreline, mostly upon Holocene-age sediments of low paleontological sensitivity, but parts of this alignment may cut into Tertiary sediments of a high paleontological sensitivity.
- From the vicinity of the San Joaquin River to Stockton, the route runs through **Qm**, or Pleistocene-age sediments.

Sacramento to Los Angeles

This alignment traverses from the heart of the Central Valley to the southern California coastal plain, through the length of the San Joaquin Valley and across the Tehachapi and San Gabriel Mountain Ranges, along with the western tip of the Mojave Desert. The following segments of the alignment are considered to be of higher sensitivity for paleontological resources:

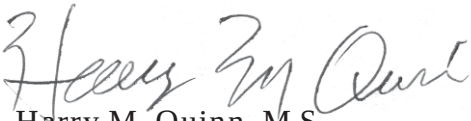
- From New Hope to approximately two miles north of the Fresno River, the route runs mainly through **Qm**, specifically the Pleistocene-age Modesto Formation.
- From the southern end of the last segment to the Fresno River, the sediments are mapped as **Qc**, or Pleistocene-age non-marine sediments.
- From the area between Storey and Trigo (west of Madera) to Calwa, the project route also lies upon the Pleistocene-age **Qc** formation, which could contain significant paleontological resources.
- From Shafter to the north side of the Kern River, the project route runs along the edge of the **Qc** formation.
- From the southeast side of the Kern River to the base of the Tehachapi Mountains, the project route runs upon **Qc**, **QP**, and **Tc**, all of them sediments of Tertiary or Pleistocene origin.
- From Tehachapi to the Garlock Fault in the Tehachapi Pass, the project route lies mainly upon the Holocene-age **Qal** formation, which is low in paleontological sensitivity, but also cuts through some **Qc**. Since the **Qc** is buried underneath the **Qal** at an unknown depth, this portion of the project area is considered sensitive if excavations are deep enough to reach the **Qc** formation.
- From the Tehachapi Pass area to the floor of the Antelope Valley, the project route cuts through both igneous rock and **Qc**. The igneous rock has a low paleontological sensitivity, but the **Qc** is highly sensitive. Since both of these are present along the route in a mixed pattern, this segment is assigned a high paleontological sensitivity in general.
- Within the Antelope Valley, the project route passes over the Rosamond Hills. On the south side of the hills, for approximately two miles the route runs upon **Mc**, namely Miocene-age non-marine sediments and tuffaceous sediments.

- From about a mile north of the Palmdale Reservoir to San Fernando, the project route runs mainly upon Holocene-age sedimentary rocks of low paleontological sensitivity, based on the Dibblee maps. There are, however, a few areas where it may cut into rocks of Tertiary age.

As stated above, other than the segments identified above, the rest of the project area is generally considered to be of low sensitivity for significant, nonrenewable paleontological resources.

Thank you for this opportunity to be of service. If you have any questions or need additional information, please feel free to contact us at (909) 824-6400.

Sincerely,



Harry M. Quinn, M.S.
Project Geologist / Paleontologist, CRM TECH
California Professional Geologist #3477

APPENDIX 6

FEMA FIRM Panels

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane Zone IV (FIPS 404). **The horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map transportation information shown on this FIRM was provided in digital format from Fresno County Public Land Survey System information was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1997 or later.

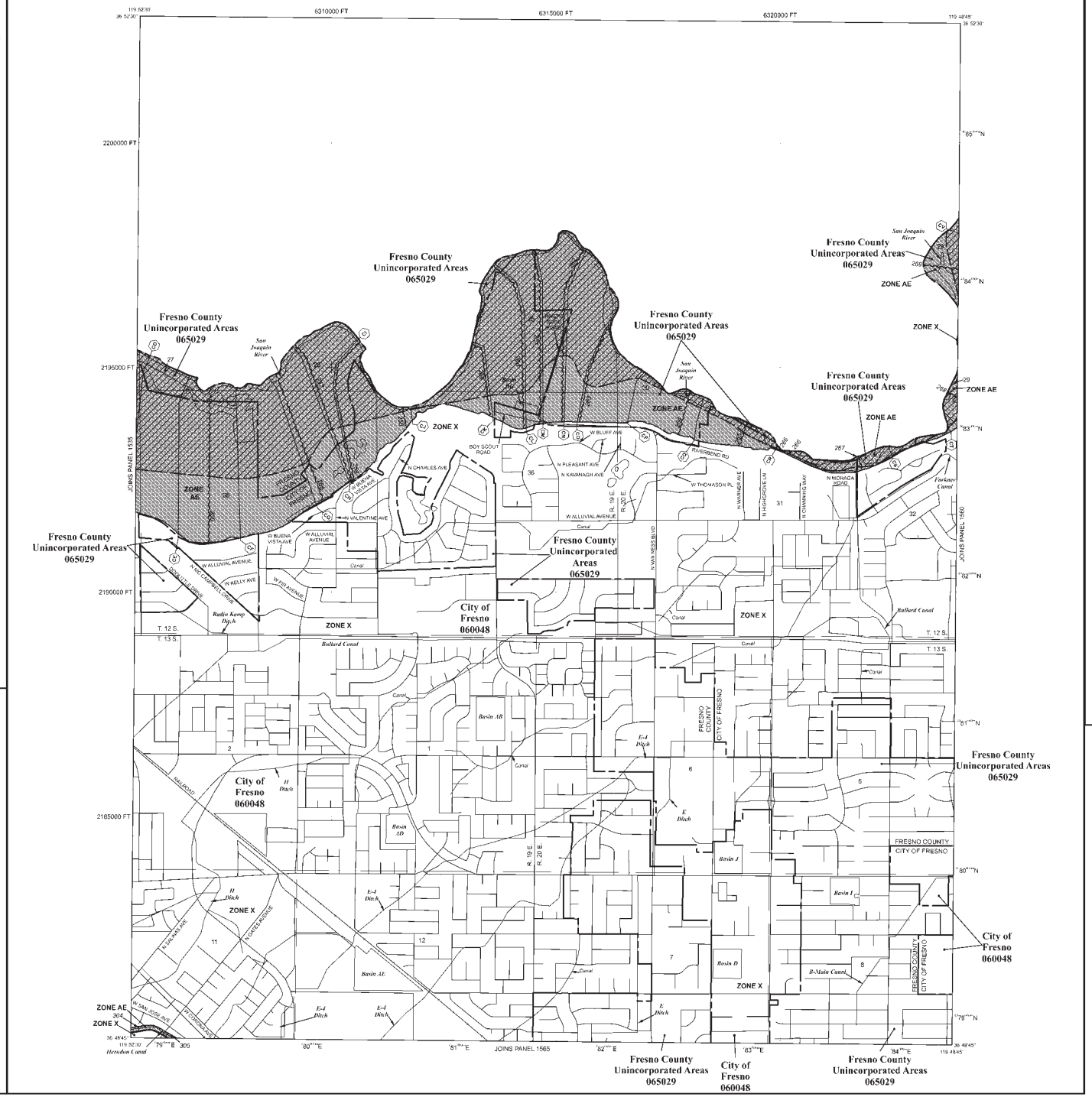
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
(B)- - - - - -(B)	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4000000 FT	1000-meter Universal Transverse Mercator grid values, zone 10
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
● M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
May 19, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 30, 2005 - to add base flood elevations, to add special flood hazard areas, to change zone designations, and to reflect updated topographic information.

February 18, 2009 - to update corporate limits, to change base flood elevations, floodway, and Special Flood Hazard Areas, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1555H

FIRM

FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 1555 OF 3525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRESNO COUNTY	065029	1555	H
FRESNO, CITY OF	060048	1555	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C1555H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane Zone IV (FIPS 404). **The horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map transportation information shown on this FIRM was provided in digital format from Fresno County. Public Land Survey System information was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1997 or later.

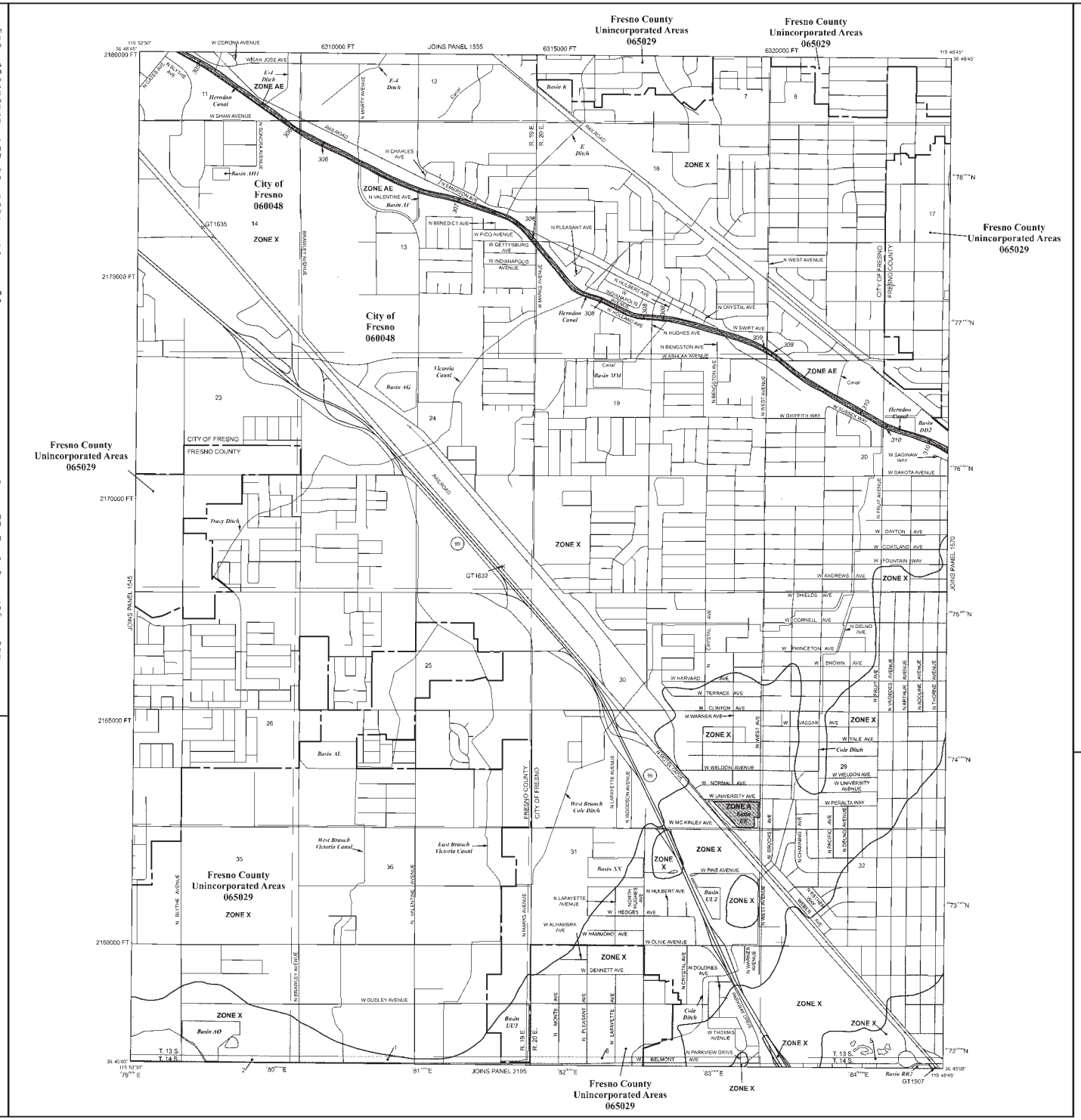
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A	Cross section Line
23 — - - - — 23	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
7°76'000" N	1000-meter Universal Transverse Mercator grid values, zone 10
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 19, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 18, 2009 - to update corporate limits, to change base flood elevations, floodway, and Special Flood Hazard Areas, to add roads and road names and to incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1565H

FIRM
FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1565 OF 3525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRESNO COUNTY	065029	1565	H
FRESNO, CITY OF	060048	1565	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C1565H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane Zone IV (FIPS 404). **The horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map transportation information shown on this FIRM was provided in digital format from Fresno County. Public Land Survey System information was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1997 or later.

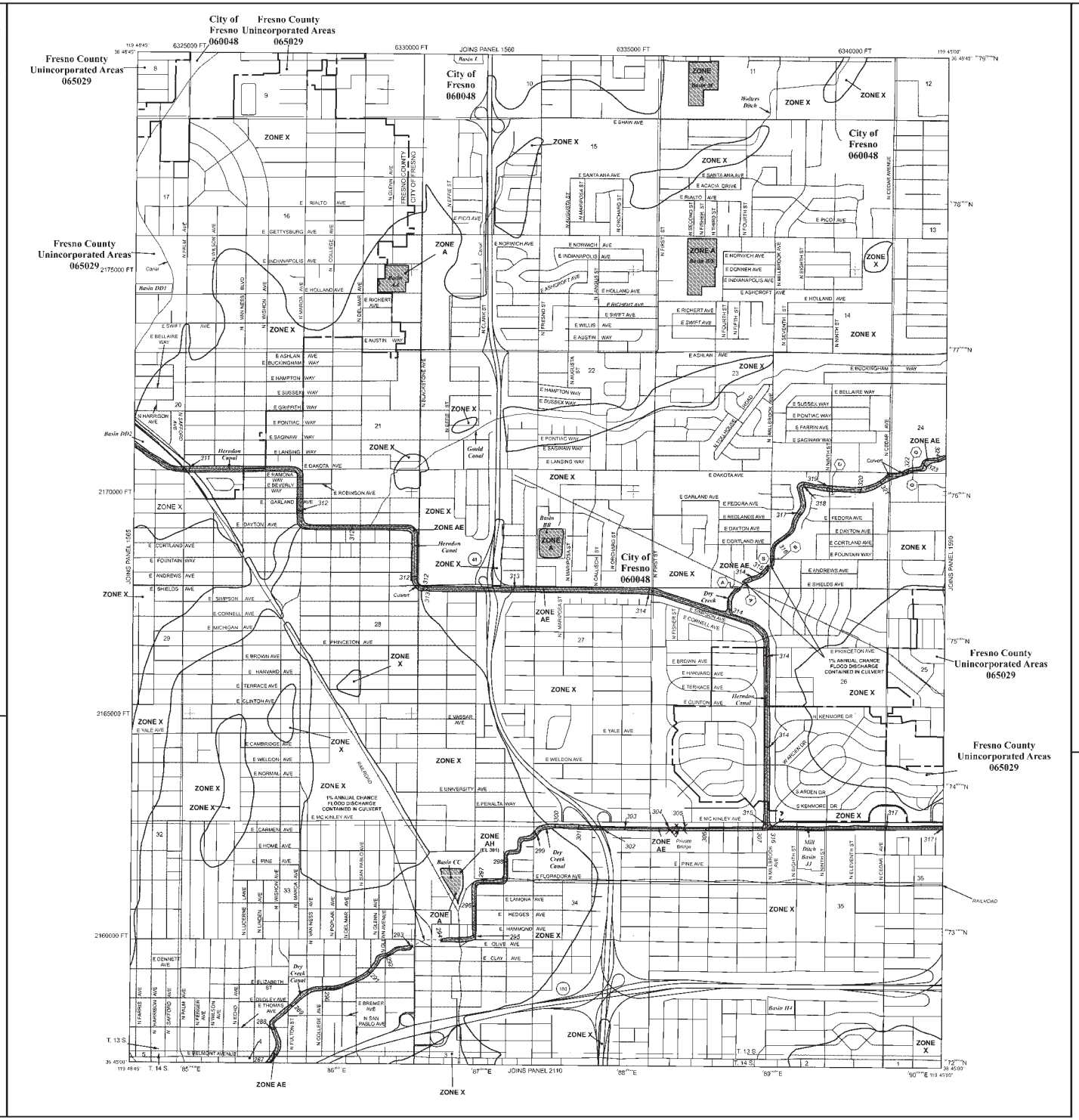
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
(B)- - - - - -(B)	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
76000 N	1000-meter Universal Transverse Mercator grid values, zone 10
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
●M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 19, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 18, 2009 - to update corporate limits, to change base flood elevations, floodways, and Special Flood Hazard Areas, to add roads and roadways and to incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1570H

FIRM
FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1570 OF 3525
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRESNO COUNTY	065029	1570	H
FRESNO, CITY OF	060048	1570	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C1570H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane Zone IV (FIPS 404). **The horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format from Fresno County. Public Land Survey System information was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1997 or later.

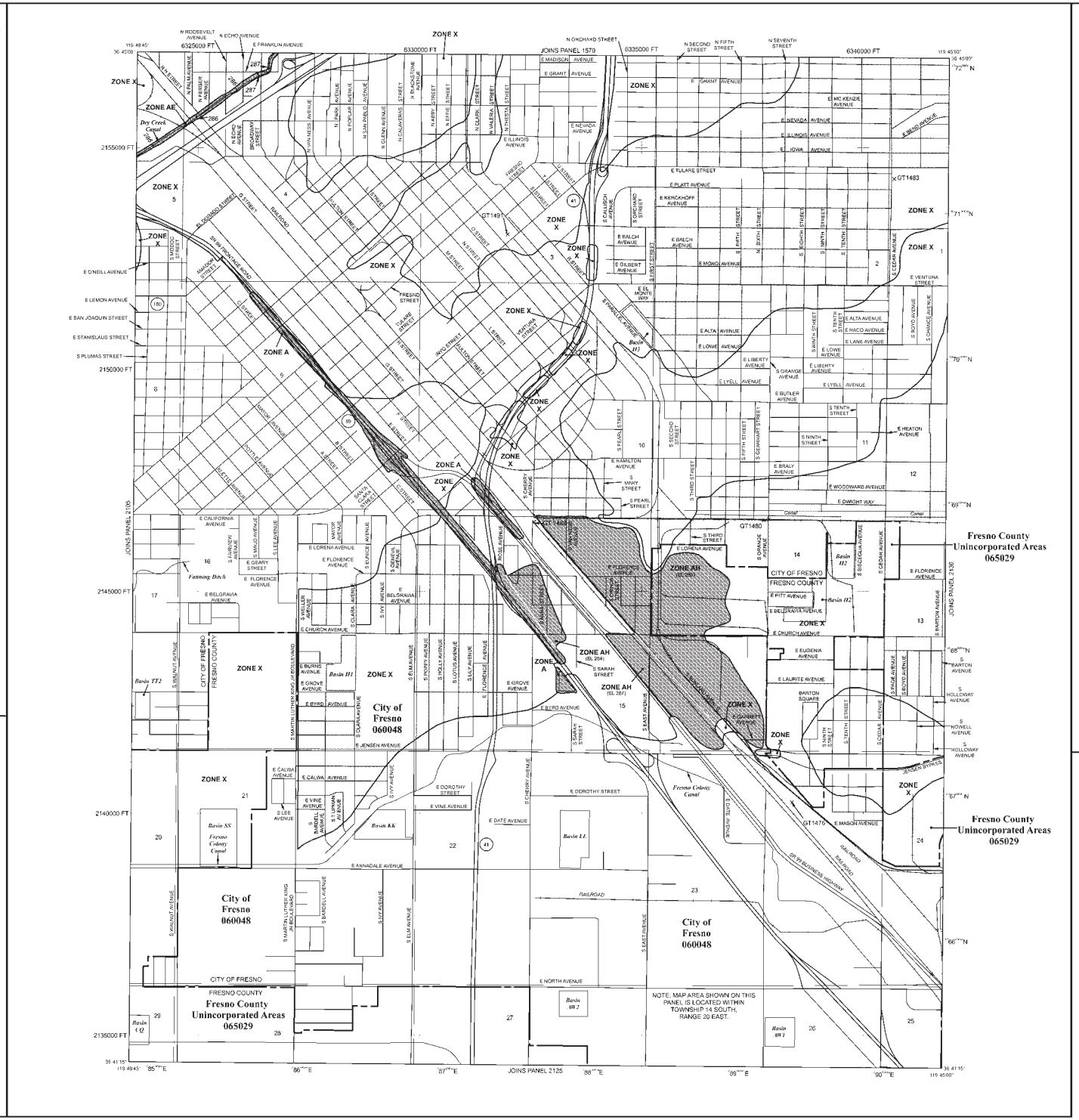
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
(B)- - - - - -(B)	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
'76''' N	1000-meter Universal Transverse Mercator grid values, zone 10
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic projection
DX5510 x	Bench mark (see explanation in Notes to Users section of this FIRM panel)
●M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 19, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 18, 2009 - to update corporate limits, to change base flood elevations, floodway, and Special Flood Hazard Areas, to add roads and road names, and to incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2110H

FIRM
FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 2110 OF 3525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRESNO COUNTY	065029	2110	H
FRESNO, CITY OF	060048	2110	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C2110H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane Zone IV (FIPS 404). The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format from Fresno County, Public Land Survey System information was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1997 or later.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

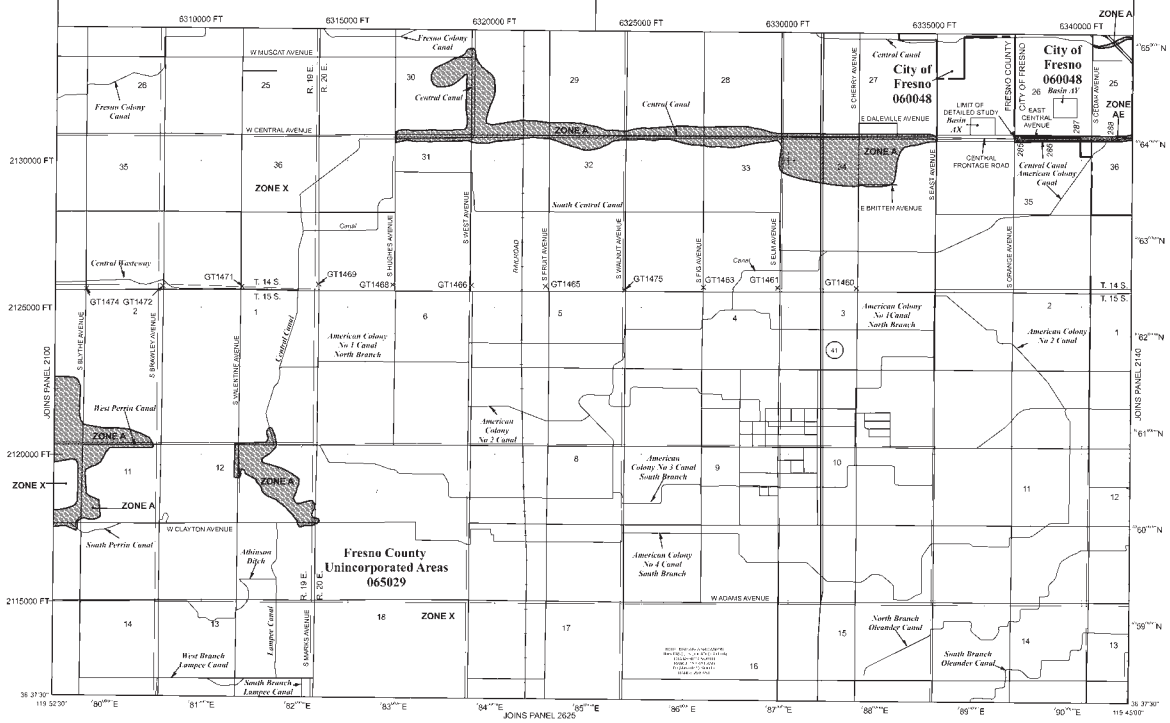
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

THIS AREA IS SHOWN
AT A SCALE OF 1" = 1000'
ON MAP NUMBER 06019C2105

THIS AREA IS SHOWN
AT A SCALE OF 1" = 1000'
ON MAP NUMBER 06019C2110



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
~~ 513 ~~~	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section Line
(23)- - - - - -(23)	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4276000 FT N	1000-meter Universal Transverse Mercator grid values, zone 10
600000 FT	1000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
●M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 19, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 18, 2009 - to update corporate limits, to change base flood elevations, floodways, and Special Flood Hazard Areas; to add roads and road names and to incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET

600 0 600 1200 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2125H

FIRM

FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 2125 OF 3525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRESNO COUNTY	065029	2125	H
FRESNO, CITY OF	060048	2125	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C2125H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane Zone IV (FIPS 404). **The horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map transportation information shown on this FIRM was provided in digital format from Fresno County. Public Land Survey System information was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1997 or later.

