Initial Study with (Proposed) Negative Declaration

for the

State Route 4/Main Street Widening Project

District 4-CCC-SR4-PM31.1/32.3

EA 2A170 0
Project Number 0400000810

Prepared for:

California Department of Transportation (CEQA Lead Agency)
and
City of Oakley (Project Sponsor)

March 2011

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General Information about This Document

What's in this document:

The California Department of Transportation (Department) has prepared this Initial Study with (Proposed) Negative Declaration, which examines the potential environmental impacts of the proposed project located in Contra Costa County, California. The document tells you why the project is being proposed, how the existing environment could be affected by the project, the potential impacts of the project, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

Please read the document. Additional copies of it, as well as of the technical studies we relied on in preparing it, are available for review at:

- Caltrans, District 4, Office of Environmental Analysis, 111 Grand Avenue, Oakland, California
- Public Works and Engineering Department at the City of Oakley Offices, 3231 Main Street, Oakley, California 94561
- Oakley Library (located in the Freedom High School Complex), 1050 Neroly Road, Oakley, CA 94561

We welcome your comments. If you have any comments regarding the proposed project, please send your written comments to the Department by the deadline.

- Submit comments via postal mail to:
  Caltrans, District 4
  ATTN: Melanie Brent
  District Office Chief - Office of Environmental Analysis
  P.O. Box 23660
  Oakland, CA 94623-0660
  510-286-5231

What happens next:

After comments are received from the public and reviewing agencies, the Department may: (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, the Department could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, District 4, ATTN: Melanie Brent, District Office Chief - Office of Environmental Analysis, P.O. Box 23660 MS-8B, Oakland, CA 94623-0660.

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District 4-CCC-SR4-PM31.1/32.3
EA 2A1700
PROJECT NUMBER 0400000810

Expand and widen SR 4/Main Street between the southbound ramp to Highway 160 in the City of Antioch (PM 31.1) and Big Break Road in City of Oakley

INITIAL STUDY
WITH (PROPOSED) NEGATIVE DECLARATION

State Route 4/Main Street Widening Project

Contra Costa County, California

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

THE STATE OF CALIFORNIA
Department of Transportation

3/23/11
Date of Approval

Melanie Brent
District Office Chief
Office of Environmental Analysis
District 4 (Oakland)
California Department of Transportation

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

Howell Chan (510/286-5623)
District Branch Chief
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P. O. Box 23660, M-8B
Oakland CA 94623-0660
Attention: Wahida Rashid (510/286-5935)

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PROPOSED NEGATIVE DECLARATION

PROJECT TITLE: State Route 4/ Main Street Widening Project

PROJECT DESCRIPTION: The project is located along SR4/ Main Street between Highway 160 and Big Break Road in Oakley, Contra Costa County, California. The city of Oakley, the project proponent, plans to expand and widen SR 4/Main Street between the southbound ramp to Highway 160 in Antioch and Big Break Road in Oakley. Presently, SR 4/Main Street is a four-lane undivided roadway with two 3.6-meter (12-foot) lanes in each direction separated by a 3-meter (10-foot) median between Highway 160 and Big Break Road. The median serves as a two-way left turn lane, while 1.5-meter (5-foot) shoulders bind the travel lanes.

In an effort to improve the level of service and enhance public safety, the City proposes to increase the travel lanes from two lanes in each direction to three lanes in each direction. The travel lanes will be 3.66 meters (12 feet) in width, with a 4.28-meter (14-foot) raised median separating the eastbound and westbound lanes. The shoulders will be 2.44 meters (8 feet) wide on the outside and 0.61 meters (2 feet) wide on the inside.

The 2.44-meter (8-foot) shoulders are sufficient in size for designation of a Class II bike lane. At the intersections with an exclusive right turn (Neroly Road, Live Oak Avenue, and Big Break Road) sufficient width will be provided and/or already exists to allow for a designated bike lane.

FINDINGS

An Initial Study was prepared for the proposed project to determine whether the project might have a significant effect on the environment. Copies of the Proposed Negative Declaration and Initial Study are available for review at the Public Works and Engineering Department at the city of Oakley Offices, 3231 Main Street, Oakley, California 94561, Monday through Friday from 8:00 a.m. to 5:00 p.m., excluding holidays. A desk copy is also available at Caltrans, District 4, Office of Environmental Analysis, 111 Grand Avenue, Oakland, California, Monday through Friday, 8:00 a.m. to 5:00 p.m., excluding holidays. Copies may also be reviewed at the Oakley Library (located in the Freedom High School Complex), 1050 Neroly Road, Oakley, CA 94561-2195, Phone: (925) 625-2400. Hours: Tuesday (10:00 a.m. to 9:00 p.m.), Wednesday (10:00 a.m. to 9:00 p.m.), Thursday (2:00 p.m. to 9:00 p.m.), Friday (2:00 p.m. to 6:00 p.m.), Saturday (10:00 a.m. to 6:00 p.m.), closed on Sunday and Monday.

The Initial Study did not identify any potentially significant impacts on the environment with implementation of environmental measures included as part of the project description. Therefore, no significant impacts would occur, and there is no substantial evidence the project may have a significant effect on the environment. Caltrans staff independently reviewed the Initial Study, and this Negative Declaration reflects the independent judgment of Caltrans. This project was developed, and will be constructed consistent with the provisions of Title VI of the Civil Rights Act of 1964.

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Initial Study for the State Route 4/Main Street Widening Project

Prepared for:

Caltrans (CEQA Lead Agency), District 4
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Contact: Melanie Brent, District Office Chief, Environmental Analysis
510/286-5231

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925/625-7003

Prepared by:

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March 2011

ICF International. 2011. Initial Study for the State Route 4/Main Street Widening Project. March. (ICF 04390.04.) Oakland, CA.

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Acronyms and Abbreviations

µg/m3	micrograms per cubic meter
AADT	Average Annual Daily Traffic
AB 32	Assembly Bill 32
AB 1493	Assembly Bill 1493
ABAG	Association of Bay Area Governments
ADL	aerial deposited lead
ARB	Air Resources Board
APN	Assessor's Parcel Number
ASTM	American Society for Testing and Materials
ATSF	Atchison, Topeka and Santa Fe Railroad
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
BNSF	Burlington Northern Sante Fe
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CCCEHD	Contra Costa County Environmental Health Department
CCR	California Code of Regulations
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CCTA	Contra Costa Transportation Authority
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
City	City of Oakley
CMP	Costruction Management Plan
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO_2	carbon dixoide
CO	carbon monoxide
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
CRHR	California Register of Historic Resources
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dB	Decibel
dBA	A-Weighted Decibel
Department	California Department of Transportation
DPB	disinfection byproducts
Delta	Sacramento-San Joaquin Delta
DFG	California Department of Fish and Game

DTSC	Calfornia Department of Toxic Substances Control
DWD	Diablo Water District
EDR	Environmental Data Resources, Inc.
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ETW	existing edge of traveled way
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FR	Federal Register
FTA	Federal Transit Administration
GHGs	Greenhouse gases
GSRDs	Gross Solids Removal Devices
HAPs	hazardous air pollutants
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HRCR	Historical Resources Compliance Report
IPCC	Intergovernmental Panel on Climate Change
IRIS	Integrated Risk Information System
IS	Initial Study
ISD	Ironhouse Sanitary District
lbs	pounds
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
L_{min} and L_{max}	minimum and maximum sound levels
L_{xx}	exceedance sound level
LOS	level of service
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MEP	Maximum Extent Practicable
mg/kg	micrograms per kilogram
mg/L	micrograms per liter
MSATs	Mobile Source Air Toxics
MTC	Metropolitan Transportation Commission
MUTCD	Manual on Uniform Traffic Control Devices
NATA	National Air Toxics Assessment
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Plan
ND	Negative Declaration
NFIP	National Flood Insurance Program
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	Natural Register of Historic Places
O_3	ozone
Phase I ESA	Phase I Environmental Site Assessment
Pb	lead
PG&E	Pacific Gas and Electric

PHLF	Potrero Hills Landfill
PM10	particulate matter of 10 micrometers or less
PM2.5	particulate matter of 2.5 micrometers or less
ppm	parts per million
POM	polycyclic organic matter
ppd	pounds per day
ROG	Reactive Organic Gases
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SWDR	Stormwater Data Report
SFBAAB	San Francisco Bay Area Air Basin
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TIP	Transportation Improvement Plan
TMDL	total maximum daily load
tpy	tons per year
TWW	treated wood waste
$\mu g/m^3$	micrograms per cubic meter
ULL	Urban Limit Line
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Society
UST	underground storage tank
VOC	Volatile Organic Compound
VMT	vehicle-miles travelled
WDRs	Waste Discharge Requirements

Chapter 1
Introduction

Purpose of this Document

This Initial Study (IS) is a public document that assesses the environmental effects of the State Route 4 (SR 4)/Main Street Widening Project (Proposed Project), as required by the California Environmental Quality Act (CEQA) and in compliance with State CEQA Guidelines (14 Cal. Adm. Code 1400 et seq.). It serves as an environmental document to be used in the local planning and decision-making process, and does not recommend approval or denial of the project.

As the CEQA lead agency for the project, the California Department of Transportation (Caltrans) will consider whether to adopt the related Proposed Negative Declaration (ND) and whether to approve the project. Construction staging could occur within limited areas of private property, as the right-of-way may not be sufficient for staging equipment, materials and worker parking. As such, permission would be required from adjacent landowners.

Scope of this Document

Consistent with CEQA requirements, the IS evaluates the potential impacts of the Proposed Project in relation to the following:

- aesthetics,
- agricultural resources,
- air quality,
- biological resources,
- cultural resources,
- geology and soils,
- hazards and hazardous materials,
- hydrology and water quality,
- land use planning,

- mineral resources,
- noise,
- population and housing,
- public services,
- recreation,
- transportation/traffic, and
- utilities and service systems.

Impact Terminology

The following terminology is used in this document to describe the levels of significance of impacts that would result from the project:

- The project is considered to have ***no impact*** if the analysis concludes that the project would not affect a particular resource topic.
- An impact is considered ***less than significant*** if the analysis concludes that the project would cause no substantial adverse change to the environment and that impacts would not require mitigation.
- An impact is considered ***less than significant with mitigation*** if the analysis concludes that the proposed project would cause no substantial adverse change to the environment with the inclusion of mitigation measures to which the applicant has agreed.
- An impact is considered ***significant*** if the analysis concludes that the proposed project would cause a substantial adverse change to the environment that could not be mitigated by the inclusion of mitigation measures to which the applicant has agreed.

Organization of this Document

The content and format of this document, described below, are designed to meet the requirements of CEQA.

- Chapter 1, "Introduction," identifies the purpose, scope, and terminology of the document.
- Chapter 2, "Project Description," identifies the location, background, and planning objectives of the project; describes the project in detail; identifies the permits and approvals required for the project; and identifies public involvement procedures.
- Chapter 3, "Environmental Checklist," presents the checklist responses for each resource topic. This section identifies the environmental setting, project

impacts on each resource and provides a brief explanation for the determination of project impacts.

- Chapter 4, “References Cited,” identifies all printed references and personal communications cited in this report.
- Chapter 5, “List of Preparers,” identifies the individuals involved in preparing this document and their areas of technical specialty.

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Chapter 2
Project Description

Project Location

The Proposed Project is located on SR 4/Main Street between Highway 160 on the Antioch border and Big Break Road in Oakley, in Contra Costa County. The project area is located on the Antioch North and Jersey Island U.S. Geological Survey (USGS) 7.5-minute quadrangles, in Sections 21 and 22, Township 2N, Range 2E.

Figure 2-1 shows the regional location of the proposed project. Figure 2-2 shows the project vicinity.

Purpose and Need

The city of Oakley plans to expand and widen SR 4/Main Street between the southbound ramp to Highway 160 in Antioch and Big Break Road in Oakley, California. Presently, SR 4/Main Street is a four-lane undivided roadway with two 3.6-meter (12-foot) lanes in each direction separated by a 3-meter (10-foot) median between Highway 160 and Big Break Road. The median serves as a two-way left turn lane, while 1.5-meter (5-foot) shoulders bind the travel lanes.

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The project plans are shown in Figure 2-3.

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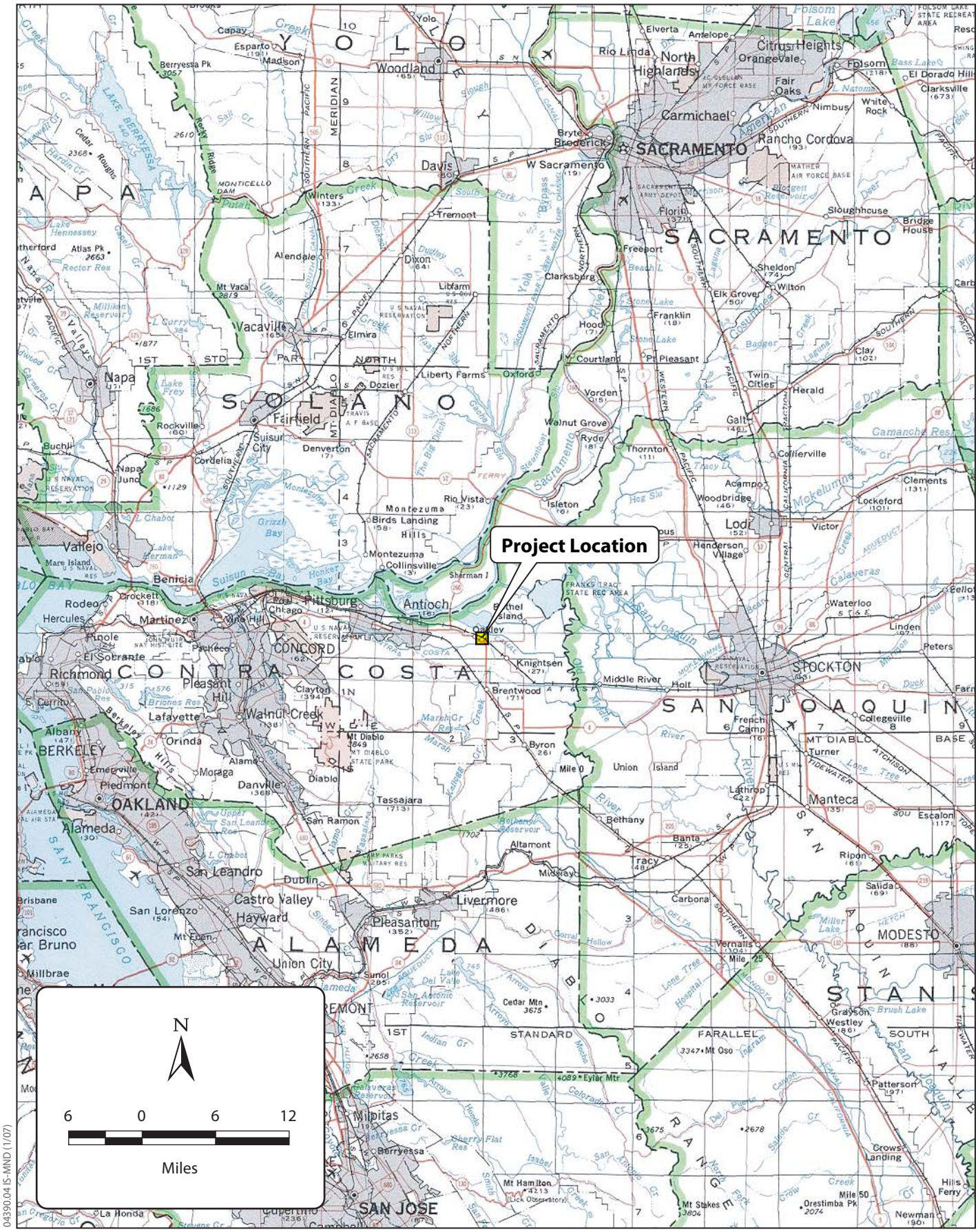
Project Location
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OAKLAND
BERKELEY
STOCKTON
MODESTO
SAN JOSE
Woodland
Davis
Vacaville
Fairfield
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Altamont
Mountain House
Bethany
Banta
Ripon
Salida
Escalon
Lathrop
Stockton
Linden
Lockeford
Clements
Acampo
Woodbridge
Thornton
Walnut Grove
Ryde
Courtland
Hood
Franklin
Freeport
Clarksburg
Dixon
Tremont
Winters
Alendale
Elmira
Dozier
Liberty Farms
Oxford
Vorden
Twin Cities
Herald
Sheldon
Wilton
Florin
Sloughhouse
Bridge House
Folsom
Citrus Heights
Orangevale
Fair Oaks
Rio Linda
Elverta
Antelope
North Highlands
Clarksville
Nimbus
White Rock
Bryte
Broderick
W Sacramento
Sherman I
Bethel Island
Franks Tract State Rec Area
Waterloo
Peters
Collegeville
Frenchi Camp
Turner
Union Island
Mile 0
Mile 25
Mile 50
Vernalis
Grayson
Westley
Patterson
Crows Landing
Newman
Hills Ferry
Orestimba Pk
Mt Stakes
Mt Oso
Eylar Mtr
Cedar Mtn
Mt Diablo
Mt Vaca
Atlas Pk
Berryessa Pk
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Cordelia
Suisun City
Denverton
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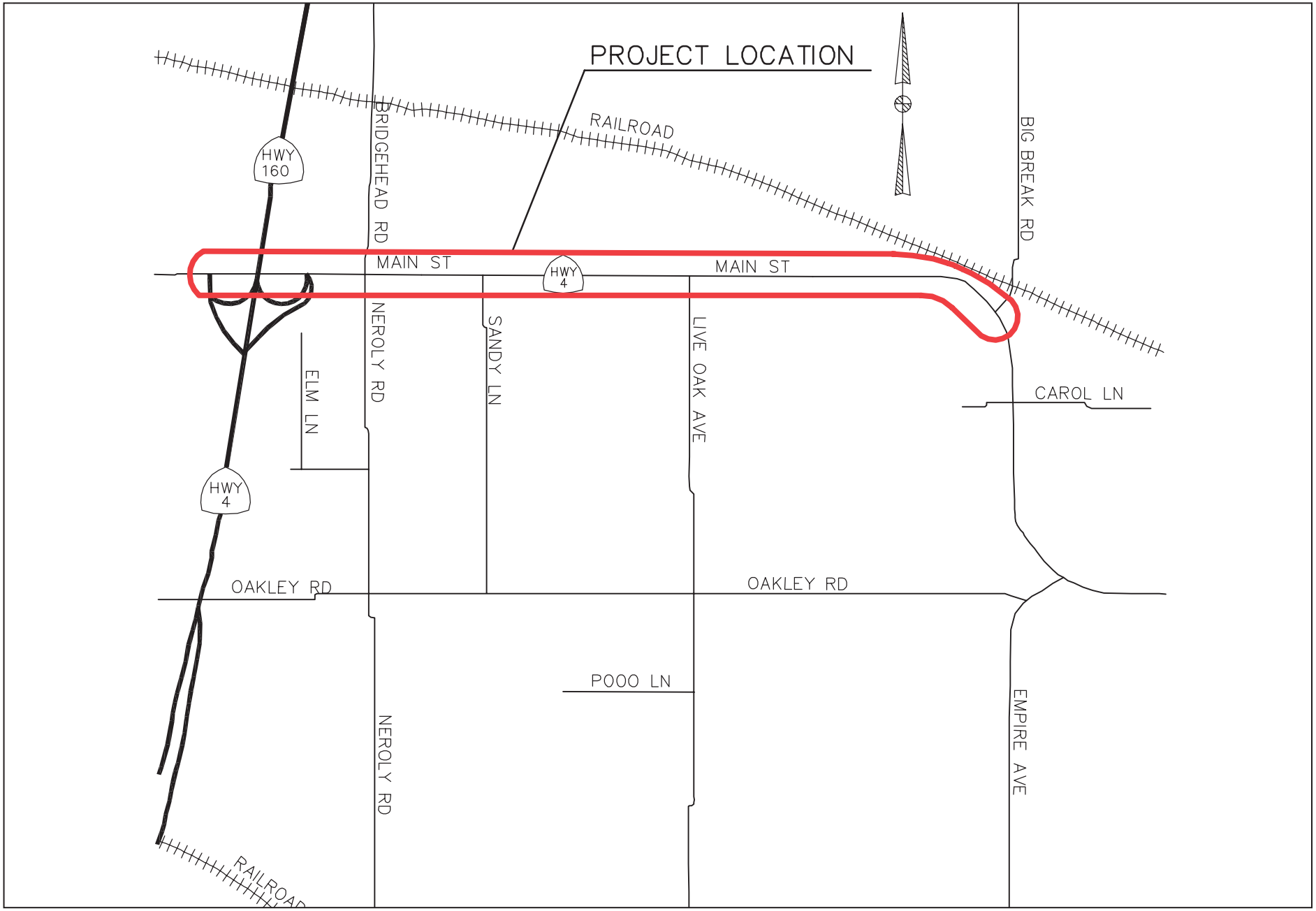

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Figure 2-2
Project Location

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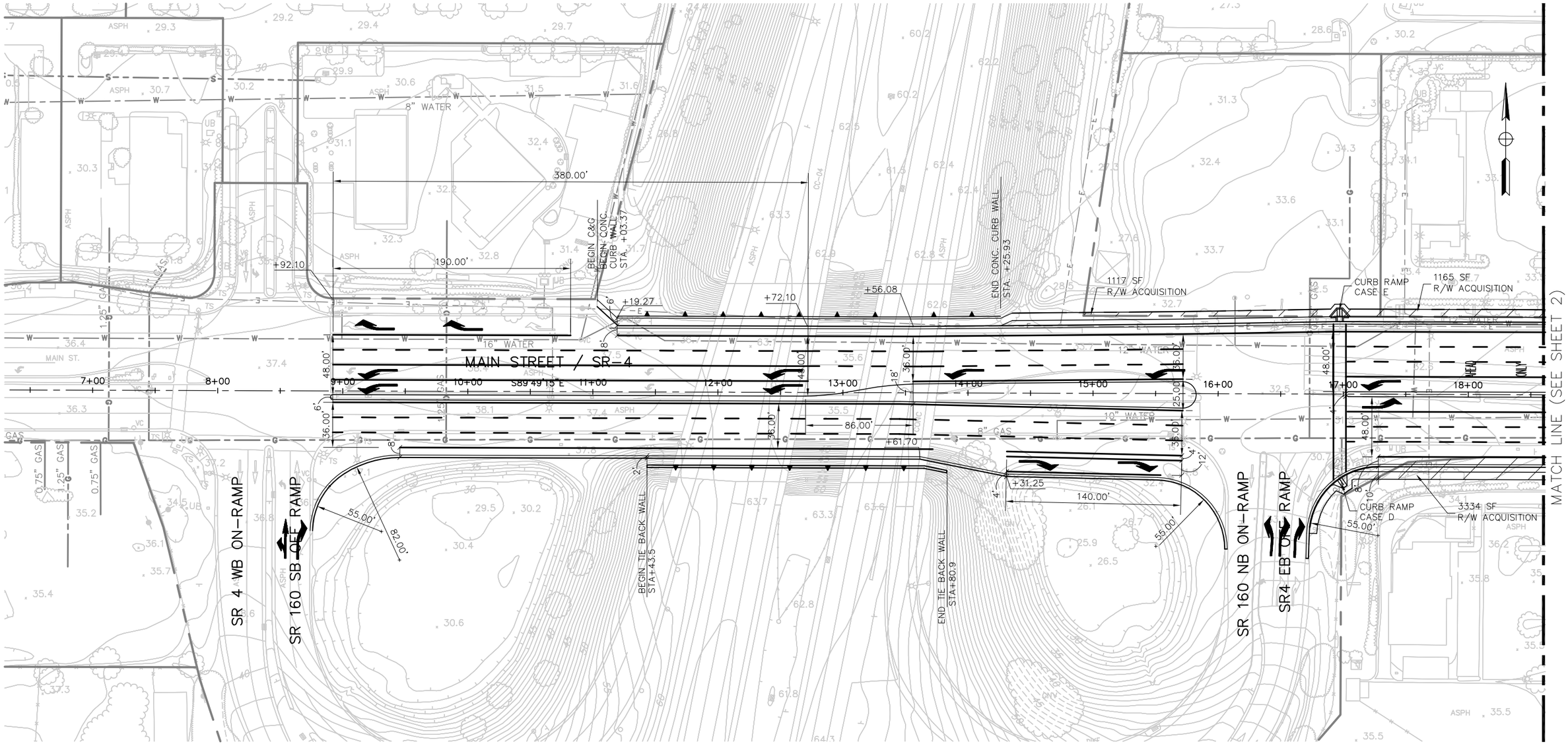

SCALE: 1"=40'

FIGURE 2-3: PROJECT PLAN

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

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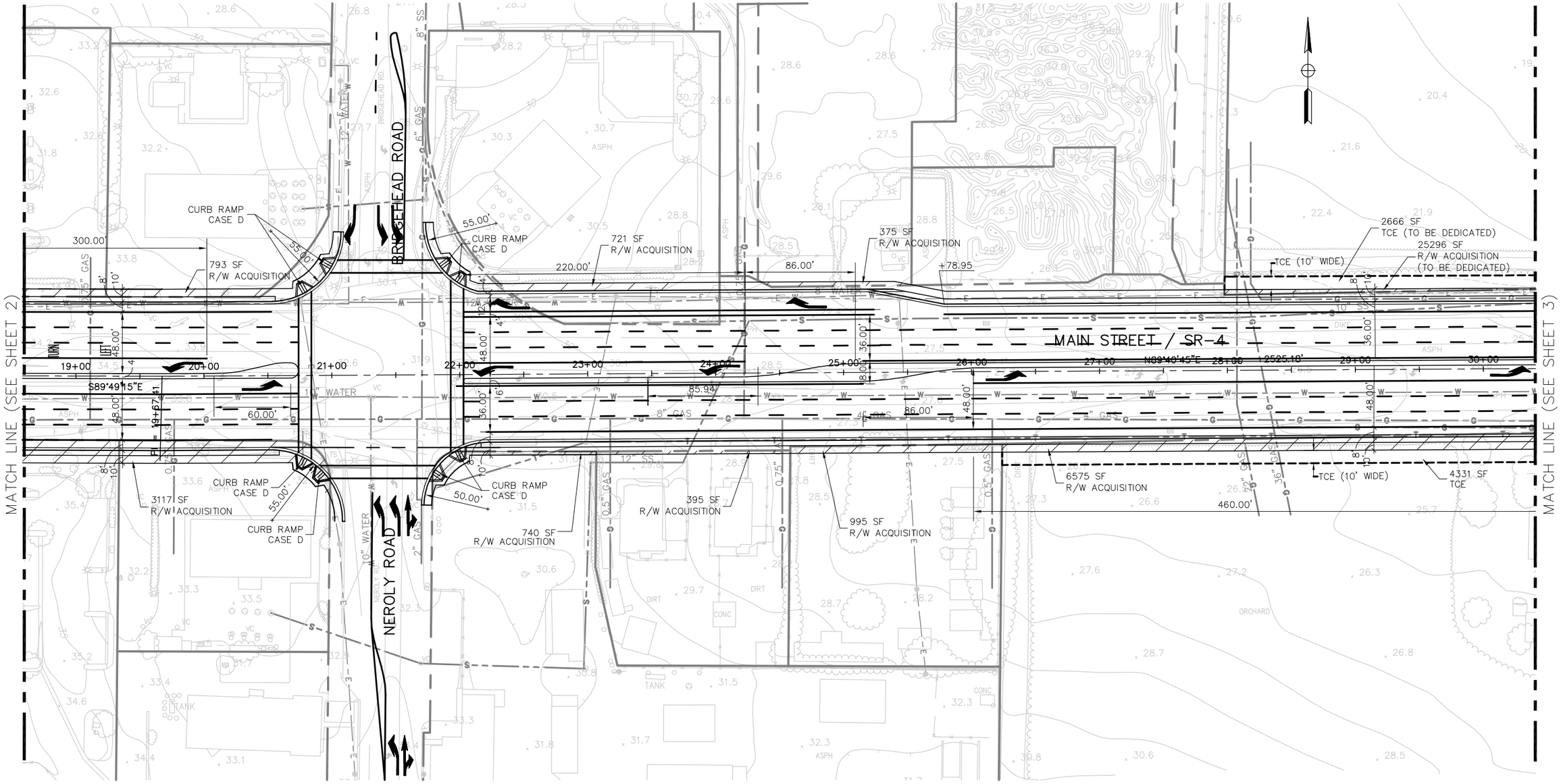

