24th Street Improvement Project

Bakersfield, Kern County, California

District 6–Fresno

EA 06-493900 Project ID: 0600000495

06-KER-58-51.7/51.8

06-KER-178-0.0/0.4

06-KER-99-24.9/25.7

EA 06-484700 Project ID: 0600000485

06-KER-178-0.4/1.9

Project ID: NCIIPLN 5109 (111), NCIIPLN 5109 (110)

Draft Environmental Impact Report/ Environmental Assessment and Section 4(f) Evaluation

Prepared by the State of California Department of Transportation and the City of Bakersfield

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by the California Department of Transportation under its assumption of responsibility pursuant to 23 U.S. Code 327.

May 2012

General Information about This Document

What's in this document?

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, and in cooperation with the City of Bakersfield (City), has prepared this Environmental Impact Report/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project in the City of Bakersfield in Kern County, California. The City is the lead agency under the California Environmental Quality Act. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read this Environmental Impact Report/Environmental Assessment.
- Additional copies of this document and related technical studies are available for review at the Caltrans District 6 office at 1352 West Olive Drive, Fresno, California; Beale Memorial Library at 701 Truxtun Avenue, Bakersfield, California; Bakersfield City Hall at 1600 Truxtun Avenue, Bakersfield, California; the City of Bakersfield Planning Division at 1715 Chester Avenue, Bakersfield, California; the County of Kern Planning Department at 2700 M Street, Bakersfield, California; the Kern Council of Governments at 1401 19th Street, Bakersfield, California; and the Thomas Roads Improvement Program Office at 900 Truxtun Avenue, Suite 200, Bakersfield, California.
- Attend the public meetings on: June 26, 2012 and July 5, 2012.
- We welcome your comments. If you have any concerns about the proposed project, please attend the public meeting or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

  Bryan Apper, Senior Environmental Planner
  California Department of Transportation—District 6
  855 M Street, Suite 200
  Fresno, CA 93721

- Submit comments via email to: bryan_apper@dot.ca.gov.
- Submit comments by the deadline: July 16, 2012.

What happens next?

After comments are received from the public and reviewing agencies, Caltrans, as assigned by the Federal Highway Administration, in cooperation with the City, 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, Caltrans could design and build all or part of the project.

For individuals with sensory disabilities, this document is 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, Attn: Bryan Apper, 855 M Street, Suite 200, Fresno, CA 93721; (559) 445-6282 Voice, or use the California Relay Service TTY number, (800) 735-2929 or 711.

SCH# 2008041070
EA 06-493900
06-0000-0495
Project ID: 0600000495
06-KER-58-51.7/51.8
06-KER-178-0.0/0.4
06-KER-99-24.9/25.7
EA 06-484700
06-0000-0485
Project ID: 0600000485
06-KER-178-0.4/1.9

Widen roadways and make intersection/interchange improvements on State Route 58 west of State Route 99 and on State Route 178 east of State Route 99, build a northbound auxiliary lane along State Route 99 south of State Route 178, and improve the 23rd/24th Street couplet in the City of Bakersfield in Kern County, California.

DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL ASSESSMENT and Section 4(f) Evaluation

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 U.S. Code 4332(2)(C), 23 U.S. Code 327 and 49 U.S. Code 303

THE STATE OF CALIFORNIA
Department of Transportation
and
the City of Bakersfield

5/16/12
Date of Approval

Jennifer H. Taylor, Office Chief South
Central Region Environmental Division
California Department of Transportation
National Environmental Policy Act Lead Agency

5/15/12
Date of Approval

Raul Rojas
Director of Public Works
City of Bakersfield
California Environmental Quality Act Lead Agency

Summary

The proposed project is a joint project by the California Department of Transportation (Caltrans) and the City of Bakersfield, and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act and the National Environmental Policy Act. Caltrans is the lead agency under the National Environmental Policy Act. The City of Bakersfield (City) is the lead agency under the California Environmental Quality Act. In addition, the Federal Highway Administration's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S. Code 327.

Some impacts determined to be significant under the California Environmental Quality Act may not lead to a determination of significance under the National Environmental Policy Act. Because the National Environmental Policy Act is concerned with the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for the National Environmental Policy Act. One of the most commonly seen joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA).

Following receipt of public comments on the Draft Environmental Impact Report/Environmental Assessment and circulation of the Final Environmental Impact Report/Environmental Assessment, Caltrans will be required to take actions regarding the environmental document. Caltrans will determine whether to certify the Environmental Impact Report and issue Findings and a Statement of Overriding Considerations under the California Environmental Quality Act and to issue a Finding of No Significant Impact or require an Environmental Impact Statement (EIS) under the National Environmental Policy Act.

S.1 Overview of Project Area

In Kern County, 24th Street is a state facility that was relinquished July 2011 to the City per the Caltrans relinquishment report titled *Transportation System Analysis and Evaluation for State Route 178 Realignment,* authorized by Assembly Bill 1858 and signed by then-Governor Arnold Schwarzenegger on September 18, 2006, and California Transportation Commission Resolution No. 3798. The portion of the

highway that was relinquished to the City is from the west end of the Kern River bridge (post mile 0.20) to just east of M Street (post mile 1.70). Assembly Bill 1858 requires the City of Bakersfield to install and maintain within its jurisdiction signs directing motorists to the continuation of State Route 178.

The proposed project includes improvements along 24th Street from the southbound State Route 99 ramp intersection to 0.2 mile east of M Street, for a distance of about 2.1 miles, and improvements on State Route 99 for the northbound auxiliary lane from 1,500 feet south of and to the Kern River bridge.

SAFETEA-LU, signed into law on August 10, 2005, earmarked federal funding for local projects in the Bakersfield area. Section 1302 of the act, the National Corridor Infrastructure Improvement Program, identified federal funding for widening State Route 178 in Bakersfield between State Route 99 and D Street.

S.2 Purpose and Need

Purpose

The purpose of the proposed 24th Street Improvement Project is to address existing traffic congestion and future travel demand (amount of additional traffic expected by 2035) along 24th Street. The project area extends from southbound State Route 99 to just east of M Street, including 23rd Street and 24th Street within the couplet (a pair of one-way streets).

Need

In the past 10 years, growth in Kern County has been concentrated in Metropolitan Bakersfield. Between 2000 and 2009, for example, growth in the City of Bakersfield ranged between 1.1 and 5.2 percent per year, while overall county growth ranged between 1.2 and 3.2 percent. As the city grows, the amount of traffic also grows.

Although more detailed information is provided below, there are a couple of simple ways to demonstrate the need for this project--time and money. Currently it takes about 3 to 4 minutes to drive through the project (from Buck Owens Boulevard/24th Street intersection to M Street/24th Street intersection) area during the evening peak period (the busiest time). Without the project this would increase to about 20 to 23 minutes in 2035. With the project, it would take about 7 to 8 minutes. Put in terms of money, this means that without the project an additional $43.6 million of costs to drivers would be incurred (based upon the analysis using the Surface Transportation Efficiency Analysis Model, which converts the cost of congestion to dollars).