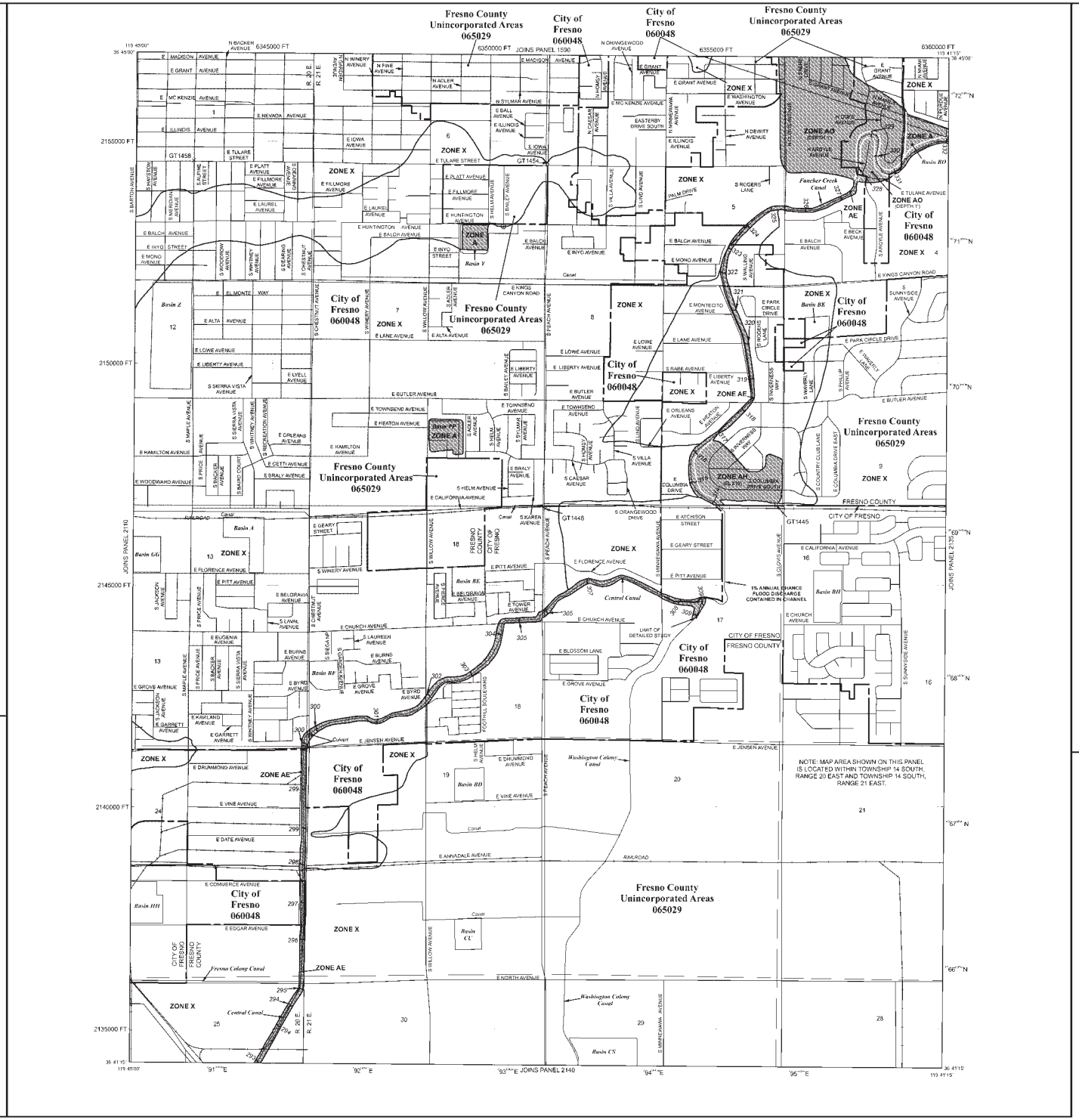
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
(B)- - - - -(B)	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
7670000 FT N	1000-meter Universal Transverse Mercator grid values, zone 10
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic projection
DX5510 x	Bench mark (see explanation in Notes to Users section of this FIRM panel)
●M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 19, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 18, 2009 - To update corporate limits, to the right of bank flood elevations, floodway, and Special Flood Hazard Areas, to add roads and road names, and to incorporate previously issued Letter of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2130H

FIRM
FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 2130 OF 3525
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRESNO COUNTY	065029	2130	H
FRESNO, CITY OF	060048	2130	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C2130H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was California State Plane Zone IV (FIPS 404). **The horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format from Fresno County. Public Land Survey System information was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1997 or later.

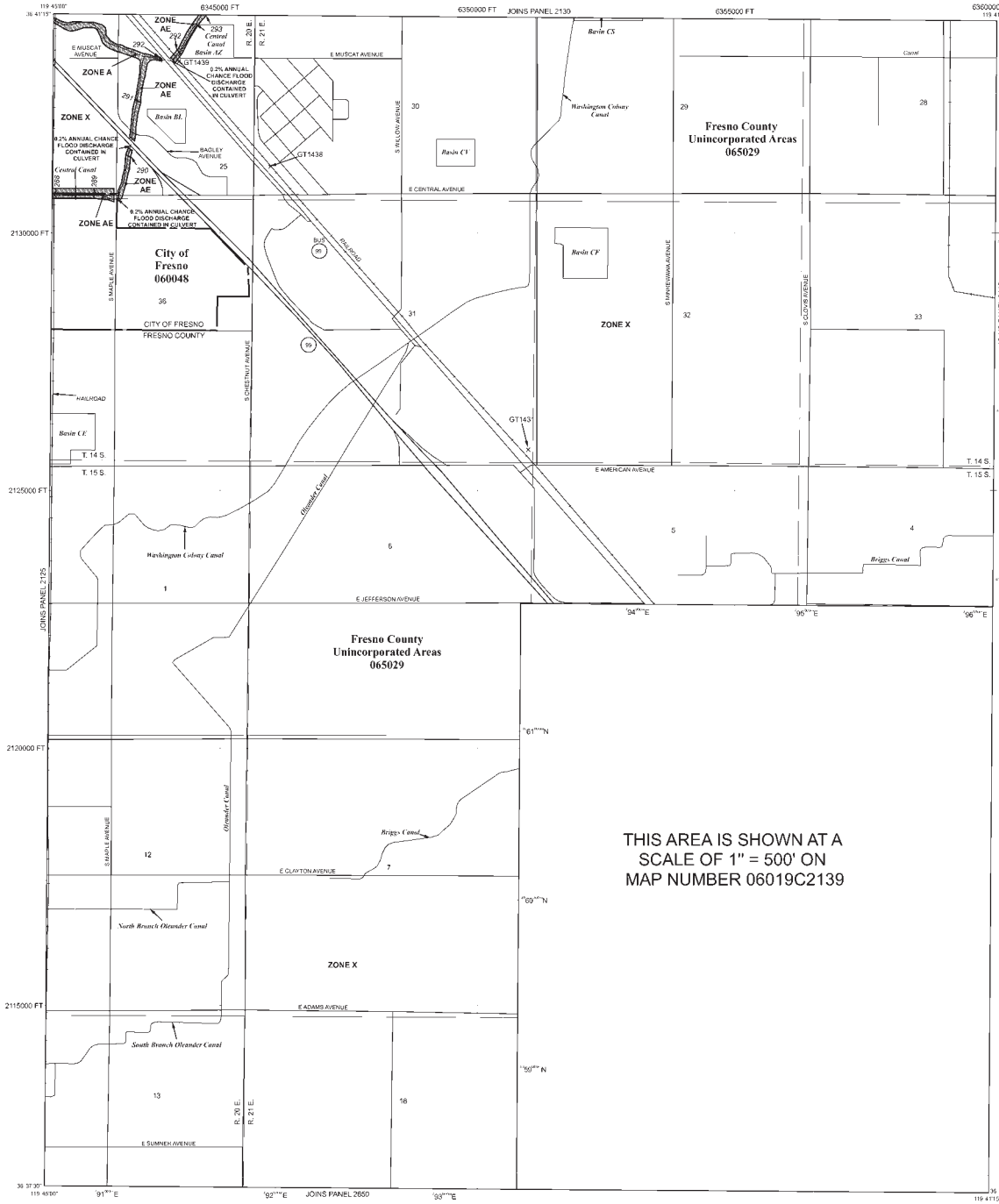
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the **FEMA** website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
(B)- - - - - -(B)	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
7°76'000" N	1000-meter Universal Transverse Mercator grid values, zone 10
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic projection
DX5510 x	Bench mark (see explanation in Notes to Users section of this FIRM panel)
●M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
July 19, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
February 18, 2009 - to update corporate limits, to change base flood elevations, floodway and Special Flood Hazard Areas, to add roads and road names and to incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2140H

FIRM
FLOOD INSURANCE RATE MAP

FRESNO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 2140 OF 3525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRESNO COUNTY	065029	2140	H
FRESNO, CITY OF	060048	2140	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06019C2140H

MAP REVISED
FEBRUARY 18, 2009

Federal Emergency Management Agency

APPENDIX 7

Noise and Vibration Impact Analyses

NOISE AND VIBRATION IMPACT ANALYSES

SAN JOAQUIN CORRIDOR PROJECT

CENTRAL VALLEY AND BAY AREA, CALIFORNIA

Prepared by:

Giroux & Associates
1820 E Garry St., #211
Santa Ana, CA 92705

Prepared for:

Caltrans District 7
Division of Environmental Planning
100 South Main Street, Suite 100
Los Angeles, CA 90012

Date:

March 5, 2014

Project No.: P11-038 N

Table of Contents

EXECUTIVE SUMMARY 2
PROJECT DESCRIPTION 3
Purpose of this Study 6
Scope of the Study 6
NOISE AND VIBRATION DESCRIPTORS 7
Other Noise Metrics 9
Vibration Descriptors 9
Noise Standards 10
Federal Agencies and Regulations 10
State Agencies and Regulations 12
California Noise Insulation Standards 12
State Vibration Policies 12
Local Agencies and Regulations 12
Existing Noise Environment 13
NOISE IMPACT ASSESSMENT 18
Impact Evaluation Criteria (CEQA Thresholds) 18
Federal Noise Impact Criteria 18
Impacts of the Project 19
Short-Term Impacts 19
Long-Term Impacts 22
Physical Support Facilities 24
Stockton Station Alternative Location 25
Lay-Over Alternative Location 25
VIBRATION IMPACT ASSESSMENT 26
Human Perception 26
Vibration Impact 27
MITIGATION 30

EXECUTIVE SUMMARY

The proposed project would allow for the installation of approximately 250 miles of second or third main-tracks to accommodate an anticipated tripling of the numbers of San Joaquin Corridor passengers in the next 20 years. A large numbers of bridges, culverts, crossings and other rail support structures must be modified to allow for the installation of additional tracks. Several physical facilities (depots and lay-over yards) are also included in this impact analysis. The increased passenger capacity is expected to be serviced by 10 additional corridor trains (5 in each direction), and the addition of 1-2 "California Cars" on 12 existing Amtrak trains.

Noise measurements along several corridor segments have documented existing noise levels well in excess of normally acceptable levels in close proximity to the BNSF track. Levels near 80 dB CNEL at 50 feet from the track centerline are well in excess of general plan standards for noise-sensitive land uses. A substantial reason for high CNELs near the tracks is a high percentage of freight traffic at night. Each nocturnal freight train is the noise-equivalent of ten daytime freights in the CNEL calculation. When this noise "penalty" is coupled with very loud train horns near at-grade crossings, noise levels become unacceptable for all but the least noise-sensitive land uses.

The attached noise study is in support of a programmatic EIR. The study lays out general possible noise constraints from anticipated future changes in the noise environment. As detailed information becomes available during project-specific development planning, a more comprehensive noise impact analysis may be warranted in areas where noise-sensitive land uses are present in areas where noise abatement criteria may be approached or exceeded. If future site-specific noise impacts are identified, an analysis of reasonable and feasible mitigation measures is required.

Noise and vibration impacts for 10 additional passenger trains would be masked by existing train noise and vibration from 46 freights and 12 passenger trains per day. This is particularly true because freights are much noisier and "shakier" than passenger trains. The only disclaimer to this observation is that passenger trains traveling 90 mph have the same noise and vibration footprint as a freight train traveling at 50-60 mph. The addition of 10 passenger trains in areas where a 90 mph travel speed is feasible is the noise/vibration equivalent of adding 10 freights at their typical travel speed. Very little of the passenger train increase would occur at night where the CNEL penalty would apply. Similarly, the addition of ten higher speed passenger trains would continue to be considered an "occasional" event rather than a "frequent" event where a more stringent vibration standard would be appropriate. The noise and vibration impacts of adding 10 passenger trains, even at locations where they can travel at 90 mph, are therefore not negligible, but do not reach levels where they would be considered environmentally adverse.

Final design of fixed support facilities has not been completed as to allow for a full noise impact analysis. However, generic noise assessments of train depots, park-and-ride lots, lay-over yards, or bus transit facilities indicate that with reasonable set-back distances, such activities will not cause noise protection planning standards to be exceeded.

Temporary construction activity noise impacts will be briefly loud, but almost all project construction will be progressive and not impact any single location for more than a limited number of days. Single event noise from existing train traffic, especially freights, is already higher than from most construction activities. The brief construction duration, the masking effects of background noise levels, standard requirements as to allowable hours of construction, and proper equipment noise muffling will not generate any substantially adverse construction noise impacts.

PROJECT DESCRIPTION

Caltrans, in cooperation with multiple local agencies located within 11 California counties, propose to fund expansion of the existing rail system within the BNSF Railway Company (BNSF) and Union Pacific Railroad (UP) rights-of-way along three segments of passenger rail corridor in the San Joaquin Valley and portions of the San Francisco Bay area. This impact study is designed to meet CEQA requirements for the proposed action. If federal funding becomes available in the future, a separate document for compliance with NEPA will be prepared at that time. The map in Figure 3-1 shows Amtrak's existing San Joaquin Corridor intercity rail passenger route. Some of the proposed Project alternatives would utilize rights-of-way along the other segments of the BNSF and UP systems and the Southern California Regional Rail Authority (SCRRA), also known as Metrolink. The expansion of this system would serve to accommodate existing and future passenger rail demand and projected increases in ridership through 2035.

Specific project objectives include

- Install a second or third main track along:
  - 188.5 miles of the Bakersfield to Port Chicago segment of BNSF track;
  - 22.11 miles of the Port Chicago to Oakland segment of UP track;
  - 43.61 miles of the Stockton to Sacramento segment (Fresno Subdivision) of UP track.
- Install new sidings, or passing track, in order to facilitate train flow on both tracks.
- Extend or upgrade existing sidings and upgrade track structure and special track work in order to enhance overall safety of railroad operations.
- Replace existing bridges and culverts or install new ones in order to ensure the best performance of drainage structures.
- Improve highway/railroad track intersections in order to enhance safety of railroad operations and to minimize impacts on local circulation systems.
- Install track and/or sidings along secondary rail segments in order to extend passenger rail service into new areas.
- Increase the maximum operating speed of passenger trains in all existing segments of the San Joaquin Corridor from 79 miles per hour (mph) to 90 mph.

- Obtain additional operating equipment (rolling stock i.e., locomotives and passenger cars) to meet the forecasted customer demand for passenger trains.
- Install or update passenger train infrastructure, such as layover or station facilities, to support expansion of future train operations.

Figure 1
Existing San Joaquin Corridor Routes

PURPOSE OF THIS STUDY

The purpose of this study is to evaluate the noise and vibration impacts of project implementation. The identified need for the project is to accommodate existing and future California intercity passenger rail demand and projected increases in ridership through 2035. The proposed project would also serve to improve rail safety and operation and provide increased availability of public transportation, which would, in turn, help to reduce emissions from vehicular travel and achieve the goals of State and local plans.

The need for increased rail capacity and the proposed improvements to the San Joaquin Corridor is demonstrated by ridership increases that have resulted in both sold out trains and an increased number of standees on board the corridor trains. Travel demand is projected to grow threefold over the course of this planning period, well exceeding current capacity.

SCOPE OF THE STUDY

This noise impact analysis includes the following components:

- Identification of baseline conditions and thresholds
- Qualitative discussion of construction activity noise
- Quantitative analysis of noise and vibration changes from increased passenger trains
- Evaluation of project impact relative to accepted standards

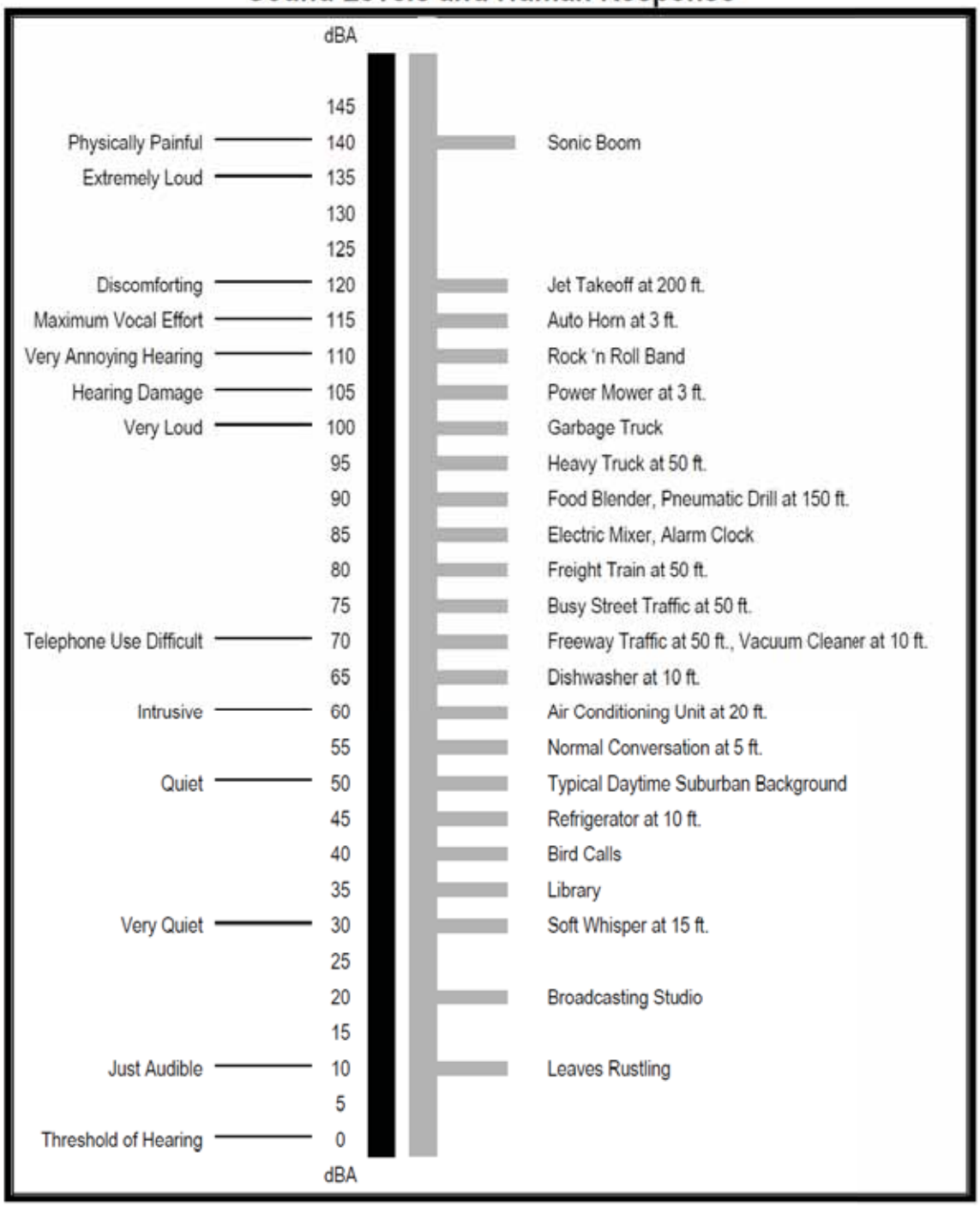
NOISE AND VIBRATION DESCRIPTORS

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, special frequency-dependent rating scales have been devised to relate noise to human sensitivity. The A-weighted decibel scale dB performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. A-weighted decibels are written as “dBA” or “dB(A)”. Any reference to decibels in this report written as “dB” should be understood as being A-weighted.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquake intensity. In general, a 1-dB change in the sound pressure levels of a given sound is detectable only under laboratory conditions. A 3-dB change in sound pressure level is considered a "just detectable" difference in most ambient situations. A 5-dB change is readily noticeable and a 10-dB change is considered a doubling (or halving) of the subjective loudness. It should be noted that, generally speaking, a 3-dB increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume. Because few rail projects individually cause a doubling or halving of the train volumes on already heavily traveled railways, most train activity noise impacts tend to be cumulative in nature.