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FIGURE 2-3: PROJECT PLAN

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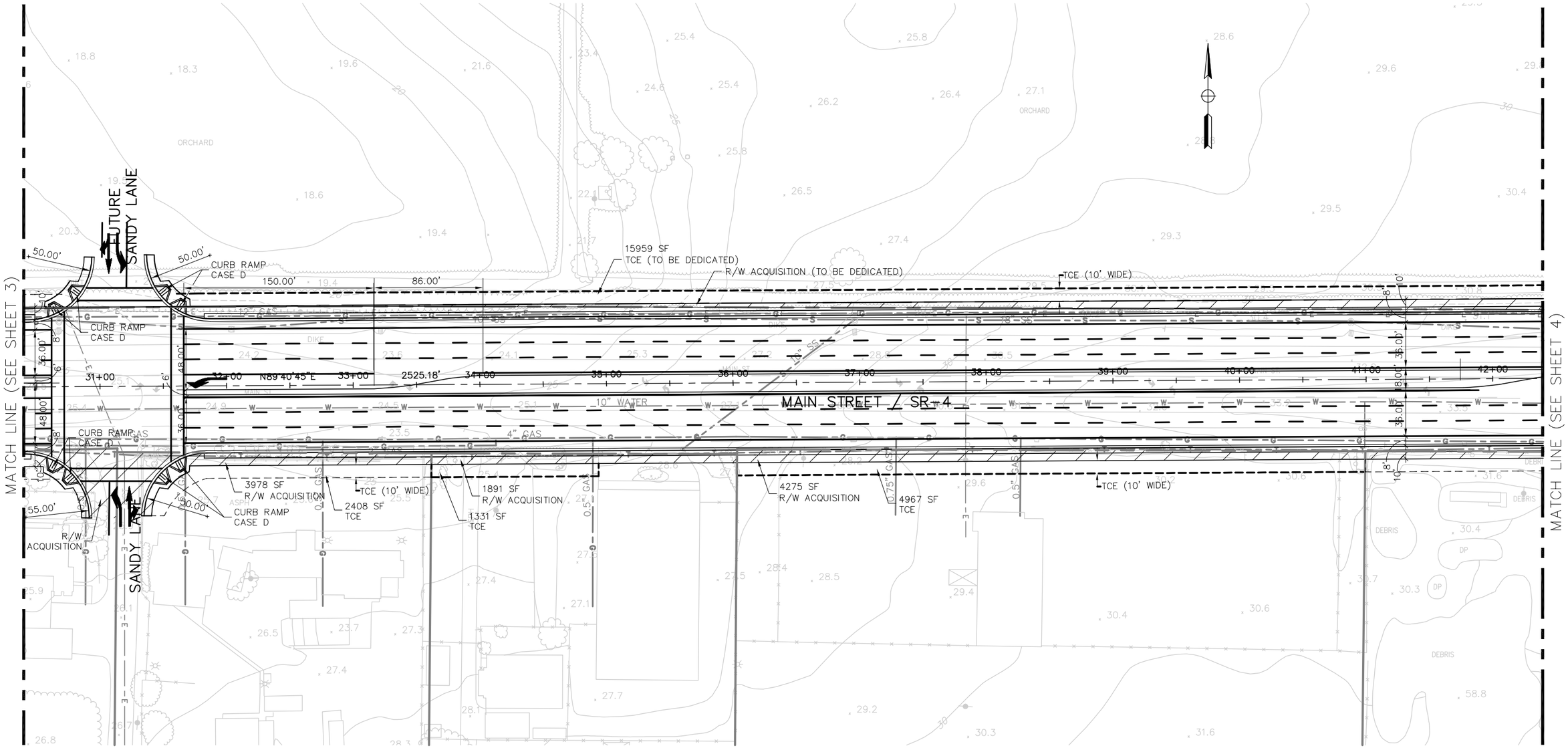

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FIGURE 2-3: PROJECT PLAN

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OAKLEY MAIN STREET WIDENING
LAYOUT

PREPARED FOR: CITY OF OAKLEY

DATE SUBMITTED: DATE_SUB

SHEET NUMBER 3 OF SHEETS

JOB NUMBER WCB010400

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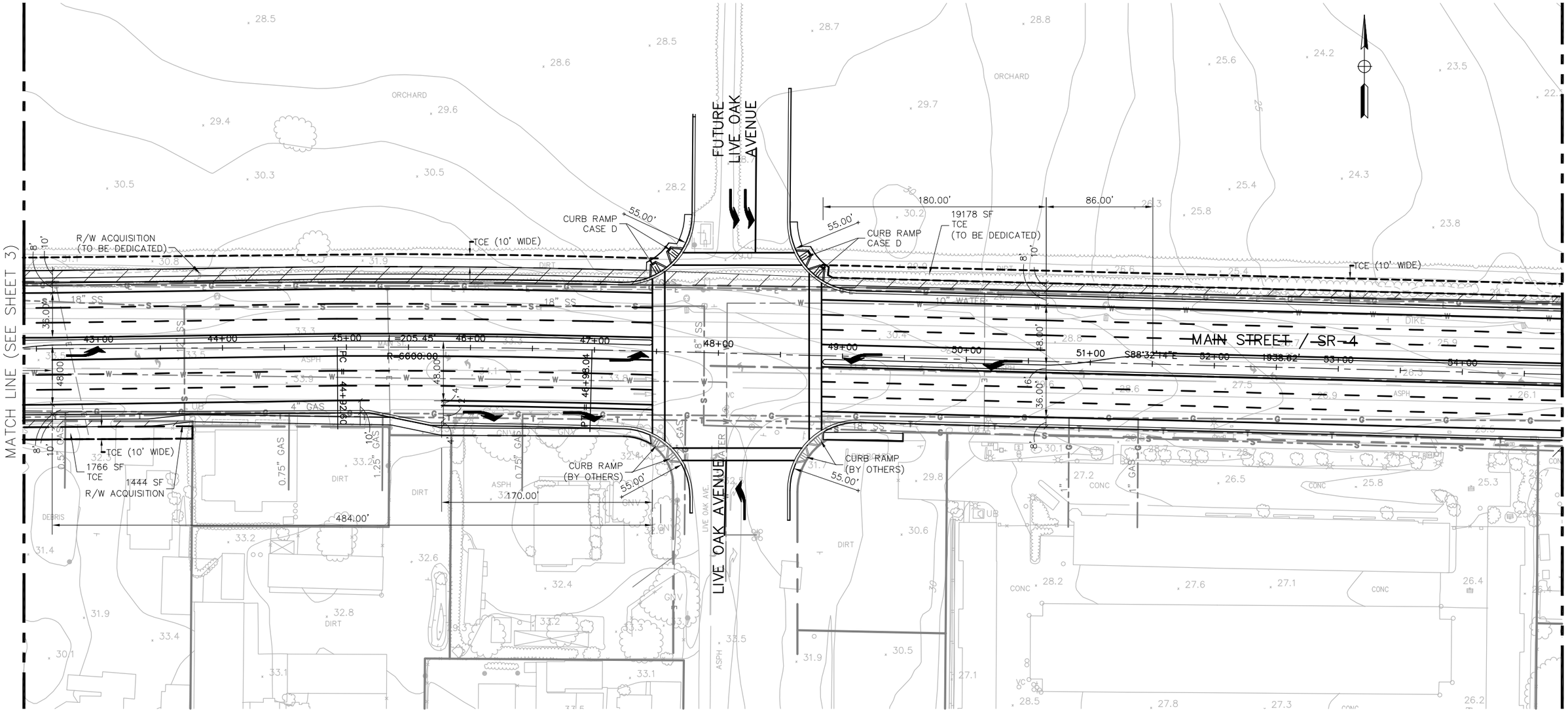

SCALE: 1"=40'

FIGURE 2-3: PROJECT PLAN

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

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OAKLEY MAIN STREET WIDENING
LAYOUT

PREPARED FOR: CITY OF OAKLEY

DATE SUBMITTED: DATE_SUB

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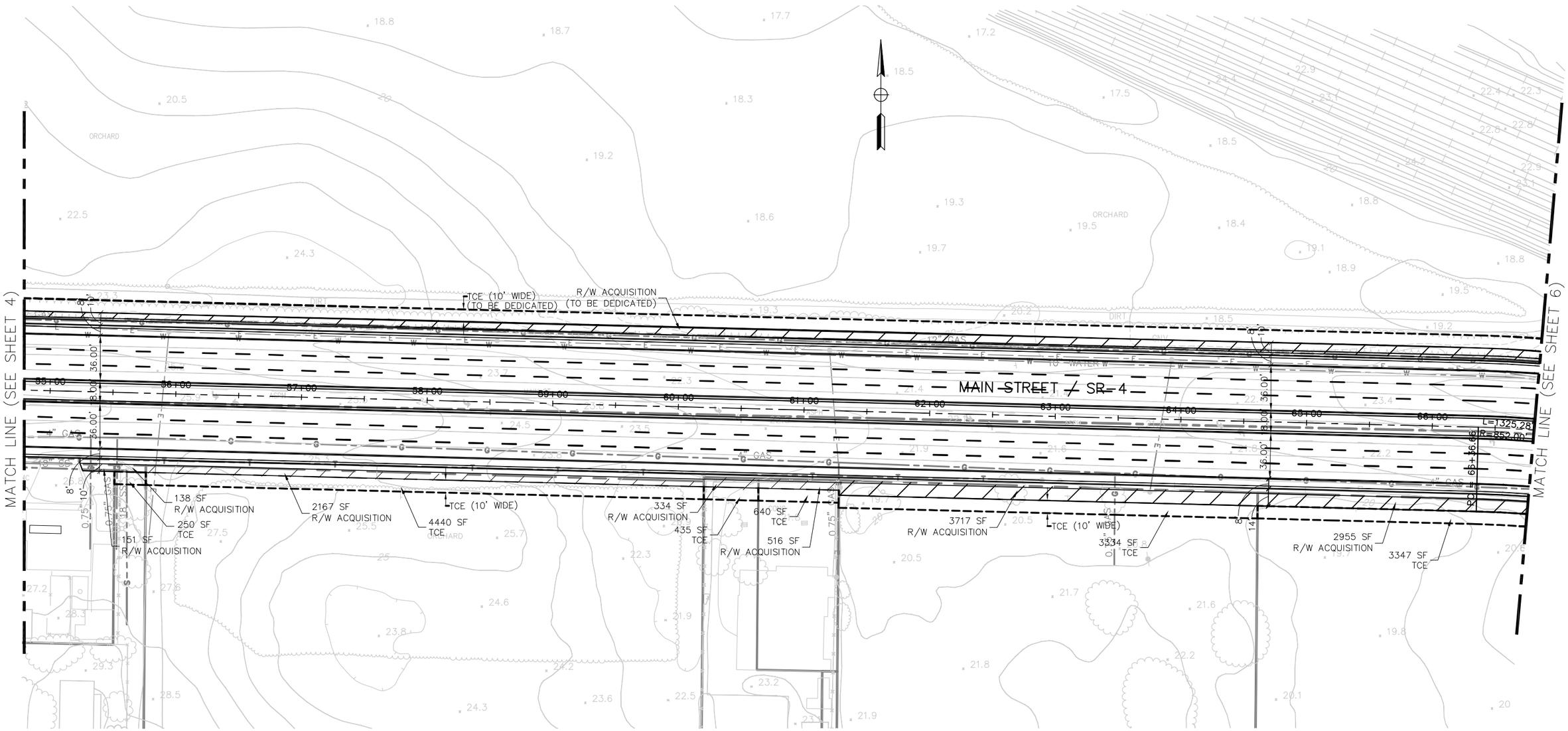

FIGURE 2-3: PROJECT PLAN

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

XREFS: exto_ft, MEUT_FT, 11X17l, sheet layout, PRMA_ft_Bike, PRSL_FT_Bike, PRPN_ft_Bike, exma-83ft

DATE: 06/09/06 TIME: 10:46 a.m. SERVER: NONE SERVICE: NONE PATH: N:\WCB010400\CADD\Civil\ DRAWING NAME: L05-FT.DWG PLOTTING VIEW: NONE DESIGNER: BJR PROJ. MGR: GVL	NOLTE BEYOND ENGINEERING 201 NORTH CIVIC DRIVE, SUITE 255, WALNUT CREEK, CA. 94596 925.934.8060 TEL 925.939.5451 FAX WWW.NOLTE.COM	OAKLEY MAIN STREET WIDENING LAYOUT PREPARED FOR: CITY OF OAKLEY DATE SUBMITTED: DATE_SUB	SHEET NUMBER 5 OF SHEETS JOB NUMBER WCB010400

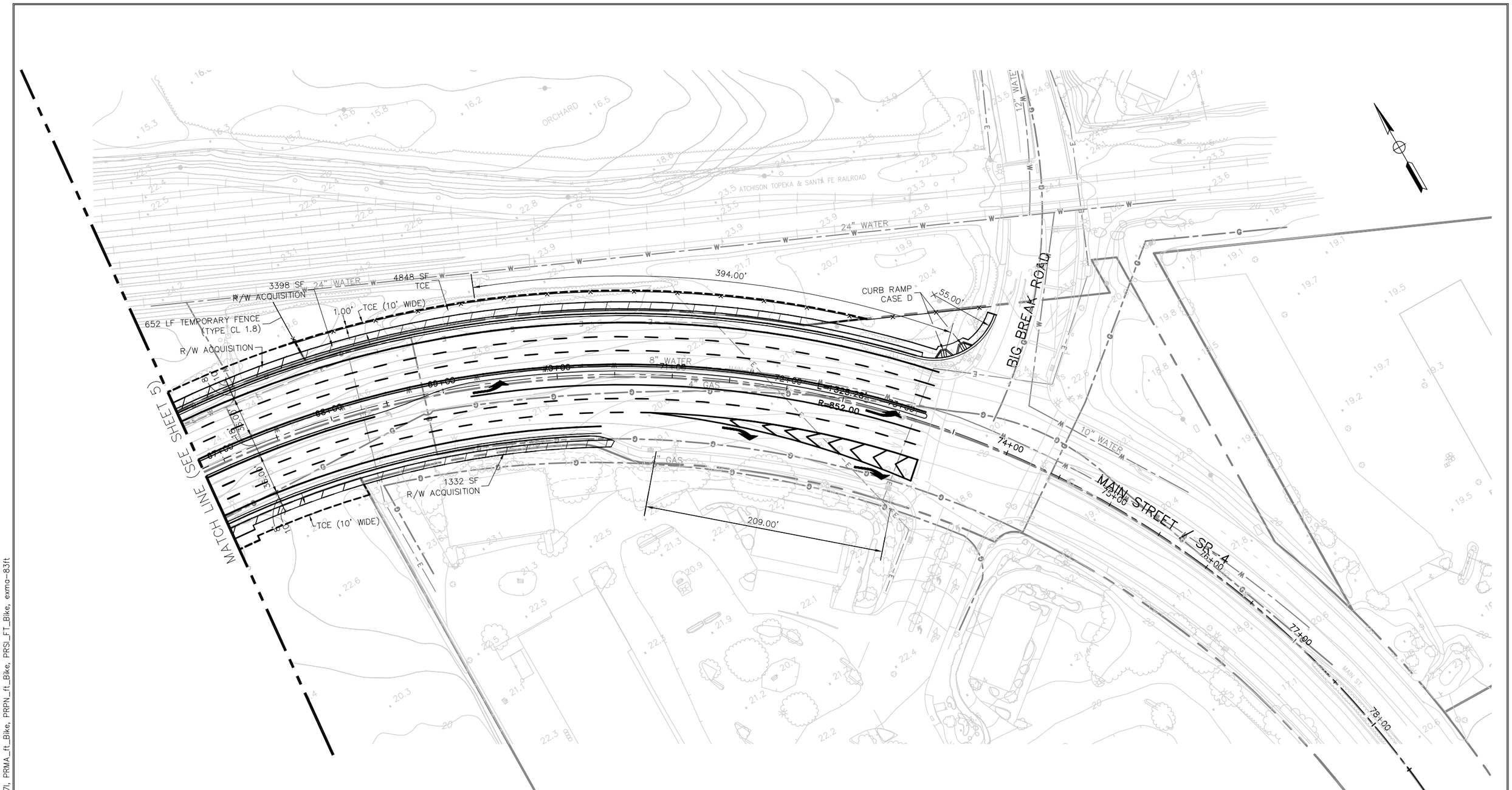

FIGURE 2-3: PROJECT PLAN

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED

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DRAWING NAME: L06-FT.DWG
PLOTTING VIEW: NONE
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NOLTE
BEYOND ENGINEERING
201 NORTH CIVIC DRIVE, SUITE 255, WALNUT CREEK, CA. 94596
925.934.8060 TEL 925.939.5451 FAX WWW.NOLTE.COM

OAKLEY MAIN STREET WIDENING
LAYOUT

PREPARED FOR: CITY OF OAKLEY

DATE SUBMITTED: DATE_SUB

SHEET NUMBER 6 OF SHEETS

JOB NUMBER WCB010400

XREFS: exto_ft, MEUT_FT, sheet layout, 11X17, PRMA_ft_Bike, PRPN_ft_Bike, PRSI_FT_Bike, exma-83ft

Project Objectives

The primary objective of the proposed project is to widen a 1.9-kilometer (1.2-mile) section of SR 4/Main Street, between Highway 160 and Big Break Road in Oakley, California in order to improve the level of service through the corridor and enhance the safety of drivers and pedestrians along Main Street. The project will utilize local funds to accommodate future traffic growth as planned for in the City's General Plan (*Oakley 2020 General Plan* 2002).

Construction Logistics

Following completion of CEQA review, construction will occur in phases over a 15-month period. Phase 1 of the construction will include the improvements on Route 4 at the Highway 160 interchange and will extend from the west side of the Highway 160 interchange to Neroly Road/Bridgehead Road. Phase 2 will include frontage improvements on the south side of Route 4 between Live Oak Avenue and Big Break Road. Other segments will be constructed in additional phases based on available funding. The project will be staged to minimize impact on the traveling public. The following approach is proposed for staging of the project construction:

Stage 1: All existing lanes, including double left turn lanes, will be reduced to 11 foot lanes. Temporary K-rail will be installed on both sides of the street to allow for widening to start at the existing edge of traveled way (ETW). New pavement sections, curbs, and gutters will be constructed to match the existing pavement. Construction of the proposed retaining wall and curb wall will be done during this stage.

Stage 2: After the new pavement section is constructed, the traffic will be shifted to the newly constructed roadway and K-rail will be moved to allow for construction of the median section of the road. The median construction will allow for required overlay and slope corrections. The proposed vertical drop between lanes during construction will be limited to the allowable 1 ¾" drop. Two lanes of traffic will be maintained in each direction. Turning movements will be limited to the intersection areas or major access points to businesses and residences where a left turn lane can be accommodated during construction. All U-turns will be limited to street intersections.

Stage 3: Road is open to the traffic and final overlay and slope correction will be done under lane closures.

All equipment and vehicle staging areas will be located in disturbed areas within the study area. If any additional staging areas are needed, they will be sited on paved or heavily disturbed sites that do not support any sensitive resources.

Standard Construction Requirements

The following measures will be included in any construction contracts associated with this project.

Measure AES-1: Apply Minimum Lighting Standards. Streetlights will be installed at the lowest allowable height and will have directional refractors to minimize light intrusion on nearby residences and businesses. Streetlights will be screened and directed away from residences and businesses to the highest degree possible; and nighttime flashing and changing of traffic signals will be minimized to the highest degree possible.

Measure AIR-1: Implement Applicable Control Measures for Construction Emissions of PM10. All control measures for construction emissions of PM10 that are applicable to the project from the *BAAQMD CEQA Guidelines* 1999 shall be implemented.

Measure BIO-1: Avoid Removal of Active Non-Sensitive Migratory Bird and Raptor Nests. To avoid impacts on active non-sensitive migratory bird and raptor nests, the following avoidance and minimization measures will be implemented as part of the project.

- To the extent possible, construction activities associated with the project will be conducted outside the breeding season for non-sensitive migratory birds and raptors (the breeding season is generally between March 1 and August 15).

- If construction activities are to take place during the breeding season for these species (generally between March 1 and August 15), a qualified wildlife biologist will be retained to conduct focused nesting surveys for non-sensitive migratory birds and raptors.

- If surveys indicate that non-sensitive migratory bird or raptors are not nesting in the study area and would therefore not be directly affected by project activities, then no further action is required.

Measure CR-1: Stop Work if Cultural Materials Are Discovered During Ground Disturbing Activities. Should evidence of prehistoric resources be unearthed during construction related activities, the City will direct that all ground disturbing activities shall cease within a 100-foot radius if buried cultural materials such as, chipped stone or groundstone, historic debris, building foundations, or human remains are discovered during project activities. Caltrans and/or City construction engineers shall be notified immediately and they will immediately notify Caltrans and project archaeologists. If human remains are discovered, the County coroner and the Native American Heritage Commission shall be contacted immediately.

Measure CR-2: Comply with State Laws Pertaining to the Discovery of Human Remains. If human remains of Native American origin are discovered during ground disturbing activities, the City will comply with the state laws regarding the disposition of Native American burials, which falls within the jurisdiction of the Native American Heritage Commission (Pub. Res. Code Sec. 5097). Caltrans and/or City Construction Engineers shall be notified immediately and they will immediately notify Caltrans and project archaeologists. If human remains are discovered or recognized in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- The County coroner has been informed and has determined that investigation of the cause of death is required; and
    - If the remains are of Native American origin, the descendents from the deceased Native Americans have made a recommendation to the land owner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Pub. Res. Code Sec. 5097.98; or
    - The Native American Heritage Commission was unable to identify a descendent or the descendent failed to make a recommendation within 24 hours after being notified by the commission.

According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section7052). Section 7050.5 requires that excavation be stopped in the vicinity of the discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the Native American Heritage Commission.

Measure GEO-1: Conduct soil density evaluations prior to construction. The City of Oakley will hire a certified geologist to evaluate the density of the soils in the project area to determine if the level of susceptibility warrants additional measures.

Measure HAZ-1: Develop a Health and Safety Plan to Address Worker Health and Safety. In accordance with standard Caltrans procedures, a Health and Safety Plan will be developed to address worker health and safety. As part of this plan, the location of underground pipeline crossings will be determined and safety plans will be prepared for excavation work at these pipeline crossings before construction. The plan will include emergency plans in the event of a pipe rupture or if a preexisting leak has occurred; remediation procedures to handle and remove contaminated soil or groundwater; and measures to ensure worker

safety when working around potentially hazardous materials, including metals, petroleum hydrocarbons, pesticides, herbicides, lead-based paint, ADL-contaminated soils, and other construction-related materials that are potentially present within the proposed right-of-way. The plan will also address procedures to follow if unknown objects (i.e. wells, septic tanks, and USTs) are encountered during construction. If prescribed exposure levels for one or more regulated hazardous substances is exceeded during construction activities, personal protective equipment will be required for workers in accordance with California Occupational Safety and Health Administration (Cal/OSHA) regulations.

Measure HAZ-2–Implement Recommended Subsurface Investigations on Adjacent Acquisition Properties, Remove Hazards, and Coordinate with Agencies as Required. Prior to groundbreaking at properties where Phase I activities have identified a potential hazardous materials issue that has not yet been evaluated in a field investigation, a limited subsurface investigation should be conducted in the project area by a qualified environmental professional, in accordance with recommendations in the hazardous materials specialist 2004 Phase 1 ESA and 2009 Phase 1 ESA Update (*Phase I Environmental Assessment* 2004, *Phase I Environmental Assessment Update* 2009). Potential off-site contamination concerns for which the hazardous materials specialist has recommended further investigation are related to the following sites:

- Former Contra Costa Auto Salvage facility (1731 Main Street)
- Delta Scrap and Salvage (1371 Main Street)
- Properties proposed for partial acquisition that are either currently or have been historically used for agricultural and/or light industrial purposes (Geocon recommended shallow soil samples at random locations)

If releases of hazardous materials are discovered during subsurface sampling, additional investigation, remediation, and/or coordination with regulatory agencies may be required prior to redevelopment of the parcels. Any needed investigations, remediation efforts, and/or coordination will be conducted in a manner consistent with all applicable local, state, and federal codes and regulations. If contaminated soil is encountered during the site screening, a Soil Management Plan will be completed to address excavation, removal, and disposal of contaminated soil. If groundwater is encountered, it should be contained, sampled, and remediated to current environmental standards. Any necessary removal, storage, transportation, and disposal of contaminated materials will be in strict accordance with appropriate regulations.

Measure HAZ-3: Conduct Sampling and Testing of Yellow Striping along Existing Roadway and Remove in Accordance with Regulatory Requirements. Before construction, the project applicant will ensure that sampling and testing of yellow pavement striping scheduled for removal is performed to determine whether lead is present. If lead is present above

regulatory thresholds, a Lead Compliance Plan will be prepared to minimize worker exposure to lead. Any necessary removal, storage, transportation, and disposal of contaminated materials will be in strict accordance with appropriate regulations.

Measure HAZ-4: Conduct Sampling and Testing of Aerial Deposited Lead along Existing Roadway and Remove in Accordance with Regulatory Requirements. During the design phase of the project, the project applicant will ensure that the contractor conducts a preliminary investigation and screening for ADL along the unpaved shoulders of Main Street within the project area at locations that were not previously tested during Geocon's Limited Site Investigation (*Limited Site Investigation* 2008). If ADL is encountered above the regulatory thresholds, a Lead Compliance Plan will be prepared to minimize worker exposure to lead. Lead-impacted soils will be handled or disposed of in accordance with regulatory agency requirements.

Measure HAZ-5: Remove Other Construction-Related Hazardous Materials in Accordance with Regulatory Requirements. Should any potentially hazardous pipes, wood waste, or bridge rails require removal during construction activities, the project applicant will hire a specialized licensed contractor to make a determination as to whether the suspected materials would pose a hazard to human health. If the materials are determined not to be hazardous, further action is not required.

If treated wood containing chemical preservatives, including but not limited to creosote, pentachlorophenol, and metallic arsenates, is determined to be present, it should be considered potentially hazardous "Treated Wood Waste" (TWW) in accordance with Alternative Management Standards provided in CCR Title 22 Section 67386. TTW should be managed, handled, stored, and disposed of in accordance with Title 22 Section 67386.

If materials containing harmful levels of lead, asbestos, or molten sulfur are determined to be present, the materials will be abated by a certified contractor in accordance with local, state, and hazardous materials laws and regulations. All work will be conducted in accordance with applicable construction worker health and safety requirements, including Cal-OSHA Construction Safety Orders for lead (Title 8 CCR Section 1532.1) and asbestos (Title 8 CCR Section 1529). These requirements may include air monitoring during construction, worker training, and preparation of a Lead Compliance Plan prior to construction. If waste disposal for these materials is necessary, the project applicant will ensure that all hazardous materials removed during construction are transported by a licensed hauler to an appropriately licensed and permitted disposal or recycling facility, in accordance with local, state, and federal requirements.

Measure HAZ-6: Remove or Abandon Undocumented Domestic/Agricultural Wells, Septic Tanks, and Underground Storage Tanks in Accordance with Regulatory Requirements. In the event that an undocumented domestic or irrigation well, septic tank, or UST is encountered

during construction, the project applicant will hire a licensed soils or geotechnical engineer to make a determination as to whether the facility should be removed or abandoned in place. Prior to removal/abandonment, the CCCEHD will be notified, and the facility will be removed/abandoned and the site remediated in accordance with recommendations made by CCCEHD, DTSC, or other appropriate federal, state, or local regulatory agencies.

Measure HAZ-7: Stop Work and Implement Hazardous Materials Investigations and Remediation in the Event that Unknown Hazardous Materials are Encountered during Construction. In the event that previously unidentified hazardous waste or materials is discovered during construction/grading activities, the contractor will immediately stop work in the vicinity of the suspected contaminant, remove workers and the public from the area, and notify the resident inspector, secure the area as directed by the resident inspector, and notify the City of Oakley Hazardous Waste/Materials Coordinator and the Oakley Fire Department.

If a hazardous material is determined to be present, additional investigation, remediation, and/or coordination with regulatory agencies may be required prior to the commencement of construction activities. Any needed investigations, remediation efforts, and/or coordination will be conducted in a manner consistent with all applicable local, state, and federal codes and regulations. If contaminated soil is present, a Soil Management Plan will be completed to address excavation, removal, and disposal of contaminated soil. If groundwater is encountered during any site construction activities, it should be contained, sampled, and remediated to current environmental standards. Any necessary removal, storage, transport, and disposal of contaminated materials will be in strict accordance with appropriate regulations.