S.3 Proposed Action

Caltrans, as assigned by the Federal Highway Administration, and in cooperation with the City, proposes to widen roadways and make intersection improvements on State Route 58 west of State Route 99, and on State Route 178 east of State Route 99 in the City of Bakersfield in Kern County. This stretch of highway is collectively referred to as 24th Street. In addition to proposed improvements along 24th Street, a northbound auxiliary lane along State Route 99 south of 24th Street is planned. The proposed project vicinity and location are shown in Figures 1-1 and 1-2, respectively.

The proposed project was initially two separate projects. One project consisted of a new intersection at State Route 178 and Oak Street, and the other project consisted of the widening of State Route 178 between Oak Street and D Street. The two projects were combined into the proposed project discussed in this document.

Three alternatives are being considered: a No-Build Alternative and two build alternatives.

No-Build Alternative

Under the No-Build Alternative, no improvements would be made to the existing Oak Street/24th Street intersection and 24th Street other than routine roadway maintenance such as roadway cleaning, pothole repair, landscape maintenance, irrigation repair, inspections, etc. The No-Build Alternative is a baseline by which to measure and compare the proposed improvement (build) alternatives. Traffic modeling for the No-Build Alternative reflects the current highway network augmented by planned transportation projects that are reasonably expected to take place in the design year (see Section 2.4, Cumulative Impacts, for a discussion of area transportation projects).

The No-Build Alternative would cost nothing at this time, but would have other impacts. Traffic volumes along State Route 178 and Oak Street would increase as the City continues to grow. The existing Level of Service at the State Route 178/Oak Street intersection would degrade to Level of Service F by 2035. Traffic backups would become longer, and vehicle delays would increase.

Build Alternatives (Alternatives 1 and 2)

Two build alternatives—Alternatives 1 and 2—are under consideration, as discussed below. The following design features are the same for both Alternatives 1 and 2:

1. State Route 99/State Route 58/State Route 178 interchange and northbound State Route 99 auxiliary lane—Widen westbound 24th Street to accommodate an additional lane and improvements at the State Route 99 southbound ramp and construction of a northbound auxiliary lane along State Route 99 south of 24th Street.
2. Oak Street intersection—Make improvements to northbound, southbound, eastbound, and westbound Oak Street approaches.
3. 24th Street Bridge over the Kern River—Remove the existing raised median and rebuild a smaller width raised median near the middle of the 24th Street bridge to accommodate four standard-width lanes in each direction and shoulders.
4. Bus turnouts—Add three bus turnouts near Cedar Street and Alder Street and one at Oak Street.
5. Reverse curve (S curve)—Build a new reverse curve (the street curves from one direction to the other) that begins along 24th Street near Alder Street (A Street) and ends along 23rd Street near D Street.
6. Two-way frontage road connecting Elm Street to Beech Street—Build a two-way frontage road on the north side of 24th Street connecting Elm Street to Beech Street, providing additional access to Elm Street.
7. 23rd Street/24th Street couplet (from D Street to 0.2 mile east of M Street)—Make improvements to the 23rd Street/24th Street couplet (a pair of one way streets), including removing existing on-street parking along 23rd and 24th Streets, rehabilitating the roadway, and restriping to allow an additional travel lane in each direction.

Unique Features of the Build Alternatives

Alternatives 1 and 2 would include the above design features, but would differ where 24th Street is widened to the north or south. Alternative 1 would widen 24th Street to the north of its existing alignment, and Alternative 2 would widen 24th Street to the south of the existing roadway alignment. The two build alternatives are summarized below.

Alternative 1 (Widen to the North)

Alternative 1 would widen 24th Street to the north and would encompass the State Route 99 interchange and auxiliary lane, the Oak Street/24th Street intersection, the 24th Street widening to the north, and the 24th Street couplet area. The widening to the north along 24th Street would add two travel lanes (one in each direction). The proposed roadway alignment would be shifted north of the existing alignment about 17 feet, which would minimize the right-of-way acquisition on the south side of 24th

Street required for the roadway widening and would accommodate a bus turnout at Alder Street (A Street). Impacts include full and partial right-of-way acquisitions and reconstruction of Carrier Canal on the north and south sides of 24th Street.

Alternative 2 (Widen to the South)

Alternative 2 would include the State Route 99 interchange and auxiliary lane, the Oak Street/24th Street intersection, the 24th Street widening to the south, and the 23rd Street and 24th Street couplet area. The widening to the south would add two travel lanes (one in each direction). The proposed roadway alignment would be shifted south of the existing alignment about 21 feet, which would minimize the right-of-way acquisition on the north side of 24th Street required for the roadway widening, accommodate a bus turnout at A Street, and accommodate residential garage access from the north properties directly to 24th Street. Impacts include full and partial right-of-way acquisitions and reconstruction of Carrier Canal on the north and south sides of 24th Street.

Locally Preferred Alternative

As the project sponsor, the City of Bakersfield is the California Environmental Quality Act lead agency for the proposed project. A California Environmental Quality Act lead agency may wait until after the environmental document is circulated for public review and comment and then select the preferred alternative based on comments received and the technical analysis presented in the environmental document. However, the California Environmental Quality Act does allow the designation of a recommended preferred alternative by the lead agency before circulation of the environmental document if the lead agency has determined that one of the project alternatives studied best meets the project objectives and is also determined to be superior based on specific engineering and environmental considerations.

Based on information from the technical studies prepared for the No-Build and the two build alternatives, the City has identified Alternative 1–Widen to the North as its recommended preferred alternative based on the ability of the recommended preferred alternative to meet the defined project objectives, engineering considerations, key project characteristics, and potential environmental impacts. See Section 1.3.4 for information on each of these topics.

S.4 Joint California Environmental Quality Act/National Environmental Policy Act Document

The project is subject to federal, state and City of Bakersfield (City) environmental review requirements because the City proposes to use federal funds from the Federal Highway Administration and/or the project requires an approval action from the Federal Highway Administration. Project documentation, therefore, complies with both the California Environmental Quality Act and the National Environmental Policy Act.

The City is the project proponent and the lead agency under the California Environmental Quality Act. The Federal Highway Administration's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S. Code 327.

Some impacts determined to be significant under the California Environmental Quality Act may not lead to a determination of significance under the National Environmental Policy Act. Because the National Environmental Policy Act is concerned with the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for the National Environmental Policy Act. One of the most common joint document types is an Environmental Impact Report/ Environmental Assessment.

Following receipt of public comments on the Draft Environmental Impact Report/ Environmental Assessment and circulation of the Final Environmental Impact Report/ Environmental Assessment, the lead agencies would take actions on the environmental document. The City would determine whether to certify the Environmental Impact Report and issue Findings and a Statement of Overriding Considerations, and Caltrans would decide whether to issue a Finding of No Significant Impact or require an Environmental Impact Statement.

S.5 Project Impacts

Table S.1 provides a summary of the impacts from the environmental analysis contained in Chapter 2. Avoidance and minimization and/or mitigation measures to minimize potential impacts are listed in Appendix G of this document.