In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; 20 dB higher, four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud.) Examples of various sound levels in different environments are shown in Table 1 - Sound Levels and Human Response.

Table 1
Sound Levels and Human Response



Source: Adapted from William Bronson, *"Ear Pollution,"* California Health (October 1971), p. 29.

NOISE SCALES

There are three general methods used to measure sound over a period of time: the Community Noise Equivalent Level (CNEL), the equivalent energy level (LEQ), and the Day/Night Average Sound Level (DNL).

CNEL: The predominant community noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL reading represents the average of 24-hourly readings of equivalent levels, known as LEQs, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dB in the evening (7:00 p.m. to 10:00 p.m.), and +10 dB for the night (10:00 p.m. to 7:00 a.m.). CNEL may be indicated by "dB CNEL" or just "CNEL."

Leq: The LEQ is the sound level containing the same steady-state total energy over a given sample time period as a continuously varying ambient level. The LEQ can be thought of as the steady (average) sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. LEQ is typically computed over 1, 8, and 24-hour sample periods.

DNL: Another commonly used method is the day/night average level or DNL. The DNL is a measure of the 24-hour average noise level at a given location. It was adopted by the United States Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the LEQ. The DNL is calculated by averaging the LEQs for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 p.m. to 7:00 a.m.), by a 10 dB to account for the increased sensitivity of people to noises that occur at night. In most applications, CNEL and DNL are generally indistinguishable.

OTHER NOISE METRICS

The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L_{90}, L_{50}, L_{10}, etc.). L_{50} equals the level exceeded 50 percent of the time.

VIBRATION DESCRIPTORS

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration velocity is usually the most common descriptor. The average foot-mean-square (RMS) is often used in ambient vibration descriptors because human response to rolling-type motion encompasses one or more full vibration cycles. Vibration damage to physical objects is more closely coupled to short-term jolts best described by the peak particle velocity. As with sound, the wide range of possible vibration velocities is compressed into a more manageable logarithmic scale expressed as VdB relative to one microinch per second. The Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Analysis (DOT-T-95-16, Updated 2006) states that background vibration

velocity levels in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans which is around 65 VdB. The upper range for rapid transit vibration is around 80 VdB and the high range for passenger and freight rail vibration is 85 VdB (U.S. FTA, 2006) close to the tracks.

The FTA Assessment states that in contrast to airborne noise, ground-borne vibration is not a common environmental problem. Although the motion of the ground may be noticeable to people outside structures, without the effects associated with the shaking of a structure, the motion does not provoke the same adverse human reaction to people outside. Within structures, the effects of ground-borne vibration include noticeable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The maximum vibration amplitudes of the floors and walls of a building often will be at the resonance frequencies of various components of the building. However, the FTA Assessment states that noticeable vibration inside a building is typically caused by equipment or activities within the building itself, such as heating and ventilation systems, footsteps or doors closing.

FTA Assessment states that it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. However, some common sources of vibration are trains, trucks on rough roads, and construction activities, such as blasting, pile driving, and heavy earth-moving equipment. Train-induced vibration depends upon a wide variety of factors. Because train speed, track condition, soil structure, suspension stiffness, wheel maintenance and other variables all affect train-caused vibration, it is very difficult to generalize the relationship of all the variables in any vibration impact assessment.

NOISE STANDARDS

The federal government sets noise standards for transportation-related noise sources that are closely linked to interstate commerce, such as aircraft, locomotives, and trucks, and, for those noise sources, the state government is preempted from establishing more stringent standards. The state government sets noise standards for those transportation noise sources that are not preempted from regulation, such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies.

Federal Agencies and Regulations

Code of Federal Regulations (CFR)

Federal regulations for railroad noise are contained in 40 CFR Part 201 and 49 CFR Part 210. The regulations set noise limits for locomotives and are implemented through regulatory controls on locomotive manufacturers.

Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck pass-by noise standard is dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers. The Federal Highway Administration

(FHWA) regulations for noise abatement must be considered for federal or federally-funded projects involving the construction of a new highway or significant modification of an existing freeway when the project would result in a substantial noise increase or when the predicted noise levels approach or exceed the "Noise Abatement Criteria."

Federal Transit Administration (FTA)

The Federal Transit Administration has prepared guidance noise and vibration impacts assessments for proposed mass transit projects: Transit Noise and Vibration Impact Assessment (U.S. FTA, 2006). The May 2006 version is the second edition of a guidance manual originally issued in 1995, which presented procedures for predicting and assessing noise and vibration impacts of proposed mass transit projects. The guidance is required to evaluate the noise and vibration impacts in environmental review process for project proponents seeking funding from FTA. All types of bus and rail projects are covered. Although the focus of the guidelines is on transit noise, intercity passenger and freight rail projects often rely on the analysis methodology detailed in that document. The guidance contains procedures for assessing impacts at different stages of project development, from early planning before mode and alignment have been selected through preliminary engineering and final design. The focus is on noise and vibration impacts during operations, but construction impacts are also covered. The guidance describes a range of measures for controlling excessive noise and vibration.

Federal Railroad Administration (FRA)

On March 24, 2009, the Federal Highway Administration (FHA) and the FTA adopted a final rule that modified FRA regulations to make certain changes mandated by the Safe, Accountable, Flexible, Efficient, Transportation, Equity Act: A Legacy for Users (SAFETEA-LU). The SAFETEA-LU prescribes requirements for environmental review and project decision making. This rule became effective April 23, 2009.

Department of Housing and Urban Development (HUD)

The noise regulation 24 CFR Part 51 Subpart B, Noise Abatement and Control presents the HUD noise program. Within the HUD Noise Assessment Guidelines, potential noise sources are examined for projects located within 15 miles of a military or civilian airport, 1,000 feet from a road or 3,000 feet from a railroad. HUD exterior noise regulations state that 65 dBA DNL noise levels or less are acceptable for residential land uses and noise levels exceeding 75 dBA DNL are unacceptable. HUD's regulations do not contain standards for interior noise levels. A goal of 45 decibels is set forth for interior noise and the attenuation requirements are based upon this level. HUD's standards assume that internal noise levels would be met if exterior standard are met under standard construction practices.

Federal Vibration Policies

The FRA and FTA have published guidance relative to vibration impacts. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS)

amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. The decibel notation, VdB, is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration. According to the FRA, fragile buildings can be exposed to groundborne vibration levels of 0.5 inches per second PPV without experiencing structural damage. The FTA has identified the human annoyance response to vibration levels as 80 VdB (U.S. FTA, 2006).

State Agencies and Regulations

California Department of Transportation (Caltrans) The State of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state pass-by standard is consistent with the federal limit of 80 dB. The state pass-by standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline. For new roadway projects, Caltrans employs the Noise Abatement Criteria, discussed above in connection with the FHWA.

California Noise Insulation Standards

The California Noise Insulation Standards found in the California Code of Regulations, Title 24, set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is DNL 45 dB in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dB. DNL is the average noise level over a 24 hour period. The noise between the hours of 10:00 p.m. and 7:00 a.m. is artificially increased by 10 dB. This takes into account the decrease in community background noise during nighttime hours.

State Vibration Policies

There are no adopted state policies or standards for ground-borne vibration. However, Caltrans recommends that extreme care be taken when sustained pile driving occurs within 7.5 meters (25 feet) of any building, and 15 to 30 meters (50 to 100 feet) of a historic building or a building in poor condition.

Local Agencies and Regulations

To identify, appraise, and remedy noise problems in the local community, each county and city along the San Joaquin Corridor has adopted a noise element as part of its General Plan. Each noise element is required to analyze and quantify current and projected noise levels associated with local noise sources, including, but not limited to, highways and freeways, primary arterials and major local streets, rail operations, air traffic associated with the airports, local industrial plants, and other ground stationary sources that contribute to the community noise environment. Beyond statutory requirements, local jurisdictions are free to adopt their own goals and policies in their noise elements, although most jurisdictions have chosen to adopt noise/land use

compatibility guidelines that are similar to those recommended by the state. The state model noise/land use compatibility guidelines have some flexibility in offering over-lapping options for noise exposure acceptability. The overlapping DNL ranges indicate that local conditions (existing noise levels and community attitudes toward dominant noise sources) should be considered in evaluating land use compatibility at specific locations. The model guidelines for noise exposure are shown in Figure 2.

In addition to regulating noise through noise element policies, local jurisdictions regulate noise through enforcement of local ordinance standards. These standards generally relate to noisy activities (e.g., use of loudspeakers and construction) and stationary noise sources and facilities (e.g., air conditioning units and industrial activities).

The proposed project includes 20 years of construction activities. However, except for a small number of fixed facilities (stations and one lay-over facility), construction noise will occur at any single location for only a very brief period. In recognition that heavy construction normally cannot be done without making noise, almost all noise ordinances exempt such activities from noise performance standards as long as they occur during hours of lesser noise sensitivity.

Existing Noise Environment

The proposed project site covers a wide expanse of the Central Valley and a small portion of the Bay Area. As the nation's breadbasket, much of the Central Valley is agricultural. Agriculture is not a noise-sensitive activity. However, the San Joaquin Corridor passes through most substantial cities in the valley. While land uses closest to the track in developed areas are mainly commercial or industrial, older residential communities are found near the tracks in many valley metropolitan areas. Because track proximity is considered less than desirable, the residential uses area often populated by people of lower socio-economic status. Impacts to such communities from increased train traffic could have environmental justice implications.

Noise from existing train operations varies substantially with train travel speed. In heavily developed areas, speeds are restricted to around 35 mph. In wide open spaces travel speeds or 70 mph are quite common. The use of train horns near at-grade intersections is another variable that determines baseline train activity noise. There are some grade- separated crossings in cities, but most train/road intersections in open country are at grade. Progress is being made on creating "quiet zones" in some cities, but safety must not be compromised if train horn use is minimized.

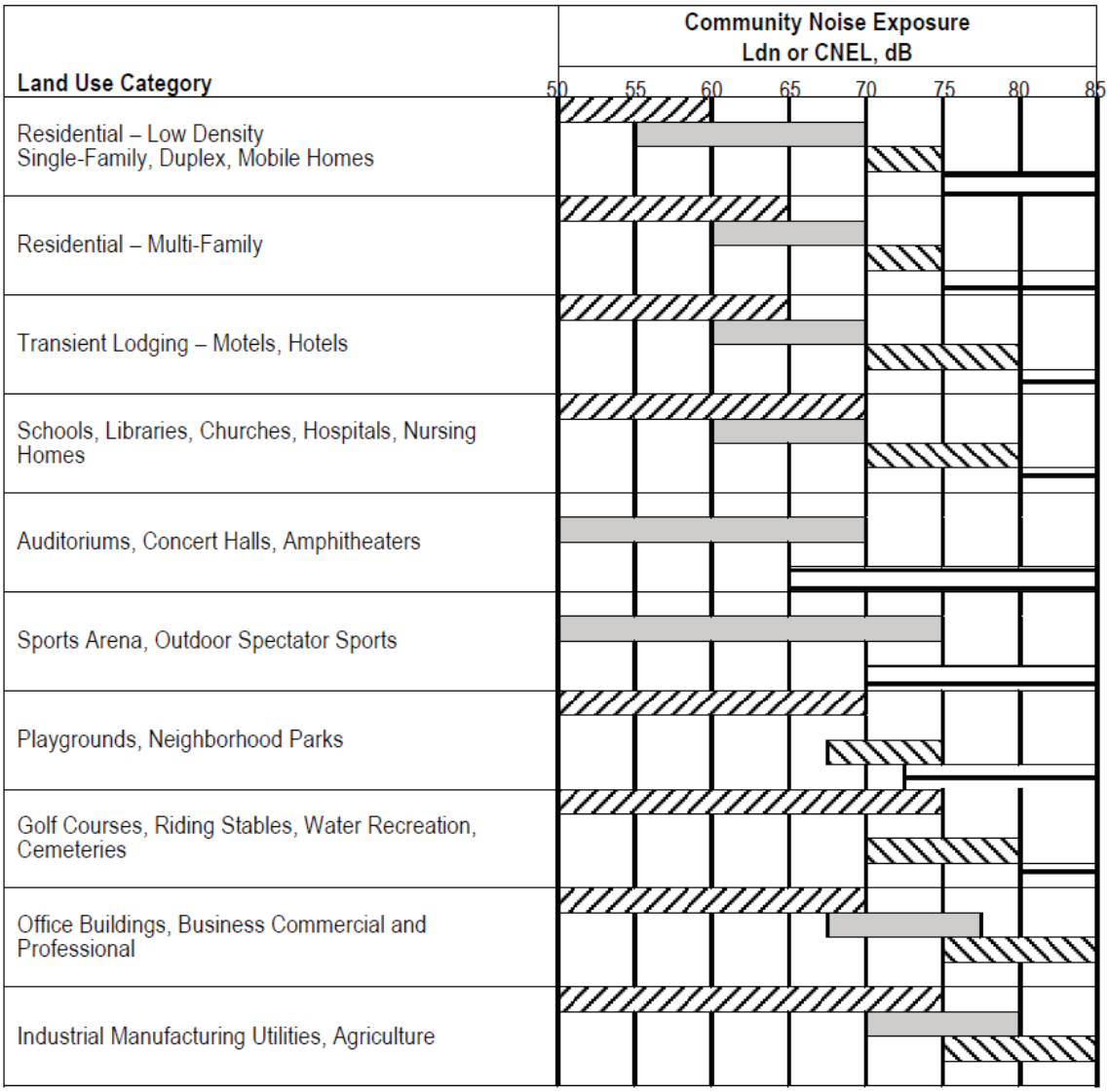
Train activity noise was monitored in 2002 near four grade crossings south of Escalon. Although these data are 10+ years old, the amount of train traffic has changed little in a decade. A similar study was conducted in 2013 at four crossings in the southern portion of the corridor between Shafter and Corcoran. Table 2 shows the 24+ hours of readings near Escalon. Table 3 shows the same breakdown for the four southern sites. The two data sets are very similar. Train passages, inferred from maximum (Lmax) levels of 90 dB or more, occurred on 18-20 hours. The weighted 24-hour CNEL close to the track ranged from 77-81 dB near Escalon. Along the southern portion of the corridor, the observed CNEL was 77-83 dB.

Freight trains are the predominant noise contributor. They are longer than passenger trains, are pulled by more engines, and most critical for CNEL calculations, a large number of freights run at night. Each train from 10 p.m. to 7 a.m. is the noise-equivalent of ten daytime trains. As a result of this noise sensitivity "penalty", almost every weighted CNEL was louder than the single noisiest hour of the day.

The state model noise/land use guideline considers 75 dB CNEL to be the upper acceptable limit for residential uses. All measurements in close proximity to existing BNSF tracks exceed this threshold. Achieving even marginally acceptable levels for residential uses requires increased set-back or creation of intervening barriers between the source and receiver. Because engine noise from trains emanates from a substantial source height, barriers must be very tall. The undesirable aesthetics of noise walls at railroad tracks generally makes set-back or placement of intervening less noise-sensitive uses the preferred methods of minimizing railroad noise intrusion.

Figure 2

Land Use Compatibility for Community Noise Environments



INTERPRETATION

Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of norm conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the nois reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: State of California Governor's Office of Planning and Research, General Plan Guidelines, 1990.

Table 2
BNSF Noise Monitoring Summary (dBA)
South of Escalon

Time	Site 1(70')		Site 2 (35')		Site 3 (60')		Site 4 (30')	
	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
00-01	72	84	50	61	47	61	59	77
01-02	76[a]	96	77	96	74	96	77	96
02-03	46	61	47	60	42	60	56	78
03-04	69	91	73	94	72	96	74	96
04-05	66	92	68	93	69	96	71	96
05-06	55	69	55	67	51	61	62	82
06-07	73	96	74	96	73	95	77	96
07-08	70	94	71	93	70	91	75	96
08-09	60	87	62	88	62	90	67	92
09-10	69	91	72	89	71	95	75	94
10-11	61	88	63	91	60	85	66	91
11-12	71	93	73	94	70	91	76	96
12-13	66	90	71	95	69	93	74	94
13-14	70	96	72	95	71	92	75	93
14-15	68	92	71	96	71	96	70	93
15-16	69	93	72	96	71	92	73	93
16-17	68	94	70	87	70	92	74	90
17-18	65	93	68	94	63	87	69	93
18-19	73	96	76	95	74	95	77	96
19-20	57	82	61	87	62	88	67	91
20-21	72	95	75	96	74	95	77	96
21-22	53	70	67	96	65	93	65	91
22-23	66	89	69	94	67	92	73	96
23-24	74	94	77	96	76	96	79	96
24-Hr. CNEL	77	-	79	-	78	-	81	-

Table 3
BNSF Noise Monitoring Summary (dBA)
Shafter-Corcoran

Time	Site 1(70')		Site 2 (35')		Site 3 (60')		Site 4 (30')	
	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax
00-01	74	94	80	96	65	85	75	96
01-02	70	94	75	96	73	91	75	94
02-03	48	68	78	96	68	87	74	96
03-04	72	93	63	84	63	83	77	95
04-05	54	69	74	96	70	93	75	96
05-06	73	92	77	94	71	93	74	96
06-07	72	92	81	96	73	95	76	94
07-08	71	93	72	95	73	96	72	91
08-09	74	93	76	91	73	95	75	93
09-10	57	69	67	89	74	92	77	95
10-11	72	93	72	96	69	86	73	92
11-12	69	92	68	94	69	87	67	85
12-13	57	73	69	90	72	93	74	96
13-14	70	94	72	93	72	96	70	90
14-15	70	94	68	93	72	96	72	91
15-16	68	93	77	93	72	91	71	87
16-17	70	94	68	93	70	88	69	84
17-18	71	92	70	95	88	96	64	77
18-19	70	93	63	86	70	89	71	93
19-20	58	69	70	95	67	90	67	88
20-21	70	91	58	76	65	83	71	96
21-22	67	93	75	95	71	96	70	91
22-23	74	93	75	96	68	89	69	95
23-24	59	85	75	96	69	90	71	93
24-Hr. CNEL	77	-	83	-	78	-	82	-

NOISE IMPACT ASSESSMENT

The San Joaquin Corridor project will generate three possible operational sources of noise along its alignment. Operational noise emissions impacts would derive from a slight relocation of the rail center-line in areas of double tracks from possible speed increases associated with improved trackage, and from anticipated future rail passenger traffic growth. Fixed facilities (new stations and lay-over yard) may experience changes in local traffic patterns that may affect patterns of noise.

Project implementation would also require an extensive amount of construction activities over the next two decades. Construction will affect any individual receiver for only a brief period. Baseline noise along the corridor is markedly elevated such that short-term construction noise will not likely be perceived as a "new" noise intrusion.

NOISE IMPACT CRITERIA

A project is considered to have an adverse noise impact where it causes an adopted noise standard to be exceeded for the project site or for adjacent sensitive receivers. A substantial increase in an environment where noise standards are already exceeded would also be considered an adverse impact. In addition to being concerned about the absolute noise level that might occur when a new source is introduced into an area, it is also important to consider the existing noise environment. If the existing noise environment is quiet and the new noise source greatly increases the noise exposure, even though a criterion level might not be exceeded, an impact may occur. Lacking adopted standards for evaluating such impacts, general rules of thumb for community noise environments are that a change of 5 dB or more is readily noticeable and, therefore, is considered an adverse impact. Changes between 3 and 5 dB may be noticed by some individuals and are, therefore considered to constitute a substantial increase since under these conditions sporadic complaints may occur. Changes in community noise levels of 3 dB(A) or less are normally less noticeable and therefore considered as not an impact that would warrant consideration of mitigation with respect to CEQA guidelines. Experience has shown that noise levels exceeding 65 dB CNEL in outdoor environments intrude upon enjoyment of exterior space or in the ability to carry on a normal conversation. A level of 65 dB CNEL is the most common noise/land use compatibility standard for usable outdoor noise-sensitive space in California.

An interior CNEL of 45 dB is mandated by the State of California Noise Insulation Standards (CCT, Title 24, Part 6, Section T25 28) for multiple-family dwelling units. Since normal noise attenuation within residential structures with closed windows is about 20 dB, an exterior noise exposure of 65 dB CNEL allows that interior standard to be met without any specialized structural attenuation (dual-paned windows, etc.) features. The noise standards used in this analysis are, therefore, 65 dB CNEL exterior use and 45 dB CNEL interior.

FEDERAL NOISE IMPACT CRITERIA

This noise/vibration impact study is in support of CEQA environmental clearance. Federal noise analysis guidelines differ somewhat from CEQA requirements in that they are based upon a

different noise metric. Although an impact analysis based upon federal guidelines is not currently required, federal impact criteria are presented as an additional frame of reference.

The Federal Transit Administration (FTA) has developed guidelines for noise/vibration impact assessment from heavy rail projects. In the absence of definitive guidance for general rail project impact assessment, the FTA's Transit Noise and Vibration Impact Assessment (DOT-T-95-16, updated 2006) has been presumed applicable to the proposed project as well.