Measure HAZ-8: Develop and Implement a Construction Management Plan. The City of Oakley will address the proposed project's construction-related traffic impacts by requiring their contractors to develop and implement a Construction Management Plan (CMP) in accordance with City of Oakley policies and ordinances. The CMP will be implemented throughout project construction. The CMP will:

- Contain a plan for communicating with emergency service providers, and residences, and anyone else who may be affected by project construction;
- Contain an access and circulation plan for use by emergency vehicles when lane closures and detours are in effect;
- Specify that, if lane closures occur, the contractor will provide advance notice to local fire and police departments to ensure that alternative evacuation and emergency routes are designed to maintain response times;

- Require that access to driveways and private roads be maintained at all times;
- Provide for adequate off-street parking for construction-related vehicles throughout the construction period;
- Restrict delivery of construction materials to between the hours of 9:00 a.m. and 3:00 p.m. to avoid more congested morning and evening hours;
- Allow temporary 30 minute closures of one lane only where waterline roadway crossings are required and only during the hours of 9:00 a.m. to 3:00 p.m.;
- Require flagpersons wearing bright orange or red vests and using a "Stop/Slow" paddle to control oncoming traffic when one lane closures occur;
- Require construction warning signs be posted in accordance with local standards or those set forth in the Manual on Uniform Traffic Control Devices (MUTCD), in advance of the construction area and at any intersection that provides access to the construction area;
- Require that written notification be provided to contractors regarding appropriate routes to and from the construction site and the weight and speed limits on local roads used to access construction sites;
- Specify that a sign be posted at all active construction areas giving the name and telephone number or e-mail address of the City of Oakley staff person and contractor personnel designated to receive complaints regarding construction traffic.

Measure NS-1. Limit Construction Noise in Accordance with Caltrans Standard Specifications and Standard Special Provisions. The following measures shall be employed to limit noise from construction activity:

- The Contractor shall comply with all local sound control and noise level rules, regulations, and ordinances, which apply to any work performed pursuant to the contract.
- Each internal combustion engine, used for any purpose on the job or related to the job shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated without a muffler.
- The noise level from the Contractor's operations, between the hours of 7:00 p.m. and 7:00 a.m., shall not exceed 86 dBA at a distance of 15 meters (50 feet). This requirement shall not relieve the Contractor from

responsibility for complying with local ordinances regulating noise level outside the limits of the State right of way.

- The noise level requirement specified herein shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the Contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of construction personnel and the public.

- Activities shall be limited to the hours established within the City's noise ordinance.

Measure TR-1: Develop and Implement a Traffic Control and Safety Plan for Project Construction. The construction contractor will mitigate the proposed project's construction-related traffic impacts by developing and implementing a traffic control plan as part of the overall construction management plan, in accordance with state and City of Oakley policies. The traffic control plan will be implemented throughout the course of project construction, and will include, but may not be limited to, the following elements.

- Provide a plan for communicating construction plans with transit and emergency service providers, businesses and residences located in the project vicinity, and anyone else who may be affected by project construction.

- Identify roadway segments or intersections that are at or approaching levels of service that exceed local standards and provide for construction-generated traffic to avoid these locations at the peak periods, either by traveling different routes or by traveling at non-peak times.

- Maintain vehicular access to residences and businesses in the area at all times.

- Maintain existing non-motorized access or provide detour and warning signs in construction area.

- Provide for adequate parking for construction trucks and equipment within the designated staging areas throughout the construction period.

- Provide adequate parking for construction workers within the designated staging areas.

- Restrict delivery of construction materials to between the hours of 9:00 a.m. and 3:00 p.m. to avoid more congested morning and evening hours.

- Post construction warning signs in accordance with local standards or those set forth in the Federal Highway Administration's *Manual on*

Uniform Traffic Control Devices (2001) in advance of the construction area and at any intersection that provides access to the construction area.

- Require that written notification be provided to contractors regarding appropriate routes to and from the construction site, and the weight and speed limits on local roads used to access the construction site.

- Specify that a sign be posted at all active construction areas giving the name and telephone number or e-mail address of the City staff person designated to receive complaints regarding construction traffic.

Measure WQ-1: Implement Best Management Practices (BMPs) to Control Discharge of Construction-Related Pollutants to Surface Waters. Since this project has a soil disturbance of 0.4 or more hectares (1 acre), this project shall adhere to the conditions of the National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities (Order No. 99-08-DWQ, NPDES No. CAS000002), which is incorporated by reference to the Caltrans NPDES Permit, Storm Water Discharges from the State Of California, Department Of Transportation (Caltrans) Properties, Facilities, And Activities (Order No. 99 – 06 – DWQ, NPDES No. CAS000003).

To comply with the conditions of the Caltrans NPDES Permit, and address the temporary water quality impacts resulting from the construction activities in this project, Standard Special Provisions for "Water Pollution Control" will be included in the construction contract. This special provision will require the contractor to prepare a Storm Water Pollution Prevention Plan (SWPPP) and the implement construction site Best Management Practices which may include:

- Soil Stabilization Practices: Hydroseeding, Soil Binders, Geotextile and Plastic Covers

- Sediment Control Practices: Silt Fence, Straw Bale Barrier, Check Dams, Storm Drain Inlet Protection

- Tracking Control: Stabilized Construction Entrances, Street Sweeping and Vacuuming

- Non-storm Water Management: Construction Site Dewatering, Vehicle and Equipment Operations (Fueling, Cleaning, and Maintenance of vehicles will not be allowed on-site)

- Waste Management: Spill Prevention and Control, Solid and Hazardous Waste Management, Concrete Waste Management

The City and/or its contractors shall implement a monitoring program to verify BMP effectiveness. The monitoring program shall begin at the outset of construction and terminate upon completion of the project.

Measure WQ-2: Implement a Spill Prevention and Control Program. As part of obtaining coverage under the NPDES General Construction Permit, the City and/or its contractor(s) shall develop and implement a spill prevention and control program to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction of the project. The plan shall be completed before any construction activities begin, and shall include provisions for preventing, containing, and reporting spills of hazardous materials. If a spill is reportable, the contractor's superintendent will notify the Contra Costa County Department of Environmental Management and the California Department of Toxic Substances Control (DTSC).

Measure WQ-3: Implement Measures to Protect Groundwater Quality and Dispose of Groundwater Appropriately. If an appreciable spill has occurred and results determine that project activities have adversely affected groundwater quality, a detailed analysis will be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials (ASTM) standards, and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the City and/or its contractors will select and implement measures to control contamination, with a performance standard that groundwater quality must be returned to baseline conditions. These measures will be subject to approval by the City.

If groundwater or seepage (i.e. dry weather flows) is encountered during construction, it will need to be treated, stored, and disposed of in accordance with the Central Valley Regional Water Quality Control Board's Basin Plan requirements. If the disposal option is to discharge to a surface water body, a permit/Waste Discharge Requirements may be needed from the Regional Board prior to commencement of discharge. If off-site disposal is an option, then the discharges can be transported to a facility that is permitted to accept these discharges (e.g. a wastewater treatment plant).

Measure WQ-4: Prepare a Stormwater Data Report and Implement Post Construction BMPs. To comply with the conditions of the Caltrans NPDES Permit and address the permanent water quality impacts resulting from project operation, the City will submit a Stormwater Data Report (SWDR), prepared by a licensed professional engineer or landscape architect, to the applicable Caltrans Project Delivery Storm Water Coordinator. The SWDR and all post-construction BMPs will be developed during the project design phase in accordance with Caltrans' Project Planning and Design Guide (*Caltrans Storm Water Quality Handbook: Project Planning and Design Guide* 2007). The City and/or its contractors will accept responsibility for implementing the BMPs developed during project design. Final post-construction BMPs may include any of the following.

Design Pollution Control BMPs

- Peak Flow Attenuation Basins

- Preservation of Existing Vegetation
- Concentrated Flow Conveyance Systems: Ditches, Berms, Dikes And Swales, Overside Drains, Flared Culvert End Section, Outlet Protection/Velocity Dissipation Devices
- Slope/Surface Protection Systems: Vegetated Surfaces or Hard surfaces

Treatment BMPs

- Biofiltration Swales
- Infiltration Basins
- Detention Basins
- Traction Sand Traps
- Dry Weather Flow Diversions
- Media Filters
- Gross Solids Removal Devices (GSRDs)
- Multi-Chamber Treatment Trains
- Wet Basins

Required Approvals and Permits

As the CEQA local lead agency for the project, Caltrans will consider whether to adopt the ND and whether to approve the project. All construction would occur within the right-of-way along SR 4/Main Street, within the city of Oakley. Agencies with subsequent permit review or approval authority over the project are summarized in Table 2-1. These are responsible agencies under CEQA and will use the Initial Study as the environmental basis of their decisions.

Table 2-1. Summary of Local and State Discretionary Actions

Agency	Permit/Review Required
Caltrans	Encroachment permit
City of Antioch	Public Works encroachment permit for city roadways

Public Involvement

The Department will file a Notice of Completion and Environmental Document Transmittal with the State Clearinghouse. With the filing of the Notice, a 30-day (minimum) period would begin for the receipt of comments on the IS with (Proposed) Negative Declaration and project. A public meeting will be held upon a substantial number of requests.

The City will concurrently file a Notice of Intent (NOI) with the Contra Costa County Clerk to adopt the ND pursuant to CEQA Guidelines Section 15072 and will circulate the ND for a 30-day public and agency review pursuant to State CEQA Guidelines Section 15105(b).

After the close of the review period, public and agency comments will be evaluated to determine whether they raise any issues that would require substantial revisions and recirculation of the ND.

Chapter 3

Environmental Checklist

1. Project Title:	City of Oakley State Route (SR) 4/Main Street Widening
2. Lead Agency Name and Address:	Caltrans 111 Grand Avenue Oakland, CA 94623
3. Contact Person and Phone Number:	Howell Chan 510.286.5623
4. Project Location:	This project is located in the cities of Oakley and Antioch, Contra Costa County, along SR 4/Main Street between the southbound ramp to Highway 160 in Antioch and Big Break Road in Oakley.
5. Project Sponsor's Name/Address:	City of Oakley 3639 Main Street Oakley, CA 94561 Contact: Jason Vogan 925.625.7003
6. General Plan Designation:	Commercial
7. Zoning:	Various (refer to Table LU-1 in Section IX, *Land Use and Planning*)

8. **Description of Project:** The project expands and widens SR 4/Main Street between the southbound ramp to Highway 160 in Antioch and Big Break Road in Oakley. At present, SR 4/Main Street is a four-lane undivided roadway with two 3.6-meter (12-foot) lanes in each direction separated by a 3-meter (10-foot) median between Highway 160 and Big Break Road. The median serves as a two-way left turn lane, while 1.5-meter (5-foot) shoulders bind the traveled lanes.

   In an effort to improve the level of service and enhance public safety, the project would increase the traveled lanes from two lanes in each direction to three lanes in each direction. The traveled lanes will be 3.66 meters (12 feet) in width, with a 4.28-meter (14 foot) raised median separating the eastbound and westbound lanes. The shoulders will be 2.44 meters (8 feet) wide on the outside and 0.61 meters (2 feet) wide on the inside.

9. **Surrounding Land Uses and Setting:** The primary land uses in the project area are agricultural, industrial, and commercial. Some residential uses are scattered along the project alignment. Parcels along the entire stretch of the alignment are designated Commercial in the Oakley General Plan.

10. **Other Public Agencies Whose Approval Is Required:** All work would occur within state or city rights-of-way. Permits may be required from the following agencies:
    - California Department of Transportation (Caltrans)
    - City of Antioch

Environmental Factors Potentially Affected:
To be completed by the Lead Agency.

The environmental factors checked below would potentially be affected by this project (i.e., the project would result in at least one potentially significant impact on the factor), as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Hazards and Hazardous Materials	☐ Hydrology/Water Quality	☐ Greenhouse Gas Emissions
☐ Mineral Resources	☐ Noise	☐ Land Use/Planning
☐ Public Services	☐ Recreation	☐ Population/Housing
☐ Utilities/Service Systems	☐ Transportation/Traffic	☐ Mandatory Findings of Significance

Determination:
To be completed by the Lead Agency.

On the basis of this initial evaluation:

☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" 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.

☐ I find that 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 ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature	Date
Printed Name	For

Evaluation of Environmental Impacts:

1. A brief explanation is required for all answers except "no impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "no impact" answer is adequately supported if the referenced information sources show that the impact does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "no impact" answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take into account the whole action, including offsite and onsite, project-level and cumulative, indirect and direct, and construction and operation impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially significant impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "potentially significant impact" entries when the determination is made, an environmental impact report (EIR) is required.
4. "Negative Declaration: Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from a "potentially significant impact" to a "less-than-significant impact." The lead agency must describe the mitigation measures and briefly explain how they would reduce the impact to a less-than-significant level.
5. Earlier analyses may be used if, pursuant to tiering, program EIR, or other CEQA processes, an impact has been adequately analyzed in an earlier EIR or negative declaration (CEQA Guidelines Section 15063[c][3][D]). In this case, a brief discussion should identify the following.
   (a) Earlier analysis used. Identify and state where earlier analyses are available for review.
   (b) Impacts adequately addressed. Identify which effects from the below checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   (c) Mitigation measures. For effects that are "less than significant with mitigation incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting information sources should be identified in an attached list, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form. Lead agencies are free to use different formats. However, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each impact should identify:
   (a) the significance criteria or threshold, if any, used to evaluate each question; and
   (b) the mitigation measure identified, if any, to reduce the impact to a less-than-significant level.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 along a 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 that would adversely affect daytime or nighttime views in the area?	❑	❑	■	❑

Setting

The visual setting of the project area is predominantly commercial along the southern side of Main Street.

The northern side of Main Street is bordered by commercial development near Highway 160, an agricultural orchard between Bridgehead Road and Big Break Road, and a railroad. A windrow of planted vegetation is located adjacent to the orchard and screens the orchard from view. Views in the project area are limited due to intervening structures.

Parcels adjacent to Main Street on the south side contain businesses with numerous temporary structures (i.e. trailers). Adjacent retailers include vehicle salvage/scrap yards, a self-storage facility, fast food chain restaurants, and a gas station. Within the entire length of the project area, the only notable structure, which provides a pleasing aesthetic, is the Live Oak Community Church, located at 5471 Live Oak Avenue. There are also remnant agricultural fields south of Main Street along the eastern part of the project area. Other structures in the project area do not lend a particular character or charm to views along Main Street.

As shown on Figure 3-1 (see Biology Section), the visual character of the project area is mixed between commercial, industrial, transportation, community, and agricultural uses and no single character dominates this portion of Main Street.

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project have a substantial adverse effect on a scenic vista?

No impact. The proposed project involves widening SR 4/Main Street between Highway 160 and Big Break Road from four lanes to six lanes with a raised median and widened shoulder. The project does not involve the construction of any buildings or structures that could block views along the roadway. No designated scenic vistas or viewpoints are located along the project alignment, and widening the roadway would not block distant views of Mount Diablo to the west. Therefore, the project would have no impact on scenic vistas.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?

No impact. The project roadway is not a designated scenic highway under Caltrans or the city of Oakley. SR 4, from SR 84 in Brentwood to SR 160, and SR 160, from SR 4 in Oakley to Sacramento, are eligible state scenic highways under the California Scenic Highway Program. The closest officially designated state scenic highway is SR 24, from the east portal of the Caldecott Tunnel to SR 680 near Walnut Creek. This roadway is not visible from the project area.

The Live Oak Community Church, while architecturally significant, is not part of an intact scenic view given the intrusions of the adjacent salvage/scrap yards, other commercial facilities, and roadways. Additionally, the agricultural land on the southeast side and the northeast side are non-contiguous remnants of the former agricultural landscape. Given the commercial and roadway improvements that exist, these areas are not considered significant scenic resources. The planted windrow along the agricultural land on the northeast side is not particularly vivid and does not convey any readily apparent nor recognizable visual character, and is thus not considered a significant scenic resource.

Overall, the project area is not considered to contain significant scenic resources and thus the project is not considered to have a significant aesthetic impact in relation to scenic resources. Since the project alignment is not a scenic highway, the proposed project would have no impact on a scenic highway or on scenic resources.

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Less than significant. Construction signage, construction vehicles, lane closures, and other construction-related activities would change the existing visual character of the project area. However, this change related to construction would be temporary and thus less than significant.

Commercial and industrial elements coexist along the project roadway with commercial uses, residences and agricultural uses, creating a mixed visual character that is not vivid and lacks integrity, and no longer conveys a rural character. The permanent loss of the planted windrow along the northern side of Main Street would not decrease the aesthetic quality, as this windrow is not a character-defining feature contributing to an intact area of high aesthetic quality. This vegetation does not presently screen view of the roadway for residents near the intersection of Big Break Road and Main Street. Because the existing visual character is low in quality and lacks integrity, the limited removal of vegetation is not considered a significant impact.

Installing a raised and planted median and turn lanes would change the road character. Because the installation of a planted median would break up the flat character of the existing 5-lane road, it would introduce visual contrast to a currently uniform portion of existing views that could actually improve its aesthetic quality. Whether or not the new, planted medium would improve aesthetic character, overall aesthetic impacts on visual quality or character are nonetheless considered less than significant for the reasons described above.

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Less than significant. The roadway features of the proposed project (widened roadway and shoulders, and raised median) themselves would not substantially contribute to daytime glare. The increase in vehicles on the widened roadway could increase nighttime light and daytime glare for nearby pedestrians, bicyclists, and residential viewers; however, this increase would not significantly exceed light and glare from existing sources along the roadway. The proposed project would include street lighting that could contribute to nighttime light in the project area. The lighting will be determined during the design phase of the project; however, it is known that, at a minimum, it would meet Caltrans lighting standards and would be submitted to Caltrans for their approval. Streetlights would be a new source of nighttime light in the project area, since streetlights currently do not exist along the majority of the roadway. However, as described in Chapter 2, the project includes mandatory standard construction contract requirements to minimize lighting effects on nearby residences and businesses to the highest degree possible.

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		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
II.	**AGRICULTURE AND FORESTRY.**				
	In determining whether impacts on 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 Department of Conservation. 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 conflict with a Williamson Act contract?	❑	❑	■	❑
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined by 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 511 04(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 that, 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?	❑	❑	■	❑

Setting

The project alignment includes active and fallow agricultural land, primarily on the north side of the roadway. The entire project area is designated Commercial in the City of Oakley General Plan, and zoned for various commercial and planned development uses in the Oakley Municipal Code (see Section IX, *Land Use and Planning*). The Oakley planning area is within the Contra Costa County Urban Limit Line (ULL), which Contra Costa County (County) established to centralize urban uses and protect agriculture. The *Oakley 2020 General Plan EIR* (2002) found that the Oakley General Plan is completing the urbanization of the area within the ULL as originally intended by the County, and that the loss of prime agricultural land within the ULL is less than significant with implementation of General Plan policies and programs that preserve the buffer between urban development and agricultural land.

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project 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. Would the project conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?

a, b: Less than significant impact. The majority of agricultural uses along the project alignment are located on the northern side of the roadway. The proposed project would widen SR 4/Main Street primarily on the south side of the roadway, effectively avoiding most of the agricultural uses along the alignment. Furthermore, the entire project area is designated and zoned Commercial in the Oakley General Plan and Municipal Code, and as discussed above, the Oakley General Plan found the loss of agricultural land within the County's ULL to be less than significant. The project area does not contain any parcels currently held in a Williamson Act contract. This impact would be less than significant.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined by 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 511 04(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

c, d: No impact. The project site does not support forest land. It is not zoned as forest land, timberland, or timberland zoned for production, and thus would neither conflict with such zoning or cause land with these classifications to be rezoned. Therefore, no impacts would occur.

e. Would the project involve other changes in the existing environment that, 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??

Less than significant impact. The project alignment is in an area currently designated for commercial uses in the City's general plan (*Oakley 2020 General Plan* 2002). The proposed roadway widening would not preclude continued agricultural use of adjacent properties, and would not convert forest land to non-forest use. The overall impact would be less than significant.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
III.	**AIR QUALITY.**				
	When 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 a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	❑	❑	■	❑
d.	Expose sensitive receptors to substantial pollutant concentrations?	❑	❑	■	❑
e.	Create objectionable odors affecting a substantial number of people?	❑	❑	❑	■

Setting

Climate and Topography

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted from those sources. Meteorological and topographical conditions are also important factors. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

The project is located in the city of Oakley, in the San Francisco Bay Area air basin (SFBAAB). The project area lies just south of the Carquinez Strait region of the Bay Area and east of the Coast Ranges. Prevailing winds are from the northwest, particularly during the summer. During summer and fall months, high pressure offshore, coupled with thermal low pressure in the Central Valley, caused by high inland temperatures, sets up a pressure pattern that draws marine air eastward through the Carquinez Strait. The wind is strongest in the afternoon (up to 15-20 miles per hour) because that is when the pressure gradient between the East Pacific high and the thermal low is greatest.

Sometimes the pressure gradient reverses and flow from the east occurs. In the summer and fall months, this can cause elevated pollutant levels. Typically, for this to occur, high pressure is centered over the Great Basin or the Pacific Northwest, setting up an east to west or northeast to southwest pressure gradient. These high pressure periods have low wind speeds and shallow mixing depths, thereby allowing the localized emissions to build up. Furthermore, the air mass from the east is warmer, thereby increasing photochemical activity, and contains more pollutants than the usual cool, clean marine air from the west. During the winter, easterly flow through the Carquinez Strait is more common. Between storms, with the high pressure system no longer offshore, high pressure over inland areas causes easterly flow.

The average annual high temperatures in the project area range from the 50s in the winter to the 80s and 90s in the summer. The annual precipitation averages about 17 inches.

Existing Air Quality Conditions

The closest air quality monitoring station that monitors ozone (O_3), oxides of nitrogen (NO_x), carbon monoxide (CO) and particulates 10 microns or less in diameter (PM_{10}) is located at Bethel Island. The closest air quality monitoring station that monitors particulates 2.5 microns or less in diameter ($PM_{2.5}$) is located at 2275 Treat Boulevard in Concord. Air quality monitoring data for the project area are summarized in Table AIR-1. The Bethel Island monitoring station has experienced 13 violations of the state 1-hour ozone standard, 18 violations of the federal 8-hour ozone standard, 28 violations of the state 8-hour ozone standard, no violations of the federal and state CO standards, and no violations of the federal 24-hour PM10 standard, 24.4 violations of the state 24-hour PM10 standard during the 3-year monitoring period. The Concord station experienced 19.6 violations of the national 24-hour PM2.5 standard during the 3-year monitoring period.

If a pollutant concentration is lower than the state or federal standard, the area is classified as being in attainment of the standard for that pollutant. If a pollutant violates the standard, the area is considered a nonattainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated unclassified. This occurs in non-urbanized areas where levels of the pollutant are not a concern. The SFBAAB, including Contra Costa County is classified as a nonattainment area for the state and federal O_3 standards and the state PM_{10} standard.

The EPA has classified Contra Costa County as a marginal nonattainment area with regards to the 8-hour ozone standard. With regards to the CO standard, the EPA has classified Contra Costa County as a moderate ($\leq$ 12.7 ppm) maintenance area. The project area is also an attainment area for the federal PM10 standard.

Table AIR-1. Ambient Air Quality Monitoring Data from Bethel Island Station and Concord Station

Pollutant Standards	2006	2007	2008
1-Hour Ozone (Bethel)			
Maximum 1-hour concentration (ppm)	0.116	0.093	0.109
1-hour California designation value	0.11	0.10	0.11
1-hour expected peak day concentration	0.105	0.103	0.108
Number of days standard exceeded[a]			
CAAQS 1-hour (>0.09 ppm)	9	0	4
8-Hour Ozone (Bethel)			
National maximum 8-hour concentration (ppm)	0.090	0.078	0.090
National second-highest 8-hour concentration (ppm)	0.082	0.074	0.084
State maximum 8-hour concentration (ppm)	0.090	0.078	0.090
State second-highest 8-hour concentration (ppm)	0.082	0.074	0.085
8-hour national designation value	0.073	0.073	0.076
8-hour California designation value	0.090	0.082	0.090
8-hour expected peak day concentration	0.090	0.088	0.091
Number of days standard exceeded[a]			
NAAQS 8-hour (>0.075 ppm)	13	1	4
CAAQS 8-hour (>0.070 ppm)	14	4	10
Carbon Monoxide (CO) (Bethel)			
National[b] maximum 8-hour concentration (ppm)	1.04	0.84	1.11
National[b] second-highest 8-hour concentration (ppm)	1.01	0.79	0.87
California[c] maximum 8-hour concentration (ppm)	1.04	0.84	1.11
California[c] second-highest 8-hour concentration (ppm)	1.01	0.79	0.87
Maximum 1-hour concentration (ppm)	1.3	1.1	1.0
Second-highest 1-hour concentration (ppm)	1.2	1.0	0.9
Number of days standard exceeded[a]			
NAAQS 8-hour (≥9 ppm)	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0
NAAQS 1-hour (≥35 ppm)	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0
Particulate Matter (PM10)[d] (Bethel)			
National[b] maximum 24-hour concentration (μg/m^3)	82.1	46.7	78.2
National[b] second-highest 24-hour concentration (μg/m^3)	47.7	46.6	59.4
State[c] maximum 24-hour concentration (μg/m^3)	84.3	49.4	77.0
State[c] second-highest 24-hour concentration (μg/m^3)	50.0	49.1	61.0
State annual average concentration (μg/m^3)[e]	19.4	18.8	24.1
National annual average concentration (μg/m^3)	18.8	18.3	23.6
Number of days standard exceeded[a]			
NAAQS 24-hour (>150 μg/m^3)[f]	0	0	0
CAAQS 24-hour (>50 μg/m^3)[f]	6.1	0	18.3
Particulate Matter (PM2.5) (Concord)			
National[b] maximum 24-hour concentration (μg/m^3)	62.1	46.2	60.3
National[b] second-highest 24-hour concentration (μg/m^3)	48.5	43.8	37.8
State[c] maximum 24-hour concentration (μg/m^3)	62.1	46.8	60.3

State[c] second-highest 24-hour concentration (μg/m^3)	48.5	45.0	38.0
National annual designation value (μg/m^3)	—	8.9	9.0
National annual average concentration (μg/m^3)	9.3	8.4	9.3
State annual designation value (μg/m^3)	12	10	12
State annual average concentration (μg/m^3) [e]	10.0	8.7	9.5
Number of days standard exceeded[a]	—	—	—
NAAQS 24-hour (>35 μg/m^3)	5.5	7.1	7.0

Notes: CAAQS = California Ambient Air Quality Standards.
NAAQS = National Ambient Air Quality Standards.
– = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[c] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.

[d] Measurements usually are collected every 6 days.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: *CARB State Area Designations.* 2009. *USEPA 2009 Air Data* 2009.

Currently, the county is designated a nonattainment area for PM2.5 National Ambient Air Quality Standards (NAAQS). U.S EPA lowered the 24-hour PM2.5 standard from 65 μg/m3 to 35 μg/m3 in 2006. EPA designated the Bay Area as nonattainment of the PM2.5 standard on October 8, 2009. The effective date of the designation is December 14, 2009 and the Air District has three years to develop a plan, called a State Implementation Plan (SIP) that demonstrates the Bay Area will achieve the revised standard by December 14, 2014. The SIP for the new PM2.5 standard must be submitted to the US EPA by December 14, 2012.

ARB has classified Contra Costa as a serious nonattainment area with regards to the state 1-hour ozone standard. With regards to the state CO standard, ARB has classified Contra Costa as an attainment area. ARB has classified Contra Costa as a nonattainment area with regards to the state PM10 and PM2.5 standards.

Sensitive Land Uses

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or the duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational

uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the respiratory system.

For the proposed project, sensitive receptors include residences located adjacent to Main Street. Those residences would be exposed to air emissions during both project construction and operation.

Regulatory Framework

Air Quality Management

Air quality is determined primarily by the type and amount of contaminants emitted into the atmosphere, the size and topography of the Basin, and its meteorological conditions. State and federal criteria pollutant emission standards have been established for seven pollutants: CO, O_3, PM10, PM2.5, NO_x, sulfur dioxide (SO_2), and lead (Pb). Within the SFBAAB, the Bay Area Air Quality Management District (BAAQMD) is responsible for ensuring that these emission standards are not violated. The BAAQMD develops and enforces air quality regulations for non-vehicular sources, issues permits, participates in air quality planning, and operates a regional air quality monitoring network.

Air quality is measured by comparing contaminant levels in ambient air samples to national and state standards. These standards are set by the U.S. Environmental Protection Agency and the California Air Resources Board (ARB) at levels determined to be protective of public health and welfare with an adequate margin of safety. National ambient air quality standards were first authorized by the federal Clean Air Act of 1970. California ambient air quality standards were authorized by the State legislature in 1967. The California Ambient Air Quality Standards (CAAQS) describe adverse conditions; that is, pollution levels must be below these standards before a Basin can attain the standard. NAAQS describe acceptable conditions. Air quality is considered in "attainment" if pollutant levels are below or equal to the standards continuously and exceed them no more than once each year. California standards are generally more stringent than the national standards. Federal and State Ambient Air Quality Standards are presented in Table AIR-2.