Table S.1. Summary of Potential Impacts from Alternatives

Environmental Resource	No-Build Alternative (No-Build)	Alternative 1 (Widen to the North)	Alternative 2 (Widen to the South)
Land Use	No impact	Temporary construction easements (6.45 acres). 6.42 acres of land uses converted.	Temporary construction easements (6.32 acres). 6.73 acres of land uses converted.
Consistency with State, Regional, and Local Plans	Not consistent with the goals and policies of the City of Bakersfield General Plan	Consistent	Consistent
Parks and Recreation	No impact	Temporary construction easement in Beach Park (0.11 acre of park land) and temporary construction easement (0.37 acre) along Kern River Parkway Bike Trail. Permanent acquisition of 0.8 acre of Beach Park property (non-active area).	Same as Alternative 1.
Community Character and Cohesion	No impact	Temporary construction impacts to neighborhoods include road detours, access restrictions, and traffic delays. No permanent impacts.	Same as Alternative 1.
Relocation	No impact	110 temporary construction easements (6.45 acres). 23 full parcel acquisitions and 29 partial parcel acquisitions.	97 temporary construction easements (6.32 acres). 23 full parcel acquisitions and 21 partial parcel acquisitions.

Table S.1. Summary of Potential Impacts from Alternatives

Environmental Resource	No-Build Alternative (No-Build)	Alternative 1 (Widen to the North)	Alternative 2 (Widen to the South)
Utilities	No impact	Removal or relocation of 19 existing wooden power poles, relocation of gas lines and water lines/well pump stations at five locations, and relocation of one existing concrete telephone conduit box and one inactive 10-inch oil pipeline.	Removal or relocation of 16 existing wooden power poles, relocation of gas lines and water lines/well pump stations at four locations, and relocation of one existing concrete telephone conduit box and one inactive 10-inch oil pipeline.
Emergency Services	No impact	Delayed response times for police, fire protection, and emergency services during construction due to short-term traffic delays and intermittent road detours. No long-term operation impacts with expanded vehicular capacity.	Same as Alternative 1.
Traffic and Transportation/Pedestrian and Bicycle Facilities	Increased traffic congestion and degradation of Level of Service	Temporary street closures, delays, or detours to accommodate construction activities. No long-term operational impacts.	Same as Alternative 1.
Visual/Aesthetics	No impact	Visibility of construction equipment, construction material staging, construction lighting, safety barriers along the Kern River Parkway Bike Trail, and visible dust during construction. Long-term increased hardscape features, relocation of housing, and restriping of portions of 24th Street.	Same as Alternative 1.

Table S.1. Summary of Potential Impacts from Alternatives

Environmental Resource	No-Build Alternative (No-Build)	Alternative 1 (Widen to the North)	Alternative 2 (Widen to the South)
Cultural Resources	No impact	Potential adverse effects to the historic district[1] south of 24th Street, consisting of 9 full parcel acquisitions (7 contributing properties), 6 partial parcel acquisitions (1 contributing property), and 12 TCEs (3 on contributing properties). The direct physical impacts to the 11 contributing properties represents 25 percent of contributing properties identified in the APE and about 10 percent of contributors within the district as a whole (based on the approximate ratio of 85% contributing and 15% noncontributing properties within the historic district to the south). No soundwalls are proposed within the district to the south. A finding of no adverse effect is expected for impacts to the district north of 24th Street, which consists of 12 full parcel acquisitions (5 contributing properties), 2 partial parcel acquisitions (1 contributing property), and 14 TCEs (2 on contributing properties). The direct physical impacts to the 8 contributing properties represents 18 percent of contributing properties identified in the APE and about 3 percent	Potential adverse effects to the historic district[1] south of 24th Street consists of 22 full parcel acquisitions (10 contributing properties), 1 partial acquisition, 2 partial parcel acquisitions with TCEs (2 contributing properties), and 9 TCEs (4 on contributing properties). The direct physical impacts to the 16 contributing properties represents 36 percent of contributing properties identified in the APE and about 16 percent of contributors within the district as a whole (based on the approximate ratio of 85% contributing and 15% noncontributing properties within the historic district to the south). • 3 potential soundwalls are proposed (on noncontributing properties) in the district to the south and are likely to have minimal to moderate impacts to the viewshed based on current hardscape features and viewshed at those locations.

[1] The historic district is assumed to be National Register-eligible for purposes of this project only as explained in Section 2.1.6.

Table S.1. Summary of Potential Impacts from Alternatives

Environmental Resource	No-Build Alternative (No-Build)	Alternative 1 (Widen to the North)	Alternative 2 (Widen to the South)
		of contributors within the district as a whole (based on the approximate ratio of 75% contributing and 25% noncontributing properties within the historic district to the north). • 4 potential soundwalls are proposed (2 on contributing properties) in the district to the north and are likely to have minimal impacts due to the comparable hardscape features currently present. No permanent or temporary use of land from the three Bungalow Court properties (2100 23rd Street, 2300 D Street, and 2210 D Street) or the commercial building (Healthland) at 2323 E Street, which are all identified as individually eligible for listing in the National Register of Historic Places.	A finding of no adverse effect is expected for impacts to the district north of 24th Street, which consist of 1 full parcel acquisition on a contributing property, no partial parcel acquisitions, and 5 TCEs (2 on contributing properties). The direct physical impacts to the 3 contributing properties represents 7 percent of contributing properties identified in the APE and about 16 percent of contributors within the district as a whole (based on the approximate ratio of 75% contributing and 25% noncontributing properties within the historic district to the north). • 1 potential soundwall is proposed (on a contributing property) in the district to the north and is likely to have minimal impacts due to the comparable hardscape features currently present. No permanent or temporary use of land from the three Bungalow Court properties (2100 23rd Street, 2300 D Street, and 2210 D Street) or the commercial building (Healthland) at 2323 E Street, which are all identified

Table S.1. Summary of Potential Impacts from Alternatives

Environmental Resource	No-Build Alternative (No-Build)	Alternative 1 (Widen to the North)	Alternative 2 (Widen to the South)
			as individually eligible for listing in the National Register of Historic Places.
Water Quality and Stormwater Runoff	No impact	Increase of 14 acres of impervious surface area and generation of roadway pollutants caused by operation of the proposed project could affect the Kern River; Treatment Control best management practices would substantially reduce pollutants and treat roadway runoff. Temporary impacts to drainage patterns by requiring extension of Carrier Canal; a temporary diversion conduit would be built to divert flows during construction.	Same as Alternative 1.
Paleontology	No impact	Excavation for retaining walls, drainage facilities, and the extension of Carrier Canal is expected to reach depths greater than 5 feet, resulting in potential permanent impacts to Pleistocene sedimentary formations with potential to contain significant nonrenewable paleontological resources within the study area.	Same as Alternative 1.
Hazardous Waste/Materials	No impact	Use of chemical agents, solvents, paints, and other hazardous materials; removal of traffic paint stripes and pavement-marking materials that may contain hazardous waste; aerially deposited lead in unpaved areas from past use of leaded fuels from soil disturbance;	Same as Alternative 1 except removal/of 16 wooden utility poles that may contain creosote; and, dewatering of contaminated groundwater.