FTA guidelines define three classes of land uses where noise exposure should be evaluated, and the guidelines specify the change in noise levels that would have no impact, limited impact and definite impact. The corridor has Category 2 land uses within its potential noise impact corridor of 375 feet (FTA Manual, Table 4-1, Rail Mainline). Category 2 uses are residences. Category 1 uses (amphitheaters, concert pavilions, etc) do not occur near the track. Category 3 uses (schools, libraries, churches, etc) occur at few locations. However, any noise impacts are addressed in terms of the more stringent Category 2 noise standards.

Federal guidelines classify noise impacts as negligible, moderate or severe as a function of baseline conditions and the project increment. The measured peak hour Leq at 50 feet from the BNSF track centerline was 80 dB. If hourly baseline noise levels exceed 77 dB Leq at any Category 2 sites, a project increment of 66-75 dB Leq is classified as a moderate impact. A project increment individually exceeding 75 dB Leq is to be considered a severe impact.

IMPACTS OF THE PROJECT

Short-Term Impacts

Impact 1: Construction-related activities associated with the transport of workers and equipment, as well as site preparation and construction would result in short-term noise impacts.

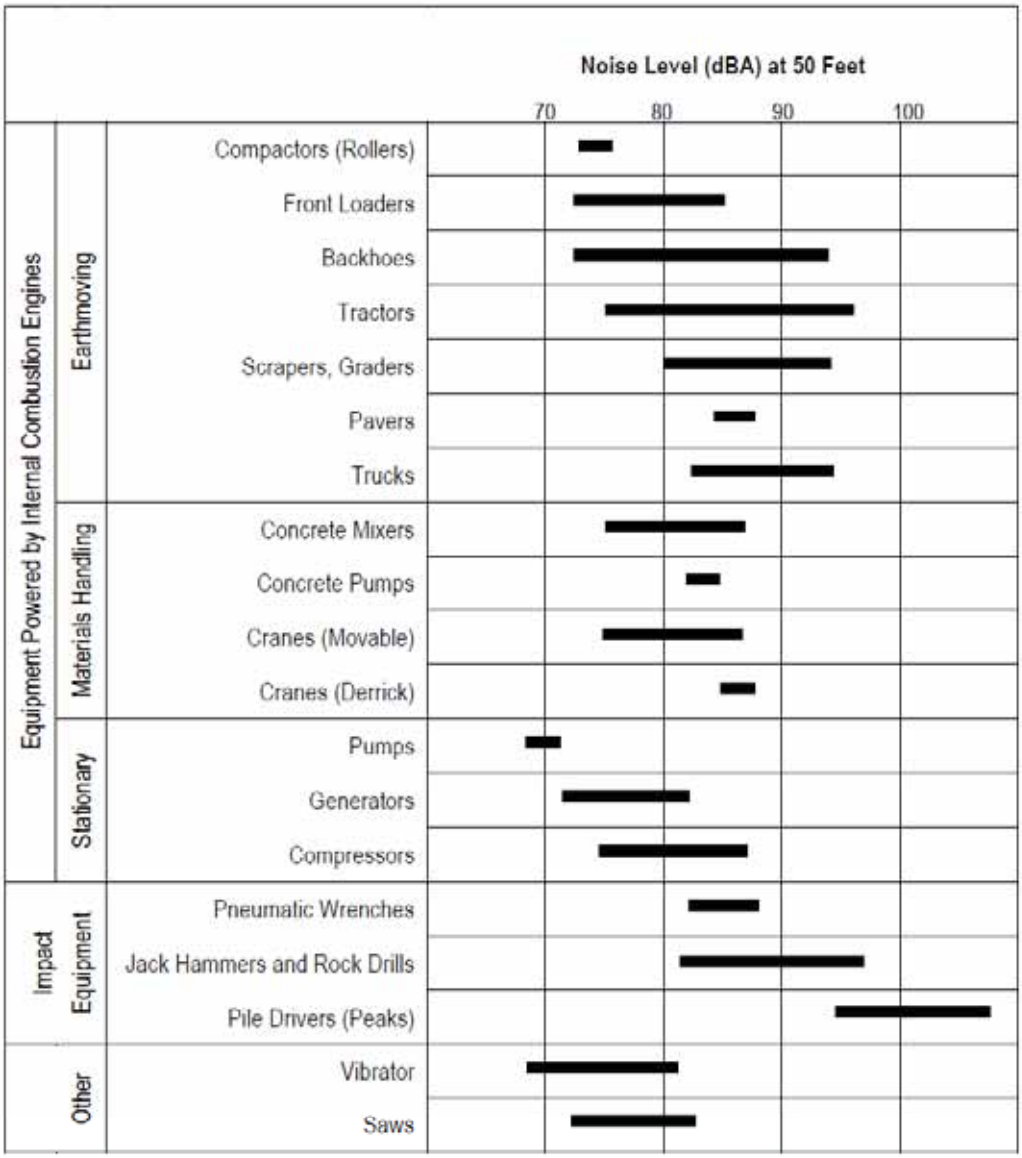
Implementation of the proposed project would involve the addition of new railroad tracks next to existing tracks for about 250 miles and improvements to bridges, drainages and crossings. Construction activities would also occur at several fixed facilities (new or relocated depots and a lay-over yard). Activities associated with such construction may be a noticeable temporary noise source. Noise from construction activities would be generated by two primary sources during the construction phase: the on-road transport of construction materials and workers and, off-road construction itself. Since transportation of personnel and materials will occur on already traveled roadways, background noise conditions will mask any project on-road contributions. Some heavy materials delivery for track improvements is proposed to be via trains such that on-road truck noise will be limited.

Construction activities occur in various steps, each of which involves different types of equipment with distinct noise characteristics. These steps would alter the character of the noise levels surrounding the construction sites as the project is developed. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise to be categorized according to discrete work phases, as discussed below.

Figure 3 shows the typical range of construction activity equipment noise. For track improvements, the first work phase category, earth moving and materials handling equipment to establish a new track bed, would include typical machinery such as small dozers, front loaders, etc. Typical operating cycles may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels at 50 feet from earth moving equipment typically range from 73 to 96 dB. Although noise ranges during all phases of construction are similar in level, the second phase, track laying, typically varies from 85 to 90 dB at 50 feet from the source. This activity has the potential to temporarily create clearly audible noise levels at the closest receptors due to the various power tools and equipment used in track and tie placement, welding and finishing the track. Such temporary noise levels are similar in magnitude to those already occurring many times per day from passing trains. They are not "new" noise sources within the existing acoustic environment. With implementation of recommended mitigation measures, such as limiting construction hours in accordance with the City or County Codes in each project jurisdiction, and the temporary nature of construction, impacts from construction activities would be reduced to a less-than-adverse level.

Figure 3

Typical Construction Equipment Noise Generation Levels



Source: EPA PB 206717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment and Operations."

Long-Term Impacts

Impact 2: Implementation of the proposed project would result in an increase of train noise levels at noise-sensitive uses along the corridor track.

The proposed project would add 10 daily train trips to a corridor currently carrying 46 freight trains and 12 Amtraks per day. The build-out scenario would carry 22 Amtrak trains (11 in each direction) with an existing speed of around 60 mph to speeds as high as 90 mph where feasible. The ten Amtrak trains would increase the frequency of train horn use for at-grade crossings by a proportionate amount.

The noise level change associated with increased passenger traffic was analyzed using the FRA's "CREATE Freight Noise and Vibration Model" (2006). Although the model is oriented toward freight trains, it contains modules for calculating noise generation from passenger rail, buses, shops, layover tracks and other facilities.

Existing (and future) freight traffic is somewhat equally split between daytime and nocturnal movements. Because of the penalty applied to noise events from 10 p.m. to 7 a.m., CNEL/DNLs are dramatically elevated along the San Joaquin Corridor close to the tracks. Passenger traffic is primarily during the day with only one train before 7 a.m. Input parameters for the train noise assessment were as follows:

Existing	**Freight**	**Amtrak**
Trains/day	46	12
Day/night split (%)	50/50	90/10
Travel Speed (mph)	50	60
Locomotives	3	1
Cars	50	5
Future		
Trains/day	48	22
Day/night split (%)	50/50	90/10
Travel Speed (mph)	50	90
Locomotives	3	1
Cars	50	7

Because of the intrinsic dominance of freight movements versus passenger trains in terms of noise, the planned addition of 5 passenger trains in each direction plus two passenger cars for existing trains, the speed increase to 90 mph engenders minimal noise impacts. The results of the CREATE Model are as follows (dB) at 50 feet from the tracks:

	CNEL/DNL	Peak Leq
Existing		
Freight	80	74
Passenger	58	57
Total	80	74
Future		
Freight	80	74
Passenger	63	62
Total	80	74

The change in passenger traffic train noise is not enough to measurably increase the total noise level by more than 0.5 dB even for a 90 mph travel speed. The "clearly perceptible increase" threshold of +3.0 dB will not be exceeded. The federal guidelines of what constitutes a severe or even a moderate noise impact will similarly not be met.

Increased train traffic will be accompanied by a greater frequency of train horn use. The 58 events per day will increase to 70 per day with 10 more passenger trains and 2 additional freights by 2035. With increased train speed, a small shift in horn sounding distance may also result to give on-road traffic enough warning time. Horn volume of freight and passenger trains is not substantially different. The change in average daily noise levels from increased horn activity can thus be estimated from a logarithmic ratio of future versus existing events as follows:

$$\triangle = 10 \times \log (70/58) = 0.8 \text{ dB}$$

The average daily noise level increase from train horn use will be less than +1 dB. Such a change will not be perceived by residents near the tracks as a substantial increase, particularly since Amtrak noise events will be primarily in the daytime.

Noise level changes due to construction and use of a second track would shift the noise generation "centroid" closer to the location of the nearest track. The effective noise generation distance (DEFF) is currently the distance to the nearest track. The addition of another track closer to the nearest noise-sensitive land use would change the effective generation location (DNEW) as:

$$DNEW = SQRT\ [DEFF \times (D-25)]$$

Application of this formula to the observed noise level would change noise levels as follows:

Distance to Nearest Existing Track (feet)	Noise Increase at Closest Homes	Net Decrease at Farther Homes
50	+1.5 dB	-0.9 dB
60	+1.2 dB	-0.8 dB
70	+1.0 dB	-0.7 dB
80	+0.8 dB	-0.6 dB
90	+0.7 dB	-0.6 dB
100	+0.6 dB	-0.5 dB
125	<0.5 dB	-0.4 dB

Any sensitive (Category 2) land use would experience an "impact" (+0.5 dB or more) if the receiver is located within 125 feet of the nearest track, and the new track is added on the receiver's side of the existing track. A noise reduction would occur on the side of the tracks father away from the new addition by shifting a portion of the train traffic a few feet farther away.

In the countryside, there are few Category 2 land uses within 125 feet of the existing track as a zone of possible noise impact from second track installation. In developed communities, there are areas of residences close to the tracks, but most of these are already double-tracked without any future track location shifts. Implementation of the proposed double track program will not experience any substantial train noise impacts from track shifts. Operational activity noise impacts from track utilization will not have an adverse noise impact that would require mitigation.

Physical Support Facilities

While most noise effects from expanded passenger rail would occur from mobile sources (trains, buses, station access traffic, etc.), the proposed project includes several fixed facilities. These include two new depots (Hercules and Elk Grove), a new or refurbished depot in Stockton, and a lay-over yard with light maintenance facilities in Merced or Fresno. Mobile source noise regulation is typically pre-empted from local control. Although mobile sources will move in/out of these "stationary" sources, there may be non-mobile activities that are amenable to local noise regulation. Presumably, any such non-mobile noise sources would comply with any applicable noise ordinances of any affected jurisdictions. These ordinances vary slightly from one city or county in terms of numerical performance standards. However, they are all crafted to insure that noise generated by a stationary source does not adversely impact the surrounding community. Ordinance compliance is presumed to create a less-than-adverse noise impact from stationary sources.

The CREATE computer noise model does contain a number of modules that calculate the noise levels associated with rail support activities. These algorithms were run for a park-and-ride lot with 50 cars and 2 buses per hour, for a bus transit center accessed by 5 buses per hour, and a lay-over yard with one train in by day and leaving before 7 a.m. the next morning. The calculation was performed for a distance of 500 feet from the center of the activity to the nearest

off-site noise sensitive use. The CNEL/DNL and the peak hourly Leq were evaluated with the following results (dB):

Facility	CNEL/DNL	Peak Leq
Lay-over yard	45	38
Park and Ride Lot	37	31
Bus Transit Center	41	34

CNEL-based (general plan) standards for residential uses are typically 65 dB. Weighted 24-hour noise impacts from support facilities are substantially below maximum allowable levels. Similarly, noise-ordinance standards for non-preempted sources are typically 45-50 dB for peak hourly impacts. The physical passenger train support facilities would have noise "footprints" that will be well within acceptable levels.

Stockton Station Alternative Location

The above calculations demonstrate that a train depot and ancillary facilities do not generate enough noise as to impact noise-sensitive uses with reasonable set-back distances. All candidate Stockton Station alternatives are in commercial or industrial zones with no immediate residential uses. In terms of noise impacts from station location selection, there is no preferred alternative.

Lay-Over Alternative Location

The primary noise impact from lay-over tracks is from an idling engine providing head end power (HEP). At base electrical load, the engine has a low-pitched hum that remains reasonably steady. At low volumes and minimum rise and fall, the nearest receivers at either location will be generally unaware of the train's presence. At either the Fresno or Merced location, variable activity noise from braking or accelerating trains, at-grade crossing horns, couplers banging, loudspeaker announcements, etc., will overwhelm the idling hum of a lay-over train. Neither candidate location is a preferred alternative in terms of minimizing noise impacts.

VIBRATION IMPACT ASSESSMENT

Vibration is oscillatory movement which can be described in terms of distance displacement, vibration velocity or acceleration. The vibration velocity is perhaps the most common vibration descriptor. The peak particle velocity (PPV) during one vibration cycle is the maximum instantaneous peak in the vibration signal. It is a good indicator of possible structural damage. The root-mean-squared (RMS) velocity is a smoothed representation of the average level of "shaking" during each vibration cycle. The human body is more sensitive to a continuous rolling or shaking motion (RMS) than it is to a single jolt (PPV).

For ease of representation, a decibel scale is used for vibration similar to the scale used for sound. The most common vibration velocity reference level in the United States is one-millionth inch/second as follows:

Vibration Velocity (in/sec)	**Vibration Decibels (VdB)**	**Typical Source/Effect**
0.000001	0	Undetectable by humans
0.000001	20	Undetectable by humans
0.0001	40	Undetectable, isolated house in the country
0.001	60	Almost perceptible, typical suburban residence
0.01	80	Annoying, loaded truck going over large bump
0.03	90	Very annoying, bulldozer operating nearby
0.1	100	Building damage, construction blasting nearby

HUMAN PERCEPTION

The commonly accepted human threshold of perception for vibration is 65 VdB (re: 10^{-6} in/sec). The dividing line between vaguely perceptible and clearly perceptible is around 75 VdB. At 85 VdB, the vibration becomes intrusive for sleeping, reading or most other "quiet" activities. There are no adopted vibration impact criteria that have been developed and approved by appropriate agencies for purposes of environmental assessment. The Federal Transit Administration, in "Transit Noise and Vibration Impact Assessment" (2006) has developed recommended impact criteria for transit projects. In the absence of definitive standards for train activity vibration, these guidelines have been incorporated into the following discussion.

The FTA's suggested vibration impact criteria are as follows:

Land Use	Threshold		
	Frequent[1] (VdB)	**Occasional (VdB)[2]**	**Infrequent[3] (VdB)**
Precision manufacturing or research	65	65	65
Residences with sleeping areas	72	75	80
Schools and other daytime-only uses	75	78	83

[1]More than 70 events per day.
[2] Between 30 to 70 events per day.
[3]Less than 70 events per day.

The FTA Manual provides a screening distance for vibration effects. Unless there are unusual vibration propagation conditions, passage of a heavy rail passenger, or commuter or freight train moving at moderate speed (50 mph) will have no perceptible impact to residences beyond 200 feet from tracks. The FTA Manual notes that these screening distances include a 5 VdB margin of safety to account for variable vibration propagation effects. Measurements have shown that freight trains typically have vibration levels that are 5 VdB higher than passenger rail. The 200-foot screening distance may thus apply to freight trains, but with a lower level of confidence given to the lack of any margin of safety.

VIBRATION IMPACT

The proposed project will add 5 passenger trains in each direction of travel at build-out. The vibration effect of 5 passenger trains is equal to one freight train. The vibration equivalence of increased passenger service is adding one freight train in each direction. The plan to ultimately achieve a 90 mph travel speed where feasible has potentially more serious vibration implications. The increased travel speed to 90 mph would add +5 VdB of vibration at near-track uses. A 90 mph passenger train is the vibration equivalent of a 50 mph freight train. To be sure, the 90 mph travel speed would only be achieved in open country where there are few Category 2 uses near the tracks. However, while the addition of 5 Amtraks in each direction has very minimal vibration impacts, the travel speed increase has a potentially more noticeable effect.

Figure 10-1 of the FTA Manual shows that the generalized ground surface vibration curves for passenger tail at 50 mph is 78 VdB at 100 feet from the track centerline. The Figure also suggests that the same value should be used for freight trains at the same travel speed and distance. As noted above, vibration measurements consistently show that freights create +5 VdB more shaking under the same travel speed and set-back conditions than passenger trains. A reference level of 83 VdB at 100 feet has therefore been assigned to existing freight traffic. That same reference level has been used to determine vibration effects of achieving a 90 mph passenger train travel speed.

Existing corridor train traffic totals 58 events. The addition of 10 passenger trains and 2 freights would increase movements to 70 per day. Corridor train use is, and would remain, within the "occasional" category of 70 events or less. The recommended vibration standard for occasional events is 75 VdB. This standard is for vibration nuisance perception. Any structural damage (cracked stucco or plaster) requires vibration levels exceeding 100 VdB. Any discussion of impact therefore relates only to nuisance.

Application of the point source decay assumption to the reference VdB, i.e.,

$$\text{VdB (at distance D)} = \text{VdB ref} - 20 \log (D/100)$$

produce the following vibration drop-off from the tracks (VdB):

Distance	Freight	Ex Amtrak	90 mph Amtrak
100'	83	78	83
128'	81	76	81
140'	80	75*	80
160'	79	74	77
200'	77	72	77
250'	75*	70	75*
320'	73	68	73

*meets 75 VdB FTA standard

Existing passenger train activity creates a possible vibration perception nuisance in uncarpeted areas of homes to a distance of 140 feet from the track centerline. Freight trains have a possible vibration impact envelope of 250 feet. Project implementation would increase the number of such events, but not the magnitude. Increasing passenger train travel speed could similarly increase the number of times vibration effects that extend as far as 250 feet. However, since freight train vibration already is felt that far, it would not be a "new" change and they would remain classified as occasional. Vibration effects from project implementation are considered to not have an adverse impact.

Double tracking may slightly change the location of vibration generation. Assuming equal use of both tracks, addition of a second mainline track will slightly change the maximum location of vibration perception, and may slightly increase the severity of individual vibration events toward the side of new track construction. The centroid of vibration generation (mainly from train locomotive) will shift by +12.5 feet for a 25-foot separation between the existing and proposed track. The potential vibration perception distance will increase toward the track side of new construction. Conversely, the number of perceptible vibration events on the side away from the new track near the fringe of the perception threshold will decrease as one-half of existing traffic is assumed to be shifted to the new track away from the closest receivers. The increased vibration magnitude of individual passbys is expressed as follows (VdB):

Existing Dist. from New Track C.L. (feet)	Toward New Track Construction	Away from New Track Construction
100	+1.2 max.	-1.0 avg.
150	+0.8 max.	-0.7 avg.
200	+0.6 max.	-0.5 avg.

An increase of +1.2 VdB is not considered a substantial increase even at 100 feet from the existing nearest track. Most existing residences are 150 feet or more from the nearest track in areas where a second track is proposed. The maximum increase of less than 1.0 VdB is likely an imperceptible change from current conditions. Addition of a second mainline track will not have a substantially adverse vibration effect on the closest residences along several portions of the project. Vibration impacts from track improvements and track utilization will not require mitigation

MITIGATION

Noise and vibration impacts from the operation of 10 additional passenger trains and any support facilities on the San Joaquin Corridor are considered to not be substantial. Such impacts are not completely negligible, but do not exceed generally accepted CEQA thresholds within the content of the existing near-track acoustic and vibration environment.

Construction activities may have a very brief noise or vibration impact near any individual receiver. However, local jurisdictions and Caltrans require compliance with a variety of best management practices (BMPs) to minimize noise impacts to any off-site noise-sensitive land uses. These "standard" measures on any grading permits include:

1. Restricting equipment operation to hours of lesser noise sensitivity allowed by the local noise ordinance,
2. Requiring properly operating mufflers on all heavy equipment,
3. Located staging areas as far as practical from noise-sensitive land uses.

The measures are typically standard measures for construction contracts. They are considered project design features and not discretionary mitigation. However, their implementation, plus the masking effects of existing train traffic, will maintain construction noise and vibration impacts at less-than-adverse levels.

Noise measurements along both the northern and southern portions of the San Joaquin Corridor have documented that existing levels could exceed accepted noise/land use compatibility criteria if noise-sensitive uses are located near the tracks. If project-specific improvements are proposed near any already impacted uses, or if new impacts are created by project implementation, a more detailed noise impact mitigation analysis must be performed. The analysis must identify the affected uses, and must discuss any mitigation measures that would be considered feasible and reasonable.