Table AIR-2. California and National Ambient Air Quality Standards

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Ozone*	O_3	1 hour	0.09	NA	180	NA	If exceeded	NA
		8 hours	0.070	0.075	137	147	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.18	NA	339	NA	If exceeded	NA
Sulfur dioxide	SO_2	Annual arithmetic mean	NA	0.030	NA	80	NA	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	NA	655	NA	If exceeded	NA
Hydrogen sulfide	H_2S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C_2H_3Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Inhalable particulate matter	PM10	Annual arithmetic mean	NA	NA	20	NA	NA	NA
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year
	PM2.5	Annual arithmetic mean	NA	NA	12	15	NA	If 3-year average from single or multiple community-oriented monitors is exceeded
		24 hours	NA	NA	NA	35	NA	If 3-year average of 98th percentile at each population-oriented monitor within an area is exceeded
Sulfate particles	SO_4	24 hours	NA	NA	25	NA	If equaled or exceeded	NA
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded no more than 1 day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA
		Rolling 3-Month average	NA	NA	NA	0.15	If equaled or exceeded	Averaged over a rolling 3-month period

Notes: All standards are based on measurements at 25ºC and 1 atmosphere pressure. National standards shown are the primary (health effects) standards. NA = not applicable.

* The U.S. Environmental Protection Agency recently replaced the 1-hour ozone standard with an 8-hour standard of 0.08 part per million. EPA issued a final rule that revoked the 1-hour standard on June 15, 2005.. However, the California 1-hour ozone standard will remain in effect.

Source: *Ambient Air Quality Standards* 2008.

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called NAAQS. Standards have been established for six criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: CO, NO_2, O_3, particulate matter (PM), Pb, and SO_2.

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for CO, NO_2, O_3, and PM. California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the Metropolitan Transportation Commission for Contra Costa County and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the RTP is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is “nonattainment” or “maintenance” for CO and/or PM. A region is a “nonattainment” area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called “maintenance” areas. “Hot spot” analysis is essentially the same, for technical purposes, as CO or PM analysis performed for National Environmental Policy Act (NEPA) purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the CO standard to be violated, and in “nonattainment” areas the project must not cause any increase in the number and severity of violations. If a known CO or PM violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

BAAQMD Thresholds

Construction

BAAQMD does not require quantification of construction emissions. Instead, it requires implementation of effective and comprehensive feasible control measures to reduce PM10 emissions (*BAAQMD CEQA Guidelines* 1999). PM10 emitted during construction activities varies greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, and weather conditions. Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to reduce PM10 emissions during construction. These control measures are aimed at controlling PM10 emissions and are summarized in Table AIR-3. The Department has adopted BAAQMD's thresholds for PM10 and has committed to implementing all applicable feasible control measures described in Table AIR-3. According to the BAAQMD, if all control measures indicated in Table AIR-3 are implemented (as appropriate, depending on the size of the project area), air pollutant emissions from construction activities are considered less-than-significant (*BAAQMD CEQA Guidelines* 1999).

Table AIR-3. Feasible Control Measures for Construction Emissions of PM_{10}

Basic Control Measures – The following controls should be implemented at all construction sites.
▪ Water all active construction areas at least twice daily.
▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
▪ Pave, apply water three times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
▪ Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
▪ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
Enhanced Control Measures – The following measures should be implemented at construction sites greater than four acres in area.
▪ Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
▪ Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)
▪ Limit traffic speeds on unpaved roads to 15 mph.
▪ Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
▪ Replant vegetation in disturbed areas as quickly as possible.
Optional Control Measures – The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors or which for any other reason may warrant additional emissions reductions.
▪ Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
▪ Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas.
▪ Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
▪ Limit the area subject to excavation, grading and other construction activity at any one time.

Source: *BAAQMD CEQA Guidelines* 1999

Operation

Operational emission thresholds are contained in the BAAQMD's CEQA Guidelines for Assessing the Air Quality Impacts of Projects and Plans (*BAAQMD CEQA Guidelines* 1999). Project operations would result in a significant impact on air quality if it would result in either of the following.

- Net increase in pollutant emissions of 80 pounds per day (ppd) or 15 tons per year (tpy) of ROG, NO_x, or PM10.
- Net increase in carbon monoxide emissions exceeding 550 ppd, reduction of roadway level of service (LOS) of intersections operating at LOS E or F, reduction of intersection LOS to E or F, or increase in traffic volumes on nearby roadways by 10% or more, and violation of state CO concentration

standards as determined by the modeling of CO emissions. (For this analysis, the level of significance of CO emissions from mobile sources is determined by modeling the ambient CO concentration under project conditions and comparing the resultant 1- and 8-hour concentrations to the respective state CO standards of 20.0 and 9.0 ppm.)

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact. A project is deemed inconsistent with air quality plans if it would result in population and/or employment growth that exceeds growth estimates included in the applicable air quality plan. Therefore, proposed projects need to be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rates included in the relevant air plans.

The proposed project is neither a population nor a growth inducing project. This roadway is not a traffic-generating project. The goal of this project is to improve traffic operations. The traffic engineer has indicated that the proposed project will not add any vehicle trips (pers. comm. Tabibnia). Consequently, this project is less-than-significant.

b. Would the project violate any air quality standard or contribute substantially to existing or projected air quality violation?

CRITERIA POLLUTANTS

<u>Construction</u>

Less than significant impact. As noted above, the BAAQMD does not require quantification of construction emissions. Instead, the District considers air pollutant emissions from construction activities less-than-significant if the control measures listed in Table III-3 are implemented.

Although the BAAQMD has not established significance thresholds for construction emissions and does not require quantification of construction emissions, modeling was conducted to achieve a better understanding of the approximate level of construction-related emissions likely to be generated by the proposed project.

The Sacramento Metropolitan Air Quality Management District's (SMAQMD's) Road Construction Emissions Model (Version 6.3.2) was

used to estimate construction-related ozone precursors (ROG and NOx), CO, PM10, PM2.5, and CO2 emissions from construction activities. It was assumed that the project would be approximately 1.2 miles in length, with an area of 23 acres and a disturbed area of 6 acres. Construction is anticipated to last for 16 months. Construction activities were divided into four distinct phases and analyzed separately. Default values for equipment were used. The results of modeling for construction activities are summarized in Table AIR-4.

Table AIR-4. Construction Emissions Estimates (lbs/day for criteria pollutants; total metric tons for CO2)

Project Phases	ROG	CO	NOx	Total PM10	Exhaust PM10	Fugitive Dust PM10	Total PM2.5	Exhaust PM2.5	Fugitive Dust PM2.5	CO2[1]
Grubbing/ Land Clearing	8.877	40.205	73.054	60.660	3.210	57.450	14.874	2.925	11.950	111.8
Grading/ Excavation	8.444	37.099	62.411	60.872	3.422	57.450	15.069	3.119	11.950	406.2
Drainage/ Utilities/Sub-Grade	5.930	23.437	38.969	59.793	2.343	57.450	14.087	2.137	11.950	211.3
Paving	6.473	22.193	33.437	2.981	2.981	0.000	2.726	2.726	0.000	72.0
Maximum (pounds/day)	**8.877**	**40.205**	**73.054**	**60.872**	**3.422**	**57.450**	**15.069**	**3.119**	**11.950**	**801.3**

[1] CO2 is presented in total metric tons for project

Notes:

Project Start Year: 2010; Project Length (months): 16; Total Project Area (acres): 23; Maximum Area Disturbed: 6; Total Soil Imported/Exported (cubic yards/day): 0.

Total PM10 and PM2.5 emissions shown are the sum of exhaust and fugitive dust emissions.

Based on the modeling summarized above, construction activities would result in increased pollutant emissions. However, emissions would be substantially lowered by the implementation of the Feasible Control Measures for Construction Emissions of PM10 in Table AIR-3 which are required as standard construction measures (see Chapter 2). Implementation of these measures will ensure project impacts are less than significant.

Conversation with BAAQMD staff indicates that they have no guidance or interim guidance on construction related diesel health risks. BAAQMD does not consider diesel-related cancer risks from construction equipment to be an issue due to the short-term nature of construction activities (Bourguidgnon pers. comm.). As previously mentioned, it is anticipated that construction activities would continue for approximately 16 months. The assessment of cancer risk is typically based on a 70-year exposure period. Construction activities are sporadic, transitory, and short-term in nature, and once construction activities have ceased, so too have emissions from construction activities. Because exposure to diesel exhaust will be well below the 70-year

exposure period, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature construction-related diesel exposure.

Operational

Less than significant impact. Long-term air quality impacts are those associated motor vehicles operating on the roadway network, predominantly those operating in the project vicinity. Emissions of ROG, CO, NO_2, O_3, PM10, PM2.5, Pb, and SO_2, and carbon dioxide (CO_2) for existing year (2004) and future year (2035) with and without project conditions were evaluated through modeling conducted using CT-EMFAC and traffic data.

Table AIR-5 summarizes the modeled emissions for 2004 and 2035 with and without future project conditions. Emissions were obtained by comparing with-project emissions to without-project emissions. The differences in emissions between with- and without-project conditions represent emissions generated directly as a result of operation of a roadway as a result of implementation of the proposed project. Vehicular emission rates are anticipated to lessen in future years due to continuing improvements in engine technology and the retirement of older, higher-emitting vehicles.

Table AIR-5. Summary of Future Roadway Project-Related Emissions Contribution

Scenario	Daily VMT	Pounds (lbs) per day					Metric tons/Year
		ROG	NO_X	CO	PM10	PM2.5	CO_2[1]
2004 Excluding Centroid Connectors	942,276	732.413	1,478.846	11,254.820	26.665	24.588	127,268
2004 Including Centroid Connectors	998,900	794.358	1,566.204	12,023.860	28.877	26.720	136,347
2035 No Project Excluding Centroid Connectors	1,527,158	228.128	444.869	3,042.576	48.020	44.077	203,109
2035 No Project Including Centroid Connectors	1,628,493	248.024	473.512	3,274.857	52.771	48.429	219,192
2035 With Project Excluding Centroid Connectors	1,538,194	230.024	448.604	3,067.165	48.421	44.445	204,716
2035 With Project Including Centroid Connectors	1,640,389	250.079	477.484	3,301.378	53.210	48.831	220,930
Alternative Differences							
Scenario	**Daily VMT**	**Pounds (lbs) per day**					**Metric Tons/Year**
		ROG	**NO_X**	**CO**	**PM10**	**PM2.5**	**CO_2[1]**
2035 With Project Excluding Centroid Connectors - 2035 No Project Excluding Centroid Connectors	11,036	1.896	3.735	24.589	0.401	0.368	1,607
2035 With Project Including Centroid Connectors - 2035 No Project Including Centroid Connectors	11,896	2.055	3.972	26.521	0.439	0.402	1,737
BAAQMD Thresholds	N/A	80	80	550	80	N/A	--[2]

Adapted from: *City of Oakley Main Street Widening Project Air Quality Technical Study* 2010
[1]CO_2 presented in metric tons per year.
[2]BAAQMD does not have an adopted GHG threshold for roadway projects. BAAQMD adopted a 1,100 ton threshold for land use projects, but the guidelines do not state that this threshold is intended to apply to transportation projects (*BAAQMD CEQA Guidelines* 2010).

Table AIR-5 represents a comparison of the emissions of a future roadway constructed and operated with and without centroid connectors to the no-project alternatives. The table indicates that implementation of the project would result in an increase in all pollutant emissions under the future year (2035). As indicated in Table AIR- 5, the emission increases are primarily attributable to increases in VMT between no build and build conditions. While these increases are anticipated, they are well below the BAAQMD's current thresholds and are consequently considered less than significant.

Regional Conformity

The proposed project is fully funded and is included in the MTC financially constrained 2011 Transportation Improvement Program (TIP) as TIP ID CC-090015, which was approved on October 27, 2010. The design concept and scope of the proposed project is consistent with the project description in the 2011 TIP and the assumptions in the MTC's regional air quality conformity analysis. Therefore, the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Less than significant impact. As described above under "b," the proposed project as mitigated would not create a significant construction air quality impact. Therefore, a cumulatively considerable net increase of any criteria pollutant would not occur.

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact. Certain residents, such as the very young, the elderly, and those suffering from certain illnesses or disabilities, are particularly sensitive to air pollution and are considered "sensitive receptors." Examples of land uses where significant numbers of sensitive receptors are often found are schools, day care centers, parks, recreational areas, medical facilities, and rest homes and convalescent care facilities. Land use conflicts can arise when sensitive receptors are located next to major sources of air pollutant emissions.

Carbon Monoxide Hot Spots

The major source of project-related pollution affecting sensitive receptors would be carbon monoxide generated by increases in automobile traffic. Background concentrations within the project vicinity are below the state and federal 1 and 8-hour standards as indicated by the monitoring station data for the past 3 years. Based on implementation of stricter air quality regulations, CO concentrations are projected to be lower in the future.

Significance is assessed whether CO concentrations are anticipated to exceed the ambient air quality standards (Table AIR-1). CO concentrations at sensitive receptors near congested intersections were estimated based on CALINE4 dispersion modeling.

CO modeling was conducted using p.m. peak-hour traffic volumes. CO modeling was performed for the following scenarios at the following

locations since they operate at LOS D or worse based on the project traffic analysis. Three design year conditions were modeled for this analysis:

- 2004 Existing conditions;
- 2035 Future no project conditions;
- 2035 Future with project conditions.

For each of the above design-year conditions, the following intersections were modeled:

- Main Street / SR 160 NB Ramps
- Maine Street / Bridgehead / Neroly
- Main Street / Sandy Lane
- Main Street / Live Oak

The modeled intersection included receptors modeled where representative sensitive receptors were located, in addition to receptors located 100 feet from the intersection diagonal. Existing background CO concentrations were obtained from the BAAQMD. Table AIR-6 summarizes CO modeling results for 2004 Existing, 2035 Future No Project conditions, and 2035 Future with Project conditions. As indicated in Table AIR-6, no violations of the state 1-hour or 8-hour CO standards are anticipated in the project area under future conditions. Therefore, the impact of the proposed project traffic conditions on ambient CO levels in the project area is considered less than significant. No mitigation is required.

Table AIR-6. Modeled Carbon Monoxide Levels Measured at Receptors in the Vicinity of the Project Area

Intersection	**Existing**		**2035 (No Project)**		**2035 (With Project)**	
	1-hr	**8-hr**	**1-hr**	**8-hr**	**1-hr**	**8-hr**
2. Main Street / SR 160 NB Ramps	3.1	2.0	N/A	N/A	N/A	N/A
3. Maine Street / Bridgehead / Neroly	3.0	2.0	1.9	1.2	1.9	1.2
4. Main Street / Sandy Lane	N/A	N/A	1.9	1.2	N/A	N/A
5. Main Street / Live Oak	2.9	1.9	1.9	1.2	1.9	1.2
CO State Standards	**20**	**9.0**	**20**	**9.0**	**20**	**9.0**

Note: Background concentrations of 1.9 ppm and 1.2 ppm were added to the modeling 1-hour and 8-hour results, respectively.
The federal 1-hour standard is 35 ppm. The federal 8-hour standard is 9 ppm.

Mobile Source Air Toxics

Toxic Air Contaminants (TACs) are pollutants that may result in an increase in mortality or serious illness, or that may pose a present or potential hazard to human health. Health effects of TACs include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. In 1998, following a 10-year scientific assessment process, ARB identified particulate matter from diesel-fueled engines as a TAC. Compared to other air toxics ARB has identified and controlled, diesel particulate matter emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk (*Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* 2000).

Through the Clean Air Act of 1990, Congress mandated that the EPA regulate 188 air toxics, which are also known as hazardous air pollutants (HAPs). In the EPA's latest final rule (2007) on the control of hazardous air pollutants from mobile sources (72 Federal Register [FR] 8430), the agency identified 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS). From this list of 93 compounds, the EPA has identified seven as priority Mobile Source Air Toxics (MSATs). The high regulation priority of these seven MSATs was based on the EPA's 1999 National Air Toxics Assessment (NATA) (*Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* 2009).

- Acrolein.
- Benzene.
- 1,3-Butadiene.
- Diesel particulate matter/diesel exhaust organic gases (diesel PM).
- Formaldehyde.
- Naphthalene.
- Polycyclic organic matter (POM).

The 2007 rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050 (*Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* 2009).

MSAT emissions were evaluated using a combination of FHWA's *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* (2009) and preliminary California-specific guidance from Caltrans. At this

time, the California-specific guidance is identical to the FHWA's guidance except for California-Specific thresholds for performing qualitative and quantitative analysis. The California-specific thresholds are found in ARB's Air Quality and Land Use Handbook: A Community Health Perspective (*Air Quality and Land Use Handbook: A Community Health Perspective* 2005). FHWA's interim guidance uses a tiered approach on how MSATs should be addressed in NEPA documents for highway projects (*Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents* 2009). Depending on the specific project circumstances, FHWA has identified three levels of analysis:

- no analysis for projects with no potential for meaningful MSAT effects,
- qualitative analysis for projects with a low potential for MSAT effects, and
- quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The purpose of this project is to provide congestion relief by increasing capacity to improve traffic flow on the interregional and regional transportation system; improve traffic operations; be consistent with existing and planned local development; help achieve the goals of the Metropolitan Transportation Commission. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. As indicated in Table AIR-5, implementation of the proposed project would increase VMT by 0.72% when excluding centroid connectors, while inclusion of the centroid connectors would result in an increase in VMT by 0.73%. As such, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs and is considered less than significant.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in VMT, FHWA predicts MSATs will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect, even with a projected 64 percent increase in VMT. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project.

Diesel Particulate Matter

As noted above, the project will result in PM emissions due to primarily diesel vehicle emissions during operations. PM emissions can be a health risk issue for projects wherein existing vehicle and truck volumes are particularly large, where intersection levels of service (LOS) are very low (as in LOS of D, E, or F) where truck idling and concentration of emissions

occurs, or where truck volumes are expected to substantially increase from existing levels. The proposed project has a moderate level of expected vehicle and truck volumes, would reduce congestion (and thus reduce potential idling of vehicles and trucks), and truck levels are expected to decrease over time with full completion of the SR 4 bypass (which provides a faster route through the Oakley/Brentwood area than main Street). A further consideration is the phased improvements in vehicle technology and fuels required by EPA regulations, which will reduce particulate emissions over time compared to existing conditions. As such, the project is not expected to result in significant PM emissions compared to baseline conditions.

Under the Code of Federal Regulations, 40cfr93.121, the project is regionally significant and is included in a conforming regional transportation plan and transportation improvement plan. Since the project will not be using federal funding or require federal approval, federal project level conformity requirements for particulates (PM 2.5 hotspot analysis) do not apply.

e. Would the project create objectionable odors affecting a substantial number of people?

No impact. The proposed project would not generate any objectionable odors. There would be no impact.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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, 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, or 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?	❑	❑	❑	■

Setting

This discussion is based on the biology study report entitled *City of Oakley Main Street Widening Project Draft Natural Environment Study Report* (2005). The findings of which are incorporated by reference in this document.

The project area is located in the Sacramento Delta region, just south of the San Joaquin River and Big Break confluence. The elevations in the study area range from approximately 6 to 12 meters (20 to 40 feet) above mean sea level. The study area is primarily commercial development with inclusions of nonnative annual grassland, landscaped areas, and vineyards. The nonnative annual grasslands in and adjacent to the study area have been substantially altered by construction of the highway, grading associated with past and current development, and agricultural practices. The study area is bordered by residential and commercial uses, fallow agricultural fields, and vineyards.

According to the *Soil Survey of Contra Costa County* (1977), the study area contains Dehli sand with 2 to 9% slopes. The Dehli soil series consists of somewhat excessively drained soils that were formed in wind-modified stream deposits. This soil type has a low potential to support wetland inclusions.

Methods

The biological team for the project reviewed the following information to determine the types of studies/surveys that may be required for the proposed project:

- California Natural Diversity Database (CNDDB) records for the Antioch South, Antioch North, Brentwood, and Jersey Island 7.5-minute USGS quadrangles (California Natural Diversity Database 2010).
- The U.S. Fish and Wildlife Service's (USFWS) species list for the Antioch South, Antioch North, Brentwood, and Jersey Island 7.5-minute USGS quadrangles (U.S. Fish and Wildlife Service 2010).
- The California Native Plant Society's (CNPS) 2010 Inventory of Rare and Endangered Plants of California.
- The Soil Survey of Contra Costa County, California (1977).
- Aerial photographs of the project area.

Special-status species

For the purpose of this analysis, "special-status species" is a collective term that refers to plants and animals that are legally protected under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or other regulations, as well as species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status plants and animals fall into the following categories:

- species listed or proposed for listing as threatened or endangered under ESA (50 CFR [Code of Federal Regulations] 17.12 [listed plants], 50 CFR 17.11 [listed animals], and in various notices in the Federal Register [FR] [proposed species]);
- species that are candidates for possible future listing as threatened or endangered under ESA (*U.S. Fish and Wildlife Service Species Reports* 2010);
- species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5);

- species that meet the definitions of "rare" or "endangered" under CEQA (State CEQA Guidelines, Section 15380);
- plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 *et seq*.);
- plants considered by CNPS to be "rare, threatened, or endangered in California and elsewhere (CNPS List 1B)" (CNPS *Inventory of Rare and Endangered Plants* 2010);
- plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution, which may be included as special-status species on the basis of local significance or recent biological information (CNPS *Inventory of Rare and Endangered Plants* 2010);
- animal species of special concern to the California Department of Fish and Game (DFG) (*Bird species of special concern in California* 1978 [birds], *Mammalian species of special concern in Califomia*1986 [mammals], and *Amphibian and reptile species of special concern in California* 1994 [amphibians and reptiles]); and
- animals fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).

The information listed above was also used to develop lists of sensitive species that could be present in the region and to determine if waters of the United States or sensitive natural communities could occur in the study area. Species from the lists were evaluated if they are known to occur in the project vicinity (i.e., within a 16-kilometer [10-mile] radius of the study area) or if suitable habitat for the species is present in the study area. Sensitive plant and wildlife species that were identified as potentially occurring in the project region are listed in Tables BIO-1 and BIO-2.

Table BIO-1. Sensitive Plant Species Identified Prior to the Field Survey as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status[a] Federal/ State/CNPS	Distribution	Preferred Habitats	Blooming Period	Species Presence/ Absence	Occurrence in the Biological Study Area
Large-flowered fiddleneck *Amsinckia grandiflora*	E/E/1B	Mt Diablo foothills in Alameda, Contra Costa, and San Joaquin Counties; currently known from only three natural occurrences	Annual grassland, cismontane woodland, on open grassy slopes below 366 meters (1,200 feet)	April–May	A	No suitable habitat present in study area
Alkali milk-vetch *Astragalus tener* var. *tener*	–/–/1B	Merced, Solano, and Yolo Counties; historically more widespread	Grassy flats and vernal pool margins, on alkali soils, below 61 meters (200 feet)	March–June	A	No suitable habitat present in study area
Heartscale *Atriplex cordulata*	SC/–/1B	Western Central Valley and valleys of adjacent foothills	Alkali grassland, alkali meadow, alkali scrub, below 201 meters (660 feet)	May–October	A	No suitable habitat present in study area
Brittlescale *Atriplex depressa*	–/–/1B	Sacramento Valley and valleys of adjacent foothills on west side of San Joaquin Valley	Alkali grassland, alkali meadow, alkali scrub, chenopod scrub, playas, valley and foothill grasslands on alkaline or clay soils, below 201 meters (660 feet)	May–October	A	No suitable habitat present in study area
San Joaquin spearscale *Atriplex joaquiniana*	–/–/1B	West edge of Central Valley from Glenn to Tulare Counties	Alkali grassland, alkali meadow, alkali scrub, and saltbush scrub, below 305 meters (1,000 feet)	April–October	A	No suitable habitat present in study area
Big tarplant *Blepharizonia plumosa* ssp. *plumosa*	–/–/1B	Interior Coast Range foothills; Alameda, Contra Costa, San Joaquin, Stanislaus*, and Solano* Counties	Annual grassland, on dry hills and plains, 15 to 457 meters (50–1,500 feet)	July–October	A	No suitable habitat present in study area

Common and Scientific Names	Status[a] Federal/ State/CNPS	Distribution	Preferred Habitats	Blooming Period	Species Presence/ Absence	Occurrence in the Biological Study Area
Mt. Diablo fairy-lantern *Calochortus pulchellus*	–/–/1B	Northeastern San Francisco Bay, Mt Diablo; endemic to Contra Costa and Alameda Counties	On wooded, brushy slopes of chaparral, cismontane woodland, riparian woodland, valley and foothill grassland, to 198 to 762 meters (650–2,600) feet	April–June	A	No suitable habitat present in study area
Hoover's Cryptantha *Cryptantha hooveri*	–/–/1B	Northern and central San Joaquin Valley; Alameda, Contra Costa, Madera, Merced, San Joaquin, and Stanislaus Counties	Coarse sandy soil in grassland	April–May	A	No suitable habitat present in study area
Round-leaved filaree *Erodium macrophyllum*	–/–/2	Sacramento Valley, northern San Joaquin Valley, Central Western California, south coast, and northern Channel Islands (Santa Cruz Island)	Open sites, dry grasslands, and shrublands below 1,219 meters (4,000 feet)	March–May	A	No suitable habitat present in study area
Diamond-petaled California poppy *Eschscholzia rhombipetala*	SC/–/1B	Interior foothills of South Coast Ranges from Contra Costa to Stanislaus Counties; Carrizo Plain in San Luis Obispo County	Grassland, chenopod scrub, on clay soils, where grass cover is sparse enough to allow growth of low annuals	March–April	A	No suitable habitat present in study area
Fragrant fritillary *Fritillaria liliacea*	SC/–/1B	Coast Ranges from Marin to San Benito Counties	Adobe soils of interior foothills, coastal prairie, coastal scrub, annual grassland, often on serpentinite, below 411 meters (1,350 feet)	February–April	A	No suitable habitat present in study area
Carquinez goldenbush *Isocoma arguta*	SC/–/1B	Deltaic Sacramento Valley, Suisun Slough, Contra Costa and Solano Counties	Annual grassland on alkaline soils and flats, generally below 21 meters (70 feet)	August–December	A	No suitable habitat present in study area

Common and Scientific Names	Status[a] Federal/ State/CNPS	Distribution	Preferred Habitats	Blooming Period	Species Presence/ Absence	Occurrence in the Biological Study Area
Showy madia *Madia radiata*	–/–/1B	Scattered populations in the interior foothills of the South Coast Ranges; Contra Costa, Fresno, Kings, Kern, Monterey, Santa Barbara, San Benito, San Joaquin, and San Luis Obispo Counties	Oak woodland, grassland, slopes below 914 meters (3,000 feet)	March–May	A	No suitable habitat present in study area
Rayless ragwort *Senecio aphanactis*	–/–/2	Scattered locations in central western and southwestern California, from Alameda to San Diego Counties	Oak woodland, coastal scrub, open sandy or rocky areas, on alkaline soils; 15 to 800 meters (50–2,625 feet)	January–April	A	No suitable habitat present in study area
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	–/–/1A	Historically known from the northwest San Joaquin Valley and adjacent Coast Range foothills	Grasslands in alkaline hills below 457 meters (1,500 feet)	March–April	A	No suitable habitat present in study area

Notes:
* = Extirpated from this county.
This table does not include any special-status plant species that occur in habitats not present in the study area (e.g., dunes, vernal pool, marsh).

[a] Status explanations:

Federal
E = listed as endangered under the federal Endangered Species Act.
SC = species of special concern.
– = No status definition.

State
E = listed as endangered under the California Endangered Species Act.
– = No status definition.

California Native Plant Society
1A = List 1A species: presumed extinct in California.
1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.