Table S.1. Summary of Potential Impacts from Alternatives

Environmental Resource	No-Build Alternative (No-Build)	Alternative 1 (Widen to the North)	Alternative 2 (Widen to the South)
		removal/relocation of 19 wooden utility poles that may contain creosote; and dewatering of contaminated groundwater during construction. Asbestos-containing materials on pre-1978 structures. No permanent impacts.	
Air Quality	Adverse impacts	Short-term air pollutant emissions during construction include fugitive dust from grading/site preparation and equipment exhaust.	Same as Alternative 1.
Noise	14 of 132 receivers within the study area would approach or exceed the noise abatement criteria	25 receivers would either approach or exceed the noise abatement criteria or have a substantial noise increase of 12 dBA or more.	22 receivers would either approach or exceed the noise abatement criteria or have a substantial noise increase of 12 dBA or more.
Natural Communities	No impact	Indirect temporary impacts to unvegetated streambed and sycamore/willow woodland due to generation of dust, noise, and lighting from construction work. No permanent impacts.	Same as Alternative 1.

Table S.1. Summary of Potential Impacts from Alternatives

Environmental Resource	No-Build Alternative (No-Build)	Alternative 1 (Widen to the North)	Alternative 2 (Widen to the South)
Wetlands and other Waters	No impact	0.075 acre of temporary impacts to California Department of Fish and Game potential jurisdictional areas. 0.42 acre of permanent impacts to U.S. Army Corps of Engineers jurisdictional waters.	Same as Alternative 1.
Animal Species	No impact	Construction activities would result in indirect temporary impacts to burrowing owls, indirect disturbance on crevice-dwelling animal species, impeded access to roosting sites due to construction activities on the Kern River bridge, and temporary impacts to bat colonies. Permanent impacts include impacts contributing to potential burrowing owl habitat fragmentation and habitat loss, indirect impacts contributing to potential migratory and other bird habitat fragmentation and habitat loss, and indirect impacts to bridge- and crevice-dwelling animal species.	Same as Alternative 1.
Threatened and Endangered Species	No impact	Temporary impacts include potential construction-related impacts to 1.07 acres of ruderal/disturbed (including barren ground) habitat, which represents both suitable foraging and denning habitat for the San Joaquin kit fox.	Temporary impacts include potential construction-related impacts to 1.04 acres of ruderal/disturbed (including barren ground) habitat, which represents both suitable foraging and denning habitat for the San Joaquin kit fox.

Table S.1. Summary of Potential Impacts from Alternatives

Environmental Resource	No-Build Alternative (No-Build)	Alternative 1 (Widen to the North)	Alternative 2 (Widen to the South)
		Permanent impacts could include direct and indirect impacts to San Joaquin kit foxes, including loss of 1.21 acres of ruderal/disturbed (including bare ground) habitat.	Permanent impacts same as Alternative 1.
Invasive Species	No impact	Permanent impacts include the potential to spread invasive species to the project area during construction activities; however, impacts would not be adverse.	Same as Alternative 1.
Cumulative Impacts	No impact	Construction of the six Thomas Roads Improvement Program projects, including the proposed project, could result in cumulative impacts to San Joaquin kit fox, including habitat and den loss, habitat fragmentation, and increase for vehicle strike.	Same as Alternative 1.

S.6 Coordination with Other Agencies

The following permits and project approvals are anticipated for the project.

Table S.2. Permits and Project Approvals

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Section 7 Endangered Species Act consultation	A Biological Assessment evaluating the projects' potential impacts to federally listed threatened and endangered species would be submitted to the U.S. Fish and Wildlife Service during Section 7 consultation.
U.S. Army Corps of Engineers	Section 404 Permit, Clean Water Act	Obtain after jurisdictional delineation approval and before start of construction.
California Department of Fish and Game	Section 1602 Streambed Alteration Agreement	Obtain after jurisdictional delineation approval and before start of construction.
California Department of Fish and Game	Section 2080.1 Consistency Determination for State Listed Threatened and Endangered Species	Concurrent review with Section 7 consultation.
State Historic Preservation Officer	Finding of Effect	Obtain before Final Environmental Document approval.
State Historic Preservation Officer	Memorandum of Agreement	Obtain before Final Environmental Document approval.
Regional Water Quality Control Board	Section 401 Water Quality Certification	Obtain after jurisdictional delineation approval and before start of construction.
State Water Resources Control Board	General Construction Storm Water Permit-Caltrans	Obtain after jurisdictional delineation approval and before start of construction.
Kern County	Flood Control Permit	Obtain after jurisdictional delineation approval and before start of construction.
San Joaquin Valley Air Pollution Control District	Air Quality Dust Control Plans	Obtain before start of construction.
San Joaquin Valley Air Pollution Control District	Air Impact Assessment	Obtain before start of construction.
Central Valley Flood Protection Board	Encroachment Permit	Obtain before start of construction.
State Water Resources Control Board	Section 402 Caltrans National Pollution Discharge Elimination System Permit CAS00003	Obtain before start of construction.
City of Bakersfield and Kern Delta Water District	Encroachment Permit	Obtain before start of construction.

Table of Contents

SUMMARY i
S.1 Overview of Project Area i
S.2 Purpose and Need ii
S.3 Proposed Action iii
S.4 Joint California Environmental Quality Act/National Environmental Policy Act Document vi
S.5 Project Impacts vi
S.6 Coordination with Other Agencies xv
CHAPTER 1 PROPOSED PROJECT 1
1.1 Introduction 1
1.2 Purpose and Need 7
1.2.1 Purpose 7
1.2.2 Need 7
1.3 Alternatives 15
1.3.1 Build Alternatives 15
1.3.2 No-Build Alternative 40
1.3.3 Comparison of Alternatives 40
1.3.4 Locally Preferred Alternative 45
1.3.5 Alternatives Considered but Eliminated from Further Discussion 50
1.4 Permits and Approvals Needed 52
CHAPTER 2 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES 53
2.1 Human Environment 54
2.1.1 Land Use 54
2.1.1.1 Existing and Future Land Use 54
2.1.1.2 Consistency with State, Federal, Regional and Local Plans and Programs 59
2.1.1.3 Parks and Recreation 63
2.1.2 Community Impacts 79
2.1.2.1 Community Character and Cohesion 79
2.1.2.2 Relocations and Real Property Acquisitions 86
2.1.2.3 Environmental Justice 111
2.1.3 Utility and Emergency Services 113
2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities 119
2.1.5 Visual/Aesthetics 137
2.1.6 Cultural Resources 167
2.2 Physical Environment 191
2.2.1 Water Quality and Storm Water Runoff 191
2.2.2 Paleontology 204
2.2.3 Hazardous Waste or Materials 210
2.2.4 Air Quality 220
2.2.5 Noise 235
2.2.6 Energy 282
2.3 Biological Environment 285
2.3.1 Natural Communities 285