APPENDIX 8

At-Grade Crossings

The Burlington Northern and Santa Fe Railway Company

Road Crossing Inventory Report (RRDX1)

Records Returned: 536

Operating Division: ---All---
Subdivision: ---All---
State:
Line Segment: 7200
Open Closed Signal Surface Lst Maint DOT #: DOT #:
Beg MP: 885
From Date:
DOT #: DOT #:
End MP: 1165
To Date:
Federal Participation:
Crossing Type:
Crossing Surface:
Crossing Status:
Warning Class:

LS	Milepost Survey Stn	DOT #	Xing Type	Street	Highway	State	City	Status	#Mains	#Other	Warn Class	Surface	Length	Latitude Longitude
7200	885.40 4675+90	028280L	Public at Grade	SUMNER/MILLER S		CA	BAKERSFIELD	Active	2	0	Gates	Conc Pav	132	35.374739780 118.984096800
7200	885.57 4666+94	028281T	Public at Grade	GAGE/21 STS		CA	BAKERSFIELD	Closed	2	3	Gates	Conc Pav	170	35.374369320 118.987025900
7200	885.70 4660+08	028283G	Public at Grade	BEALE AVE		CA	BAKERSFIELD	Closed	2	0	Gates	Conc Pav	75	35.373935450 118.990467600
7200	885.88 4650+32	028284N	Public at Grade	E TRUXTON AVE		CA	BAKERSFIELD	Active	2	0	Gates	Conc Pav	90	35.373841880 118.991207200
7200	885.98 4645+09	028285V	Public at Grade	BAKER ST		CA	BAKERSFIELD	Active	2	0	Gates	Conc Pav	86	35.373488370 118.994092500
7200	886.04 4642+12	028286C	Public at Grade	E TRUXTON AVE		CA	BAKERSFIELD	Closed	0	1	XBucks	Asph	0	35.372501000 119.055801000
7200	886.17 4635+11	028288R	Public at Grade	TULARE ST		CA	BAKERSFIELD	Active	2	0	Gates	Conc Pav	71	35.373048850 118.997602600
7200	886.20 4633+62	028287J	Public at Grade	TULARE ST		CA	BAKERSFIELD	Closed	0	1	XBucks	Asph	0	35.372799000 118.996597000
7200	886.37 4624+44	028289X	Public at Grade	SONORA ST		CA	BAKERSFIELD	Active	2	0	Gates	Conc Pav	75	35.372606820 119.001144000
7200	886.47 4619+28	028290S	Public RR Over	UNION AVENUE		CA	BAKERSFIELD	Active	2	0	None			35.372267240 119.003850840
7200	886.78 4602+87	028291Y	Public at Grade	"S" ST		CA	BAKERSFIELD	Closed	2	2	Gates	Asph	65	
7200	886.86 4598+57	028295B	Private at Grade	PRIVATE	PRIV	CA	BAKERSFIELD	Closed	0	1	None	Uncons	0	35.371185000 119.050125000
7200	886.91 4595+86	028297P	Public RR Over	Q ST		CA	BAKERSFIELD	Active	2	1	None			35.371429720 119.010830280
7200	886.92 4595+38	028296H	Public at Grade	Q ST		CA	BAKERSFIELD	Active	0	3	XBucks	Asph	0	35.371464000 119.028717000
7200	886.96 4593+25	028293M	Private at Grade	PRIVATE	PRIV	CA	BAKERSFIELD	Closed	0	1	None	Uncons	0	35.371441000 119.048607000

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	886.98 4592+40	028298	Public at Grade	"P" ST		CA	BAKERSFIELD	Closed	2	1	H Si	Asph	72	
7200	887.10 4585+85	027494A	Pedestria RR Under	N ST PEDESTRIAN		CA	BAKERSFIELD	Active	2	2	None			35.371417980 119.013886320
7200	887.11 4585+42	028351F	Public at Grade	N ST		CA	BAKERSFIELD	Active	2	2	Gates	Conc Pav	64	35.371415910 119.014124000
7200	887.24 4578+50	028354B	Public at Grade	L ST		CA	BAKERSFIELD	Active	2	1	Gates	Conc Pav	80	35.371423200 119.016436600
7200	887.30 4575+02	028356P	Public at Grade	"K" ST		CA	BAKERSFIELD	Closed	2	1	H Si	Asph	86	
7200	887.35 4572+64	028357	Public RR Over	CHESTER AVE		CA	BAKERSFIELD	Active	2	1	None			35.371432900 119.017900420
7200	887.44 4567+78	028358D	Public at Grade	EYE ST		CA	BAKERSFIELD	Active	2	1	H Si	Asph	88	35.371434240 119.019504380
7200	887.51 4564+29	028359K	Public at Grade	H ST		CA	BAKERSFIELD	Active	2	1	Flashers	Asph	80	35.371474140 119.020592180
7200	887.57 4560+86	028360E	Public at Grade	G ST		CA	BAKERSFIELD	Active	2	2	H Si	Asph	80	35.371479670 119.021646630
7200	887.64 4557+37	028361L	Public at Grade	"F" ST		CA	BAKERSFIELD	Closed	2	2	Gates	Asph	80	
7200	888.49 4512+43	028362T	Public RR Under	OAK ST		CA	BAKERSFIELD	Active	2	19	None			35.371477440 119.038489700
7200	888.79 4496+59	028363A	Public RR Under	CA SH 99	CA 99	CA	BAKERSFIELD	Active	2	11	None			35.371476960 119.042779200
7200	889.22 4473+99	028364G	Private at Grade	PRIVATE		CA	BAKERSFIELD	Active	2	1	None	Uncons	5	35.371506340 119.051372400
7200	889.25 4472+25	028365N	Private at Grade	PRIVATE		CA	BAKERSFIELD	Closed	2	1	None	Uncons	12	35.371506340 119.051372350
7200	889.44 4462+27	028292F	Public RR Over	TRUXTON AVE		CA	BAKERSFIELD	Active	2	0	None			35.372072110 119.055461910
7200	889.66 4450+65	028366V	Private RR Over	PRIVATE		CA	BAKERSFIELD	Active	2	0	None			35.373863820 119.058731690
7200	890.10 4427+48	028367C	Public RR Under	MOHA K RD		CA	BAKERSFIELD	Active	2	1	Other			35.376260230 119.065467700
7200	890.56 4403+31	028370K	Private at Grade	PRIVATE		CA	BAKERSFIELD	Active	2	0	None	Uncons	48	35.376287000 119.073485700
7200	890.65 4398+40	028487T	Pedestria RR Over	PEDESTRIAN		CA	BAKERSFIELD	Active	2	0	None			35.376293500 119.075547800

□S	Milepost Sur□ey Stn	□□T □	□ing Type	Street	□ighway	State	City	Status	□Mains	□□ther	□ arn Class	Surface	□ength	□atitude □ongitude
7200	890.84 4388+37	028368J	Private at Grade	PRIVATE	PRV.	CA	BAKERSFIELD	Closed	0	1	None	Uncons	0	35.376305000 119.074852000
7200	890.99 4380+46	028369R	Private at Grade	PRIVATE	PRV	CA	BAKERSFIELD	Closed	0	1	None	Uncons	0	35.376301000 119.078262000
7200	891.34 4361+87	028371S	Private at Grade	PRIVATE		CA	BAKERSFIELD	Closed	2	0	None	Uncons	12	35.376334500 119.087487400
7200	891.60 4348+08	028372Y	Public RR Under	COFFEE RD		CA	BAKERSFIELD	Active	2	0	None			35.376354120 119.093481600
7200	891.90 4332+39	028373F	Private at Grade	PRIVATE		CA	BAKERSFIELD	Closed	0	1	None	Uncons	0	35.376228000 119.089928000
7200	892.61 4295+00	028374M	Public at Grade	CALLO□ AY DR		CA	BAKERSFIELD	Closed	1	0	Gates	Ti□ ber	48	
7200	893.79 4232+60	028375U	Public RR Over	ROSEDALE H□ Y	CA 58	CA	BAKERSFIELD	Active	1	0	None		0	35.383305340 119.127663900
7200	895.22 4157+08	933622E	Public at Grade	ALLEN RD		CA	BAKERSFIELD	Active	1	0	XBucks			35.397986490 119.145541810
7200	895.33 4151+28	028376B	Public at Grade	HAGEMAN RD		CA	BAKERSFIELD	Active	1	0	Gates	Conc Pav	48	35.399207370 119.147028520
7200	895.70 4131+74	028377H	Private at Grade	PRIVATE		CA	BAKERSFIELD	Closed	0	2	None	Uncons	0	35.407532000 119.156471000
7200	895.90 4121+18	028378P	Private at Grade	PRIVATE		CA	BAKERSFIELD	Closed	0	2	None	Uncons	0	35.419968000 119.171600000
7200	896.62 4083+06	028379□	Public at Grade	REINA RD		CA	SHAFTER	Active	1	0	Gates	Conc Pav	38	35.412439160 119.163144000
7200	897.33 4045+62	028380R	Public at Grade	KRAT□MYR□RUDD		CA	SHAFTER	Active	1	1	Gates	Conc Pav	52	35.419727310 119.172022200
7200	899.50 3931+08	028381X	Public RR Under	7TH STANDARD RI		CA	SHAFTER	Active	1	1	StopSi□ns			35.441609030 119.198711300
7200	899.63 3924+22	028382E	Private at Grade	PRIVATE		CA	SHAFTER	Closed	0	1	None	Uncons	0	
7200	902.29 3783+80	028383L	Public at Grade	BURBANK AVE		CA	SHAFTER	Active	1	0	Gates	Ti□ ber	72	35.470681450 119.234207400
7200	902.99 3746+56	028384T	Public at Grade	CHERRY AVE		CA	SHAFTER	Active	1	1	Gates	Conc Pav	64	35.477889660 119.243011700
7200	903.71 3708+79	028385A	Public at Grade	RIVERSIDE ST		CA	SHAFTER	Active	1	1	Gates	Conc Pav	62	35.485228800 119.251983600
7200	904.40 3672+14	028386G	Public at Grade	LOS ANGELES AVE		CA	SHAFTER	Active	1	3	Gates	Conc Pav	48	35.492334270 119.260672800

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	905.13 3633+69	028390	Public at Grade	LERDO RD		CA	SHAFTER	Active	1	2	Gates	Rubber	101	35.499836450 119.269843300
7200	905.20 3630+05	028389C	Private at Grade	PRIVATE		CA	SHAFTER	Closed	0	1	None	Uncons	0	
7200	905.21 3629+52	028387N	Private at Grade	PRIVATE	PVT	CA	SHAFTER	Closed	0	1	None	Uncons	0	
7200	905.33 3623+19	028388V	Private at Grade	ELM	PVT	CA	SHAFTER	Closed	0	1	None	Uncons	0	
7200	905.46 3616+22	028391D	Public at Grade	CENTRAL AVE		CA	SHAFTER	Active	1	2	Gates	Conc Pav	62	35.503256710 119.274033200
7200	905.80 3598+42	028392K	Public at Grade	SHAFTER AVE		CA	SHAFTER	Active	1	4	Gates	Conc Pav	80	35.506665240 119.278201500
7200	906.55 3558+85	028393S	Public at Grade	FRESNO AVE		CA	SHAFTER	Active	1	0	Gates	Ti ber	64	35.514329680 119.287577100
7200	907.20 3524+42	028394Y	Public at Grade	POPLAR AVE		CA	SHAFTER	Active	1	0	Gates	Conc Pav	32	35.521019770 119.295764500
7200	907.98 3483+36	028395F	Public at Grade	MERCED AVE		CA	SHAFTER	Active	1	0	Gates	Conc Pav	40	35.528983610 119.305518300
7200	910.46 3352+89	028397U	Public at Grade	KIMBERLINA RD		CA	ASCO	Active	1	0	Gates	Conc Pav	44	35.557977170 119.330175200
7200	910.55 3348+11	028398B	Private at Grade	PRIVATE	PVT	CA	ASCO	Closed	0	1	None	Uncons	0	
7200	912.46 3246+65	028300V	Public at Grade	POSO AVE		CA	ASCO	Active	1	1	Gates	Conc Pav	69	35.586958150 119.331821000
7200	912.89 3224+19	028301C	Private at Grade	PRIVATE		CA	ASCO	Closed	1	0	None	Uncons	5	35.593142620 119.331764970
7200	913.05 3215+44	028302J	Public at Grade	6TH ST		CA	ASCO	Active	1	7	Gates	Conc Pav	55	35.595531880 119.331735700
7200	913.46 3194+38	028303R	Private at Grade	PRIVATE		CA	ASCO	Closed	1	1	None	Uncons	15	
7200	913.46 3194+12	028304X	Public RR Over	CA SH 46	CA 46	CA	ASCO	Active	1	1	None		0	35.602041510 119.331673800
7200	913.77 3177+80	028305E	Private at Grade	PRIVATE		CA	ASCO	Closed	0	1	None	Uncons	0	35.499249000 119.264542000
7200	914.47 3140+90	028306L	Public at Grade	MC COMBS AVE		CA	ASCO	Active	1	0	Gates	Conc Pav	40	35.615987980 119.331536200
7200	915.83 3068+73	028307T	Private at Grade	PRIVATE		CA	ASCO	Closed	1	0	None	Uncons	15	

□S	Milepost Sur□ey Stn	□□T □	□ing Type	Street	□ighway	State	City	Status	□Mains	□□ther	□ arn Class	Surface	□ength	□atitude □ongitude
7200	916.96 3008+89	028308A	Public at Grade	TAUSSIC AVE		CA	□ ASCO	Active	1	0	Gates	Ti□ ber	30	35.652254840 119.331184400
7200	917.96 2956+50	028309G	Public at Grade	BLANKENSHIP AVE		CA	□ ASCO	Active	1	0	Gates	Ti□ ber	48	35.666656000 119.331042100
7200	919.98 2849+96	028311H	Private at Grade	PRIVATE		CA	□ ASCO	Closed	1	0	None	Uncons	15	
7200	920.47 2823+81	028310B	Public at Grade	PETERSON RD		CA	□ ASCO	Active	1	0	Gates	Conc Pav	32	35.703133610 119.330684000
7200	921.14 2788+40	028312P	Public at Grade	CENTRAL VLLEY H	SR □43	CA	□ ASCO	Closed	0	1	XBucks	Asph	0	
7200	921.15 2787+87	028313□	Private at Grade	PRIVATE		CA	□ ASCO	Closed	0	1	None	Uncons	0	35.693977000 119.329948000
7200	921.20 2785+23	028314D	Private at Grade	PRIVATE		CA	□ ASCO	Closed	0	1	None	Uncons	0	35.695141000 119.329941000
7200	921.47 2770+95	028315K	Public at Grade	POND RD		CA	□ ASCO	Active	1	0	Gates	Ti□ ber	40	35.717640270 119.330711500
7200	922.55 2713+91	028316S	Public at Grade	SCHUSTER RD		CA	□ ASCO	Active	1	0	Gates	Ti□ ber	32	35.732170830 119.335490600
7200	924.58 2606+57	028317Y	Public at Grade	GARCES H□ Y		CA	□ ASCO	Active	1	1	Gates	Conc Pav	46	35.761205110 119.345476100
7200	925.60 2552+84	028318F	Private at Grade	PRIVATE		CA	□ ASCO	Closed	1	0	None	Uncons	15	
7200	925.63 2551+26	028319M	Private at Grade	PRIVATE		CA	DELANO	Closed	1	0	None	Uncons	15	
7200	928.74 2387+74	028320G	Private at Grade	PRIVATE		CA		Closed	1	0	None	Uncons	12	
7200	929.77 2332+63	028321N	Public at Grade	AVE 24		CA		Active	1	0	Gates	Conc Pav	40	35.833603890 119.370429200
7200	932.08 2202+88	028322V	Public at Grade	PALMER AVE		CA	ALPAUGH	Active	1	1	Gates	Conc Pav	55	35.864294810 119.385922300
7200	934.23 2088+47	028323C	Public at Grade	AVE 56	J□22	CA	ALPAUGH	Active	1	0	Gates	Conc Pav	54	35.891301060 119.405627600
7200	936.00 1995+10	029512C	Private at Grade	PRIVATE	PRIV	CA	ALPAUGH	Closed	0	1	None	Uncons	0	
7200	938.88 1843+07	028324J	Public at Grade	AVE 88		CA		Active	1	0	Gates	Ti□ ber	56	35.949224160 119.447910500
7200	940.80 1741+80	028338S	Private at Grade	PRIVATE		CA		Closed	1	0	None	Uncons	16	

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	942.36 1659+03	028325R	Public at Grade	AVE 112		CA		Active	1	1	Gates	Conc Pav	49	35.992766240 119.479710400
7200	943.52 1597+79	028326X	Public at Grade	AVE 120		CA		Active	1	0	Gates	Ti ber	64	36.007230120 119.490265400
7200	944.69 1536+16	028327E	Public at Grade	AVE 128		CA		Active	1	0	Gates	Ti ber	48	36.021766690 119.500888100
7200	945.85 1475+06	028328L	Public at Grade	AVE 136		CA		Active	1	0	Gates	Ti ber	44	36.036297600 119.511511900
7200	947.01 1413+88	028329T	Public at Grade	AVE 144		CA		Active	1	0	Gates	Ti ber	32	36.050760520 119.522081400
7200	948.57 1331+19	028330M	Public at Grade	4TH AVE		CA	CORCORAN	Active	1	0	Gates	Ti ber	48	36.070148810 119.536253800
7200	950.03 1254+19	028336D	Private at Grade	5TH AVE	PRIV	CA	CORCORAN	Closed	0	1	None	Uncons	0	
7200	950.21 1244+54	028331U	Public at Grade	SANTA FE AVE		CA	CORCORAN	Active	0	1	XBucks	Asph	0	36.352432000 119.662933000
7200	950.50 1229+00	028332B	Public at Grade	SANTA FE AVE		CA	CORCORAN	Active	0	1	StopSi ns	Asph	0	36.196396000 119.627594000
7200	950.50 1228+79	028334P	Public at Grade	SHERMAN AVE		CA	CORCORAN	Active	1	1	Gates	Conc Pav	56	36.094367060 119.553956000
7200	950.58 1224+71	028335	Private at Grade	PRIVATE		CA	CORCORAN	Closed	0	1	None	Uncons	0	36.108624000 119.553513000
7200	950.79 1213+51	028337K	Public at Grade	HITLEY AVE		CA	CORCORAN	Active	1	3	Gates	Conc Pav	96	36.097997200 119.556610900
7200	950.97 1203+81	028339Y	Private at Grade	PRIVATE		CA	CORCORAN	Closed	0	1	None	Uncons	0	36.158745000 119.599686000
7200	951.01 1201+68	028340T	Private at Grade	PRIVATE		CA	CORCORAN	Closed	0	1	None	Uncons	0	36.158745000 119.599686000
7200	951.02 1201+11	028341A	Public at Grade	BROKA AVE		CA	CORCORAN	Active	1	3	Gates	Conc Pav	48	36.100855260 119.558704400
7200	951.70 1165+82	028343N	Public at Grade	ORANGE AVE		CA	CORCORAN	Active	1	1	Gates	Conc Pav	48	36.109259060 119.564858900
7200	954.00 1044+61	028344V	Public at Grade	NEVADA AVE		CA	CORCORAN	Active	1	0	Gates	Asph	32	36.137951090 119.585846300
7200	955.74 952+45	028345C	Private at Grade	PRIVATE		CA	CORCORAN	Active	1	0	None	Uncons	12	36.159666980 119.601735400
7200	955.92 943+06	028346J	Private at Grade	PRIVATE		CA	CORCORAN	Closed	1	0	None	Uncons	12	

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	956.33 921+57	028347R	Private RR Over	PRIVATE		CA	CORCORAN	Closed	1	0	None		15	36.166711560 119.606890220
7200	958.71 795+82	028348X	Public at Grade	LANSING AVE		CA	CORCORAN	Active	1	0	Gates	Conc Pav	32	36.196650850 119.628811200
7200	959.59 749+03	028349E	Public at Grade	10TH AVE		CA	HANFORD	Active	1	1	Gates	Conc Pav	63	36.207697190 119.636902900
7200	959.88 733+90	028400A	Public at Grade	KANSAS AVE		CA	HANFORD	Active	1	1	Gates	Conc Pav	48	36.211334910 119.639568300
7200	960.97 676+21	028401G	Public at Grade	KENT AVE		CA	HANFORD	Active	1	1	Gates	Conc Pav	28	36.225807440 119.645889100
7200	961.98 623+23	028402N	Private at Grade	PRIVATE		CA	HANFORD	Closed	1	1	None	Uncons	10	
7200	962.98 570+30	028403V	Public at Grade	JACKSON AVE		CA	HANFORD	Active	1	1	Gates	Rubber	32	36.254839580 119.645900000
7200	963.78 527+94	028405J	Private at Grade	PRIVATE		CA	HANFORD	Closed	0	1	None	Uncons	0	36.283920000 119.645073000
7200	963.94 519+47	028404C	Private at Grade	PRIVATE		CA	HANFORD	Closed	0	1	None	Uncons	0	36.275162000 119.645012000
7200	963.98 517+52	028406R	Public at Grade	IDAHO AVE		CA	HANFORD	Active	1	2	Gates	Conc Pav	32	36.269366860 119.645904500
7200	964.00 516+30	029086	Public at Grade	CRO N AVE		CA	HANFORD	Active	0	1	XBucks	Ti ber	24	36.280265000 119.650478000
7200	964.99 463+53	028408E	Public at Grade	IONA AVE		CA	HANFORD	Active	1	1	Gates	Rubber	24	36.283929150 119.645912400
7200	965.95 1703+05	028409L	Public at Grade	HOUSTON AVE		CA	HANFORD	Active	1	0	Gates	Conc Pav	40	36.298461330 119.647072300
7200	966.99 1648+16	028410F	Public at Grade	ARMONA RD		CA	HANFORD	Active	1	0	Gates	Conc Pav	32	36.313387750 119.649646200
7200	967.56 1618+45	028416	Public at Grade	3RD ST		CA	HANFORD	Active	1	0	Gates	Conc Pav	40	36.321492090 119.651059800
7200	967.59 1616+67	028417D	Public RR Under	CA SH 198	CA 198	CA	HANFORD	Active	1	0	None		0	36.322068460 119.651186400
7200	967.62 1615+10	028418K	Public at Grade	4TH ST		CA	HANFORD	Closed	0	1	XBucks	Asph	0	
7200	967.63 1614+57	028411M	Private at Grade	PRIVATE		CA	HANFORD	Closed	0	1	None	Uncons	0	36.325924000 119.650650000
7200	967.63 1614+52	028419S	Private at Grade	PRIVATE		CA	HANFORD	Closed	0	1	None	Uncons	0	