Table BIO-2. Sensitive Wildlife Species Identified Prior to the Field Survey as Having the Potential to Occur in the Study Area

Common and Scientific Name	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
California horned lizard *Phrynosoma coronatum frontale*	SC/SSC	Sacramento Valley, including foothills, south to southern California; Coast Ranges south of Sonoma County; below 1,219 meters (4,000 feet) in northern California	Grasslands, brushlands, woodlands, and open coniferous forest with sandy or loose soil; requires abundant ant colonies for foraging	None; suitable habitat is not present
Curved-foot hygrotus diving beetle *Hygrotus curvipes*	SC/–	Kellogg Creek watershed, one site near Oakley, and several sites in Contra Costa and Alameda Counties	Aquatic; Small seasonal pools and wetlands and small pools left in dry creek beds, associated with alkaline-tolerant vegetation	None; suitable habitat is not present
Ferruginous hawk *Buteo regalis*	SC/SSC	Does not nest in California; winter visitor along coast from Sonoma to San Diego Counties, east to Sierra Nevada foothills and southeastern deserts, the Inyo-White Mountains, the plains east of the Cascade Range, and Siskiyou County	Open terrain in plains and foothills where ground squirrels and other prey are available	None; suitable habitat is not present
Loggerhead shrike *Lanius ludovicianus*	–/SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	None; suitable habitat is not present
Long-billed curlew *Numenius americanus*	–/SSC	Nests in northeastern California in Modoc, Siskiyou, and Lassen Counties; winters along the coast and in interior valleys west of Sierra Nevada	Nests in high-elevation grasslands adjacent to lakes or marshes; during migration and in winter frequents coastal beaches and mudflats and interior grasslands and agricultural fields	None; suitable habitat is not present
Longhorn fairy shrimp *Branchinecta longiantenna*	E/–	Eastern margin of central Coast Ranges from Contra Costa to San Luis Obispo Counties; disjunct population in Madera County	Small, clear pools in sandstone rock outcrops of clear to moderately turbid clay- or grass-bottomed pools	None; suitable habitat is not present
Molestan blister beetle *Lytta molesta*	SC/–	San Joaquin Valley from Contra Costa to Tulare and Kern Counties	Feeds on flowers in the summer and fall, mostly composites	None; suitable habitat is not present

Common and Scientific Name	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
San Joaquin kit fox *Vulpes macrotis mutica*	E/T	San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties from Kern to Contra Costa Counties	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	None; suitable habitat is not present
San Joaquin whipsnake *Masticophis flagellum ruddocki*	SC/SSC	From Colusa County in the Sacramento Valley south to the grapevine in the San Joaquin Valley and westward into the inner Coast Ranges; an isolated population occurs at Sutter Buttes; known elevational range 20 to 914 meters (65–3,000 feet)	Open, dry, vegetative associations with little or no tree cover; occurs in valley grassland and saltbush scrub associations; often in association with mammal burrows	None; suitable habitat is not present
Silvery legless lizard *Anniella pulchra pulchra*	SC/SSC	Along Coast, Transverse, and Peninsular Ranges from Contra Costa to San Diego Counties with spotty occurrences in San Joaquin Valley	Habitats with loose soil for burrowing or thick duff or leaf litter; often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas	None; suitable habitat is not present
Swainson's hawk *Buteo swainsoni*	–/T	Lower Sacramento and San Joaquin Valleys, Klamath Basin, and Butte Valley; highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields	None; suitable habitat is not present
Tricolored blackbird *Agelaius tricolor*	SC/SSC	Permanent resident in Central Valley from Butte to Kern Counties; breeds at scattered coastal locations from Marin to San Diego Counties and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony	None; suitable habitat is not present
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/–	Streamside habitats below 914 meters (3,000 feet) throughout Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant	None; no potential habitat (elderberry shrubs [*Sambucus* sp.]) observed in study area

Common and Scientific Name	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Vernal pool fairy shrimp *Branchinecta lynchi*	T/–	Central Valley, central and south Coast Ranges from Tehama to Santa Barbara Counties; isol. pops. in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools	None; suitable habitat is not present
Vernal pool tadpole shrimp *Lepidurus packardi*	E/–	Shasta to Merced Counties	Vernal pools and ephemeral stock ponds	None; suitable habitat is not present
Western burrowing owl *Athene cunicularia hypugea*	SC/SSC	Lowlands throughout California, including Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows	None; suitable habitat is not present
White-faced ibis (rookery site) Plegadis chihi	SC/SSC	Resident and winter populations on Salton Sea and in isolated areas in Imperial, San Diego, Ventura, and Fresno Counties; breeds - Honey Lake in Lassen County, -Mendota Wildlife Management Area in Fresno County, and near Woodland in Yolo County	Prefers freshwater marshes with tules, cattails, and rushes, but may nest in trees and forage in flooded agricultural fields, especially flooded rice fields	None; suitable habitat is not present
White-tailed kite *Elanus leucurus*	–/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Low; grasslands in study area provide a small amount of foraging habitat

Status explanations:

Federal

E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
SC = species of concern; species for which existing information indicates it may warrant listing but for which substantial biological information to support a proposed rule is lacking.
– = no listing.

State

E = listed as endangered under the California Endangered Species Act. T = listed as threatened under the California Endangered Species Act.
FP = fully protected under the California Fish and Game Code. SSC = species of special concern in California.
– = no listing.

Field Surveys

The biological study area is shown in Figure 3-1. An additional 76-meter-wide (250-foot-wide) survey corridor was evaluated in open annual grassland along Main Street that has the potential to contain seasonal wetland habitat. The biological team conducted an initial field visit on September 22, 2004, to evaluate existing conditions. During this field visit, the biological team conducted a combination of walking and driving surveys. A subsequent confirmation field visit was conducted on August 21, 2010. These surveys focused on the following objectives:

- characterizing biological communities and their associated wildlife habitat uses;
- determining whether the study area contains suitable habitat for sensitive species listed in Tables BIO-1 and BIO-2, particularly sensitive plants that would not have been identifiable during the September 22, 2004 field surveys;
- assessing trees adjacent to the study area and determining whether they currently support or could support raptor nests; and
- determining if there are any wetlands, drainages, or other water features that could be considered potential waters of the United States and regulated by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act.

No limitations that may influence results were identified during the field survey.

Following the field surveys conducted on September 22, 2004, the biological team determined that protocol-level studies, including a wetland delineation, were unnecessary because the study area does not contain suitable habitat for sensitive species (other than non-sensitive migratory birds and nesting raptors) and does not contain any areas that would be considered waters of the United States. No changed habitat conditions were identified during the August 21, 2010 site visit relative to the conditions identified in 2004. There are no waterways in the study area that would provide suitable habitat for fisheries resources; accordingly, fisheries studies were determined to be unnecessary.

Waters of the United States

Waters of the United States is an encompassing term used for areas that fall under federal jurisdiction under Section 404 of the Clean Water Act. Waters of the United States are categorized as either wetlands or other waters of the United States. These terms are defined below.

Wetlands

Wetlands are defined as areas that are inundated or saturated by surface water or groundwater 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 CFR 328.3[b], 40 CFR 230.3). To fall under federal

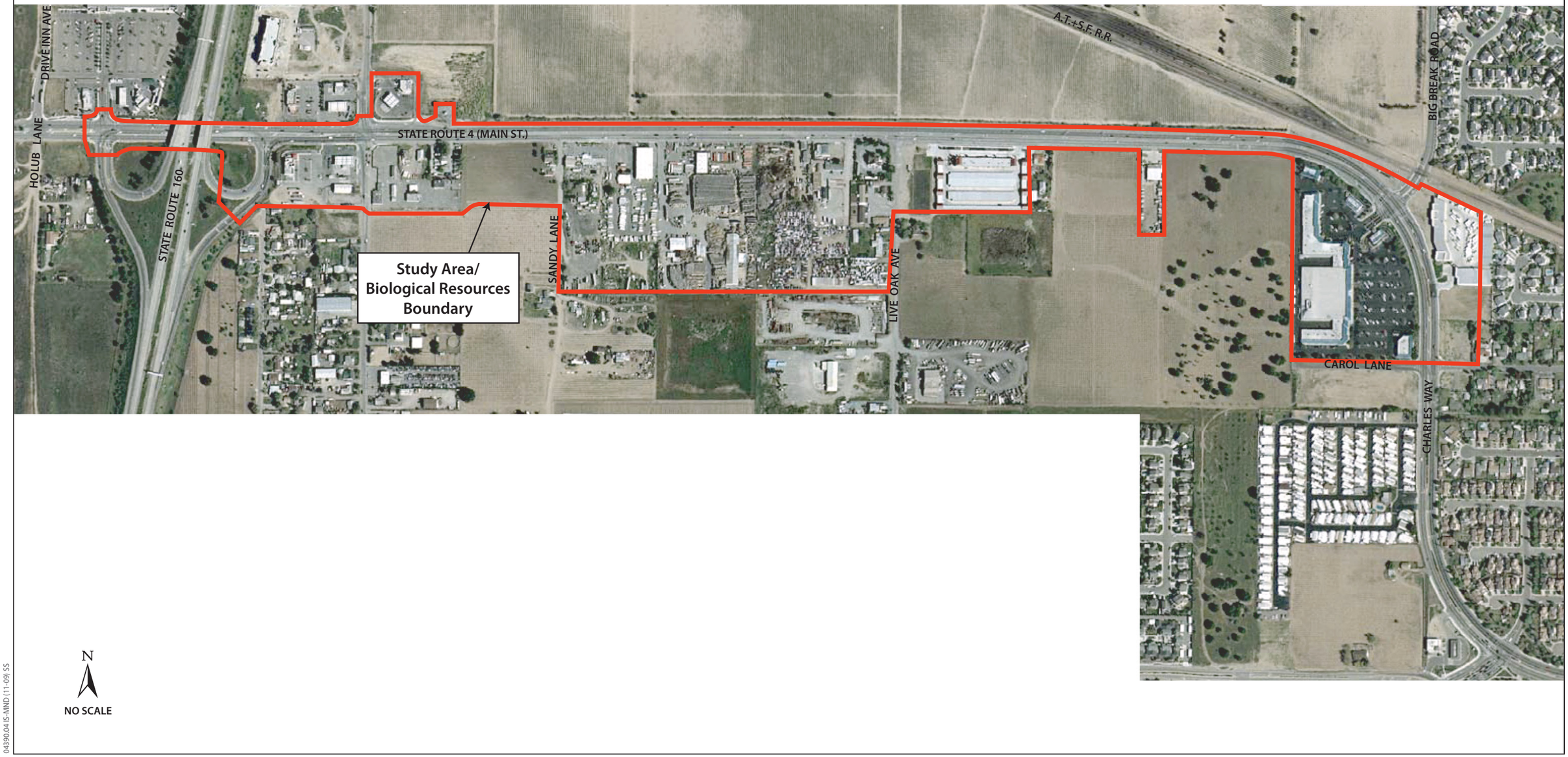

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Figure 3-1
Study Area Boundary

jurisdiction, a wetland must support positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology, as defined in the *Corps of Engineers Wetlands Delineation Manual* (1987).

There are no wetlands located in the study area.

Other Waters of the United States

Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high water mark but lack positive indicators for one or more of the three wetland characteristics (33 CFR 328.4). The term *ordinary high water mark* refers to the "line on the shore established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas" (51 FR 41250, Section 328.3[e]).

There are no other waters of the United States located in the study area.

Waters of the State

Waters of the State include all surface water or groundwater, including saline waters, within the boundaries of the state of California [Water Code §13050(e)]. All waters of the United States within the jurisdiction of the state of California are waters of the state, but waters of the state also includes isolated water bodies and wetlands that do not meet the definition of waters of the United States. In general, waters that are only state waters (and not waters of the United States) include water bodies and wetlands that are not connected with or have a significant nexus with traditionally navigable waters (as defined by the federal Clean Water Act).

California's Porter-Cologne Water Quality Control Act requires "[a]ny person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state" to file a "report of waste discharge" with the RWQCB [Water Code § 13260(a)(1)]. The Board then must issue a permit (waste discharge requirements or WDRs) implementing "any relevant water quality control plans" and taking into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisances [Water Code § 13263].

There are no waters of State located in the study area.

Biological Communities

The communities within the project area are nonnative annual grassland, agricultural fields, and developed areas. The following sections describe each community type and associated wildlife.

Ruderal Vegetation. Nonnative ruderal species dominate the undeveloped habitat type in the study area. This habitat type occurs along the edge of Main Street, within the SR 160 cloverleaf, and within fallow agricultural fields in the study area. The species composition of this community varies depending on the extent of disturbance and land use practices. In general, ruderal vegetation includes weedy forbs, including Bermuda grass, ripgut brome, hare barley, wild oats, gumplant, jimson weed, telegraph weed, pig weed, yellow star-thistle, and red-stem filaree. Scattered ornamental trees and shrubs also occur in some portions of the study area and include eucalyptus, olive, walnut, oleander, and juniper. The ruderal vegetation in the study area provides foraging habitat and cover for many wildlife species. Wide-ranging animals, such as turkey vultures, red-tailed hawks, and coyotes, are common in the area. Mammals typically found in annual grassland include California vole, black-tailed hare, California ground squirrel, and valley pocket gopher. Western meadowlark, house finch, turkey vulture, and red-tailed hawk were observed during the field survey. Gopher snake, common kingsnake, and western fence lizard probably occur in the grassland area.

Agricultural Fields. Vineyards occur on the south side of Main Street in the study area and north of the study area. This habitat provides limited value to wildlife species. Birds, such as brewer's blackbird (*Euphagus cyanocephalus*) and European starling (*Sturnus vulgarism*) will forage in vineyards, but vineyards do not provide nesting habitat for these species.

Developed/Graded Areas. Developed/graded areas include hard cape surfaces such as driveways and paved parking areas, and landscaping such as lawns and perimeter plantings that surround various commercial and residential developments along the project corridor. Vegetation in these areas is characterized by a mixture of landscaped ornamental plants, planted trees, and ruderal species that typically colonize recently disturbed or graded areas. The developed areas of the study area provide low habitat value for native wildlife species. Typical wildlife species that occur in these areas are those that have adapted to an urban landscape, including house sparrow (*Passer domestics*), European starling, and Brewer's blackbird, as well as Virginia opossum (*Didelphis Virginian*) and raccoon (*Procom lot or*).

Special-Status Species and Their Habitats

Special-status species and their habitats were identified by reviewing the California Natural Diversity Database (CNDDB), and conducting reconnaissance-level field surveys. Based on the species list and the field survey it was determined that there is no suitable habitat for any of the special-status plants or animals.

Special-Status Plant Species

A total of 40 sensitive plant species were identified in the CNDDB list (2004) and USFWS's species list as potentially occurring in the project region. Most of these species are associated with wetlands, dunes, and other types of habitats that are not present in the study area. After further review of these lists during the pre-field evaluation, it was determined that 15 of the 40 sensitive plants have some level of potential to occur in nonnative annual grasslands in the study area. These species are listed in Table BIO-1.

According to the CNDDB (2004), no sensitive plants have been recorded in or adjacent to the study area. The nearest recorded occurrence of a sensitive plant population is the Antioch dunes evening primrose (*Oenothera deltoides* ssp. *howellii*), a species listed as endangered under both ESA and CESA. This occurrence was identified east of the study area and north of the Santa Fe railroad line (*California Natural Diversity Database* 2004). This species is associated with dune habitat, which does not exist in the study area.

It was determined after the September 2004 field survey that none of the sensitive plant species listed in Table BIO-1 have the potential to occur in the study area. This determination is based on the lack of suitable, undisturbed habitat; lack of nearby recorded occurrences; and the disturbed and developed conditions observed in the study area.

A subsequent search of the CNDDB and USFWS lists in 2010 did not identify any additional sensitive plant species with the potential to occur in the study area (*California Natural Diversity Database* 2010; *U.S. Fish and Wildlife Service Species List* 2010).

Special-Status Wildlife Species

A total of 56 sensitive wildlife species were identified in the CNDDB list (2004) and USFWS's species list as potentially occurring in the project region. Most of these species are associated with wetlands, dunes, and other types of habitats that are not present in the study area. After further review of these lists during the pre-field evaluation, it was determined that 18 of the 56 sensitive wildlife species have some level of potential to occur in nonnative annual grasslands in the study area. These species are listed in Table BIO-2.

According to the CNDDB (2004), no sensitive wildlife species have been recorded in or adjacent to the study area. The nearest recorded sensitive wildlife occurrence is for silvery legless lizard (*Anniella pulchra pulchra)*, a federal species of concern and a California species of special concern. One occurrence of this species was reported east of the study area and north of the Santa Fe railroad line (California Natural Diversity Database 2004). This species is associated with dune habitat, which does not exist in the study area. Because of the lack of suitable, undisturbed habitat; lack of nearby recorded occurrences; and the disturbed and developed conditions observed in the study area, it was determined that none of the sensitive wildlife species listed in BIO-2 have the potential to occur in the study area.

A subsequent search of the CNDDB and USFWS lists in 2010 did not identify any additional sensitive wildlife species with the potential to occur in the study area (*California Natural Diversity Database* 2010; *U.S. Fish and Wildlife Service Species List* 2010).

Non-sensitive migratory birds, including raptors, have the potential to nest in the study area. Although these species are not considered special-status wildlife species, their occupied nests and eggs are protected under Sections 3503 and 3503.5 of the California Fish and Game Code as well as the Migratory Bird Treaty Act (MBTA).

Discussion of Impacts

The proposed project would result in the disturbance or loss of a linear strip of nonnative annual grassland along Main Street. This habitat is heavily disturbed, supports a low diversity of species, and is dominated by weedy, nonnative species. The nonnative annual grassland does not support habitat for sensitive plant or wildlife species.

Additional impacts on developed, vineyard, and landscaped areas are not addressed in this section because these areas do not support any biological functions or values.

The following impact analysis is based on the most current project information and assumes that all project activities (including the use of material and vehicle staging areas) would occur within the designated study area.

a. Would the project 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?

Less than significant impact. Construction of the proposed project could result in the loss of active nests of migratory birds, including raptors, within the study area. Potential nesting habitat occurs in trees within and adjacent to the study area. The loss of an active nest would be in conflict with Sections 3503 and 3503.5 of the California Fish and Game Code and the Migratory Bird Treaty Act. However, as described in Chapter 2, the project includes mandatory standard construction contract requirements to avoid removal of active non-sensitive migratory bird and raptor nests that may be directly affected by project activities..

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

No impact. The proposed project does not involve construction in any riparian areas, or other sensitive habitat types. There would be no impact.

c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not

limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?

No impact. The proposed project does not involve any federally protected wetlands. There would be no impact.

d. Would the project 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?

No impact. The project site does not include any waterbodies, migratory wildlife corridors, or native wildlife nursery sites. There would be no impact.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact. The proposed project does not involve removal of any heritage trees. There would be no impact.

f. Would the project conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

No impact. The proposed project area is within the inventory area of the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP), which provides for comprehensive species, wetlands, and ecosystem conservation and contributes to the recovery of endangered species in eastern Contra Costa County. The HCP/NCCP was approved in August 2007 and the city of Oakley approved implementing Ordinance No. 19-07 on November 13, 2007. All development activities within the inventory area and the city of Oakley are automatically subject to HCP/NCCP compliance. Compliance with the HCP/NCCP enables projects to receive authorization to impact or "take" endangered species when such take is incidental to an otherwise lawful activity (incidental take coverage) and also requires covered projects to adhere to specific avoidance, minimization, and mitigation measures. Projects that would not result in the take of endangered species (typically, those project that are entirely within areas mapped as urban, turf, landfill or aqueduct land cover in the HCP/NCCP) are exempt from complying with the HCP/NCCP.

Analysis of project impacts indicates that the project is entirely or almost entirely within an area mapped as urban land cover in the HCP/NCCP and may be exempt from compliance with the HCP/NCCP. Furthermore, as noted in "Setting" above, the study area does not contain suitable habitat for sensitive species other than non-sensitive migratory birds and nesting raptors; therefore, it is not anticipated that the project would result in incidental take of any covered species. Although no impacts to non-urban areas or covered species are expected, the City is responsible for verifying the extent of the project limits relative to the adjacent non-urban areas based on the final design drawings. In the event that the project is determined not to be exempt from the HCCP/NCCP, the City would be expected to implement the avoidance, minimization measures and pay mitigation fees as set forth in the HCP/NCCP. Regardless of the project's effects, if any, on adjacent non-urban areas or covered species, the project would not be in conflict with

the HCP/NCCP. Therefore, no impact is anticipated with regard to the project's conformance with the provisions of the HCP/NCCP.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
V.	**CULTURAL RESOURCES.**				
	Would the project:				
a.	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	❑	❑	❑	■
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 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?	❑	❑	❑	■

Setting

This discussion is based on the cultural resources study report entitled *City of Oakley Main Street Widening Project Historical Resources Compliance Report* (HRCR) (2005) and a supplemental memorandum (*City of Oakley Main Street Widening Project, Cultural Resources Memorandum* 2010). The findings of which are incorporated by reference in this document.

Methodology

A team of technical specialists conducted a cultural resources inventory of the project area. The methods used to identify cultural resources in the project area consisted of a literature review and records search, historic map research, consultation with Native Americans and a cultural resources survey of the project area. Information obtained as a result of the literature review is presented in the prehistoric, ethnographic, and historic context summaries of this section.

Twenty parcels were identified in the study area, nine of which contained buildings or structures that were constructed in or before 1955 and were therefore evaluated for California Register of Historical Resources (CRHR) eligibility. After evaluating the properties in accordance with State CEQA Guidelines Section 15064.5 (a)(2–3), using criteria outlined in Public Resources Code Section 5024.1, the technical specialists have concluded that one of the remaining resources appears to be historically significant for the purposes of CEQA. The building appears to meet CRHR Criterion 3 for its

architectural merit on a local level and is therefore a historical resource for the purposes of CEQA.

Prehistoric Context

Although only minimal archaeological evidence exists of human use of the Contra Costa County area during the late Pleistocene and early Holocene Epochs (12,000 to 6000 B.C.), this is likely a result of missing information in the archaeological record, rather than actual lack of human use of this area. Most sites from the Pleistocene and Holocene Epochs are deeply buried in accumulated gravels and silts or have eroded away.

Three general time periods of prehistory have been developed and followed for several decades and was developed by (*Early Cultures of the North Coast Ranges, California* 1973). The Windmiller Pattern, the period from 6000 to 2000 B.C. is referred to as the Early Horizon in archaeology. During this time, the population used a generalized subsistence strategy of a highly mobile population of hunters and gatherers that is thought to have been replaced by a more specialized strategy as time passed. The Berkeley Pattern or the Middle Horizon, dating from approximately 2000 B.C. to A.D. 500, differs from the Windmiller Pattern primarily in the increased use of the acorn as a dietary staple of the population. This is reflected in the numerous and varied mortars and pestles (grinding implements) that were created during this time (*California Archaeology* 1984). The Augustine Pattern, A.D. 500 and the arrival of the Spanish explorers in central California is named the Late Horizon. The predominant pattern during this period, is characterized by large village sites, increasing evidence of acorn and nut processing, the introduction of the bow and arrow, and the use of clam shell disc beads as the primary medium of exchange.

Ethnographic Context

This ethnographic context is based primarily on Levy's chapter in Volume 8 of Heizer's *Handbook of the North American Indians* (1978). The earliest known inhabitants of the project area were the Eastern Miwok. The Bay Miwok group that once inhabited the project area was the Chupcan, according to Milliken's *A Time of Little Choice* (1995). The Chupcan who inhabited the lower Diablo Valley were occasionally referred to as Yacumusmos in the records from Mission San Francisco. The main village of the Chupcan was located along lower Pacheco Creek near present-day Concord in Contra Costa County and was known as Monte del Diablo (*A Time of Little Choice* 1995). Based on baptismal records for Mission San Francisco, approximately 146 Chupcan were sent to Mission San Francisco and baptized between 1810 and 1811, where they intermarried with members of the Suisun (*A Time of Little Choice* 1995). Although this early contact with settlers was profoundly damaging to the Miwok population because of both disease and violent actions, the Miwok people have survived and maintain strong communities.

Historical Overview

Contra Costa County

The study area is located in Oakley in Contra Costa County. Contra Costa County is generally bounded by San Pablo and Suisun Bays on the north; the San Leandro Hills on the west; Sacramento-San Joaquin Delta (Delta) islands on the east; and San Joaquin County to the south. Contra Costa County is one of the original 27 counties created in California after it became a state in 1850. Martinez serves as the County seat (*Historic Spots in California* 1990:50). The County contains a handful of incorporated cities, including Pittsburg, Antioch, and Brentwood, as well as several smaller areas such as West Pittsburg, Oakley, Bethel Island, Knightsen, and Byron.

As early as 1772, Pedro Fages led an expedition through the County in search of a route to Point Reyes. The party reached the Delta and glimpsed mountains of the Sierra Nevada before turning back. Shortly thereafter, in spring 1776, Father Pedro Font mapped the route of Juan Bautista de Anza's exploration party. Attempting to follow the watercourses and explore in the direction of the Sierra Nevada, the party reached a point just south of Bethany before deciding to return to Monterey. Except for Mexican settlement, the County remained largely uninhabited by European settlers until after the Gold Rush (*Historic Spots in California* 1990:50; *History of Contra Costa County* 1940:7).

Contra Costa County's main sources of wealth in the nineteenth century were mining and agriculture. During the Mexican rancho period of the early nineteenth century, land in the vicinity of the study area was primarily used for livestock raising and hides and tallow were the major trade exports. With little irrigation, agriculture was of little value. By the late part of the century, however, as European settlers arrived in the area, agriculture and mining gained prominence. After the Gold Rush, producers of food, tools, and other necessities for miners and other industries became the chief occupation of people throughout the greater northern California region (*History of Contra Costa County* 1940:7).

City of Oakley

The city of Oakley is situated in eastern Contra Costa County near the Delta. Oakley is located in the heart of one of the most productive farming sections of Contra Costa County. SR 4 is the major artery through the City. It fronts reclaimed land where hundreds of acres of orchards and crops are raised (*The History of Contra Costa County, California* 1926:172).

The area remained a largely unsettled land of chaparral and live oak until the late nineteenth century, inhabited only by wildlife. By the turn of the twentieth century, European settlers had gradually arrived in the area and settled on the land. With the help of Chinese laborers, these early settlers reclaimed portions of the nearby Delta and waterways and planted thousands of acres of orchards and vineyards, which flourished in the area's sandy soil (*California's Contra Costa County* 1986:209).

As early as 1885, the families such as the Newhalls, Mintas, Giovanetties, and Fieckhamers settled in the area. The region gradually flourished, and by the turn of the twentieth century land sold for as much as $5 per acre in 10- to 40-acre plots. Two settlers, James O'Hara and R.C. Marsh, contributed greatly to the early development of the Oakley area. In 1887, O'Hara purchased and cleared hundreds of acres where he planted almond and fruit trees. By 1912, he owned 7,000 acres in the vicinity of Oakley. Marsh subdivided much of his land and sold individual parcels to new settlers. He also donated 12 acres to develop Oakley Township. Within the township, he laid out and named the first few streets: Main, Acme, Ruby, Star, and Home. During this period, the Peabody and Giovanettie families were located in the study area. On September 9, 1898, a post office was established with Marsh serving as the first postmaster (*Official map of Contra Costa County, California* 1885, 1908).

The township deeded right-of-way to the Atchison, Topeka and Santa Fe Railroad (ATSF) to lay at least a 0.8 kilometer (0.5-mile) spur within the new settlement, with the understanding that the railroad erect a temporary shelter and, when needed, a permanent depot and freight buildings. The railroad agreed, and on July 1, 1900, the first passenger train of the transcontinental railroad arrived in Oakley (*The History of Contra Costa County, California* 1926:172).

Other early settlers to the area included Frank Silva, Jerry O'Meara, Joseph Jesse, Henry Jannssee, and Arnold Van Kathoven (*California's Contra Costa County* 1986:209). Soon, stores, a garage, machine shops, hotel, community hall, three packing plants, and a bank were in the town. J.A. Jesse operated the first store, and J.M. Augusto was associated with the first blacksmith shop, where he also sold farm machinery. His brother Joseph established a lumberyard. In 1908, the S. Dal Porto family opened the first hotel in the settlement. In addition, the family built a town hall, which served as Oakley's social center. In 1909, O'Hara platted the first addition to the town. R.C. Marsh added additional land to the settlement. Also, during this period, the southwestern portion of the study area was purchased by the Peabody family and subdivided into individual parcels making up the Peabody tract (*The History of Contra Costa County, California* 1926:172; *Official Map of Contra Costa County, California* 1908).

During this period, several churches and a school were constructed. Live Oak School served as the original school during this period. It was followed by Iron House School, located 2.5 kilometers (1.5 miles) to the east. The township constructed a third school in 1904, which served the community until 1923, when a larger facility (located in the study area) designed for 200 students was built. By 1916, a County branch library and the Oakley Women's Club were established (*California's Contra Costa County* 1986:209).

Area fruit and vegetable wholesalers built packing sheds along the ATSF spur to hold produce. The goods were shipped by the carload to the east coast. Crops included celery, asparagus, tomatoes, apricots, and wine grapes. During this time, the California Almond Growers Association established a processing plant and warehouse for almonds. After it was established, nearly all almond growers in Oakley joined the cooperative (*California's Contra Costa County* 1986:210; *The History of Contra Costa County, California* 1926).