2.3.2 Wetlands and Other Waters 299
2.3.3 Animal Species 305
2.3.4 Threatened and Endangered Species 315
2.3.5 Invasive Species 327
2.4 Cumulative Impacts 330
CHAPTER 3 CALIFORNIA ENVIRONMENTAL QUALITY ACT EVALUATION 345
3.1 Determining Significance under the California Environmental Quality Act 345
3.2 Discussion of Significant Impacts 346
3.2.1 Less than Significant Effects of the Proposed Project 346
3.2.2 Significant Environmental Effects of the Proposed Project 347
3.2.3 Unavoidable Significant Environmental Effects 349
3.2.4 Significant Irreversible Environmental Changes 349
3.3 Mitigation Measures for Significant Impacts under the California Environmental Quality Act 350
3.4 Climate Change under the California Environmental Quality Act 351
3.4.1 Regulatory Setting 352
3.4.2 Project Analysis 356
3.4.3 Limitations and Uncertainties with Modeling 364
3.4.4 Construction Emissions 372
3.4.5 California Environmental Quality Act Conclusion 372
3.4.6 Greenhouse Gas Reduction Strategies 373
CHAPTER 4 COMMENTS AND COORDINATION 383
4.1 Scoping Process 383
4.1.1 Notice of Preparation 383
4.1.2 Notice of Intent 384
4.1.3 Scoping Meetings 384
4.2 Consultation and Coordination with Cooperating/Participating Agencies 384
4.2.1 Cooperating/Participating Agencies 384
4.3 Consultation and Coordination with Resource Agencies 385
4.4 Cultural Resources Consultation and Coordination 390
CHAPTER 5 LIST OF PREPARERS 393
CHAPTER 6 DISTRIBUTION LIST 401
APPENDIX A CALIFORNIA ENVIRONMENTAL QUALITY ACT CHECKLIST 405
APPENDIX B SECTION 4(F) EVALUATION 415
APPENDIX C CORRESPONDENCE WITH THE CITY OF BAKERSFIELD REGARDING *DE MINIMIS* SECTION 4(F) FINDING 479
APPENDIX D STATE HISTORIC PRESERVATION OFFICER CONSULTATION 487
APPENDIX E TITLE VI POLICY STATEMENT 511
APPENDIX F SUMMARY OF RELOCATION BENEFITS 513
APPENDIX G MINIMIZATION AND/OR MITIGATION SUMMARY 521
APPENDIX H SPECIES LIST 547
LIST OF TECHNICAL STUDIES THAT ARE BOUND SEPARATELY 559

List of Figures

Figure 1-1. Project Vicinity 3
Figure 1-2. Project Location 5
Figure 1-3. Traffic Levels of Service for Multi-Lane Highways 9
Figure 1-4. Traffic Levels of Service for Signalized Intersections 11
Figure 1-5. Alternatives 1 and 2 – Proposed State Route 99/24th Street Interchange Improvements 17
Figure 1-6. Alternatives 1 and 2 – Proposed Auxiliary Lane State Route 99 19
Figure 1-7. Alternative 1, Widen to the North – West of Oak Street to Cedar Street 27
Figure 1-8. Alternative 1, Widen to the North – Cedar Street to Eye Street 29
Figure 1-9. Alternative 1, Widen to the North – Eye Street to State Route 178 31
Figure 1-10. Alternative 2 – West of Oak Street to Cedar Street 33
Figure 1-11. Alternative 2 – Cedar Street to Eye Street 35
Figure 2-1. General Plan Land Use Designations 55
Figure 2-2. Beach Park and Kern River Parkway Bike Trail 65
Figure 2-3. Impacts to Beach Park 69
Figure 2-4. Kern River Parkway Bike Trail Temporary Construction Detour 73
Figure 2-5. Study Area Census Tracts 81
Figure 2-6. Potential Acquisitions/Relocations – Alternative 1 – Widen to the North 89
Figure 2-7. Alternative 2 Potential Acquisitions/Relocations – Alternative 2 – Widen to the South 99
Figure 2-8. Existing Utilities within the Study Area 115
Figure 2-9. Study Intersection Locations 121
Figure 2-10. Landscape Units 141
Figure 2-11. Key View Locations 143
Figure 2-12. Key View 1 Existing and Proposed Conditions 147
Figure 2-13. Key View 2 Existing and Proposed Conditions 149
Figure 2-14. Key View 3 Existing and Proposed Conditions 151
Figure 2-15. Key View 4 Existing and Proposed Conditions 153
Figure 2-16. Key View 5 Existing and Proposed Conditions 155
Figure 2-17. Key View 6 Existing and Proposed Conditions 157
Figure 2-18. Key View 7 Existing and Proposed Conditions 159
Figure 2-19. Impacts to Properties within the Historic Districts North and South of 24th Street – Alternative 1 177
Figure 2-20. Impacts to Properties within the Historic Districts North and South of 24th Street – Alternative 2 179
Figure 2-21. Individually Eligible Properties 181
Figure 2-22. Kern River Watershed Map 197
Figure 2-23. Geologic Map of Study Area 205
Figure 2-24. Modeled Sound Barriers and Receiver Locations – Alternative 1 241
Figure 2-25. Modeled Sound Barriers and Receiver Locations – Alternative 2 251
Figure 2-26. Existing Biological Resources 287
Figure 2-27. Project Impacts to Biological Resources for Alternative 1 291
Figure 2-28. Project Impacts to Biological Resources for Alternative 2 293
Figure 3-1. California Greenhouse Gas Inventory Forecast 359
Figure 3-2. Possible Effect of Traffic Operation Strategies in Reducing On-Road Carbon Dioxide Emission 361
Figure 3-3. Cascade of Uncertainties 369
Figure 3-4. Mobility Pyramid 375