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	967.63 1614+41	028421T	Public at Grade	4TH ST		CA	HANFORD	Active	2	0	Gates			
7200	967.65 1613+52	028412U	Private at Grade	PRIVATE		CA	HANFORD	Closed	0	1	None	Uncons	0	36.325924000 119.650650000
7200	967.67 1612+47	028413B	Private at Grade	PRIVATE		CA	HANFORD	Closed	0	1	None	Uncons	0	36.325924000 119.650650000
7200	967.70 1610+89	028420L	Public at Grade	S ILLIAMS ST		CA	HANFORD	Closed	0	2	StopSi ns	Asph	0	
7200	967.71 1610+41	028422A	Public at Grade	5TH ST		CA	HANFORD	Active	1	0	Gates	Conc Pav	56	36.322564000 119.651301200
7200	967.77 1607+21	028423G	Public at Grade	6TH ST		CA	HANFORD	Active	2	0	Gates			
7200	967.83 1604+06	028414H	Private at Grade	PRIVATE		CA	HANFORD	Closed	0	1	None	Uncons	0	36.325924000 119.650650000
7200	967.85 1603+21	028424N	Public at Grade	7TH ST		CA	HANFORD	Active	2	0	Gates			
7200	967.85 1603+01	028415P	Private at Grade	PRIVATE		CA	HANFORD	Closed	0	1	None	Uncons	0	36.325924000 119.650650000
7200	968.02 1594+20	028425V	Public at Grade	LACEY BLVD		CA	HANFORD	Active	2	0	Gates			
7200	968.29 1579+25	028427J	Public at Grade	11TH AVE		CA	HANFORD	Active	2	0	Gates			
7200	968.47 1569+77	028273B	Public at Grade	ELM ST		CA	HANFORD	Active	2	0	Gates			
7200	969.12 1534+95	028428R	Public at Grade	GRANGEVILLE BLV		CA	HANFORD	Active	2	0	Gates	Conc Pav	73	36.342578170 119.661701100
7200	970.16 1480+40	028429X	Public at Grade	FARGO AVE		CA	HANFORD	Active	2	0	Gates	Conc Pav	40	36.357223690 119.663967700
7200	971.17 1427+34	028430S	Public at Grade	FLINT AVE		CA	HANFORD	Active	2	0	Gates	Conc Pav	32	36.371756200 119.663973800
7200	972.17 1374+51	028431Y	Public at Grade	ELDER AVE		CA	HANFORD	Active	2	0	Gates	Conc Pav	32	36.386259680 119.663978000
7200	973.19 1320+46	028432F	Public at Grade	EXCELSIOR AVE		CA	HANFORD	Active	1	1	Gates	Conc Pav	32	36.401112890 119.663983600
7200	974.27 1263+62	028433M	Public at Grade	DOVER AVE		CA		Active	1	0	Gates	Conc Pav	32	36.415664500 119.668816800
7200	974.87 1231+92	028434U	Public at Grade	DOUGLAS AVE		CA		Active	1	0	Gates	Conc Pav	32	36.422967890 119.674603500

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	975.48 1200+03	028435B	Private RR Over	PRIVATE		CA		Active	1	0	None		0	36.428824410 119.682679720
7200	975.84 7771+62	028436H	Public RR Over	LATONIA AVE		CA	LATON	Active	1	0	None		0	36.432660460 119.686254700
7200	976.22 7751+79	028437P	Public at Grade	RIVERDALE AVE		CA	LATON	Active	1	2	Gates	Conc Pav	24	36.438071790 119.688591300
7200	979.52 7577+23	028438	Public at Grade	CLOVIS AVE		CA	LATON	Active	1	0	Gates	Ti ber	64	36.483377290 119.708138700
7200	979.96 7553+97	028439D	Public at Grade	ELKHORN AVE		CA	LATON	Active	1	0	Gates	Conc Pav	32	36.489335990 119.710714300
7200	981.01 7498+65	028440X	Public at Grade	CLARKSON AVE		CA	LATON	Active	1	0	Gates	Ti ber	24	36.503685250 119.716916300
7200	981.34 7481+01	028441E	Public at Grade	PEACH AVE		CA	LATON	Active	1	1	Gates	Ti ber	64	36.508229250 119.718877900
7200	982.08 7442+18	028442L	Public at Grade	CONEJO AVE		CA	LATON	Active	1	1	Gates	Conc Pav	32	36.518267280 119.723215600
7200	983.14 7386+21	028443T	Public at Grade	KAMM AVENUE		CA	LATON	Closed	1	1	Gates	Ti ber	24	
7200	984.19 7330+29	028445G	Public at Grade	MOUNTAIN VIE A		CA	LATON	Active	1	0	Gates	Conc Pav	24	36.547288860 119.735764700
7200	984.41 7318+86	028446N	Public at Grade	CHESTNUT AVE		CA	LATON	Active	1	0	Gates	Ti ber	82	36.550199480 119.737024700
7200	984.87 7294+42	028447V	Private at Grade	PRIVATE		CA	LATON	Closed	1	0	None	Uncons	12	36.556609190 119.739554800
7200	984.93 7291+08	028448C	Private at Grade	PRIVATE		CA	LATON	Closed	1	0	None	Uncons	10	
7200	985.24 7275+02	028449J	Public at Grade	NEBRASKA AVE		CA	LATON	Active	1	0	Gates	Conc Pav	24	36.561859790 119.740871700
7200	985.46 7263+30	028450D	Public at Grade	TOPEKA AVE		CA	LATON	Closed	0	1	XBucks	Asph	0	
7200	985.75 7248+09	028451K	Public at Grade	ROSE AVE		CA	LATON	Closed	1	0	Gates	Asph	24	
7200	986.26 7221+30	028452S	Public at Grade	FLORAL AVE		CA	LATON	Active	1	0	Gates	Ti ber	24	36.576327300 119.744430600
7200	987.78 7140+62	028453Y	Public at Grade	SPRINGFIELD AVE		CA	FRESNO	Active	1	1	Gates	Conc Pav	24	36.598007280 119.749765300
7200	988.28 7114+15	028454F	Public at Grade	MANNING AVE		CA	FRESNO	Active	1	1	Gates	Rubber	32	36.605318150 119.750346700

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	989.28 7061+15	028455M	Public at Grade	SOUTH AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	32	36.619844680 119.750317800
7200	990.28 7008+38	028456U	Public at Grade	ADAMS AVE		CA	FRESNO	Active	1	1	Gates	Conc Pav	32	36.634335670 119.750290300
7200	990.78 6981+96	028457B	Public at Grade	CLAYTON AVE		CA	FRESNO	Active	1	1	Gates	Ti ber	24	36.641583460 119.750274400
7200	991.28 6955+63	028458H	Public at Grade	LINCOLN AVE		CA	FRESNO	Active	1	0	Gates	Ti ber	20	36.648862840 119.750258800
7200	992.28 6902+70	028459P	Public at Grade	AMERICAN AVE		CA	FRESNO	Active	1	0	Gates	Ti ber	20	36.663408800 119.750231700
7200	992.66 6882+85	028460J	Private at Grade	PRIVATE		CA	FRESNO	Closed	1	0	None	Uncons	5	
7200	992.78 6876+30	028461R	Public at Grade	MALAGA AVE		CA	FRESNO	Active	1	1	Gates	Ti ber	18	36.670645920 119.750219100
7200	993.30 6849+12	028462X	Public at Grade	CENTRAL AVE		CA	FRESNO	Active	1	0	Gates	Asph	40	36.680656090 119.750199000
7200	993.80 6822+68	028463E	Public RR Under	CA SH 99	CA 99	CA	FRESNO	Active	1	1	None		0	36.684773420 119.750191100
7200	994.13 6804+73	028464L	Public at Grade	FRONTAGE RD		CA	FRESNO	Active	1	2	Gates	Ti ber	40	36.691138090 119.750186500
7200	994.27 6800+16	028478U	Public at Grade	NORTH AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	36	36.692333690 119.750254700
7200	994.30 6798+41	028479B	Public RR Under	GOLDEN ST BLVD		CA	FRESNO	Active	1	0	None		0	36.692367090 119.750254700
7200	995.58 6728+55	028492P	Public RR Under	JENSEN AVE		CA	FRESNO	Active	2	4	None			36.707115650 119.765158700
7200	995.73 6734+36	028491H	Public at Grade	SUNLAND AVE		CA	FRESNO	Closed	0	1	XBucks	Asph	0	36.707854000 119.765769000
7200	996.23 6694+02	028512Y	Public at Grade	CHURCH AVE		CA	FRESNO	Active	2	1	Gates	Conc Pav	68	36.714223210 119.772255500
7200	996.72 6668+37	028517H	Public at Grade	CALIFORNIA AVE		CA	FRESNO	Active	2	0	Gates	Ti ber	24	36.721365770 119.772420200
7200	997.00 6653+59	028527N	Public at Grade	HAMILTON AVE		CA	FRESNO	Active	2	0	Gates	Ti ber	48	36.725213030 119.772401290
7200	997.17 6644+61	028519	Private at Grade	PRIVATE	PVT	CA	FRESNO	Closed	2	0	None	Uncons	5	
7200	997.21 6642+50	028520R	Private at Grade	PRIVATE		CA	FRESNO	Closed	2	0	None	Uncons	5	

□S	Milepost Sur□ey Stn	□□T □	□ing Type	Street	□ighway	State	City	Status	□Mains	□□ther	□ arn Class	Surface	□ength	□atitude □ongitude
7200	997.23 6641+29	028528V	Public at Grade	BUTLER AVE		CA	FRESNO	Active	2	0	Gates	Conc Pav	84	36.728672580 119.772494100
7200	997.26 6639+86	028521X	Private at Grade	PRIVATE	PVT	CA	FRESNO	Closed	2	0	None	Uncons	5	
7200	997.74 6614+52	028538B	Public RR Under	EISENHO□ ER F□ \	CA 41	CA	FRESNO	Active	2	1	None			36.734599800 119.778087400
7200	997.79 6611+72	028539H	Public at Grade	VENTURA AVE		CA	FRESNO	Active	2	1	Gates	Asph	100	36.735052190 119.778574200
7200	998.10 6595+45	028549N	Public at Grade	TULARE AVE		CA	FRESNO	Active	2	0	Gates	Conc Pav	56	36.738088960 119.781901800
7200	998.11 6594+91	028545L	Pedestria at Grade	PEDESTRIAN	PED	CA	FRESNO	Closed	2	0	None	Uncons	5	36.739044760 119.782951100
7200	998.20 6590+11	028550H	Pedestria at Grade	PEDESTRIAN		CA	FRESNO	Active	1	0	Flashers	Rubber	52	36.740043460 119.784026700
7200	998.30 6584+79	028551P	Public at Grade	FRESNO ST		CA	FRESNO	Active	1	0	Gates	Conc Pav	70	36.741028500 119.785124000
7200	998.43 6577+86	028552□	Public at Grade	MERCED ST		CA	FRESNO	Closed	1	0	Flashers	Asph	52	
7200	998.53 6572+59	028553D	Public at Grade	DIVISADERO ST		CA	FRESNO	Active	1	0	Gates	Ti□ ber	120	36.743311490 119.787024300
7200	998.65 6566+25	028554K	Public at Grade	ILLINOIS AVE		CA	FRESNO	Closed	1	0	Flashers	Asph	30	
7200	998.77 6559+64	028556Y	Public at Grade	MCKEN□IE ST		CA	FRESNO	Active	1	0	Gates	Conc Pav	36	36.746864260 119.787097500
7200	998.90 6553+09	028557F	Public at Grade	GRANT AVE		CA	FRESNO	Closed	1	0	StopSi□ns	Asph	36	
7200	999.02 6546+45	028558M	Public at Grade	BELMONT AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	80	36.750405070 119.787161100
7200	999.05 6544+62	028559U	Public at Grade	ALLEY		CA	FRESNO	Closed	1	0	StopSi□ns	Asph	18	
7200	999.10 6542+52	028560N	Public at Grade	□ HITE AVE		CA	FRESNO	Closed	1	0	StopSi□ns	Conc Pav	56	
7200	999.12 6540+90	028561V	Public at Grade	ALLEY		CA	FRESNO	Closed	1	0	StopSi□ns	Asph	27	
7200	999.18 6538+07	933557B	Public RR Under	CA SH 180	CA 180	CA	FRESNO	Active	1	0	None			36.752701000 119.787211000
7200	999.23 6535+24	028564R	Public at Grade	HARVEY AVE		CA	FRESNO	Closed	1	0	StopSi□ns	Conc Pav	59	

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	999.27 6533+35	028565X	Public at Grade	ALLEY		CA	FRESNO	Closed	1	0	StopSi ns	Asph	22	
7200	999.30 6531+62	028566E	Public at Grade	LE IS AVE		CA	FRESNO	Closed	1	0	Flashers	Conc Pav	60	
7200	999.37 6528+27	028567L	Public at Grade	TYLER AVE		CA	FRESNO	Closed	1	0	Flashers	Conc Pav	60	
7200	999.43 6524+97	028568T	Public at Grade	CLAY AVE		CA	FRESNO	Closed	1	0	Flashers	Conc Pav	60	
7200	999.49 6521+61	028569A	Public at Grade	OLIVE AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	80	36.757304410 119.787195900
7200	999.59 6516+64	028570U	Public at Grade	HAMMOND AVE		CA	FRESNO	Active	1	1	Gates	Ti ber	32	36.758644520 119.787203100
7200	999.63 6514+49	028571B	Private at Grade	PRIVATE	PVT	CA	FRESNO	Closed	0	1	None	Uncons	0	36.753300000 119.786201000
7200	999.68 6511+87	028572H	Private at Grade	PRIVATE	PVT	CA	FRESNO	Closed	0	1	None	Uncons	0	36.753300000 119.786201000
7200	1000.01 6494+41	028573P	Public at Grade	BLACKSTONE AVE	CA 41	CA	FRESNO	Active	1	0	Gates	Conc Pav	205	36.764011870 119.790537500
7200	1000.10 6489+92	028574	Public at Grade	MC KINLEY AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	76	36.765074290 119.791357800
7200	1000.17 6486+12	028575D	Private at Grade	PRIVATE	PVT	CA	FRESNO	Closed	0	1	None	Uncons	0	36.771099000 119.795097000
7200	1000.39 6474+65	028576K	Public at Grade	ELDON AVE		CA	FRESNO	Closed	1	0	Gates	Conc Pav	46	36.768638040 119.794112900
7200	1000.70 6458+11	028577S	Public at Grade	CLINTON AVE		CA	FRESNO	Active	1	0	Gates	Ti ber	96	36.772266900 119.796909200
7200	1000.96 6444+22	028578Y	Public at Grade	PRINCETON AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	102	36.775768340 119.799615700
7200	1001.10 6436+98	028579F	Public RR Over	ISHON AVE		CA	FRESNO	Active	1	0	None		0	36.777574710 119.801020800
7200	1001.27 6428+16	028580A	Public at Grade	SHIELDS AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	95	36.779500610 119.802502100
7200	1001.44 6419+02	028581G	Public RR Over	VAN NESS AVE		CA	FRESNO	Active	1	0	None		0	36.781900340 119.804357630
7200	1001.88 6395+68	028582N	Public at Grade	PALM AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	94	36.786943910 119.808656500
7200	1002.53 6361+62	028583V	Public at Grade	FRUIT AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	55	36.792894610 119.817510600

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1002.63 6356+08	028584C	Public at Grade	ASHLAN AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	112	36.793825650 119.818949000
7200	1003.18 6327+30	028585J	Public at Grade	EST AVE		CA	FRESNO	Active	1	0	Gates	Conc Pav	80	36.798658220 119.826404800
7200	1004.22 6272+00	028586R	Public RR Under	SHA AVE		CA	FRESNO	Closed	1	1	Gates			36.807988370 119.840831000
7200	1004.43 6260+95	927543E	Public RR Under	N MARKS SUE		CA	FRESNO	Active	1	1	None			36.810218593 119.844269585
7200	1005.80 6188+71	028587X	Public at Grade	BULLARD AVE		CA	FRESNO	Closed	1	1	Gates	Asph	32	
7200	1006.20 6167+59	027488	Public at Grade	FIGARDEN DR		CA	FRESNO	Active	1	0	Gates	Conc Pav	0	36.826528060 119.869504800
7200	1007.38 6104+92	028588E	Public RR Under	HERNDON AVE		CA	FRESNO	Active	1	0	None			36.837232570 119.886062200
7200	1007.87 6079+15	028589L	Private at Grade	PRIVATE		CA	FRESNO	Closed	1	0	None	Uncons	12	
7200	1008.71 6034+84	028590F	Private RR Over	PRIVATE	PVT	CA	FRESNO	Active	1	0	None		0	36.848962880 119.904213900
7200	1009.07 6015+82	028591M	Public at Grade	ROAD 35		CA		Active	1	0	Gates	Conc Pav	32	36.852416720 119.909556400
7200	1009.97 5968+32	028592U	Private at Grade	PRIVATE	PVT	CA		Closed	1	0	None	Uncons	15	
7200	1010.27 5952+52	028593B	Private at Grade	PRIVATE	PVT	CA	MADERA	Closed	1	0	None	Uncons	14	
7200	1011.18 5904+19	028594H	Private at Grade	PRIVATE	PVT	CA	MADERA	Active	1	1	None	Uncons	15	36.876796860 119.932666500
7200	1011.48 5888+41	028595P	Public at Grade	AVE 9		CA	MADERA	Active	1	1	Gates	Conc Pav	38	36.880309500 119.935776000
7200	1012.11 5855+10	028596	Private at Grade	PRIVATE	PVT	CA	MADERA	Active	1	1	None	Uncons	15	36.887648430 119.942251800
7200	1012.97 5809+79	028597D	Private at Grade	PRIVATE	PVT	CA	MADERA	Active	1	0	None	Uncons	26	36.897882410 119.951309900
7200	1013.95 5758+07	028598K	Public at Grade	AVE 11		CA	MADERA	Active	1	0	Gates	Conc Pav	48	36.909412620 119.961511500
7200	1014.81 5712+45	028599S	Private at Grade	PRIVATE		CA	MADERA	Closed	1	0	None	Uncons	31	
7200	1014.88 5709+02	028600J	Private at Grade	PRIVATE		CA	MADERA	Closed	1	0	None	Uncons	5	

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1015.12 5696+40	028601R	Public at Grade	AVE 12		CA	MADERA	Active	1	0	Gates	Conc Pav	34	36.923265420 119.973759900
7200	1015.22 5690+96	028602X	Private at Grade	PRIVATE		CA	MADERA	Closed	1	0	None	Uncons	32	
7200	1016.35 5631+35	028603E	Public at Grade	AVE 13		CA	MADERA	Closed	1	0	Gates	Conc Pav	24	36.937885760 119.986700100
7200	1016.94 5600+04	028604L	Private at Grade	PRIVATE	PVT	CA	MADERA	Closed	1	0	None	Uncons	35	
7200	1017.63 5563+92	028605T	Private at Grade	PRIVATE	PVT	CA	MADERA	Active	1	0	None	Uncons	35	36.952962440 120.000061100
7200	1018.82 5500+81	028606A	Public at Grade	AVE 15		CA	MADERA	Active	1	1	Gates	Conc Pav	48	36.967093140 120.012568600
7200	1019.44 5468+02	028607G	Public at Grade	AVE 15 1 2		CA	MADERA	Active	1	2	Gates	Conc Pav	32	36.974426200 120.019075900
7200	1020.20 5428+04	028617M	Public RR Over	YOSEMITE BLVD	CA 145	CA	MADERA	Active	1	0	None		0	36.983112790 120.027355310
7200	1020.38 5418+64	028618U	Public at Grade	ROAD 28 1 2		CA	MADERA	Active	1	0	Gates	Conc Pav	32	36.984912140 120.029538400
7200	1022.45 5309+24	028619B	Public at Grade	ROAD 27		CA	MADERA	Active	1	0	Gates	Conc Pav	104	37.006903750 120.056246600
7200	1023.92 5231+39	028620V	Public at Grade	ROAD 26		CA	MADERA	Active	1	0	Gates	Conc Pav	35	37.021818220 120.074374400
7200	1024.44 5204+14	028621C	Private at Grade	PRIVATE		CA	MADERA	Closed	1	0	None	Uncons	15	
7200	1025.97 5123+15	028622J	Private at Grade	PRIVATE	PVT	CA	MADERA	Active	1	2	None	Uncons	15	37.047207420 120.093844000
7200	1026.37 5102+02	028623R	Public at Grade	AVE 20 1 2		CA	MADERA	Active	1	0	Gates	Conc Pav	40	37.052086090 120.097349600
7200	1027.86 5023+36	028624X	Public at Grade	ROAD 24		CA	MADERA	Active	1	0	Gates	Conc Pav	78	37.070808490 120.110832400
7200	1028.92 4967+36	028625E	Private at Grade	PRIVATE	PVT	CA	MADERA	Closed	1	0	None	Uncons	15	
7200	1030.04 4908+50	028626L	Public at Grade	AVE 24		CA	CHO CHILLA	Active	1	2	Gates	Conc Pav	40	37.098079410 120.130469600
7200	1031.87 4811+64	028627T	Public at Grade	ROAD 22		CA	MADERA	Active	1	1	Gates	Ti ber	72	37.121136640 120.147077900
7200	1032.34 4786+74	028628A	Public at Grade	AVE 26		CA		Active	1	1	Gates	Conc Pav	56	37.127087760 120.151359600