The 1920s saw more businesses open in Oakley, as well as the installation of streetlights and improvement of roads. A fire during this time destroyed much of the town, and a

breech in a levee north of town claimed 2.5 acres of farmland. The land was not reclaimed from the river, and the area became known as Big Break.

Improvements in the form of the installation of street signs, dial telephones, and natural gas, and the formation of a sewer district took place throughout the 1930s and 1940s. Following World War II, the City authorized the construction of a sewer line, officially unified schools in the area, and established a chamber of commerce. Agriculture in the area continued to flourish; crops included tomatoes, apricots, walnuts, almonds, asparagus, grapes, and berries, as well as cereals, hay, and grain (*The Story of Contra Costa* 1936).

As agriculture continued to boom in the area, refrigerated trucks replaced old produce railcars and they picked up crated vegetables, bypassing the sheds in town. As long-distance refrigerated trucking became more popular, the railroad's importance in the town diminished. In time, the ATSF abandoned its spur track in Oakley (*California's Contra Costa County* 1986:211).

As was common throughout the United States during the post–World War II period, the Oakley area experienced an increase in population and development as more families moved to the area. Many of the area's large agricultural properties were subdivided into smaller parcels ranging in size from roughly 2 to 20 acres, appropriate for single-family residences and small businesses (*Map of the Lands from Antioch and East* 1951).

In 1955, the DuPont Company purchased 552 acres of land just east of Antioch in the vicinity of Oakley to establish a Freon manufacturing plant. For more than 20 years, DuPont remained a major employer in the Antioch-Oakley area, employing nearly 600 people during its peak period. The plant closed by 1998 partly because of increasing environmental regulations.

During the latter part of the twentieth century, Oakley grew from a small rural community of roughly 2,000 to 3,000 residents in 1960 to more than 25,000 by 2000. Over this period, the community continued to retain its agricultural heritage with vineyards, fruit and nut orchards. Local produce included almonds, walnuts, apricots, and olives. Additionally, many large dairies and cattle ranches operated in the surrounding areas. Residential and commercial development began its latest increases in the 1970s and subsided slightly in the 1980s. In 1998, the city of Oakley was officially incorporated. Today, Oakley is a "bedroom community" of the greater San Francisco Bay Area, with a current population of 25,619; grapes now provide the primary agricultural product of the region (*History of a Desert Town* 2000).

Description of Cultural Resources

Following Caltrans' guidelines for inventorying architectural properties, the historical significance of buildings, structures, and objects in the study area that predate 1960 were evaluated. The HRCR (2005a) presents the California Department of Parks and Recreation Historic Resource Inventory Forms (DPR 523 forms)—primary records, building/structure/object records, and linear feature records—for the evaluated properties.

A supplemental memo reviewed two additional resources (*City of Oakley Main Street Widening Project, Cultural Resources Memorandum* 2010).

The project area's architecture is characterized by a combination of mostly small commercial and industrial enterprises, some single-family residences, and a church. Overall, the area is semi-rural, with agricultural fields interspersed with new development consisting of strip malls, fast-food restaurants, and service stations. Older (circa pre-1960) homes and businesses are also scattered along SR 4 and side streets.

Land holdings along the corridor vary in size from small suburban parcels to 100-acre or larger agricultural parcels used for raising crops. Age ranges for the architectural examples along the corridor span from the early to mid-twentieth century, with a greater concentration of modern development at the west and east ends of SR 4.

Twenty-four properties were identified in the study area. Two bridges carrying SR 160 are located at the western end of the alignment were previously evaluated for National Register of Historic Places (NRHP) significance by Caltrans, but did not meet the 50 year age requirement. None of the remaining properties within the project area have been previously determined eligible for listing in the NRHP or considered historical resources under CEQA. Nine of the properties were formally evaluated under this study for consideration as historical resources under CEQA. Thirteen of the properties contained buildings and/or structures that are less than 50 years old and thus were not evaluated. These 13 properties, constructed after 1960, are exempt from evaluation pursuant to Stipulation VIII.C.1 and Attachment 4 (Property Types Exempt from Evaluation) of the 2004 Programmatic Agreement.

Findings

Two bridges within the project area (28-0011L and 28-0011R) were previously evaluated for eligibility to the NRHP and did not meet the age requirement for significance. No properties constructed in or before 1955 had been evaluated previously. The nine properties in the project area constructed in or before 1955 were evaluated as part of this study. Table CUL-1 summarizes the nine evaluated properties, which are listed by Assessor's Parcel Number (APN).

Table CUL-1. Evaluated Properties in the Study Area

APN	Street Address	Year Built	CRHR Status
[a] 037-050-014	5400 Neroly Road	circa 1940s	Not eligible
[a] 037-050-013	1033 Main Street	1935	Not eligible
[a] 037-050-011	1059 Main Street	1949	Not eligible
[a] 037-050-015	487 Sandy Lane	1948	Not eligible
[a] 037-090-017	1371 Main Street	circa 1920s	Not eligible
[a] 037-090-012	1403 Main Street	1903	Not eligible
[b]037-100-030	1685 Main Street	1955	Not eligible
[b]037-100-029	1683 Main Street	1910	Not Eligible
[a] 037-090-011	5471 Live Oak Avenue	1903	Eligible

Sources: [a] *City of Oakley Main Street Widening Project Historical Resources Evaluation Report* 2005; [b] *City of Oakley Main Street Widening Project, Cultural Resources Memorandum* 2010.

No properties in the study area have been listed or determined eligible for listing in the NRHP. One of the properties (5471 Live Oak Avenue) appears to meet the criteria for listing in the CRHR and therefore appears to be a historical resource for the purposes of CEQA. None of the remaining buildings or structures built in or before 1960 have the historical or architectural associations required to meet the eligibility criteria or appear to be historical resources for the purposes of CEQA. The rationale for the findings of eligibility can be found on the DPR 523 forms in the HRCR (*City of Oakley Main Street Widening Project, Cultural Resources Memorandum* 2005a) and the supplemental memorandum (*City of Oakley Main Street Widening Project, Cultural Resources Memorandum* 2010).

Nine properties identified in the study area contained buildings or structures built in or before 1955 and are categorized as follows:

- Historic properties listed in the NRHP/CRHR: None.
- Historic properties previously determined eligible or not eligible for listing in the NRHP/CRHR: None.
- Properties eligible for the CRHR: One (5471 Live Oak Avenue).
- Properties that appear potentially eligible but for which further study is needed: None.
- Resources evaluated as not eligible for inclusion in the CRHR: Eight properties were evaluated in the study area, none of which appear to meet the criteria for listing in the CRHR. DPR 523 forms for these properties are presented in the HRCR (*City of Oakley Main Street Widening Project, Cultural Resources Memorandum* 2005); two of the resources are evaluated in the supplemental memorandum (*City of Oakley Main Street Widening Project, Cultural Resources Memorandum* 2010).

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No impact. The project area consists of fallow agricultural fields, roads, residences and commercial enterprises. The surrounding land uses are primarily residential and commercial. One potentially historic property was identified in the project area: 5471 Live Oak Avenue. However, the proposed project would not impact those character-defining features of the building or landscape from which the property derives its significance. As such, there would be no impact to historic resources.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No Impact. No known archaeological resources are present within the area of potential effect. While there is always the potential for ground-disturbing activities to unearth buried cultural resources that are not visible on the surface, as described in Chapter 2, the project includes mandatory standard construction contract requirements to stop work in the event of a discovery, evaluate the discovery by a qualified archaeologist, and appropriate treatment of cultural material.

c. Could the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No impact. No unique paleontological resources or geologic features were identified in the project area. There would be no impact.

d. Could the project disturb any human remains, including those interred outside of formal cemeteries?

No Impact. Buried human remains that were not identified during field surveys could be inadvertently unearthed during excavation activities. However, as described in Section 2, the project includes mandatory procedures to comply with state laws pertaining to the discovery of human remains including stopping work near the discovery, contacting the County coroner and coordination with designated Native American representatives if the burial is determined to be of Native American origin.

		Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
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:				
	1. 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.	❑	❑	❑	■
	2. Strong seismic ground shaking?	❑	❑	❑	■
	3. Seismic-related ground failure, including liquefaction?	❑	❑	■	❑
	4. 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 an 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 in areas where sewers are not available for the disposal of wastewater?	❑	❑	❑	■

Setting

Geology and Soils

Topography in the project area is generally level to gently sloping. The regional geologic map compiled by Wagner et al. (*Geologic Map of the San Francisco –San Jose Quadrangle, California* 1991) indicates that the proposed widening of SR4/Main Street between Highway 160 and Big Break Road is underlain by similarly aged alluvial fan deposits consisting of unconsolidated gravel, sand, silt, and clay.

Soils in the project area were mapped by Welch (*Soil Survey of Contra Costa County, California* 1977) during the soil survey of Contra Costa County. The soils derived from the dune deposits in the project area are mapped as Delhi sands, which typically consist of very deep, somewhat excessively drained sandy soils that exhibit little differentiation with depth. Runoff from the Delhi soils mapped within the project area is typically slow to very slow, and the hazard of wind and water erosion is slight.

No unstable slopes or geologic units have been identified in or adjacent to the project area by the California Geological Survey or the USGS.

Seismicity

There are no active faults, potentially active faults, or Alquist-Priolo Earthquake Fault Zones located within an 8-kilometer (five-mile) radius of the project area. However, there are numerous active and potentially active faults located farther to the west and south, including recently active segments of the Concord, Calaveras, and Hayward Faults (*Geologic Map of the San Francisco –San Jose Quadrangle, California* 1991).

In 1996, the California Division of Mines and Geology released *Probabilistic Seismic Hazard Assessment for the State of California* to aid in the assessment of seismic ground shaking hazards in California. The report contains a probabilistic seismic hazard map that depicts the peak horizontal ground acceleration values exceeded in a given region of California at a 10% probability in 50 years (i.e., a 0.2% probability in 1 year). The peak horizontal ground acceleration values depicted on the map represent probabilistic estimates of the ground-shaking intensity likely to occur in a given area as a result of characteristic earthquake events on active faults, and can be used to assess the relative seismic ground shaking hazard for a given region. The probabilistic peak horizontal ground acceleration value assigned to the region of Contra Costa County where the project area is located is approximately 0.4g (where "g" is the acceleration due to gravity). In general terms, this indicates that the project area could be subject to a moderate ground shaking during an earthquake on one of the many active faults that exist in the vicinity of the project area.

The regional liquefaction hazard map published by the Association of Bay Area Governments (*ABAG Liquefaction Maps and Information* 2003) indicates that the project area is located in a region that is moderately susceptible to liquefaction. As described in Chapter 2, a geologist will be required to evaluate the density of the soils in the project

area to determine if the level of susceptibility requires additional action prior to construction.

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving:

1. 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?

No Impact. There are no active faults, potentially active faults, or Alquist-Priolo Earthquake Fault Zones located in the immediate vicinity of the project area. There would be no impact.

2. Strong seismic groundshaking?

No impact. The California Division of Mines and Geology's *Probabilistic Seismic Hazard Assessment for the State of California* (1996) indicates that the project area could be subject to moderate intensity ground shaking during an earthquake on one of the many active faults located in the project region. However, all proposed project facilities would be constructed in accordance with the most recent seismic standards of the Uniform Building Code, which would greatly reduce the potential for substantial structural damage to occur as the result of seismic ground shaking. There would be no impact.

3. Seismic-related ground failure, including liquefaction?

Less than significant impact. The soils liquefaction map (*ABAG Liquefaction Maps and Information* 2003) indicates soils in the area to be moderately susceptible to liquefaction. This impact is expected to be less than significant because, as described in Chapter 2, the project includes mandatory standard construction contract requirements to evaluate soil density in the project area prior to construction. With implementation of these measures, the potential for the project to expose people or structures to potential substantial adverse effects related to liquefaction would be less than significant.

4. Landslides?

No impact. There are no recorded occurrences of landslides within or adjacent to the project area. Implementation of the project would not change this condition. There would be no impact.

b. Result in substantial soil erosion or the loss of topsoil?

Less than significant. The grading, trenching, and other earthwork that would be conducted during construction of the project would result in substantial ground disturbance that would increase the hazard of erosion, and could temporarily increase erosion and sedimentation rates above pre-construction levels. Accelerated erosion and sedimentation resulting from construction-related ground disturbance could result in the loss of appreciable quantities of soil and adversely affect water quality in nearby surface waters. Although there is a potential for the project to cause erosion and loss of topsoil, as described in Chapter 2, the project includes mandatory standard construction contract provisions requiring the contractor to prepare a Storm Water Pollution Prevention Plan (SWPPP) and implement construction site Best Management Practices in compliance with the conditions of the Caltrans NPDES permit. With implementation of these measures, the potential for the project to cause erosion or loss of topsoil would be less than significant.

c. Would the project 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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

No impact. There are no unstable slopes or geologic units located within or adjacent to the project area. Implementation of the project would not change this condition. There would be no impact.

d. Would the project 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?

No impact. The Delhi Sand soil type present in the project area has low clay content and therefore is not an expansive soil. There would be no impact.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

No impact. Implementation of the project would not involve onsite wastewater disposal. There would be no impact.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 emissions of greenhouse gases?	❑	❑	■	❑

Regulatory Framework

Climate Change Regulatory Requirements

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to human activity that include CO_2, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. Assembly Bill 1493 requires the ARBto develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the EPA. The waiver was denied by EPA in December 2007. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. In January 2009, President Obama instructed the EPA to reconsider the prior administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the EPA granted California's waiver request enabling the State to enforce its GHG emissions standards for new motor vehicles, beginning with the current model year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG

emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases. " Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the EPA to regulate GHG as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency* et al., 549 U.S. 497 (2007). The court ruled that GHG does fit within the Clean Air Act's definition of a pollutant, and that the EPA does have the authority to regulate GHG. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)--in the atmosphere threaten the public health and welfare of current and future generations.

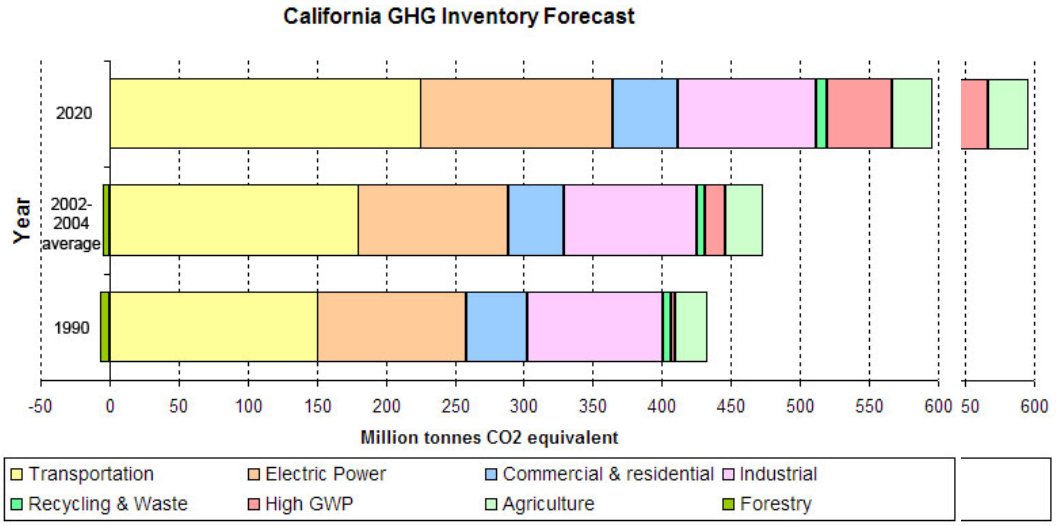
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.

According to *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate change in CEQA Documents* (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(i)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects.

As part of its supporting documentation for the AB 32 Scoping Plan, ARB released an updated version of the GHG inventory for California (2008). Shown below in Figure 3-2 is a graph that shows the total GHG emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

Figure 3-2. California Greenhouse Gas Inventory



Source: *Greenhouse Gas Inventory - 2020 Forecast* 2008.

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation (see Climate Action Program at Caltrans [December 2006]), Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006. This document can be found at: http://www.dot.ca.gov/docs/ClimateReport.pdf

BAAQMD Thresholds

Construction

The BAAQMD guidelines applicable to this project do not contain CEQA guidelines addressing GHG emissions for construction (*BAAQMD CEQA Guidelines* 1999). The District adopted new CEQA guidelines for GHG emissions on June 2, 2010 (*California Environmental Quality Act: Air Quality Guidelines* 2010), but the District has identified that the new guidelines should only be applied to projects that had not commenced their environmental analysis after the adoption date; this project's analysis commenced long before adoption of the new guidelines. Nevertheless, the adopted guidelines do not include a significance threshold for construction GHG emissions and recommends

consideration of construction GHG emissions on a case by case basis (*California Environmental Quality Act: Air Quality Guidelines* 2010).

Operation

The BAAQMD applicable to this project do not currently have CEQA guidelines addressing GHG emissions for operation (*BAAQMD CEQA Guidelines* 1999). The District adopted new CEQA guidelines for GHG emissions on June 2, 2010 (*California Environmental Quality Act: Air Quality Guidelines* 2010). The adopted guidelines include a recommended significance threshold of 1,100 metric tons/year for operational GHG emissions for land use projects (defined as residential, commercial, and industrial projects – excluding industrial stationary sources) but does not state that this threshold is intended for evaluation of transportation projects (*California Environmental Quality Act: Air Quality Guidelines* 2010). Thus, there is no specifically adopted GHG threshold applicable to roadway projects.

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases?

a, b: Less than Significant. GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations.

Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. Table AIR-4 (in Section III., *Air Quality*) presents the construction CO_2 emissions which would be approximately 801 metric tons. As noted above, BAAQMD has not adopted significance thresholds for construction GHG emissions.

Project-level operational emissions were obtained by comparing future with-project emissions to future no-project emissions. Table AIR-5 (in Section III., *Air Quality*) presents a comparison of project emissions to the no-build condition to identify emissions directly attributed to the project. Table AIR-5 indicates that CO_2 emissions would increase slightly under 2035 conditions. These increases are directly attributed to increases in VMT between the no-project and with project conditions. At present, BAAQMD does not have a significance threshold for roadway projects. BAAQMD adopted threshold of 1,100 metric tons of CO_2-equivalent that applies to land use projects (*California Environmental Quality Act: Air Quality Guidelines* 2010).

In absence of quantitative project level thresholds, the determination of significance instead considers whether the project would contribute to California as a whole not being able to meet the required GHG reductions embodied in AB 32 by 2020. Thus, the following discussion presents the context of actions that Caltrans is taking statewide to support AB 32 implementation and promote transportation-related GHG emissions reductions.

Caltrans continues to be actively involved on the Governor's Climate Action Team as ARB works to implement the Governor's Executive Orders and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $238.6 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $100.7 billion in transportation funding through 2016. As shown in Figure 3-3, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

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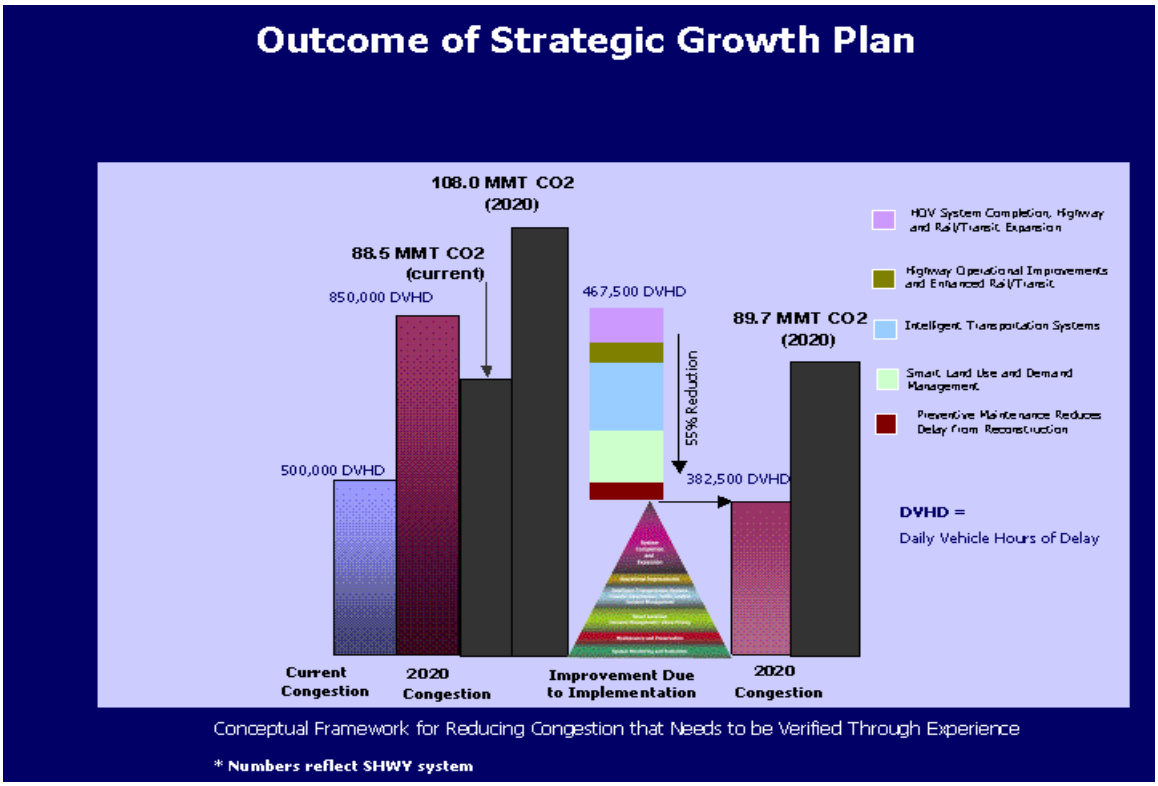
Figure 3-3. Caltrans' Strategic Growth Investment Strategies for Reducing Congestion in California and the Projected Outcome



Source: *Climate Action Program at Caltrans* 2006.

As part of the *Climate Action Program at Caltrans* (December 2006, http://www.dot.ca.gov/docs/ClimateReport.pdf), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by EPA and ARB. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the UC Davis.

Table GHG-1 summarizes Caltrans' and statewide efforts that Caltrans is implementing in order to reduce GHG emissions. For more detailed information about each strategy, please see *Climate Action Program at Caltrans* (2006); it is available at http://www.dot.ca.gov/docs/ClimateReport.pdf.

Table GHG-1. Caltrans' Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.007	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					**2.72**	**18.67**

As presented in Section III., *Air Quality*, Table AIR-4 indicates that construction activities are anticipated to result in approximately 801 metric tons of CO_2, while Table AIR-5 indicates that implementation of the proposed project would result in between approximately 1,606 and 1,737 metric tons of CO_2. The operational emission estimates in Table AIR-5 do not take into account the effect of improved vehicle efficiency (per AB 1493), the ARB adopted Low Carbon Fuel Standard (LCFS), or other measures being pursued by ARB and thus overstate the actual amount of GHG emissions. Given the limited context and intensity of the anticipated emissions associated with implementation of the proposed project, and the broad-ranging efforts of Caltrans to support AB 32 GHG reductions throughout the state, this project is considered less than significant because it

is not expected to hinder the ability of the state to reach the AB-32 reduction goals overall.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

On November 14, 2008, Governor Schwarzenegger signed Executive Order S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. Furthermore Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level affecting safety, maintenance and operational improvements of the system and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding the next five years (through 2013), or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.)

The elevations in the study area range from approximately 6 to 12 meters (20 to 40 feet) above mean sea level. According to the latest estimates of potential sea level rise (*The Impacts of Sea Level Rise on the California Coast* 2009), sea level may rise as much as 1.4 meters by 2100. Thus, the project is located above the high range of sea level rise predicted in the latest studies and would not be subject to coastal flooding as a result.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	❑	❑	■	❑
d.	Be located on a site that 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.	Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	❑	❑	❑	■
f.	Be located within the vicinity of a private airstrip and 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?	❑	❑	❑	■

Methodology

The discussion of potential soil and groundwater contamination hazards in the project area is based on information from an initial Phase I Environmental Site Assessment (Phase I ESA) and Phase I ESA Update completed for the proposed project by the hazardous materials specialist in December 2004 and July 2009, respectively (*Phase I Environmental Site Assessment* 2004, *Phase I Environmental Site Assessment Update* 2009). The initial Phase I ESA and Phase I ESA Update included site reconnaissance, as well as review of a regulatory database search report, historical documents (obtained from Environmental Data Resources Inc. [EDR]), and readily available regulatory information.

Setting

The proposed widening project includes partial right-of-way acquisitions of properties adjacent to the existing roadway that either are currently supporting or have historically supported agricultural, commercial, residential, or light industrial land uses.

In the preparation of the Phase 1 ESA Update, the hazardous materials specialist contracted with a commercial database service, EDR, to perform a search of federal, state, and local databases for the project footprint and the surrounding area. The hazardous materials specialist also reviewed available documents on the State Water Resource Control Board's (SWRCB's) GeoTracker database pertaining to listed LUST facilities within and adjacent to the project area (*Phase I Environmental Site Assessment Update* 2009). Table HAZ-1 lists properties within and adjacent to the proposed right-of-way takes that use, store, and/or handle hazardous materials; the type and nature of contamination if any has occurred, and the status of remediation if applicable.

Table HAZ-1. Hazardous Materials Storage/Waste Sites within and Adjacent to the Proposed Right-of-Way

Site Name	Substance/Affected Media	Case Status
Oakley Builders Supply (former) 800 Main St	Gasoline(LUST)/Soil	Closed (December 1997)
76 Service Station 3629 East 18th St (Antioch)	No violations or reported releases	N/A
Shell Service Station 5545 Bridgehead Rd.	No violations or reported releases	N/A
Arco Service Station 5540 Hwy 4/ Bridgehead Rd/	Gasoline (Minor spill)/Unknown Gasoline (LUST)/Groundwater	Spill: Unknown LUST: Closed (June 2003)
Chevron #93801 5433 Neroly Rd	Gasoline (LUST)/Groundwater	Closed (May 2002)

Site Name	Substance/Affected Media	Case Status
Mello's Sheet Metal 1241 Main St	No violations or reported releases	N/A
Bay Area Pallet/Bonanza Industrial Supply 1315 Main St	Uncontaminated influent or solid waste/Stormwater runoff (Minor water quality violation subject to RWQCB order)	Unknown
Delta Scrap & Salvage 1371 Main St	No violations or reported releases	N/A
Live Oak Storage 1433 Main St	No violations or reported releases	N/A
Contra Costa Auto Salvage (former) 1731 Main St	Petroleum hydrocarbon compounds/Soil and groundwater	Open
Cypress Cleaners 2027 Main St	No violations or reported releases	N/A
Raley's #394/304 2075/2077 Main St	No violations or reported releases	N/A
Hardcastle RV Center 1189 Main St	No violations or reported releases	N/A
KMART #4762 3625 E. 18th St (Antioch)	No violations or reported releases	N/A
Cypress Square Shopping Center 2025 Main St	Tetrachloroethene/Groundwater	Open
Oil Can Henry's 2435 Main St	No violations or reported releases	N/A
Southland Corp. 2437 Main St	No violations or reported releases	N/A
Rich Ladeira Trucking Inc. 5300 Live Oak Ave	No violations or reported releases	N/A
Rain for Rent 5301 Live Oak Ave	Petroleum hydrocarbons (LUST)/Groundwater	Closed (April 2008)
JM Enterprises 5387 Live Oak Ave	No violations or reported releases	N/A
PG&E Antioch District Maintenance Station 5400 Neroly Rd	VOCs/Groundwater	Closed (November 2003)
Dewitt Painting Co. 81 Big Break Rd	No violations or reported releases	N/A

Site Name	Substance/Affected Media	Case Status
Big Break Marina 100 Big Break Rd	Gasoline (LUST)/Groundwater	Closed (November 1997)

Source: *Phase I Environmental Site Assessment Update* 2009.

The database search returned a list of 23 sites within 1-mile of the project area, including two sites within Antioch city limits. Two of the sites have open cases that are currently undergoing assessment, monitoring, or remediation; five sites have closed cases in which corrective action was undertaken in compliance with regulatory requirements; two sites had minor reportable spills or discharges, the status of which is unknown; and 14 sites consist of properties where hazardous materials and/or wastes are used, handled, or stored onsite but no violations or releases have been reported.

The majority of contamination issues in the project vicinity are characterized by elevated concentrations of petroleum hydrocarbons in soil or groundwater as a result of leaking underground storage tanks (LUSTs) and/or operations associated with current or former automobile service stations or salvage yards. Elevated levels of volatile organic compounds (VOCs) have also been detected in groundwater in association with the Pacific Gas & Electric (PG&E) maintenance facilities on Neroly Road. Although there are no violations on record for the Delta Scrap and Salvage site, at 1371 Main Street, Geocon observed numerous overturned storage drums at the site during a field reconnaissance indicating the potential for site soil or groundwater contamination (*Limited Site Investigation Report* 2008).