List of Tables

Table S.1. Summary of Potential Impacts from Alternatives vii
Table S.2. Permits and Project Approvals xv
Table 1.1. Study Intersections Level of Service Summary 13
Table 1.2. State Route 99 Study Ramps Level of Service 14
Table 1.3. Comparison of Project Alternatives 41
Table 2.1. Existing Land Use Impacts by Alternative (acres) 58
Table 2.2. Metropolitan Bakersfield General Plan Policies and Goals Relevant to the Proposed Project 60
Table 2.3. Summary of Temporary Occupancies and Permanent Uses at Beach Park by Build Alternative 68
Table 2.4. Ethnic Composition for the County, City and Study Area Census Tracts 83
Table 2.5. Housing Profile for the County, City and Study Area Census Tracts 84
Table 2.6. Age Distribution for the County, City, and Study Area Census Tracts 85
Table 2.7. Summary of Property Acquisitions for the Build Alternatives 109
Table 2.8. Environmental Justice Populations 112
Table 2.9. 24th Street Project-Level of Service Summary Table 124
Table 2.10. Traffic Accident Data for 24th/23rd Street Couplet and State Route 178 127
Table 2.11. Traffic Accident Data for 23rd Street S-Curve (Post Miles 0.964 to 1.120) 128
Table 2.12. Level of Service and Delay Ranges 130
Table 2.13. Permanent Uses and Temporary Occupancies at the Historic Properties 175
Table 2.14. National and California Ambient Air Quality Standards and Attainment Status 224
Table 2.15. Build Alternatives–2015 Regional Vehicle Emissions (tons/year) 228
Table 2.16. Build Alternatives–2035 Regional Vehicle Emissions (tons/year) 228
Table 2.17. Activity Categories and Noise Abatement Criteria 236
Table 2.18. Typical Noise Levels 237
Table 2.19. Noise Levels within the Project Study Area 261
Table 2.20. Predicted Future Exterior and Interior Noise Levels 268
Table 2.21. Vegetation Communities Occurring in the Biological Study Area 289
Table 2.22. Project Impacts to Vegetation Communities 290
Table 2.23. Project Impacts to U.S. Army Corps of Engineers Jurisdictional Areas 303
Table 2.24. Project Impacts to California Department of Fish and Game Jurisdictional Areas 304
Table 2.25. Federally and/or State-Listed Species 317
Table 2.26. San Joaquin Kit Fox Suitable Habitat in the Biological Study Area 319
Table 2.27. Cumulative Thomas Roads Improvement Program Projects within the Study Area 332
Table 2.28. Cumulative City of Bakersfield Projects within the Study Area 334
Table 3.1. Carbon Dioxide Emissions (tons per year) 364
Table 3.2. Model Year 2015 Required Miles Per Gallon (mpg) by Alternative 366
Table 3.3. Climate Change/Carbon Dioxide Reduction Strategies 378

List of Acronyms and Abbreviations

APE	Area of Potential Effects
APN	Assessor's Parcel Number
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Bakersfield
dBA	A-weighted decibels
dBA L_{eq}	A-weighted decibels equivalent continuous noise level
dBA L_{max}	A-weighted decibels maximum instantaneous noise level
EIR/EA	Environmental Impact Report/Environmental Assessment
EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
Kit Fox Study	San Joaquin Kit Fox Effects Analysis, Mitigation Strategy, and Implementation Plan for the Thomas Roads Improvement Program
NEPA	National Environmental Policy Act
SAFETEA-LU	Safe, Accountable, Flexible, Efficient, Transportation Equity Act
Section 106	Section 106 of the National Historic Preservation Act
SHPO	State Historic Preservation Officer (Office of Historic Preservation)
U.S. Code	United States Code

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, in cooperation with the City, proposes to widen roadways and make intersection/interchange improvements on State Route 58 west of State Route 99, and on State Route 178 east of State Route 99, in the City of Bakersfield in Kern County. This stretch of highway is collectively referred to as 24th Street.

In addition to proposed improvements along 24th Street, a northbound auxiliary lane along State Route 99 south of 24th Street is planned. The project vicinity and project location are shown in Figure 1-1 and Figure 1-2, respectively.

The 24th Street Improvement Project will involve review and approvals by the City and Caltrans. The City of Bakersfield is the lead agency for California Environmental Quality Act compliance, and Caltrans is the lead agency for National Environmental Policy Act compliance.

In Kern County, 24th Street is a state facility that was relinquished to the City per the Caltrans relinquishment report titled *Transportation System Analysis and Evaluation for State Route 178 Realignment,* authorized by Assembly Bill 1858, signed by then-Governor Arnold Schwarzenegger on September 18, 2006, and California Transportation Commission Resolution No. 3798. The portion of the highway relinquished to the City is from the west end of the Kern River bridge (post mile 0.20) to just east of M Street (post mile 1.70). Assembly Bill 1858 requires the City of Bakersfield to install and maintain within its jurisdiction signs directing motorists to the continuation of State Route 178.

The Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (known as SAFETEA-LU), signed into law on August 10, 2005, earmarked federal funding for projects in the Bakersfield area. Section 1302 of the act, the National Corridor Infrastructure Improvement Program, identified federal funding for widening State Route 178 in Bakersfield between State Route 99 and D Street. The proposed project is included in the 2011 Kern Regional Transportation Plan and the 2008 Regional Transportation Improvement Program, which were found to be conforming by the Federal Highway Administration/Federal Transit Administration.

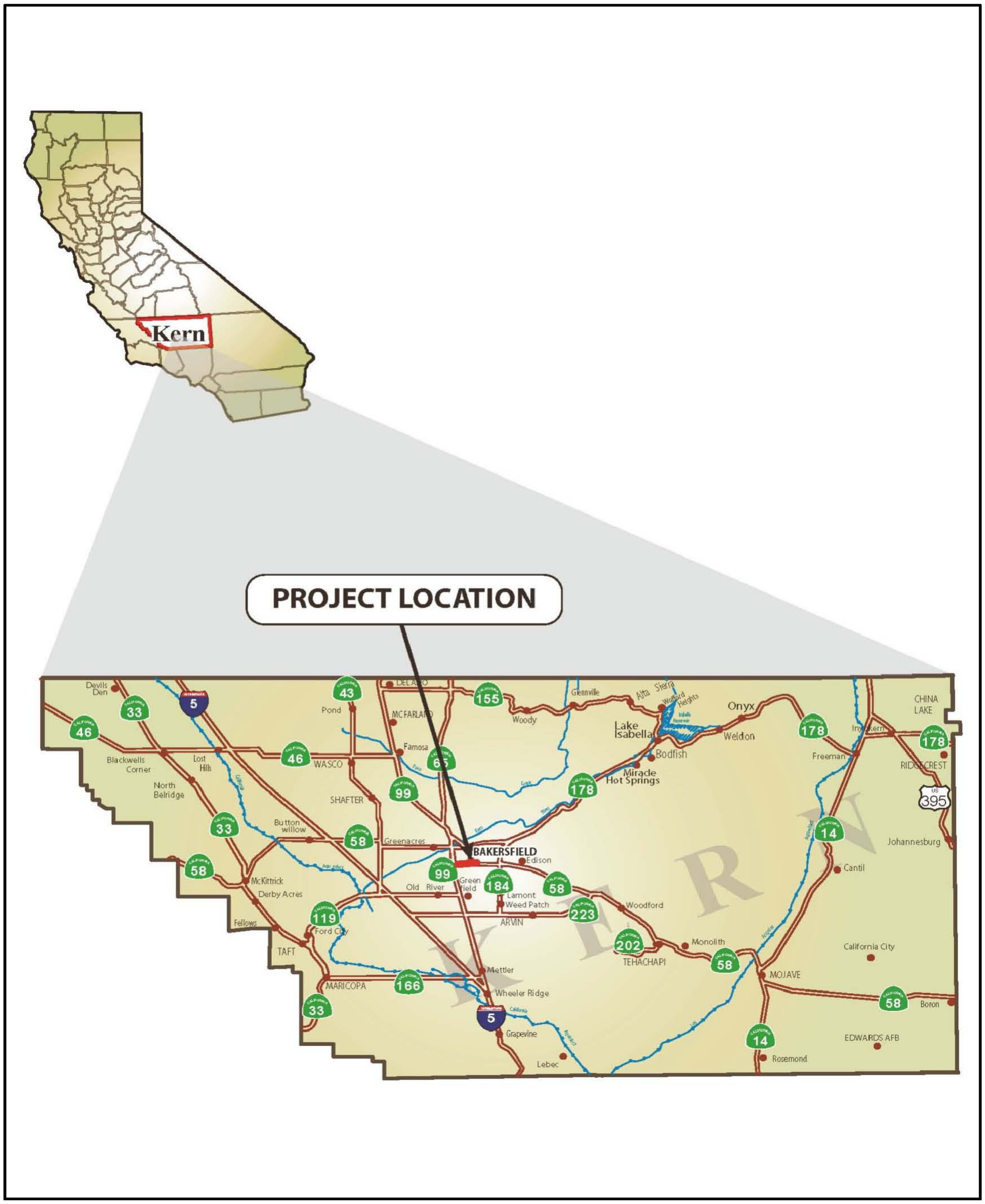


Figure 1-1 Project Vicinity

Not to Scale

SOURCE: Caltrans (2011)