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1034.04 4694+37	028629G	Private at Grade	PRIVATE	PVT.	CA		Active	1	0	None	Uncons	13	37.148916830 120.165831900
7200	1034.60 4664+72	028630B	Private at Grade	PRIVATE	PVT.	CA		Closed	1	0	None	Uncons	5	
7200	1035.94 4594+01	028631H	Public at Grade	SANTA FE AVE		CA	PLANADA	Active	1	0	Gates	Conc Pav	32	37.174082770 120.179781700
7200	1037.51 4511+17	028632P	Public at Grade	HITE ROCK RD		CA	PLANADA	Active	1	0	Gates	Conc Pav	32	37.190867690 120.198642400
7200	1038.39 4464+76	028633	Public at Grade	BUCHANAN HOLLC		CA	PLANADA	Active	1	0	Gates	Conc Pav	24	37.199832000 120.209777100
7200	1039.31 4416+44	028634D	Private at Grade	PRIVATE	PVT	CA	LE GRAND	Closed	1	0	None	Uncons	10	37.209346610 120.221634500
7200	1039.68 4396+96	028635K	Public at Grade	IPSEN AVE		CA	PLANADA	Active	1	0	Gates	Ti ber	24	37.213108340 120.226305300
7200	1040.49 4353+71	028636S	Private at Grade	PRIVATE	PVT.	CA	LE GRAND	Active	1	1	None	Uncons	10	37.221479960 120.236732200
7200	1041.17 4317+76	028637Y	Public at Grade	LE GRAND RD		CA	PLANADA	Active	1	2	Gates	Ti ber	40	37.228493390 120.245454800
7200	1041.43 4304+08	028638F	Public at Grade	JEFFERSON ST		CA	PLANADA	Active	1	3	Gates	Ti ber	32	37.231187050 120.248814400
7200	1041.74 4287+64	028639M	Public at Grade	CUNNINGHAM RD		CA	PLANADA	Active	1	1	Gates	Ti ber	40	37.234379890 120.252774500
7200	1042.48 4248+73	028640G	Public at Grade	DUMPYARD RD		CA	PLANADA	Active	1	0	XBucks	Ti ber	32	37.241581470 120.261745700
7200	1043.86 4175+97	028641N	Private at Grade	PRIVATE		CA	PLANADA	Closed	1	0	None	Uncons	15	
7200	1044.50 4141+80	028642V	Private at Grade	PRIVATE		CA	PLANADA	Closed	1	0	None	Uncons	15	
7200	1044.55 4139+48	028643C	Public at Grade	BURCHELL AVE		CA	PLANADA	Active	1	0	Gates	Ti ber	32	37.263197740 120.288676900
7200	1044.93 4119+26	028644J	Private at Grade	PRIVATE		CA	PLANADA	Closed	1	0	None	Uncons	5	
7200	1045.52 4088+10	028645R	Public at Grade	MISSION AVE		CA	PLANADA	Active	1	0	Gates	Ti ber	32	37.273185190 120.301119500
7200	1045.95 4065+19	028646X	Private at Grade	PRIVATE		CA	PLANADA	Closed	1	0	None	Uncons	20	
7200	1046.96 4011+68	028647E	Public at Grade	CHILDS AVE		CA	PLANADA	Active	1	2	Gates	Asph	32	37.288035990 120.319657240

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1046.97 4011+36	028650M	Public at Grade	PLAINSBURG RD		CA	PLANADA	Active	1	2	Gates	Conc Pav	48	37.288035990 120.319657200
7200	1047.00 4009+77	028648L	Private at Grade	PRIVATE		CA	PLANADA	Closed	0	1	None	Uncons	0	
7200	1047.02 4008+71	028649T	Private at Grade	PRIVATE		CA	PLANADA	Closed	0	1	None	Uncons	0	
7200	1047.93 3960+84	028651U	Private at Grade	PRIVATE	PVT	CA	PLANADA	Closed	1	1	None	Uncons	15	37.292278290 120.324918900
7200	1048.48 3932+23	028652B	Private at Grade	PRIVATE	PVT	CA	PLANADA	Active	1	0	None	Uncons	15	37.295381810 120.343760000
7200	1048.94 3907+83	028653H	Private at Grade	PRIVATE		CA	PLANADA	Active	1	0	None	Uncons	16	37.295506560 120.352164800
7200	1049.24 3891+65	028654P	Private at Grade	PRIVATE		CA	PLANADA	Closed	1	0	None	Uncons	15	
7200	1049.80 3862+29	028655	Private at Grade	PRIVATE	PVT	CA	PLANADA	Active	1	0	None	Uncons	12	37.295720270 120.367843300
7200	1050.42 3829+38	028656D	Public at Grade	ARBOLEDA DR		CA	PLANADA	Active	1	0	Gates	Conc Pav	25	37.295802450 120.379091400
7200	1050.68 3815+97	028657K	Private at Grade	PRIVATE	PVT	CA	MERCED	Closed	1	0	None	Uncons	12	
7200	1051.18 3789+61	028658S	Private at Grade	S ORCHARD DR	PVT	CA	MERCED	Closed	1	0	None	Uncons	12	37.295385110 120.392754100
7200	1051.83 3755+05	028659Y	Private at Grade	PRIVATE	PVT	CA	MERCED	Closed	1	0	None	Uncons	5	
7200	1051.93 3749+60	028660T	Public at Grade	TO ER RD		CA	MERCED	Active	1	0	Gates	Conc Pav	24	37.295016600 120.406329900
7200	1052.15 3738+09	028661A	Private at Grade	PRIVATE		CA	MERCED	Closed	0	1	None	Uncons	0	
7200	1052.42 3723+72	028662G	Public at Grade	KIBBY RD		CA	MERCED	Active	1	0	Gates	Conc Pav	32	37.294924770 120.415359100
7200	1052.71 3708+50	028663N	Private at Grade	PRIVATE		CA	MERCED	Closed	1	0	None	Uncons	5	
7200	1053.92 3644+57	028664V	Public RR Under	BRADLEY OH	CA 140	CA	MERCED	Active	1	0	None		0	37.295171080 120.442714900
7200	1054.78 3599+16	028665C	Pedestria RR Over	PEDESTRIAN	PED.	CA	MERCED	Active	1	1	None		0	37.300066920 120.456621240
7200	1055.11 3581+57	028667R	Public at Grade	GLEN AVE	FAUY953	CA	MERCED	Active	1	1	Flashers	Rubber	56	37.302146470 120.462279100

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1055.19 3577+31	028668X	Pedestria RR Over	PEDESTRIAN	PED	CA	MERCED	Active	1	1	None		0	37.302613000 120.463527760
7200	1055.68 3550+94	028669E	Public RR Over	G ST	FAUY950	CA	MERCED	Active	1	1	Other			37.305634990 120.471751900
7200	1056.00 3533+72	029088K	Private at Grade	BIANCHI SONS		CA	MERCED	Closed	0	1	None	Uncons	0	
7200	1056.04 3531+71	028670Y	Public at Grade	"K" ST		CA	MERCED	Active	1	2	Gates	Rubber	64	37.307856990 120.477830300
7200	1056.13 3526+95	028671F	Public at Grade	CANAL ST		CA	MERCED	Active	1	1	Gates	Rubber	64	37.308409430 120.479346900
7200	1056.22 3522+14	028672M	Public at Grade	"M" ST	FAUY948	CA	MERCED	Active	1	1	Gates	Rubber	80	37.308875430 120.480583700
7200	1056.68 3497+93	028673U	Public at Grade	"R" ST	FAUY947	CA	MERCED	Active	1	0	Gates	Ti ber	72	37.311744160 120.488395900
7200	1056.95 3483+39	028674B	Public at Grade	"U" ST		CA	MERCED	Active	1	0	Gates	Conc Pav	32	37.313411850 120.492916700
7200	1057.13 3474+14	028675H	Public at Grade	BEAR CREEK RD	9M31	CA	MERCED	Active	1	0	Gates	Conc Pav	32	37.314488780 120.495861100
7200	1057.68 3444+94	028676P	Public at Grade	OLIVE AVE		CA	MERCED	Closed	0	1	XBucks	Ti ber	0	
7200	1057.68 3444+78	028682T	Public at Grade	SNELLING H Y	CA 59	CA	MERCED	Active	1	0	Gates	Conc Pav	32	37.318101680 120.504954700
7200	1057.79 3439+13	028677	Private at Grade	PRIVATE	PVT	CA	MERCED	Closed	0	1	None	Uncons	0	37.309513000 120.481323000
7200	1058.18 3418+54	028678D	Private at Grade	PRIVATE	PVT	CA	MERCED	Closed	0	1	None	Uncons	0	
7200	1058.32 3411+14	028679K	Private at Grade	PRIVATE	PVT	CA	MERCED	Closed	0	1	None	Uncons	0	37.324474000 120.514946000
7200	1058.58 3397+42	028680E	Private at Grade	PRIVATE	PVT	CA	MERCED	Closed	0	1	None	Uncons	0	37.325970000 120.517334000
7200	1058.63 3394+78	028681L	Private at Grade	PRIVATE	PVT	CA	MERCED	Closed	0	1	None	Uncons	0	37.326721000 120.518539000
7200	1059.09 3370+49	028683A	Public at Grade	EST AVENUE 2		CA	MERCED	Active	0	1	XBucks	Asph	0	37.329758000 120.523384000
7200	1059.16 3366+79	028684G	Private at Grade	PRIVATE	PVT	CA	MERCED	Closed	0	1	None	Uncons	0	37.330524000 120.524612000
7200	1059.21 3364+15	028685N	Private at Grade	PRIVATE	PVT	CA	MERCED	Closed	0	1	None	Uncons	0	37.331299000 120.525848000

□S	Milepost Sur□ey Stn	□□T □	□ing Type	Street	□ighway	State	City	Status	□Mains	□□ther	□ arn Class	Surface	□ength	□atitude □ongitude
7200	1059.27 3360+83	028686V	Public at Grade	BEACH□ OOD		CA	MERCED	Active	1	0	Gates	Conc Pav	57	37.332063820 120.527770700
7200	1060.16 3313+73	028687C	Public at Grade	FRANKLIN RD		CA	MERCED	Active	1	0	Gates	Conc Pav	57	37.340054930 120.540536700
7200	1061.22 3257+92	028689R	Public at Grade	FELBER RD		CA	MERCED	Active	1	0	Gates	Conc Pav	25	37.349505610 120.555669000
7200	1062.46 3192+71	028688J	Public at Grade	BELLEVUE AVE		CA	MERCED	Active	1	1	Gates	Conc Pav	48	37.360518870 120.573355000
7200	1062.59 3185+69	028691S	Public at Grade	SANTA FE DR		CA	AT□ ATER	Active	0	1	Gates	Asph	0	37.357651000 120.568237000
7200	1062.70 3180+04	028704R	Public at Grade	BUHACH RD		CA	AT□ ATER	Active	1	1	Gates	Conc Pav	72	37.362632650 120.576740700
7200	1062.74 3177+77	028692Y	Pedestria at Grade	PEDESTRIAN		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1062.79 3175+13	028693F	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1062.82 3173+54	028694M	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1062.82 3173+49	028701V	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1062.85 3171+96	028695U	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1062.92 3168+26	028702C	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1063.12 3157+68	028703J	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1063.15 3156+09	028696B	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1063.22 3152+37	028697H	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1063.25 3150+78	028698P	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1063.38 3143+89	028699□	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1063.62 3131+16	028700N	Private at Grade	PRIVATE		CA	AT□ ATER	Closed	0	1	None	Uncons	0	
7200	1064.00 3110+75	028705X	Public at Grade	SHAFFER RD		CA	□ INTON	Active	1	0	Gates	Conc Pav	42	37.374333670 120.595538600

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1065.26 3044+43	028706E	Public at Grade	INTON AY		CA	INTON	Active	1	0	Gates	Conc Pav	94	37.385524830 120.613509700
7200	1065.69 3021+67	028707L	Public at Grade	ALNUT AVE RD 1		CA	INTON	Active	1	0	Gates	Conc Pav	56	37.389418090 120.619773300
7200	1066.52 2978+11	028708T	Public at Grade	OLIVE AVE		CA	INTON	Active	1	0	Gates	Conc Pav	24	37.396754300 120.631558400
7200	1067.33 2935+13	028709A	Public at Grade	EUCALYPTUS AVE		CA	INTON	Active	1	0	Gates	Conc Pav	30	37.404041740 120.643272600
7200	1069.04 2844+90	028710U	Public at Grade	CRESSEY AY		CA		Active	1	0	Gates	Conc Pav	48	37.419298350 120.667802700
7200	1069.67 2811+53	028711B	Private RR Over	PRIVATE		CA		Closed	1	0	None		0	
7200	1069.71 2809+42	028712H	Private RR Over	PRIVATE	PRIV	CA		Active	0	1	None		0	
7200	1069.78 2805+73	028713P	Private RR Over	PRIVATE	PRIV	CA		Active	1	0	None		0	37.428065450 120.674135820
7200	1070.19 2784+08	028714	Public at Grade	EL CAPITAN AY		CA		Active	1	0	Gates	Conc Pav	32	37.433693510 120.676131900
7200	1071.99 2688+82	028715D	Public at Grade	BALLICO AVE		CA		Active	1	1	Gates	Conc Pav	37	37.450703400 120.701320500
7200	1072.70 2651+33	028716K	Public at Grade	LOMBARDY AVE		CA		Active	1	0	Gates	Conc Pav	32	37.456967010 120.711330800
7200	1074.68 2547+30	028717S	Public at Grade	CORTE AVE		CA		Active	1	0	Gates	Ti ber	32	37.474692310 120.739678100
7200	1075.80 2488+51	028718Y	Private at Grade	PRIVATE	PRIV	CA		Active	1	0	None	Uncons	5	37.485111280 120.755105100
7200	1076.44 2454+51	028719F	Public at Grade	EAST AVE		CA	DENAIR	Active	1	0	Gates	Ti ber	32	37.492315160 120.762446700
7200	1077.09 2420+19	028720A	Private at Grade	PRIVATE	PRIV	CA	DENAIR	Closed	1	0	None	Uncons	14	37.499732230 120.770050440
7200	1077.62 2392+10	028721G	Public at Grade	VINCENT RD		CA	DENAIR	Active	1	0	Gates	Ti ber	34	37.505584030 120.776036600
7200	1078.39 2351+55	028722N	Private at Grade	PRIVATE	PVT	CA	DENAIR	Closed	1	0	None	Uncons	5	
7200	1078.92 2323+67	028723V	Private at Grade	PRIVATE	PRIV	CA	DENAIR	Active	1	0	None	Uncons	15	37.520047650 120.790812100
7200	1079.05 2316+44	028724C	Public at Grade	MONTE VISTA AVE		CA	DENAIR	Active	1	0	Gates	Ti ber	45	37.521759460 120.792544100

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1079.44 2296+16	028725J	Public at Grade	MAIN ST		CA	DENAIR	Active	1	2	Gates	Conc Pav	32	37.526037080 120.796920900
7200	1079.70 2282+22	028726R	Public at Grade	EERING RD		CA	DENAIR	Active	1	2	Gates	Conc Pav	50	37.528998130 120.799971600
7200	1080.42 2244+47	028727X	Private at Grade	PRIVATE	PVT	CA	DENAIR	Closed	1	1	None	Uncons	5	
7200	1081.03 2212+21	028728E	Public at Grade	BARNHART RD		CA	DENAIR	Active	1	0	Gates	Ti ber	37	37.543918360 120.815214100
7200	1081.66 2178+73	028729L	Public at Grade	KEYES RD		CA	DENAIR	Active	1	0	Gates	Conc Pav	32	37.551166520 120.822613300
7200	1082.21 2150+06	028730F	Public at Grade	BERKELEY AVE		CA	DENAIR	Active	1	0	Gates	Ti ber	32	37.557138670 120.828734900
7200	1083.10 2102+86	028731M	Private at Grade	PRIVATE	PVT	CA	DENAIR	Closed	1	0	None	Uncons	15	
7200	1083.80 2065+79	028732U	Public at Grade	GREER RD	J 14	CA	DENAIR	Active	1	0	Gates	Conc Pav	32	37.575087600 120.847079800
7200	1084.26 2041+75	028733B	Public at Grade	SERVICE RD		CA	DENAIR	Active	1	0	Gates	Conc Pav	32	37.580214520 120.852323600
7200	1085.07 1998+72	028734H	Public at Grade	7TH ST		CA	HUGHSON	Active	1	0	Gates	Conc Pav	20	37.588221360 120.860514500
7200	1085.55 1973+28	028735P	Public at Grade	HITMORE AVE		CA	HUGHSON	Active	1	2	Gates	Conc Pav	32	37.594775250 120.867220200
7200	1085.78 1960+98	028736	Public at Grade	TULLY RD		CA	HUGHSON	Active	1	2	Gates	Conc Pav	32	37.597348200 120.870055000
7200	1086.26 1936+00	028737D	Private at Grade	PRIVATE	PVT	CA	HUGHSON	Active	1	0	None	Uncons	15	37.602096170 120.876062400
7200	1086.60 1917+72	028738K	Private at Grade	PRIVATE	PVT	CA	HUGHSON	Active	1	0	None	Uncons	12	37.605726050 120.880656200
7200	1086.95 1899+40	028739S	Public at Grade	HATCH RD		CA	EMPIRE	Active	1	0	Gates	Conc Pav	48	37.609253010 120.885124200
7200	1087.65 1862+64	028740L	Private at Grade	PRIVATE	PVT	CA	EMPIRE	Active	2	0	None	Uncons	14	37.616552560 120.894372100
7200	1088.14 1836+65	028741T	Private RR Over	PRIVATE	PVT	CA	EMPIRE	Active	2	0	None			37.622053720 120.899280400
7200	1088.28 1829+25	028742A	Private RR Over	PRIVATE	PVT	CA	EMPIRE	Active	2	0	None			37.624124370 120.899818730
7200	1089.28 1776+16	028743G	Public at Grade	YOSEMITE BLVD	CA 132	CA	EMPIRE	Active	2	1	Gates	Rubber	32	37.638275580 120.903555200

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1089.47 1766+35	028744N	Public at Grade	2ND ST		CA	EMPIRE	Active	2	4	Gates	Ti ber	24	37.640904850 120.904240600
7200	1090.20 1727+86	028745V	Private at Grade	PRIVATE	PVT	CA	EMPIRE	Closed	2	0	None	Uncons	15	37.651223780 120.906938700
7200	1091.32 1668+32	028746C	Public at Grade	PARKER RD		CA	EMPIRE	Active	1	0	Gates	Ti ber	18	37.667187100 120.911427400
7200	1091.38 1665+29	028747J	Private at Grade	PRIVATE	PVT	CA	EMPIRE	Closed	1	0	None	Uncons	10	
7200	1092.38 1612+34	028748R	Public at Grade	MILNES RD		CA	RIVERBANK	Active	1	0	Gates	Conc Pav	32	37.681805170 120.917520400
7200	1092.69 1596+13	028749X	Private at Grade	PRIVATE		CA	RIVERBANK	Closed	0	1	None	Uncons	0	
7200	1092.76 1592+43	028750S	Private at Grade	PRIVATE		CA	RIVERBANK	Closed	0	1	None	Uncons	0	
7200	1092.84 1588+21	028751Y	Private at Grade	PRIVATE		CA	RIVERBANK	Closed	0	1	None	Uncons	0	
7200	1093.09 1575+06	028752F	Public at Grade	CLAUS RD		CA	RIVERBANK	Active	1	0	Gates	Conc Pav	136	37.691541320 120.921580500
7200	1093.97 1528+54	028753M	Public at Grade	PLAINVIE AVE		CA	RIVERBANK	Active	1	0	Gates	Conc Pav	32	37.703608450 120.926610500
7200	1094.42 1504+97	028754U	Private at Grade	PRIVATE	PVT	CA	RIVERBANK	Closed	1	0	None	Uncons	12	
7200	1094.50 1500+71	028755B	Public at Grade	CLARIBEL RD		CA	RIVERBANK	Active	1	0	Gates	Conc Pav	32	37.710918940 120.929655700
7200	1096.08 1417+02	028767V	Public at Grade	PATTERSON RD		CA	RIVERBANK	Active	1	2	Gates	Conc Pav	32	37.732766820 120.938770600
7200	1096.37 1402+02	028769J	Pedestria RR Under	PEDESTRIAN	PED	CA	RIVERBANK	Closed	1	0	None		0	37.736612190 120.940339200
7200	1096.46 1397+27	028768C	Public RR Under	ATCHISON ST	CA 108	CA	RIVERBANK	Active	1	0	None		0	37.738179210 120.940881300
7200	1096.78 1380+37	028770D	Private RR Over	PRIVATE	PVT.	CA		Active	1	0	None		0	37.741712040 120.941916100
7200	1096.82 1378+26	028771K	Private RR Over	RIVER COVE DR	PVT	CA		Active	1	0	None			37.743123590 120.942341640
7200	1097.94 1330+58	028772S	Private at Grade	PRIVATE	PVT	CA		Active	1	0	None	Uncons	16	37.758585230 120.947643100
7200	1098.23 1315+00	028773Y	Public at Grade	RIVER RD		CA		Active	1	0	Gates	Conc Pav	999	37.762091430 120.950836800

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1099.10 1268+95	028774F	Private at Grade	PRIVATE	PVT	CA	ESCALON	Active	1	0	None	Uncons	12	37.770775780 120.962275800
7200	1099.59 1243+19	028775M	Public at Grade	HARROLD AVE		CA	ESCALON	Active	1	0	Gates	Conc Pav	48	37.775599710 120.968656200
7200	1099.99 1222+17	028776U	Private at Grade	PRIVATE	PVT	CA	ESCALON	Active	1	0	None	Uncons	15	37.779584240 120.973926300
7200	1100.98 1169+74	028778H	Public at Grade	ST JOHNS RD		CA	ESCALON	Active	2	0	Gates	Conc Pav	23	37.789503840 120.987047700
7200	1101.51 1141+60	028779P	Public at Grade	1ST ST		CA	ESCALON	Active	2	1	Gates	Conc Pav	40	37.794889200 120.994167600
7200	1101.71 1131+51	028780J	Public at Grade	ESCALON AVE		CA	ESCALON	Active	2	0	Gates	Conc Pav	112	37.796729380 120.996600210
7200	1101.88 1122+33	028781R	Public at Grade	YOSEMITE AVE	CA 120	CA	ESCALON	Active	2	0	Gates	Conc Pav	81	37.796940870 120.996879900
7200	1103.11 1057+04	028782X	Public at Grade	BRENNAN AVE		CA	ESCALON	Active	1	0	Gates	Ti ber	32	37.810796730 121.015223460
7200	1103.35 1044+46	028783E	Public at Grade	ARTHUR RD		CA	ESCALON	Active	1	0	Gates	Ti ber	32	37.798560400 120.999020500
7200	1104.49 984+37	028784L	Public at Grade	SEXTON AVE		CA	ESCALON	Active	1	0	Gates	Conc Pav	32	37.823643780 121.034602300
7200	1104.94 960+23	028785T	Public at Grade	LONE TREE RD		CA	ESCALON	Active	1	0	Gates	Conc Pav	56	37.827651350 121.041284600
7200	1105.77 916+57	028786A	Public at Grade	VAN ALLEN RD		CA	ESCALON	Active	1	0	Gates	Conc Pav	34	37.834868630 121.053328800
7200	1106.66 869+50	028787G	Public at Grade	AVENA RD		CA	ESCALON	Active	1	0	Gates	Conc Pav	32	37.841866830 121.065005400
7200	1107.05 848+92	028788N	Public at Grade	CARROLTON RD		CA	ESCALON	Active	1	0	Gates	Conc Pav	32	37.846075910 121.072031800
7200	1108.22 786+73	028789V	Public at Grade	DODDS RD		CA	ESCALON	Active	1	0	Gates	Conc Pav	32	37.856372350 121.089216400
7200	1108.32 781+55	028790P	Public at Grade	AGNER RD		CA	ESCALON	Closed	1	0	StopSi ns	Ti ber	16	37.857203790 121.090606300
7200	1109.60 714+34	028791	Public at Grade	MURPHY RD		CA	ESCALON	Active	1	1	Gates	Conc Pav	26	37.868360490 121.109239500
7200	1109.68 710+12	028792D	Private at Grade	PRIVATE		CA	ESCALON	Closed	1	0	None	Uncons	16	
7200	1109.92 697+19	028793K	Private at Grade	PRIVATE	PVT	CA	ESCALON	Closed	1	0	None	Uncons	16	