Based on the recommendations presented in the 2004 Draft Phase I ESA, Geocon conducted a soil investigation within the project area along the eastbound shoulder of Main Street/SR-4, between Live Oak Avenue and Big Break Road Soil borings were located along the eastbound shoulder of Main Street, within the roadway segment proposed for widening and other improvements. Soil samples were collected from two depths (at depth intervals of 0 foot to 0.5 foot and 1.0 foot to 1.5 feet) at each boring for the purpose of evaluating potential vertical impacts of lead in soil. Composite samples were also analyzed for pesticides and metals due to past and present agricultural land use (*Limited Site Investigation Report* 2008). Statistical analysis of the lead results indicated that soil excavated from the eastbound Main Street shoulder and generated for offsite disposal would not be classified as a California hazardous waste, and may be reused onsite or disposed as non-hazardous based on lead content. Based on the total metals concentrations, soil excavated from the Site should not be considered a hazardous waste however concentrations of arsenic and vanadium residential land use environmental screening levels. Accordingly, offsite disposal of soil may be restricted based on metals content. Based on the reported concentrations of pesticides, handling or disposal of soil excavated from the site should not be restricted based on pesticides content (*Phase I Environmental Site Assessment Update* 2009).

The Phase I ESA Update recommended the following: (1) soil and groundwater sampling at the former Contra Costa Auto Salvage facility and the Delta Scrap & Salvage site; (2) surface soil sampling within areas previously used for agriculture and/or light industrial purposes and analysis for metals, pesticides, herbicides, and petroleum hydrocarbons; and (3) sampling along the unpaved shoulders of Main Street that were not previously tested during the 2008 Limited Site Investigation; and (4) preparation of a

project-specific health and safety plan to minimize worker exposure to metals-impacted soil, per Caltrans' requirements, to include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of metals-impacted soil (*Phase I Environmental Site Assessment Update* 2009)

No public airports, public use airports, or private airstrips are in the immediate vicinity of the project site. The nearest airport facility, Funny Farm Airport, is approximately six miles to the southeast.

The project site consists of urbanized land and is not located in a designated Very High Fire Hazard Severity Zone or a wildland area that may contain substantial forest fire risks and hazards, as determined by the California Department of Forestry (*Wildlife Hazard Real Estate Disclosure* 2009).

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant. Project construction is not expected to create a hazard to the public through the routine use of hazardous materials. Hazardous materials present at the project site would likely include substances such as fuels, oils, solvents, paving materials, and paints. In accordance with the contractor's specifications, these construction-related hazardous materials would be transported, stored, and handled in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by the U.S. Department of Transportation, Contra Costa County Environmental Health Department (CCCEHD), and the Regional Water Quality Control Board (RWQCB). In addition, the City will require the general contractor(s) selected for project implementation to adhere to procedures to ensure that water quality is protected during construction, as specified in the project SWPPP provisions (see Section VIII, *Hydrology and Water Quality*). These measures would include provisions for appropriate handling of any hazardous materials used on the project sites, as well as a Spill Prevention and Response Plan to minimize the potential for, and effects from, spills occurring during project construction. The Plan will describe transport, storage, and disposal procedures; construction site housekeeping practices, and monitoring and spill response protocols. The City will be responsible for ensuring that both the hazardous pollutant control measures and the Spill Prevention and Response Plan are appropriately implemented by all contractors. With the these plans and procedures in place, potential impacts related to hazardous materials use, transport, storage, or disposal at the project site are expected to be less than significant, and no mitigation is required.

b. Would the project 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?

Less than significant impact. Based on conditions observed in the field and a review of the regulatory status of listed facilities within and adjacent to the project area, the hazardous materials specialist determined that the majority of the facilities present in the project vicinity are not likely to pose a risk to the proposed construction activities. However, the hazardous materials specialist noted that there is a potential that soils at the Chevron gas station facility at 5433 Neroly Road may be contaminated by residual petroleum hydrocarbons from a former LUST. The hazardous materials specialist also identified a potential for adverse soil or groundwater impacts related to the former Contra Costa Auto Salvage facility at 1731 Main Street and Delta Scrap and Salvage at 1371 Main Street (*Phase I Environmental Site Assessment Update* 2009).

Other potentially hazardous conditions that were identified in the 2004 Phase 1 ESA and 2009 ESA Update include the following.

- Undocumented underground storage tanks (USTs) associated with former and existing residential, agricultural, and commercial refueling operations may exist within the project area.
- Undocumented wells or septic tanks associated with former a residential or agricultural land uses may be present within the project area.
- Unknown or unreported releases of metals, herbicides, pesticides, and petroleum hydrocarbons may be present in soil or groundwater within proposed acquisition properties used for agricultural and/or light industrial purposes.
- Aerial deposited lead (ADL), attributed to the historical use of leaded gasoline, may exist in soils adjacent to the existing roadbed.
- The existing traffic striping on Main Street could contain lead.
- Asbestos-containing pipe, treated wood, and bridge rail posts constructed with molten sulfur may be encountered during removal or modification of roadway facilities or structures.

Given the potential for encountering contaminated soils or groundwater, or existing hazardous construction-related materials, within or adjacent to the project area, there is a potential risk that construction workers or the public could be exposed to previously unreported or unknown hazardous materials as a result of ground-disturbing activities implemented during construction. The potential exposure of workers to hazardous wastes or material during construction is considered a potential human health risk. This impact is considered less than significant with implementation of the mandatory standard construction contract provisions described in Chapter 2, which require contractors to develop a Health and Safety Plan, conduct subsurface investigations recommended in the Phase ESA I and Phase I ESA Update; and test and sample yellow thermoplastic striping and aerial deposited lead prior to the start of construction. In the event that hazardous materials are discovered during construction, contractors will be required to implement

the additional measures described in Chapter 2 as applicable, including those regarding removal of hazardous wood waste, pipes, and bridge railings; removal or abandonment of undocumented wells, septic tanks, and USTs; and suspension of work and implementation of hazardous materials investigation and remediation. With implementation of these measures, the potential for the project to expose workers to hazardous wastes or material discovered during construction would be less than significant.

c. Would the project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant. Bouton-Shaw Academy, a private school serving student in grades 1-12, is located approximately 0.07-mile south of the project alignment at 5394 Elm Lane. Students, teachers, and other persons present at the school during project construction are not considered likely to be exposed to spills or releases of common construction-related hazardous materials such as vehicle fuels, lubricants, etc., because these materials would be transported, stored, and handled in a manner consistent with relevant regulations and guidelines, as discussed above. Impacts are therefore anticipated to be less than significant. No mitigation is required.

d. Would the project be located on a site that 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?

No impact. The project site is not listed on any federal or state hazardous materials sites lists. No impact to the public or the environment is anticipated.

e. Would the project be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?

f. Would the project be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?

e, f: No impact. The project site is not located within the vicinity of a public or private airstrip. As such, the project would not conflict with an airport land use plan, operation of nearby airports, or pose a safety hazard to people living or working in the project area. There would be no impact.

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than significant impact. Emergency access to the project area could be affected by project construction; specifically, temporary lane closures and construction-related traffic could delay or obstruct the movement of emergency vehicles. This impact is considered less than significant with implementation of the mandatory standard construction contract provisions described in Chapter 2, which require the contractor to develop and implement a Construction Management Plan to address construction-related traffic impacts.

h. Would the project 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?

No impact. The project site is located in a commercially designated area in the city of Oakley. No risk for wildland fires is associated with this project.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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, resulting in 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 that 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 that 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 that would result in flooding onsite or offsite?	❑	❑	■	❑
e.	Create or contribute runoff water that 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 that would impede or redirect floodflows?	❑	❑	❑	■
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?	❑	❑	❑	■

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
j.	Contribute to inundation by seiche, tsunami, or mudflow?	❑	❑	■	❑

Setting

Surface Water and Groundwater

The project area is located in the southwestern Sacramento-San Joaquin Delta region within the city of Oakley. Topography is generally flat and slopes slightly towards the north. There are no natural drainages in the project area. Surface runoff is collected and conveyed in roadside drainages that eventually discharge to the Delta. The project area overlies the San Joaquin Valley East Contra Costa groundwater basin. The average depth to groundwater is approximately 3 to 9 meters (10-30 feet) below ground surface (Department of Water Resources 2004). The project is not within a 100-year flood zone, as designated by the Federal Emergency Management Agency (FEMA).

The city of Oakley relies on surface water as its drinking water source; however, there are private wells within the Oakley city limits, south of Laurel Road and east of Main Street (*Draft Environmental Impact Report for the City of Oakley General Plan* 2002). Roads, residential housing, and agricultural fields primarily influence surface and groundwater quality in the project area. Pollutants from these sources can include oil and grease from automobiles, heavy metals from auto exhaust, tires, pesticides, herbicides, fertilizers, and other constituents.

Water Quality

Beneficial uses and water quality objectives for surface water and groundwater resources in Oakley are established in the Central Valley Regional Water Quality Control Board (CVRWQB) Basin Plan, as mandated by the state Porter-Cologne Water Quality Control Act of 2002 (Porter-Cologne Act) and federal Clean Water Act (CWA). CWA Section 303(d) establishes the total maximum daily load (TMDL) process to assist in guiding the application of state water quality standards. Specifically, it requires states to identify streams whose water quality is “impaired” (affected by the presence of pollutants or contaminants) and to establish a TMDL or the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects. As indicated above, roadside drainages in the project area drain to the Delta. Water quality issues particular to the Delta, as indicated in the 2006 303(d) list (*Clean Water Act Section 303(d) List of Water Quality Limited Segments* 2006), include the following:

- High-salinity water from the San Francisco Bay intrudes into the Delta during periods of low Delta outflow. Salinity adversely affects agricultural, municipal, recreational, and industrial uses.
- Delta exports have elevated concentrations of disinfection byproducts (DBP) precursors (e.g., dissolved organic carbon and bromide), and their presence increases the potential for the formation of brominated DBP in treated drinking water.
- Agricultural drainage in the Delta contains high levels of nutrients, suspended sediment, dissolved organic carbon, and minerals (salinity) as well as traces of agricultural chemicals (pesticides).
- Synthetic and natural contaminants have bioaccumulated in Delta fish and other aquatic organisms. Synthetic organic chemicals and heavy metals are found in Delta fish in quantities occasionally exceeding acceptable standards for food consumption.

Flooding

The project site is not within a 100-year flood hazard area, as identified on a Flood Insurance Rate Map (FIRM) that is delineated by FEMA.

Regulatory Framework

Federal

Clean Water Act

The CWA, as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Project-related sections of the CWA are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for any federal permit that proposes an activity that may result in a discharge to "waters of the United States" to obtain certification from the State of California that the discharge will comply with other provisions of the CWA. Certification is provided by the SWRCB and its nine RWQCBs.
- Section 402 establishes the NPDES, a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters

of the United States. This permit program is administered by the SWRCB and RWQCBs. The state issues general and individual NPDES permits to regulate discharges from construction, municipal, and industrial activities.

Federal Flood Insurance Program

Congress, alarmed by increasing costs of disaster relief, passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts is to reduce the need for large publicly funded flood control structures and disaster relief by restricting development on floodplains.

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues FIRMs for communities participating in the NFIP. These maps delineate flood hazard zones in the community.

State

Porter-Cologne Water Quality Act

The State of California's Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.) provides the basis for water quality regulation within California. This act requires a report of waste discharge for any discharge of waste (liquid, solid, etc.) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. Waste discharge requirements resulting from the report are issued by the RWQCBs.

Central Valley Regional Water Quality Control Board—Basin Plan

Water quality in streams and aquifers of the region is guided and regulated by the CVRWQCB Basin Plan. State policy for water quality control is directed at achieving the highest water quality consistent with the maximum benefit to the people of the state. The Basin Plan identifies beneficial uses of waters, establishes quantitative and qualitative objectives for protection of beneficial uses, and sets forth policies to guide the implementation of programs to attain the objectives.

Permitting for Construction and Post-Construction Activities

The SWRCB adopted Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ) on July 15, 1999. This permit covers all Department rights-of-way, properties, facilities, and

activities in the State. NPDES permits establish a 5-year permitting time frame. NPDES permit requirements remain active until a new permit has been adopted.

In compliance with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices (BMPs). The proposed Project will be programmed to follow the guidelines and procedures outlined in the 2003 SWMP to address storm water runoff or any subsequent SWMP version draft and approved.

Municipal Separate Storm Sewer System Program

The U.S. EPA defines a Municipal Separate Storm Sewer System (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, country, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. As part of the NPDES program, U.S. EPA initiated a program requiring that entities having MS4s apply to their local RWQCBs for storm water discharge permits. The program proceeded through two phases. Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or greater. Phase II expanded the program to municipalities with populations less than 100,000.

Construction Activity Permitting

Section H.2, Construction Program Management of the Department's NPDES permit states: "The Construction Management Program shall be in compliance with requirement of the NPDES General Permit for Construction Activities (Construction General Permit)". The Construction General Permit (Order No. 2009-009-DWQ) was adopted on September 2, 2009, and become effective on July 1, 2010. The permit regulates storm water discharges from construction sites that result in a disturbed site area of 1 acre or greater, and/or are part of a common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit.

The newly adopted permit separates projects into Risk Levels 1 – 3. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring. Risk levels are determined during the design phase and are based on potential erosion and transport to receiving waters. Applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPP).

Caltrans Statewide NPDES Permit requires the Department to submit a Notice of Construction (NOC) to the RWCB to obtain coverage under the Construction General Permit. Upon project completion, a Notice of Completion of Construction (NOCC) is required to suspend coverage. This process will continue to apply to Department projects until a new Caltrans Statewide NPDES Permit is adopted by the SWRCB. An NOC or equivalent form will be submitted to the RWQCB at least 30 days prior to construction if the associated DSA is 1 acre or more. In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is used for projects with DSA less than 1-acre.

During the construction phase, compliance with the permit and the Department's Standard Special Conditions requires appropriate selection and deployment of both structural and non-structural BMPs. These BMPs must achieve performance standards of Best Available Technology economically achievable/Best Conventional Pollutant Control Technology (BAT/BCT) to reduce or eliminate storm water pollution.

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project violate any water quality standards or waste discharge requirements?

Less than significant impact. Excavation and construction-related runoff could contain soil and other pollutants, which may contribute to reduced water quality in local water bodies. Construction equipment would use toxic chemicals (e.g., gasoline, oils, grease, lubricants, and other petroleum-based products) that could be released accidentally. In consideration of the existing degraded condition of water quality in the Delta, as identified by the CWA Section 303(d) listings, contributions of construction-related contaminants could degrade downstream water quality, thus resulting in a significant impact. Groundwater could also be encountered during project excavation. This impact is considered less than significant with implementation of the mandatory standard construction contract provisions described in Chapter 2, which require contractors to prepare a SWPPP and implement construction site best management practices (BMPs), develop and implement a spill prevention and control program, and implement measures to protect groundwater quality.

b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in 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 that would not support existing land uses or planned uses for which permits have been granted)?

Less than significant impact. Groundwater will not be used as a source of water for this project. The amount of impervious surface associated with the proposed project will be low, and would not significantly interfere with groundwater recharge. No mitigation is required.

c. Would the project 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 that would result in substantial erosion or siltation onsite or offsite?

d. Would the project 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 that would result in flooding onsite or offsite?

e. Would the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

c, d, e: Less than significant impact. After project construction, drainage patterns would be altered due to the increase in impervious area from the expanded road. This could result in increased stormwater runoff, which would potentially cause erosion or flooding on- or offsite. However, implementation of the mandatory construction contract provisions described in Chapter 2, which require contractors to prepare a Stormwater Data Report (SWDR) and implement post-construction BMPs, would ensure that increases in stormwater runoff and consequent effects are less than significant.

f. Would the project otherwise substantially degrade water quality?

Less than significant impact. Operation of the project would increase the number of vehicles and pedestrians on the road. Consequently, the concentration of pollutants from automobiles and trash would degrade the quality of stormwater runoff. However, implementation of the mandatory construction contract provisions described above and in Chapter 2, which require contractors to prepare a SWDR and implement post-construction BMPs, would ensure stormwater quality would be protected to the maximum extent practicable for the life of the project. Consequently, impacts are considered less than significant.

g. Would the project 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. Would the project place within a 100-year flood hazard area structures that would impede or redirect floodflows?

i. Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, as a result of the failure of a levee or dam?

g, h, i: No impact. The project would not be located within a 100-year flood hazard area and would not involve placement of new housing or structures, which would impede floodflows. There would be no impact.

j. Would the project contribute to inundation by seiche, tsunami, or mudflow?

Less than significant impact. The project site is unlikely to be subject to inundation by a seiche, tsunami, or mudflow. The site is located several miles inland from San Francisco Bay and has not been historically affected by tsunamis or seiches. The risk of these events is considered low. The project site is located in a relatively flat area and is not adjacent to steep slopes or high-gradient drainages that experience variable discharge.

As a result, the risk of mudflow is also considered low. Impacts would be less than significant, and no mitigation is necessary.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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, a 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?	❑	❑	❑	■

Setting

The primary land uses in the project area are agricultural, industrial, and commercial. Some residential uses are scattered along the project alignment. The project area is within the city of Oakley and is therefore subject to the City's current general plan land use and zoning designations, which are shown in Table LU-1. The portion of the project area that lies north of Main Street between Bridgehead Road and Big Break Road is part of the River Oaks Crossing Specific Plan Area. This area has been historically dominated by the DuPont facility and other industrial uses along SR 4/Main Street (*Oakley 2020 General Plan* 2002). Additionally, the westernmost parcel on the south side of Main Street, which abuts the off-ramp from Highway 160, is within the P-1 Planned Development District. Oakley Municipal Code section 9.1.1002 governs Planned Unit Development zoning regulations. One of the purposes of the P-1 District is to allow diversification in development standards while ensuring that development is compatible with surrounding uses and the General Plan, while still maintaining the public health, safety, and general welfare of the City.

Table LU-1. Project Area Land Use and Zoning Designations

Portion of Project Area	Land Use Designation	Zoning Designation
North of Main Street		
Highway 160 to Bridgehead Road	Commercial	RB (Retail Business) and C (General Commercial)
Bridgehead Road to Big Break Road	Commercial	SP-2 (River Oaks Crossing Specific Plan Area)
South of Main Street		
Highway 160 to Neroly Road	Commercial	P-1 (Planned Development with Development Plan) and C (General Commercial)
Neroly Road to Big Break Road	Commercial	C (General Commercial)

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project physically divide an established community?

No impact. The proposed project involves the widening of an existing four-lane roadway to six lanes, and would not involve any elements, such as new streets, that could physically divide an established community. The addition of a median, streetlights, and signalized intersection would not introduce any physical barriers that could divide a community. The proposed project would have no impact.

b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No impact. Widening the existing roadway would not interfere with or otherwise affect the land use and zoning designations along the roadway. The City's General Plan policies for maintaining levels of service and developing this stretch of SR 4/Main Street as a commercial corridor would be promoted by widening and improving the roadway. Therefore, the proposed project would not conflict with any applicable land use plans, policies, or regulations and would result in no impact.

c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

No impact. As discussed under Section IV, "Biological Resources," the proposed project area is within the inventory area of the East Contra Costa County Habitat

Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). However, a preliminary analysis of project impacts indicates that the project is entirely or almost entirely within an area mapped as urban land cover in the HCP/NCCP and may be exempt from compliance with the HCP/NCCP. Furthermore, the project limits and adjacent areas, which were surveyed by for biological resources, does not contain suitable habitat for sensitive species other than non-sensitive migratory birds and nesting raptors; therefore, it is not anticipated that the project would result in incidental take of any covered species. Although no impacts to non-urban areas or covered species are expected, the City is responsible for verifying the extent of the project limits relative to the adjacent non-urban areas based on the final design drawings. In the event that the project is determined not to be exempt from the HCCP/NCCP, the City would be expected to implement the avoidance, minimization measures and pay mitigation fees as set forth in the HCP/NCCP. Regardless of the project's effects, if any, on adjacent non-urban areas or covered species, the project would not be in conflict with the HCP/NCCP. Therefore, no impact is anticipated with regard to the project's conformance with the provisions of the HCP/NCCP.

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		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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?	❑	❑	❑	■

Setting

The Oakley 2020 General Plan states that the City does not contain any mineral resources of economic importance (*Oakley 2020 General Plan* 2002).

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project 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. Would the project 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?

a, b: No impact. The project will not result in the loss of availability of a known mineral resource or mineral resource recovery site. There would be no impact.

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		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
XII.	**NOISE.**				
	Would the project:				
a.	Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	❑	❑	■	❑
b.	Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	❑	❑	■	❑
c.	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	❑	❑	■	❑
d.	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	❑	❑	■	❑
e.	Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	❑	❑	❑	■
f.	Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	❑	❑	❑	■

Setting

This discussion is based on the noise study report entitled *City of Oakley Main Street Widening Project Noise Technical Study Report* (2005), the findings of which are incorporated by reference in this document.

Noise Terminology

The following are brief definitions of noise terminology used in this evaluation:

- **Sound.** A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

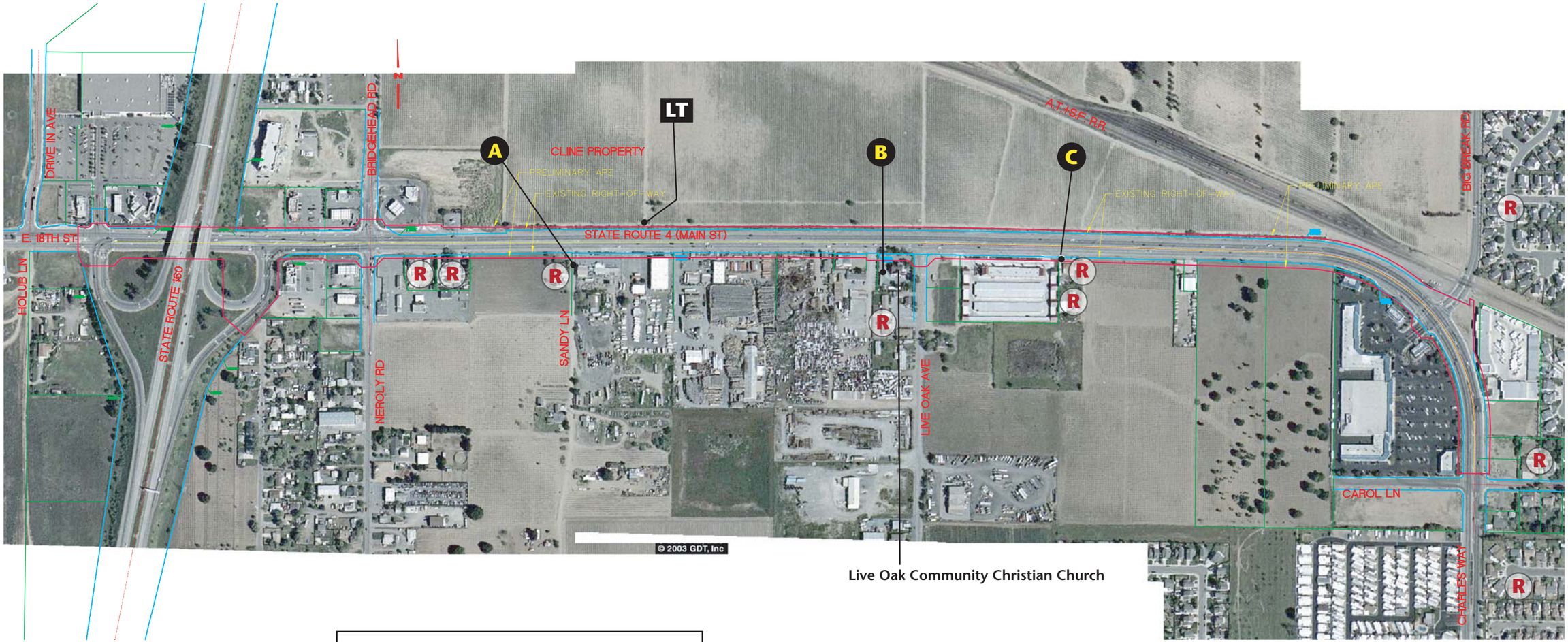
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels, which approximates the frequency response of the human ear.
- **Equivalent Sound Level (L_{eq}).** The average of sound energy occurring over a specified period. In effect, Leq is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
- **Exceedance Sound Level (L_{xx}).** The sound level exceeded XX percent of the time during a sound level measurement period. For example L_{90} is the sound level exceed 90 percent of the time and L_{10} is the sound level exceeded 10 percent of the time.
- **Maximum and Minimum Sound Levels (L_{max} and L_{min}).** The maximum or minimum sound level measured during a measurement period.
- **Day-Night Level (L_{dn}).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving sound level.

Existing Conditions

The existing noise environment in the project area is dominated by vehicular traffic traveling on SR 4/Main Street, SR 160, and surrounding roadways in the project area, as well as noise from agricultural and industrial operations from the adjacent land uses.

Short-term and long-term noise monitoring was conducted in the project area to quantify the existing noise environment. Short-term monitoring was conducted on Wednesday, July 28, 2004. The results of the short-term monitoring episodes are summarized in Table NS-1. Long-term noise monitoring was conducted over a 148-hour period beginning on July 28, 2004. The results of the long-term monitoring episode are summarized in Table NS-2. The locations for the short- and long-term noise monitoring positions are shown in Figure 3-4.



Legend

- A — Short-term monitoring position
- LT — Long-term monitoring position
- R — Residential land uses

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Figure 3-4
Noise Monitoring Positions and Noise-Sensitive Land Uses

Table NS-1. Summary of Short-Term Noise Monitoring

Receiver	Measurement	Date	Start Time	Duration (minutes)	Sound Level (dBA, L_{eq})	Sources
A	1	7/28/04	11:37 a.m.	15	71.0	Traffic
	2	7/28/04	11:37 a.m.	15	71.2	Traffic
B	1	7/28/04	12:08 p.m.	15	68.8	Traffic
	2	7/28/04	12:08 p.m.	15	68.9	Traffic
C	1	7/28/04	12:38 p.m.	15	71.8	Traffic, flags fluttering in wind
	2	7/28/04	12:38 p.m.	15	71.9	Traffic
	2	7/28/04	12:38 p.m.	15	71.9	Traffic

Table NS-2. Summary of Long-Term Noise Monitoring

	Weekday (1-Hour dBA, Leq)								Maximum Noise Hour dBA, L_{eq} minus Hourly dBA, L_{eq}[1]
Time	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Average	
12 a.m.	67.0	59.0	60.0	61.0	61.0	59.5	57.5	60.7	6.7
1 a.m.	67.5	57.5	57.5	60.0	58.0	59.0	60.5	60.0	7.4
2 a.m.	67.5	58.5	58.0	58.5	57.0	58.0	56.0	59.1	8.3
3 a.m.	68.5	60.0	61.0	59.5	56.0	62.0	60.5	61.1	6.3
4 a.m.	68.0	65.0	65.0	60.5	56.5	65.0	65.0	63.6	3.8
5 a.m.	67.5	67.5	67.5	63.5	59.0	67.5	67.5	65.7	1.7
6 a.m.	67.5	70.0	68.5	65.5	61.5	69.0	69.5	67.4	0.0
7 a.m.	67.5	68.5	68.5	65.0	62.5	68.0	68.5	66.9	0.5
8 a.m.	65.5	69.0	70.0	65.5	64.0	68.0	68.0	67.1	0.3
9 a.m.	65.0	68.5	68.5	65.0	64.5	67.5	67.0	66.6	0.8
10 a.m.	64.0	68.5	68.5	65.5	63.5	67.5	67.5	66.4	1.0
11 a.m.	61.0	68.0	68.5	65.5	65.0	67.0	67.0	66.0	1.4
12 p.m.	NA	68.5	68.0	65.0	65.0	67.0	66.5	66.7	0.7
1 p.m.	NA	67.5	68.0	66.0	65.5	66.5	66.5	66.7	0.7
2 p.m.	NA	67.0	68.0	66.0	69.0	67.5	66.5	67.3	0.1
3 p.m.	NA	68.0	68.0	66.0	65.5	67.0	67.5	67.0	0.4
4 p.m.	NA	68.0	68.0	66.0	66.0	67.5	67.5	67.2	0.2
5 p.m.	NA	67.5	68.0	67.5	66.0	67.0	NA	67.2	0.2
6 p.m.	NA	67.5	67.0	66.0	65.5	66.5	NA	66.5	0.9
7 p.m.	NA	66.5	66.0	65.0	65.5	65.5	NA	65.7	1.7
8 p.m.	NA	66.0	66.0	64.5	66.0	65.5	NA	65.6	1.8
9 p.m.	NA	65.0	64.5	65.5	64.0	64.0	NA	64.6	2.8
10 p.m.	NA	63.5	64.0	64.0	61.5	62.0	NA	63.0	4.4
11 p.m.	NA	61.0	62.5	62.0	59.5	60.0	NA	61.0	6.4

Notes:
[1] Values in this column are determined by subtracting the average sound level for each hour from 67.4 dBA at 6:00 a.m. (the maximum hour sound level).