EA 06-493900
EA 06-484700

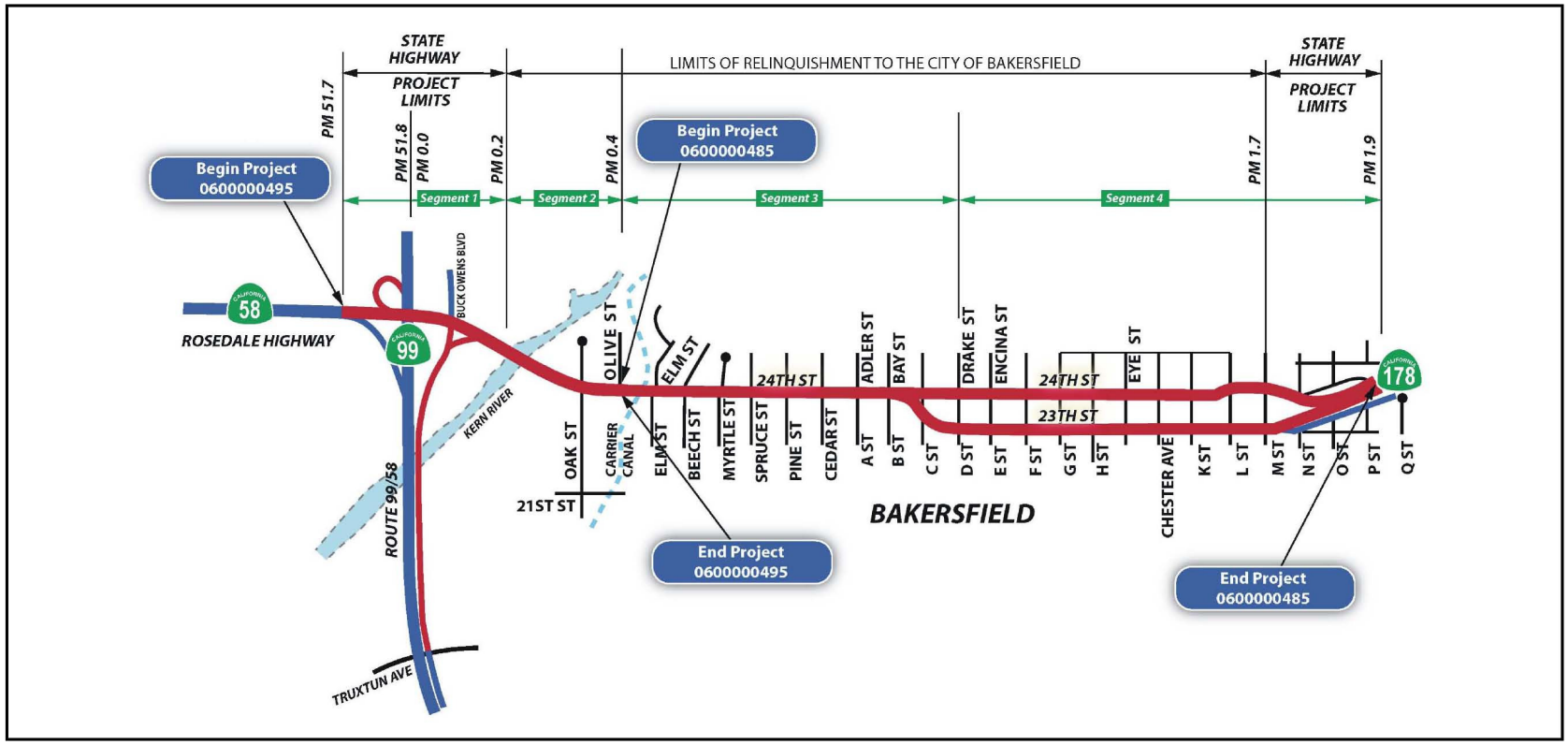


Figure 1-2 Project Location

Not to Scale

SOURCE: Caltrans (2011)

EA 06-493900
EA 06-484700

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the 24th Street Improvement Project is to address existing traffic congestion and future travel demand (amount of additional traffic expected by 2035) along 24th Street. The project area extends from southbound State Route 99 to just east of M Street, including 23rd Street and 24th Street within the couplet (a pair of one-way streets).

1.2.2 Need

In the past 10 years, growth in Kern County has been concentrated in Metropolitan Bakersfield. Between 2000 and 2009, for example, growth in the City of Bakersfield ranged between 1.1 and 5.2 percent per year, while overall county growth ranged between 1.2 and 3.2 percent. As the city grows, the amount of traffic also grows.

Although more detailed information is provided below, there are a couple of simple ways to demonstrate the need for this project--time and money. Currently it takes about 3 to 4 minutes to drive through the project (from Buck Owens Boulevard/24th Street intersection to M Street/24th Street intersection) area during the evening peak period (the busiest time). Without the project this would increase to about 20 to 23 minutes in 2035. With the project, it would take about 7 to 8 minutes. Put in terms of money, this means that without the project an additional $43.6 million of costs to drivers would be incurred (based upon the analysis using the Surface Transportation Efficiency Analysis Model, which converts the cost of congestion to dollars).

The following discussion provides more detailed technical information that supports the need for the proposed project.

Relieve Traffic Congestion along 24th Street

According to the Metropolitan Bakersfield General Plan, the City of Bakersfield strives to maintain a target Level of Service C on its roadways. Caltrans District 6 strives to maintain a target Level of Service at the transition between Level of Service C and Level of Service D on all state facilities within the district (see Figure 1-3 and Figure 1-4).

Table 1.1 summarizes existing, 2015 and 2035 “No-build” conditions intersection Level of Service (see Figure 1-4) at key intersections along the 24th Street corridor.