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1110.70 656+08	028794S	Private at Grade	PRIVATE	PVT	CA	ESCALON	Closed	1	0	None	Uncons	15	37.877980850 121.125318800
7200	1111.22 628+70	028795Y	Private at Grade	PRIVATE	PVT	CA	STOCKTON	Active	1	0	None	Uncons	13	37.883417680 121.134409100
7200	1111.54 611+73	028796F	Private at Grade	PRIVATE	PVT	CA	STOCKTON	Closed	1	0	None	Uncons	16	
7200	1111.84 595+86	028797M	Private at Grade	PRIVATE	PVT	CA	STOCKTON	Closed	1	0	None	Uncons	16	
7200	1112.19 577+26	028798U	Public RR Under	JACK TONE RD		CA	STOCKTON	Active	1	1	None			37.891005380 121.147083300
7200	1112.43 564+64	028799B	Private at Grade	PRIVATE		CA	STOCKTON	Closed	1	0	None	Uncons	14	
7200	1113.46 510+21	029569D	Public at Grade	KAISER RD		CA	STOCKTON	Closed	1	0	Gates	Ti ber	28	
7200	1114.68 445+48	029570X	Public RR Under	MARIPOSA RD	CORTJ 7	CA	STOCKTON	Active	1	1	None			37.912574750 121.183184300
7200	1115.47 404+18	029571E	Private RR Under	PRIVATE		CA	STOCKTON	Closed	1	0	None			
7200	1115.88 382+23	029572L	Private at Grade	PRIVATE		CA	STOCKTON	Closed	1	0	None	Uncons	16	
7200	1116.60 344+10	029573T	Public at Grade	CARPENTER RD		CA	STOCKTON	Active	1	1	Gates	Conc Pav	33	37.929520890 121.211570700
7200	1117.95 272+73	029578C	Public at Grade	FARMINGTON RD	CA 4	CA	STOCKTON	Active	2	0	Gates	Conc Pav	46	37.941310430 121.231332300
7200	1118.20 259+68	029579J	Public RR Over	SH CA 99	CA 99	CA	STOCKTON	Active	2	0	None			37.943673390 121.235312200
7200	1119.00 217+40	029580D	Public RR Over	MARTIN LUTHER K	SR 5	CA	STOCKTON	Active	2	1	None			37.949262840 121.247682700
7200	1120.26 150+87	029597G	Public RR Over	ILSON AY		CA	STOCKTON	Active	2	9	None			37.947961140 121.269322200
7200	1120.40 143+47	029598N	Public at Grade	AIRPORT AY		CA	STOCKTON	Active	2	0	Gates	Conc Pav	999	37.947436490 121.271950800
7200	1120.47 139+61	029599V	Public at Grade	PILGRIM ST		CA	STOCKTON	Active	2	1	Gates	Conc Pav	999	37.947191030 121.273367500
7200	1120.69 128+09	029603H	Public at Grade	AURORA ST		CA	STOCKTON	Active	2	2	Gates	Ti ber	999	37.946532060 121.277267200
7200	1120.84 120+42	029604P	Public at Grade	STANISLAUS ST		CA	STOCKTON	Active	2	0	Gates	Conc Pav	999	37.946100720 121.279842900

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1120.91 116+56	029605	Private at Grade	AMERICAN ST		CA	STOCKTON	Closed	2	0	StopSi ns	Asph	5	
7200	1120.98 112+70	029606D	Public at Grade	S CALIFORNIA ST		CA	STOCKTON	Active	2	0	Gates	Conc Pav	999	37.945652090 121.282446500
7200	1121.05 108+90	029607K	Public at Grade	S SUTTER ST		CA	STOCKTON	Active	2	0	Gates	Conc Pav	999	37.945427810 121.283732500
7200	1121.13 105+04	029608S	Public at Grade	SAN JOAQUIN ST		CA	STOCKTON	Active	2	0	Gates	Conc Pav	999	37.945212670 121.285054900
7200	1121.20 101+19	029609Y	Public at Grade	HUNTER ST		CA	STOCKTON	Closed	2	1	Gates	Asph	72	
7200	1121.27 97+49	029611A	Public RR Under	EL DORADO ST		CA	STOCKTON	Active	2	0	None			37.944764160 121.287687900
7200	1121.35 93+27	029612G	Public RR Under	SO CENTER ST		CA	STOCKTON	Active	2	0	None			37.944554480 121.288861300
7200	1121.40 90+63	029114X	Public RR Under	ESTSIDE F Y	I 5	CA	STOCKTON	Active	0	1	None		0	37.788822000 121.538918000
7200	1121.42 89+68	029613N	Public at Grade	COMMERCE ST		CA	STOCKTON	Active	2	0	Gates	Conc Pav	999	37.944330930 121.290280800
7200	1121.49 85+83	029614V	Public at Grade	S MADISON ST		CA	STOCKTON	Active	2	0	Gates	Asph	27	37.944105380 121.291573500
7200	1121.56 82+02	029615C	Public at Grade	MONROE ST		CA	STOCKTON	Closed	2	0	Gates	Asph	70	
7200	1121.64 78+17	029616J	Public at Grade	VAN BUREN ST		CA	STOCKTON	Active	2	0	Gates	Conc Pav	999	37.943668280 121.294180500
7200	1121.71 74+32	029617R	Public at Grade	LINCOLN ST		CA	STOCKTON	Active	2	0	Gates	Conc Pav	999	37.943449100 121.295479300
7200	1121.89 59+89	029618X	Public RR Under	I 5	I 5	CA	STOCKTON	Active	2	0	None			37.942911190 121.298615100
7200	1122.11 71+51	029619E	Public at Grade	ANDERSON ST		CA	STOCKTON	Active	0	4	Flashers	Ti ber	0	37.945061000 121.273178000
7200	1122.31 82+07	029623U	Private at Grade	PRIVATE	PRIV	CA	STOCKTON	Closed	0	1	None	Uncons	0	37.942600000 121.300491000
7200	1122.31 82+12	029624B	Private at Grade	PRIVATE	PRIV	CA	STOCKTON	Closed	0	1	None	Uncons	0	37.942600000 121.300491000
7200	1122.60 97+38	029628D	Public at Grade	FRESNO AVE		CA	STOCKTON	Active	0	1	Flashers	Asph	0	37.940899000 121.310303000
7200	1122.60 97+43	029633A	Public RR Over	FRESNO AVE		CA	STOCKTON	Active	1	1	None		0	37.940787770 121.311472800

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1122.70 102+66	029625H	Public at Grade	NAVY DR		CA	STOCKTON	Active	0	1	XBucks	Asph	0	37.937599000 121.309502000
7200	1122.74 104+77	029626P	Public at Grade	NAVY DR		CA	STOCKTON	Active	0	1	XBucks	Asph	0	37.937599000 121.309502000
7200	1122.78 106+88	029620Y	Public at Grade	EBER AVE		CA	STOCKTON	Closed	0	2	XBucks	Asph	0	37.956902000 121.270897000
7200	1122.88 112+16	029621F	Private at Grade	PRIVATE	PRIV	CA	STOCKTON	Closed	0	1	None	Uncons	0	37.941040000 121.309540000
7200	1122.90 113+22	029629K	Public at Grade	NAVY DR		CA	STOCKTON	Active	0	1	XBucks	Asph	0	37.937599000 121.309502000
7200	1122.92 114+28	029630E	Private at Grade	PRIVATE	PRIV	CA	STOCKTON	Active	0	1	None	Uncons	0	37.944122000 121.312378000
7200	1122.93 114+80	029631L	Public at Grade	NAVY DR		CA	STOCKTON	Active	0	1	XBucks	Asph	0	37.937599000 121.309502000
7200	1122.98 117+44	029627	Private at Grade	PRIVATE	PRIV	CA	STOCKTON	Active	0	1	None	Uncons	0	37.942101000 121.303200000
7200	1123.00 118+50	029622M	Private at Grade	PRIVATE	PRIV	CA	STOCKTON	Closed	0	1	None	Uncons	0	37.943851000 121.314125000
7200	1123.14 125+89	029632T	Public at Grade	TILLIE LE IS DR		CA	STOCKTON	Active	0	1	XBucks	Ti ber	0	37.940498000 121.319801000
7200	1123.62 151+24	029634G	Public RR Over	NAVY DR		CA	STOCKTON	Active	1	0	None		0	37.937847060 121.329708600
7200	1123.92 167+34	029635N	Private at Grade	PRIVATE	PRIV	CA	STOCKTON	Closed	1	0	None	Uncons	14	
7200	1124.16 179+96	029122P	Private at Grade	TERTIARY ROAD	PVT	CA	STOCKTON	Active	1	0	None	Uncons	30	37.936285300 121.339479100
7200	1125.18 233+66	029637C	Public at Grade	PT OF STOCKTON		CA	STOCKTON	Active	1	0	Gates	Asph	24	37.934147710 121.357924200
7200	1125.68 260+27	029638J	Public at Grade	OODSBRO RD		CA	STOCKTON	Active	1	0	Gates	Conc Pav	999	37.934144670 121.367042300
7200	1127.53 357+79	029639R	Public at Grade	INLAND DR		CA	STOCKTON	Active	1	0	Gates	Conc Pav	999	37.934125800 121.400953200
7200	1128.68 418+14	029640K	Public RR Over	HOLT RD		CA	STOCKTON	Active	1	0	None		24	37.934110090 121.421736400
7200	1129.17 444+17	029641S	Public at Grade	COOK RD		CA	STOCKTON	Active	2	0	Gates	Conc Pav	32	37.934512020 121.430778900
7200	1134.66 736+25	029642Y	Public RR Over	BACON ISLAND RD		CA	STOCKTON	Active	1	0	None		0	37.939851380 121.532189070

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1136.86 852+31	029643F	Private at Grade	PRIVATE		CA	KNIGHTSEN	Active	1	1	StopSi ns	Uncons	5	37.939930920 121.571484100
7200	1139.00 965+29	029644M	Public at Grade	ERNER ROAD		CA	KNIGHTSEN	Active	1	0	StopSi ns	Conc Pav	5	37.940005440 121.610766060
7200	1139.79 1781+79	029645U	Private at Grade	PRIVATE		CA	KNIGHTSEN	Active	2	0	StopSi ns	Uncons	10	37.941255520 121.624852850
7200	1140.31 1754+30	029646B	Private at Grade	PRIVATE		CA	KNIGHTSEN	Closed	2	0	None	Uncons	12	
7200	1140.98 1718+97	029647H	Public at Grade	BYRON H Y	J 4	CA	ANTIOCH	Active	2	0	Gates	Conc Pav	25	37.952554590 121.640591300
7200	1141.43 1694+84	029648P	Private at Grade	PRIVATE	PRIV	CA	KNIGHTSEN	Closed	2	0	None	Uncons	16	
7200	1142.63 1631+85	029649	Public at Grade	DELTA RD		CA	ANTIOCH	Active	2	1	Gates	Conc Pav	65	37.968841090 121.663236900
7200	1143.01 1611+74	029650R	Public at Grade	KNIGHTSEN AVE		CA	ANTIOCH	Active	2	0	Gates	Conc Pav	28	37.972623790 121.668502700
7200	1143.68 1576+26	029651X	Public at Grade	SELLERS AVE		CA	ANTIOCH	Active	2	0	Gates	Conc Pav	32	37.979151450 121.677588100
7200	1144.11 1553+55	029094N	Private at Grade	PRIVATE		CA	KNIGHTSEN	Closed	2	0	None	Uncons	0	37.983334010 121.683491980
7200	1144.19 1549+12	029652E	Private at Grade	PRIVATE		CA	KNIGHTSEN	Closed	2	0	None	Uncons	8	
7200	1144.26 1545+63	029653L	Private at Grade	PRIVATE	PRIV	CA	KNIGHTSEN	Closed	2	0	None	Uncons	5	37.984684170 121.685569520
7200	1144.91 1511+26	029654T	Public at Grade	CYPRESS RD		CA	ANTIOCH	Active	2	0	Gates	Conc Pav	84	37.990657610 121.694771100
7200	1145.02 1505+46	029655A	Private at Grade	PRIVATE		CA	KNIGHTSEN	Closed	2	0	None	Uncons	12	
7200	1145.45 1482+64	029656G	Private at Grade	PRIVATE	PRIV	CA	KNIGHTSEN	Closed	2	0	None	Uncons	16	37.994930280 121.703048500
7200	1145.50 1480+15	926597G	Private RR Over	ROSE AVE		CA	ANTIOCH	Active	2	0	None			37.995260000 121.704100000
7200	1145.56 1477+05	029657N	Private at Grade	PRIVATE	PRIV	CA	KNIGHTSEN	Closed	2	0	None	Uncons	16	
7200	1145.96 1455+61	029658V	Public at Grade	OAKLEY RD		CA	ANTIOCH	Closed	2	0	StopSi ns	Conc Pav	24	
7200	1146.40 1432+64	027497V	Public RR Under	VINTAGE PK Y		CA	OAKLEY	Active	1	0	None		0	38.000244480 121.719123400

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1146.94 1403+97	029659C	Private at Grade	PRIVATE	PRIV	CA	KNIGHTSEN	Closed	1	0	None	Uncons	8	
7200	1147.19 1390+72	029660	Public at Grade	BIG BREAK RD		CA	ANTIOCH	Active	1	1	Gates	Ti ber	71	38.004736540 121.732502500
7200	1148.11 1342+25	029661D	Private at Grade	PRIVATE	PRIV	CA	ANTIOCH	Closed	1	1	None	Uncons	16	38.008702750 121.748528100
7200	1148.24 1335+49	029662K	Public RR Over	BRIDGEHEAD RD		CA	ANTIOCH	Active	1	0	None		0	38.009040850 121.750842700
7200	1148.34 1330+21	029663S	Public RR Under	SH CA 160	CA 160	CA	ANTIOCH	Active	1	0	None		0	38.009329830 121.752870500
7200	1148.78 99+99	029664Y	Public at Grade	ILBUR AVE		CA	ANTIOCH	Active	0	1	StopSi ns	Asph	0	38.012342935 121.759056483
7200	1149.23 1283+22	029665F	Private at Grade	PRIVATE	PRIV	CA	ANTIOCH	Closed	0	1	None	Uncons	0	38.011398000 121.779404000
7200	1149.45 1271+44	029677A	Public at Grade	VIERA AVE		CA	ANTIOCH	Active	1	1	Gates	Ti ber	23	38.011062330 121.772669700
7200	1149.51 1268+33	029678G	Private at Grade	ILBUR LN	PVT	CA	ANTIOCH	Active	1	0	Gates	Uncons	32	38.011074310 121.773894800
7200	1149.63 1262+10	029667U	Public at Grade	ILBUR AVE		CA	ANTIOCH	Closed	0	1	Flashers	Asph	0	38.012798000 121.786400000
7200	1149.65 1261+04	029676T	Public at Grade	ILBUR AVE		CA	ANTIOCH	Active	0	1	Flashers	Asph	0	38.012600000 121.777397000
7200	1149.70 1258+40	029668B	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	0	1	None	Uncons	0	38.019299000 121.833656000
7200	1149.70 1258+35	029670C	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	0	1	None	Uncons	0	38.019299000 121.833710000
7200	1149.77 1254+70	029669H	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	0	1	None	Uncons	0	38.019299000 121.833710000
7200	1149.77 1254+65	029671J	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	0	1	None	Uncons	0	38.019299000 121.833710000
7200	1149.79 1253+65	029672R	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Closed	0	1	None	Uncons	0	38.019299000 121.833710000
7200	1149.80 1253+12	029679N	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	0	1	None	Uncons	0	38.019299000 121.836037000
7200	1149.84 1251+01	029673X	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	0	1	None	Uncons	0	38.019299000 121.836037000
7200	1149.87 1249+42	029674E	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	0	1	None	Uncons	0	38.019299000 121.836037000

S	Milepost Sur ey Stn	T	ing Type	Street	ighway	State	City	Status	Mains	ther	arn Class	Surface	ength	atitude ongitude
7200	1149.90 1247+84	029675L	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	0	1	None	Uncons	0	38.019310000 121.838295000
7200	1149.90 1247+79	029680H	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	0	1	None	Uncons	0	38.019310000 121.838295000
7200	1150.28 1227+78	029684K	Public RR Under	ILBUR AVE		CA	ANTIOCH	Active	1	0	None		0	38.012309080 121.787971000
7200	1150.50 1216+27	029685S	Public at Grade	MINAKER AVE		CA	ANTIOCH	Active	1	2	Gates	Conc Pav	32	38.013102130 121.791680700
7200	1150.92 1193+98	029693J	Public at Grade	FULTON SHPYRD F		CA	ANTIOCH	Active	1	1	Gates	Conc Pav	40	38.014693690 121.799085700
7200	1151.19 1179+78	029694R	Public RR Over	"F" ST		CA	ANTIOCH	Active	1	0	None		0	38.015723370 121.803909080
7200	1151.82 1146+73	029696E	Pedestria at Grade	"H" ST		CA	ANTIOCH	Active	1	0	Flashers	Rubber	0	38.017755470 121.814902000
7200	1151.87 1144+00	029697L	Public at Grade			CA	ANTIOCH	Active	1	0	Gates	Conc Pav	29	38.017856510 121.815983000
7200	1152.08 1133+04	029698T	Public at Grade	L STREET		CA	ANTIOCH	Active	1	0	Gates	Conc Pav	14	38.018286000 121.819711000
7200	1153.04 1082+32	933633S	Private at Grade	PRIVATE		CA	ANTIOCH	Active	1	1	None			
7200	1153.32 1067+64	029709D	Private at Grade	PRIVATE	PVT	CA	ANTIOCH	Active	1	1	Gates	Uncons	24	38.019040980 121.842696500
7200	1154.11 1025+90	029732X	Public at Grade	LOVERIDGE RD		CA	ANTIOCH	Active	1	2	Gates	Conc Pav	53	38.020808120 121.856662600
7200	1154.96 980+46	029743K	Private at Grade	COLUMBIA STREET	PVT	CA	PITTSBURG	Active	1	2	None	Uncons	24	38.024196640 121.871901900
7200	1155.36 959+67	029753R	Public RR Over	HARBOR ST		CA	PITTSBURG	Active	1	1	None		0	38.025718130 121.878732600
7200	1155.51 951+78	029754X	Public RR Over	SOLARI AVE	SR 75	CA	PITTSBURG	Active	1	1	None		0	38.026274850 121.881325800
7200	1155.74 939+48	029755E	Public RR Over	RAILROAD AVE		CA	PITTSBURG	Active	1	2	None		54	38.026531770 121.886021700
7200	1157.51 846+30	029765K	Public RR Over	ILLO PASS RD		CA	PITTSBURG	Active	1	0	None		0	38.027770000 121.917700630
7200	1158.36 801+47	029766S	Private at Grade	PRIVATE	PVT	CA	PITTSBURG	Active	1	0	StopSi ns	Uncons	8	38.031448540 121.932772000
7200	1158.89 773+60	029767Y	Private at Grade	PRIVATE	PVT	CA	PITTSBURG	Active	1	0	None	Uncons	16	38.033837330 121.942133700

□S	Milepost Sur□ey Stn	□□T □	□ing Type	Street	□ighway	State	City	Status	□Mains	□□ther	□ arn Class	Surface	□ength	□atitude □ongitude
7200	1159.95 717+66	029768F	Public at Grade	MC AVOY RD		CA	PITTSBURG	Active	1	0	Gates	Asph	40	38.038501900 121.960516500
7200	1160.70 678+50	029096C	Private at Grade	PRIVATE	PVT	CA	PORT CHICAGO	Active	1	0	None	Uncons	0	38.042091690 121.974178500
7200	1161.54 634+02	029770G	Public at Grade	NICHOLS RD		CA	PORT CHICAGO	Active	1	0	Gates	Ti□ber	40	38.045026930 121.988047300
7200	1161.61 630+38	029771N	Private at Grade	PRIVATE	PVT	CA	PORT CHICAGO	Closed	1	0	None	Uncons	5	
7200	1162.35 591+18	029772V	Private at Grade	PRIVATE	PVT	CA	PORT CHICAGO	Closed	1	0	None	Uncons	8	
7200	1162.52 582+41	029115E	Private at Grade	PORT CHICAGO	PVT.	CA	PORT CHICAGO	Active	1	0	None	Uncons	22	38.047300190 122.005257800
7200	1163.40 535+73	029773C	Public at Grade	MAIN ST		CA	PORT CHICAGO	Active	1	4	Flashers	Asph	32	38.047533940 122.020757200
7200	1164.00 505+30	029774J	Public RR Under	NAVY RD		CA	PORT CHICAGO	Active	1	1	None			38.043679810 122.030860700