To further characterize existing noise levels in the project area, noise from traffic traveling on roadways in the vicinity of the project area was modeled using Sound32, the Caltrans version of the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108) and traffic data provided by the project traffic engineer (*Final Traffic Analysis Report* 2006). The model estimates traffic noise levels based on roadway geometrics; traffic volumes for automobiles, medium trucks (vehicles with two axles and six tires), and heavy trucks (vehicles with three or more axles); vehicle speeds; and a noise attenuation rate parameter. Table NS-3 summarizes modeled traffic noise levels under existing conditions at selected distances from the roadway centerline. These distances are representative of distances to noise sensitive land uses in the project area.

Table NS-3. Summary of Traffic Data and Noise Modeling Results for Existing Conditions

Distance from Roadway Centerline	Roadway	Segment	Peak Hour Traffic Volume	Speed (mph)	Modeled Noise Level (dBA, L_{eq})
27 meters / 90 feet	SR 4/Main Street	Sandy Lane to Big Break Road	2,917	50	72
34 meters / 111 feet	SR 4/Main Street	Sandy Lane to Big Break Road	2,917	50	71
46 meters / 150 feet	SR 4/Main Street	Sandy Lane to Big Break Road	2,917	50	69

Sensitive Land Uses

Noise-sensitive land uses typically include residences, schools, libraries, hospitals, and other similar uses that are considered to be sensitive to noise. Noise-sensitive land uses located in the project area include scattered residences and the Live Oak Community Christian Church located along the roadway alignment (Figure 3-4).

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified. Caltrans' CEQA noise impact assessment methodology, as defined in the *Protocol*, was used in the assessment of noise impacts.

a. Would the project expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?

Construction Impacts

Less than significant impact. Construction of the proposed project would temporarily increase noise in the vicinity of the project site. Noise increases would result both from onsite construction activities, especially during site preparation, grading, and other earthmoving activities, as well as from construction-related vehicle traffic delivering materials to and from the construction site. During project construction, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Caltrans has identified guidelines related to construction noise in the *Caltrans Standard Specifications* (2006) and the *Caltrans Standard Special Provisions* (2006).

Local noise ordinances do not apply to Caltrans construction activity conducted within the State right-of-way. However, any activity conducted outside the Caltrans right-of-way would be subject to local noise ordinance standards.

Construction activity has the potential to conflict with guidance in the *Caltrans Standard Specifications* (2006) and the *Caltrans Standard Special Provisions* (2006) in exceptional cases, where activities such as pile driving and crack/seat pavement rehabilitation operations would occur. Typical construction activities associated with the proposed project are not anticipated to involve this type of equipment and therefore are not anticipated to result in any significant noise impacts. However, adjacent noise-sensitive land uses may be exposed to temporary elevated levels of noise during construction. Implementation of the mandatory standard construction contract provisions described in Chapter 2, which require the contractor to limit construction noise in accordance with *Caltrans Standard Specifications* (2006) and *Caltrans Standard Special Provisions* (2006), would minimize construction noise impacts to adjacent noise-sensitive land uses.

Operational Impacts

Less than significant impact. Traffic noise impacts under CEQA were identified by determining if design-year (2035) traffic noise levels would exceed existing noise levels by 12 dBA, L_{eq}. Table NS-4 summarizes the predicted traffic noise levels for design-year conditions and indicates that traffic noise levels would not increase by more than 3 dBA, L_{eq}, between existing and design-year project conditions. Increases in roadway noise are attributed to predicted increases in traffic volumes and shifting of traffic closer to adjacent receivers resulting from outside widening of the roadway. Because predicted traffic noise levels with project implementation would not exceed existing noise levels by 12 dBA, L_{eq}, the project would not result in a substantial increase in noise, as defined by the *Protocol*. Consequently, traffic noise impacts resulting from implementation of the proposed project are less than significant. No mitigation is required.

Table NS-4. Summary of Traffic Noise Impacts

Distance from Roadway Centerline	Substantial Increase in Noise per Caltrans Standard[a]	Worst Noise Hour Noise Level (dBA, L_{eq})		Noise Increase (dB) Relative to Existing Conditions	Impact Type[c]
		Existing	Future[b]		
37 meters / 90 feet	+12 dB Leq	72	75	3	LTS
34 meters /111 feet	+12 dB Leq	71	73	2	LTS
46 meters / 150 feet	+12 dB Leq	69	71	2	LTS

Notes:
[a] Future with project minus existing.
[b] Design year 2035.
[c] LTS = less than significant.

b. Would the project expose persons to or generate excessive groundborne vibration or groundborne noise levels?

Less than significant impact. Construction activities associated with grading and excavation may result in some minor amount of ground vibration. Vibration from non-impact construction activity is typically below the threshold of perception when the activity is more than about 15 meters / 50 feet from receiver. Additionally, vibration from these activities would be short-term and would end when construction is completed. Because construction activity would not involve high impact activities, such as pile driving, and construction activities would be temporary, this impact is considered less than significant. No mitigation is required.

c. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than significant impact. The results in Table NS-4 indicate that predicted noise increases due to traffic noise from the proposed project are between 2 and 3 dB. Because predicted traffic noise levels with project implementation would not exceed existing noise levels by 12 dBA, L_{eq}, the project would not result in a substantial increase in noise, as defined by the *Protocol*. Consequently, traffic noise impacts resulting from implementation of the proposed project are less than significant under CEQA. No mitigation is required.

d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than significant impact. Construction activity would result in a temporary increase in noise. Implementation of Control Measure NS-1 (described in Chapter 2) would ensure this impact is less than significant.

e. Would the project be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public

use airport and expose people residing or working in the project area to excessive noise levels?

f. Would the project be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?

e., f.: No impact. The proposed project is not within the vicinity of a public airport or private airstrip, or within an airport land use plan area. There would be no impact.

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		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
XIII.	**POPULATION AND HOUSING.**				
	Would the project:				
a.	Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	❑	❑	■	❑
b.	Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	❑	❑	❑	■
c.	Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	❑	❑	❑	■

Setting

In January 2009, the California Department of Finance (*E-1 Population Estimates for Cities, Counties, and the State with Annual Percent Change* 2009) estimated the population of the city of Oakley to be 34,468. This represents a four percent increase since January 2008, when the population was estimated to be 33,189. The Oakley 2020 General Plan buildout population projection is 68,435 (*Oakley 2020 General Plan* 2002).

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

Less than significant impact. The purpose of the proposed widening and improvements of SR 4/Main Street is to improve the level of service through the corridor and enhance the safety of drivers and pedestrians along Main Street. The project would utilize local funds to accommodate future traffic growth as planned for in the *Oakley 2020 General Plan* (2002). Goals and policies implemented in the Oakley 2020 General Plan provide for the necessary infrastructure to support the growth of Oakley's population. Mitigation measures proposed as part of the City's General Plan EIR would minimize impacts due to increased population to a less-than-significant level. The proposed project would not

induce growth that has not been anticipated and planned for in both the General Plan and the General Plan EIR for the city of Oakley. This impact would be less than significant. No mitigation is required.

b. Would the project displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?

c. Would the project displace a substantial number of people, necessitating the construction of replacement housing elsewhere?

b, c: No impact. Several residential structures exist along the project alignment. It is not anticipated that removal of these residences would be necessary under the proposed roadway widening because of distance from the roadway. There would be no impact.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
XIV.	**PUBLIC SERVICES.**				
	Would the project:				
a.	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services:				
	Fire protection?	❑	❑	❑	■
	Police protection?	❑	❑	❑	■
	Schools?	❑	❑	❑	■
	Parks?	❑	❑	❑	■
	Other public facilities?	❑	❑	❑	■

Setting

Fire protection in the city of Oakley is provided by the East County Fire Protection District. The District currently has one station (Station 93) serving the city of Oakley, and eight other stations serving the surrounding communities (*City of Oakley Fire Services* 2009). The East County Fire Protection District provides fire fighting services, vehicle accident assistance, medical emergency services, and hazardous materials incident services. Police protection in the city of Oakley is provided by the Oakley Police Department. The Oakley Police Department contracts with the Contra Costa County Sheriff's Department for dispatch, records, basic equipment services, and additional personnel.

Public school service in the city of Oakley is provided by the Oakley Union Elementary School District, the Liberty Union High School District, and the Antioch Unified School District. The Oakley Union Elementary School District includes four elementary schools and two middle schools, all within the city of Oakley. Freedom High School, one of three schools in the Liberty Union High School District, serves the residential areas of Oakley and Bethel Island. The Antioch Unified School District covers the City of Antioch and the western portion of Oakley, and includes 17 schools (five of which serve Oakley students).

Public neighborhood and community parks in the city of Oakley are located mostly on school properties, flood control properties, and other joint-use sites. Thirteen parks are located within the city of Oakley, and other vicinity parks, such as the Antioch/Oakley Regional Shoreline Park and Big Break Regional Shoreline, are owned and operated by Contra Costa County, East Bay Regional Parks District, or other agencies. The City of Oakley Parks Master Plan includes detailed implementation programs needed to expand local public recreational activities and standards for planning future parks and recreational facilities (*Oakley 2020 General Plan* 2002).

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services:

- **fire protection,**
- **police protection,**
- **schools,**
- **parks, or**
- **other public facilities?**

No impact. As discussed in Section XII, Population and Housing, the proposed project would not induce population growth that could result in the need for new or altered police, fire, school, or park facilities. The proposed project would improve the level of service through the SR 4/Main Street corridor and enhance the safety of drivers and pedestrians along Main Street. It would not induce growth that has not been anticipated and planned for in the Oakley 2020 General Plan. The project would improve emergency access through the corridor and, by enhancing safety for drivers and pedestrians, reduce the number of calls for emergency services to the area. There would be no impact.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
XV.	**RECREATION.**				
	Would the project:				
a.	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.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	❑	❑	❑	■

Setting

Parks and recreational facilities in the city of Oakley are discussed above, in Section XIV, Public Services.

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

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. Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

a, b: No impact. The project would neither increase the use of existing parks nor require the construction or expansion of existing recreational facilities. There would be no impact.

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		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
XVI.	**TRANSPORTATION/TRAFFIC.**				
	Would the project:			(const.)	(oper.)
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?	❑	❑	■	■
				(const.)	(oper.)
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 because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❑	❑	❑	■
				(const.)	(oper.)
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?	❑	❑	■	❑

Setting

This discussion is based on traffic studies performed by the traffic consultant in cooperation with the project design team including the City and Caltrans, including the traffic study report entitled *Main Street (SR 4) Widening Project Final Traffic Analysis Report* (2006) and the *Response to Caltrans Comments on SR4 Main Street Widening*

Update Memorandum (2009). The findings of which are incorporated by reference in this document.

Methodology

Traffic operations throughout the study areas were analyzed using the following methods:

- Signalized intersections operations were calculated using the methodology described in Chapter 16 of the 2000 *Highway Capacity Manual* (HCM) (2000). The Synchro 6.0 software was applied.
- For both side-street stop-controlled and all-way stop-controlled (i.e., unsignalized) intersections, the methodology described in Chapter 17 of the 2000 HCM was used. The Traffix software was applied.
- SimTraffic is companion software used for modeling and simulating traffic operations, to visually confirm the results of the Synchro and Traffix intersection analyses.

Traffic forecasts in the traffic operations report were analyzed to reflect year 2035 conditions and were based on the Contra Costa Transportation Authority (CCTA) Travel Demand Model that uses land projection from the Association of Bay Area Governments (ABAG) *Projections 2000*. This traffic study was approved by CALTRANS in March of 2009. It was subsequently suggested that new traffic forecasts, using the most recent ABAG projections and version of the CCTA model and extending to the year 2035 be used. However, upon further examination of the data in comparison to forecasts recently prepared for a similar project in eastern Antioch using the more recent projections, it was determined that the forecasts developed for the original Main Street Widening traffic analysis were conservative, and the approved traffic report contains a reasonable presentation of the traffic impacts associated with the proposed project.

Roadway System

SR 4 is the primary east-west corridor in the eastern part of the Contra Costa County, between I-80 in Hercules and SR 160 in Oakley. SR 4 is a predominantly four-lane highway connecting Oakley to Brentwood, and continuing as a two-lane highway to Stockton and beyond. SR 4 is also known as Main Street within the city of Oakley.

Rapid growth in the cities of Oakley and Brentwood and unincorporated areas east of Oakley has contributed to traffic congestion on SR 4 during commute hours. The Oakley 2020 General Plan identifies the widening of Main Street as a major project to accommodate the forecasted traffic demand generated by projected growth (*Oakley 2020 General Plan* 2002).

The following roadways are affected by the proposed project:

- *SR 4/Main Street* is an east-west highway. Within the study area, SR 4/Main Street typically provides two lanes in each direction with a two-way center left-turn lane. According to Caltrans' *2002 Traffic Volumes on the California Highway System*

website, SR 4 has an annual average daily traffic (AADT) volume of 38,000 vehicles (both directions) between SR 160 and Oakley Road.

- *SR 160* is a north-south highway on the west end of the study area. This roadway serves as a major route connecting Oakley to the Antioch Bridge and Sacramento County to the north, and to the SR 4 highway to the west.
- *Neroly Road/Bridgehead Road* is a north-south two-lane roadway. The roadway's intersection with SR 4/Main Street is controlled by a signal with protected left turns on SR 4/Main Street and split-phase operation on Neroly Road/Bridgehead Road.
- *Live Oak Avenue* is a minor north-south roadway extending from SR 4/Main Street to Neroly Road. Live Oak Avenue is controlled by a stop sign at its intersection with SR 4/Main Street.
- *Big Break Road* is a minor north-south roadway providing access to a large residential development and the Oakley Marina. There is an at-grade railroad crossing just north of Main Street at the Burlington Northern Santa Fe (BNSF) tracks. The roadway's intersection with Main Street is controlled by a signal with protected left turns on SR 4/Main Street and permitted left turns on Big Break Road.
- *SR 4 Bypass* is planned as a four-lane freeway between SR 4 and Balfour Road with interchanges at Laurel Road, Lone Tree Way, Sand Creek Road, and Balfour Road and would continue as a two-lane expressway between Balfour Road and Vasco Road. At present, the SR4 Bypass is a four-lane freeway from SR 4 to Lone Tree Way and then a two-lane road to Vasco Road. Direct access is not provided between the SR 4 Bypass and SR 160. The shortest route from the SR 4 Bypass to SR 160 on major streets would be via the Laurel Road exit, east to Empire Road, north to Main Street, and then west to SR 160 (with the opposite route from SR 160 to the SR 4 Bypass). Secondary routes between SR 4 Bypass and SR 160 from the Laurel Road exit could be via Neroly Road to Main Street or via Neroly Road and Live Oak Avenue to Main Street.

Bicycle and Pedestrian Facilities

Currently, limited bicycle and pedestrian facilities exist within the study area. Sidewalks are provided intermittently at the SR 160 southbound ramps, Bridgehead Road/Neroly Road, and Big Break Road.

Transit Service

Tri-Delta Transit currently operates four local bus routes and two express commuter routes in the project area. Route 300 is a weekday express route connecting Brentwood to the Pittsburg/Bay Point BART station via Oakley and Antioch. Route 383 is a weekday route that connects Oakley to Antioch and Freedom High School in Oakley. Route 391 provides weekday service to most East County cities. Route 392 is the weekend service of Route 391. Delta Express provides express commuter service to the Dublin/Pleasanton BART station and the Lawrence Livermore National Lab.

Intersection Operations Analysis

The six study intersections were analyzed based on volumes, lane configurations, and traffic control devices. Table TR-1 summarizes the results of the intersection operations analysis for existing conditions.

LOS D or better is considered acceptable operations as identified in the *East County Action Plan for Routes of Regional Significance* (*2000 Update to the Countywide Comprehensive Transportation Plan* 2000). All but one of the signalized intersections in the study area operates at an acceptable LOS during both the AM and PM peak hours. The SR 4/Main Street and Bridgehead Road/Neroly Road intersection is the only intersection that operates at unacceptable conditions, with LOS E during the PM peak hour. The deficient LOS is generally due to high eastbound traffic volumes.

The two unsignalized intersections operate acceptably in terms of overall average delay during the AM and PM peak hours. However, the stop-controlled northbound left-right lane at the SR 4/Main Street and Sandy Lane intersection operates at LOS E during the AM peak hour. Additionally, the stop-controlled northbound left turn lane at the SR 4/Main Street and Live Oak Avenue intersection operates at LOS F during both peak hours.

Table TR-1. Existing Intersection Level of Service (LOS) Summary

		AM Peak Hour		PM Peak Hour	
Intersection	Traffic Control	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1. SR 4/Main Street and SR 160 southbound ramps	Signal	12	B	15	B
2. SR 4/Main Street and SR 160 northbound ramps	Signal	17	B	52	D[3]
3. SR 4/Main Street and Bridgehead Road/Neroly Road	Signal	31	C	75	E
4. SR 4/Main Street and Sandy Lane Northbound Turn Lane)	Side Street Stop-Controlled	>1 (36)	A (E)	>1 (20)	A (C)
SR 4/Main Street and Live Oak Avenue (Northbound Turn Lane)	Side Street Stop-Controlled	1 (>50)	A (F)	2 (>50)	A (F)
6. SR 4/Main Street and Big Break Road	Signal	12	B	20	B

Notes:

[1] Delay for signalized intersections reported for the average of the entire intersection. Delay for unsignalized intersections reported for the average of the entire intersection and the worst movement.

[2] LOS based on the Chapter 16 2000 Highway Capacity Manual methodology for signalized intersections, and on the Chapter 17 methodology for unsignalized intersections.

[3] Average delay and LOS at this intersection may be worse due to queues spilling back from the Main Street (SR 4)/Bridgehead Road and Neroly Road intersection.

Source: *Final Traffic Analysis Report* 2006.

Discussion of Impacts

a. Would the project 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. Would the project 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?

Construction

a, b: Less than significant. Lane closure of portions of SR 4/Main Street would be necessary to facilitate construction of the roadway-widening project. Closure of portions of SR 4/Main Street would result in significant delays, particularly during the PM peak hour. Adequate detour signage and controls must be provided to facilitate access to and from the detour along SR 4/Main Street.

Construction activities would also generate construction-related traffic, which could create a temporary increase in localized traffic. Most of the construction traffic would be generated during excavation and grading activities. The construction contractor would determine the specific haul routes.

The impact of construction-generated traffic and construction detours on area traffic volumes and level of service is could temporarily degrade the performance of the circulation system in light of the performance goals and policies established by the CCTA and the city of Oakley for mass transit, motorized vehicles, and non-motorized travel. Implementation of the mandatory standard construction contract provisions described in Chapter 2, which require the contractor to develop and implement a traffic control and safety plan, would reduce the impact to a less-than-significant level.

Operations

No Impact. Completion of the proposed project is expected to improve roadway operation conditions in the city of Oakley and within the study area; thus, it would not cause roadways within the study area to exceed a level of service standard established by the CCTA or to otherwise degrade performance of the circulation system in light of the performance goals and policies established by the CCTA and the city of Oakley for mass transit, motorized vehicles, and non-motorized travel.

Table TR-2 summarizes the results of the intersection operations analysis with and without the proposed project. Future roadway improvements, including the full completion of the SR 4 Bypass, improvements to SR 4 west of the bypass, extension of Live Oak Avenue, paving and signalization of Sandy Lane, and signalization of Main street/Carol Lane (just east of the study area) were included in the future model network to analyze the impact of these improvements and changes in traffic conditions as well as the impacts of the proposed project (*Final Traffic Analysis Report* 2006).

Without any improvements, the current configuration of SR 4/Main Street would only serve about 75% of the AM peak hour and 55% percent of the PM peak hour traffic forecasted demand in 2035. Based on the traffic analysis, the proposed improvements to the SR 4/Main Street corridor would serve nearly all of the expected AM and PM peak hour demand. All six study intersections are expected to operate at acceptable LOS D or better. Minor bottlenecks may occur at the SR 4/Main Street and Big Break Road intersection during the AM peak hour, and at the SR 4/Main Street and Bridgehead Road/Neroly Road intersection at the PM peak hour.

Operation of the proposed project would serve about 95% of the 2035 forecasted traffic demand during both the AM and PM peak hours. Because the SR 4/Main Street widening project will reduce potential congestion and improve LOS within the study area, the impact is considered beneficial. No mitigation is required.

On the SR4/Main Street and SR 160 northbound ramps, queues would continue to spill back onto the freeway mainline during portions of the PM peak hour, but since the LOS will be better than without the project, this would be a less-than-significant impact.

Table TR-2. 2035 Conditions Level of Service (LOS) Summary

Intersection	Traffic Control	2035 No Project				2035 With Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1. SR 4/Main Street and SR 160 southbound ramps	Signal	22	C	54	D	18	B	27	C
2. SR 4/Main Street and SR 160 northbound ramps	Signal	20	B	69	E	10	A	30[5]	C[5]
3. SR 4/Main Street and Bridgehead Road/Neroly Road	Signal	54	D	>100	F	39	D	45	D
4. SR 4/Main Street and Sandy Lane Northbound Turn Lane)	Signal[3]	>100[4]	F[4]	>100[4]	F[4]	16	B	20	C
SR 4/Main Street and Live Oak Avenue (Northbound Turn Lane)	Signal[3]	66	E	>100	F	27	C	37	D
6. SR 4/Main Street and Big Break Road	Signal	35	C	55	D	35	D	52	D

Notes:

1 Delay for signalized intersections reported for the average of the entire intersection. Delay for unsignalized intersections reported for the average of the entire intersection and the worst movement.

2 LOS based on the Chapter 16 2000 Highway Capacity Manual methodology for signalized intersections, and on the Chapter 17 methodology for unsignalized intersections.

3 Intersection would be side street stop-controlled under 2035 No Project conditions and signalized under 2035 With Project conditions.

4 Average delay reported for worst-case controlled approaches (northbound). Average delay for the entire intersection cannot be calculated under these conditions based on HCM methodology.

5 Westbound queues from Main Street (SR 4)/ SR 160 Southbound Ramps and eastbound queues from Main Street (SR 4)/Bridgehead Road and Neroly Road are expected to extend to the intersection of Main Street (SR 4)/SR 160 Northbound Ramps, frequently blocking traffic on the ramps. Thus the LOS at this intersection may be worse than reported.

Source: *Final Traffic Analysis Report* 2006.

c. Would the project 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?

No impact. Neither construction nor operation of the project is expected to have any effect on air traffic patterns. There would be no impact. No mitigation is required.

d. Would the project substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No impact. Construction of the proposed project is not expected to result in obstacles to sight distance. No sharp roadway curves currently exist in the project area, and the proposed project would create no such curves. There would be no impact. No mitigation is required.

e. Would the project result in inadequate emergency access?

Construction

Less than significant. Construction-related traffic could potentially disrupt emergency response vehicles along SR 4/Main Street and adjacent roadways during construction hours. Implementation of the mandatory standard construction contract provisions described above and in Chapter 2, which require the contractor to develop and implement a traffic control and safety plan, would reduce this impact to a less-than-significant level.

Operations

No impact. Once the project is completed, operational conditions as described above are expected to allow adequate circulation and access for emergency service providers. There would be no impact. No mitigation is required.

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?

Less than significant. The project complies with policies and goals in the City of Oakley General Plan Circulation Element (*Oakley 2020 General Plan* 2002) and therefore would not permanently conflict with the City's policies, plans, or programs regarding public, transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. However, construction-related traffic could temporarily interfere with transit operations during construction hours for the duration of project construction. Implementation of the mandatory standard construction contract provisions described above and in Chapter 2, which require the contractor to develop and implement a traffic control and safety plan, would reduce this impact to a less-than-significant level.

		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 would new or expanded entitlements be needed?	❑	❑	❑	■
e.	Result in a determination by the wastewater treatment provider that 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 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?	❑	❑	■	❑

Setting

The Diablo Water District (DWD) provides water service to Oakley and surrounding areas within its Diablo Water District sphere of influence. DWD's water supply comes from the Contra Costa Water District (CCWD), a public water agency, which delivers water to central and eastern Contra Costa County via the Contra Costa Canal (*Oakley 2020 General Plan* 2002).

The Ironhouse Sanitary District (ISD) provides wastewater service to Oakley and unincorporated areas of the County. ISD owns and operates the wastewater collection,

treatment, storage, and effluent recycling facilities that serve the city of Oakley (*Oakley 2020 General Plan* 2002).

The ISD also maintains the franchise for solid waste collection for the city of Oakley and outlying areas. ISD contracts with Garaventa Enterprises, the parent company of Oakley Disposal, Inc. and Mt. Diablo Recycling, who provide residential and commercial solid waste collection and recycling service in Oakley (*Oakley 2020 General Plan* 2002). Solid waste in Oakley is hauled to the Recycling Center and Transfer Station in Pittsburg, sorted, and then hauled to the Potrero Hills Landfill (PHLF) in Solano County, which is permitted to accept waste through 2015 with the potential expansion of 50 additional years (*Oakley 2020 General Plan* 2002).

Storm drainage facilities are developed and managed by the city of Oakley and County Flood Control and Water Conservation District (CFCWCD). Stormwater is collected and discharged to either Marsh Creek or the Delta. The regional drainage plan has been updated using current population forecasts and flow predictive models. As a result, large regional detention basins were added to address the limited flow capacity of Marsh Creek (*Oakley 2020 General Plan* 2002).

Discussion of Impacts

This impact discussion utilizes the CEQA Guidelines IS Checklist questions as the threshold for determining the level of impacts associated with the project, unless otherwise specified.

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b. Would the project 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?

a, b: No impact. The project would not produce wastewater and therefore would not exceed wastewater treatment requirements or exceed a wastewater treatment provider's capacity. No mitigation is required.

c. Would the project 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?

Less than significant impact. The proposed project would include the installation of new storm drains along portions of the alignment. Additional stormwater runoff would be created from new impervious surfaces, resulting in an increase in runoff above existing conditions. However, large regional detention basins have been developed in response to anticipated growth outlined in the Oakley 2020 General Plan (*Oakley 2020 General Plan* 2002) and analyzed in the Oakley General Plan EIR (*Draft Environmental Impact Report for the City of Oakley General Plan* 2002). Since the proposed project is considered a component of the growth and improvements under the 2020 General Plan, this impact is considered less than significant. No mitigation is required.

d. Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?

e. Would the project result in a determination by the wastewater treatment provider that 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?

d, e: No impact. The project would not require water or result in the need for new wastewater treatment facilities. There would be no impact. No mitigation is required.

f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

f, g: Less than significant impact. Waste from widening of the roadway is not expected to be significant. Construction and demolition waste generated during construction would be taken to Recycling Center and Transfer Station in Pittsburg, where some material may be recycled, and then to the Potrero Hills Landfill, where adequate capacity exists to accept the remainder of the waste. This impact would be less than significant. No mitigation is required.

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		Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 that will cause substantial adverse effects on human beings, either directly or indirectly?	❑	❑	■	❑

Discussion of Impacts

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?

Less than significant impact. After incorporating the measures detailed in Chapter 2 of this document, the proposed SR 4/Main Street widening project does not 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, eliminate a plant or animal community or to reduce the number or restrict the range of a rare or endangered plant or animal. The measures described in Chapter 2 would minimize disturbance to migratory bird and raptor nests. Contingency measures are proposed in the event of unexpected discoveries of cultural resources, and thus the project would not eliminate important examples of California history or prehistory. The project's impact is less than significant.

b. Does the project have impacts that are individually limited but cumulatively considerable?

Less than significant impact. With implementation of the measures described in Chapter 2,the proposed roadway widening project would not contribute to a significant cumulative impact. Therefore, the project's contribution to cumulative impacts is less than significant. For discussion of greenhouse gas emissions and climate change, which is a potential cumulative impacts issue, see the discussion above under *Greenhouse Gas Emissions*, wherein the conclusion is that the project would not contribute considerably to greenhouse gas emissions or climate change..

c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less than significant impact. Because the proposed roadway widening would not result in any significant impacts, there would be no environmental impacts that would cause substantial adverse direct or indirect effects on human beings. The impact would be less than significant.

Chapter 4
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Chapter 5

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Appendix A

TITLE VI POLICY STATEMENT

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