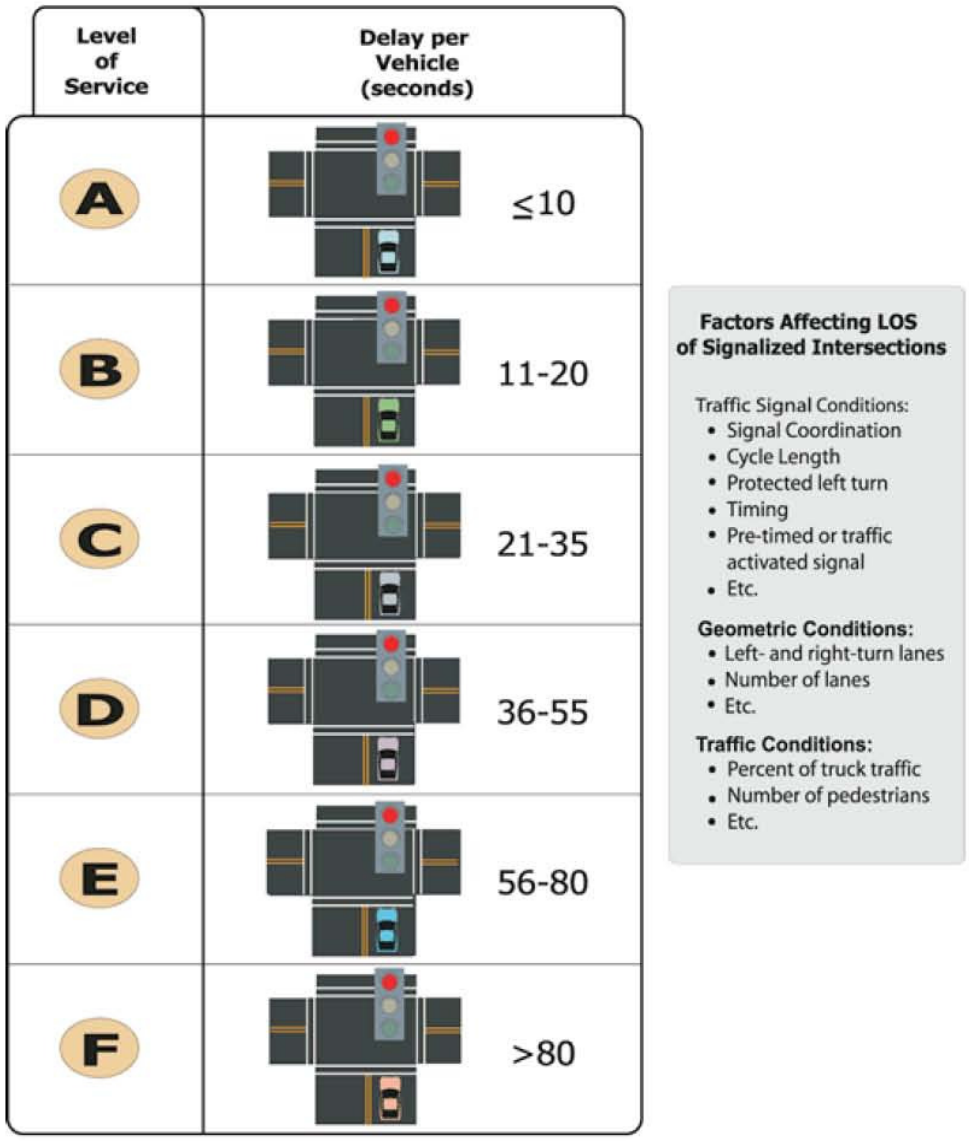
Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		60	Highest level of service. Traffic flows freely with little or no restrictions on maneuverability. **No delays**
B		60	Traffic flows freely, but drivers have slightly less freedom to maneuver. **No delays**
C		60	Density becomes noticeable with ability to maneuver limited by other vehicles. **Minimal delays**
D		57	Speed and ability to maneuver is severely restricted by increasing density of vehicles. **Minimal delays**
E		55	Unstable traffic flow. Speeds vary greatly and are unpredictable. **Minimal delays**
F		<55	Traffic flow is unstable, with brief periods of movement followed by forced stops. **Significant delays**

Source: 2000 HCM, Exhibit 21-3, Speed-Flow Curves with LOS Criteria for Multi-Lane Highways

Figure 1-3 Traffic Levels of Service for Multi-Lane Highways

SOURCE: Caltrans (2002)

EA 06-493900
EA 06-484700



Source: 2000 HCM, Exhibit 16-2, Level of Service Criteria for Signalized Intersections

Figure 1- 4 Traffic Levels of Service for Signalized Intersections

SOURCE: Caltrans (2002)

EA 06-493900
EA 06-484700

Table 1.1. Study Intersections Level of Service Summary

Key Study Intersections	Existing Conditions Level of Service (2008)		Forecast 2015 No-Build Level of Service		Forecast 2035 No-Build Level of Service	
	Morn Peak Hour	Eve Peak Hour	Morn Peak Hour	Eve Peak Hour	Morn Peak Hour	Eve Peak Hour
24th Street Traffic Demand West of Oak Street (vehicles/hour)[1]	3,947	4,266	4,810	5,470	5,455	5,985
Camino Del Rio Ct/Rosedale Highway (State Route 58)	B	**D**	C	**E**	C	**F**
State Route 99 Southbound Ramps/ (State Route 58)	**D**	**D**	**D**	**E**	**F**	**F**
Buck Owens Blvd/State Route 99 Northbound Ramps-Sillect Avenue	C	**D**	**E**	**D**	**E**	**E**
Buck Owens Blvd-State Route 99 Northbound Ramps/24th Street (State Route 178)	**D**	**F**	**E**	**F**	**F**	**F**
Oak Street/24th Street (State Route 178)	**E**	**E**	**F**	**F**	**F**	**F**
Oak Street/Truxtun Avenue	**D**	**E**	**D**	**E**	**F**	**F**
F Street/24th Street (State Route 178)	B	C	B	B	**E**	**E**
H Street/24th Street (State Route 178)	A	B	A	B	**E**	C
Chester Street/24th Street (State Route 178)	B	B	**D**	**D**	**F**	**E**
M Street/24th Street (State Route 178)	C	B	**F**	C	**F**	**D**
F Street/23rd Street (State Route 178)	C	C	**D**	**F**	**F**	**F**
H Street/23rd Street (State Route 178)	B	B	B	**D**	**E**	**F**
Chester Street/23rd Street (State Route 178)	B	B	**D**	**F**	**F**	**F**
M Street/23rd Street (State Route 178)	B	B	B	**E**	C	**F**

Source: Data based on *Traffic Analysis* (July 2010).
Note: Deficient intersection operations shown in **bold.**
[1] Traffic volumes presented provide a snapshot of traffic volumes on 24th Street and vary based on location.

While the traffic operations anyalysis included 39 total study intersections, the 14 key intersections included in Table 1.1 indicate the operation of 24th Street where traffic flows are most constrained by north-south conflicting traffic demand.

As shown in Table 1.1, the operation of 14 key intersections worsens as traffic demand grows from existing to 2015 to 2035 No-build conditions. This means that the average driver would wait a minimum of 80 seconds at each signal at most of these intersections, including all of the intersections in Table 1.1 that show Level of Service F. Note that the morning traffic demand grows on 24th Street from about 4,000 vehicles under existing conditions to about 5,500 vehicles in 2035, and that the evening traffic demand grows from about 4,300 vehicles under existing conditions to about 6,000 vehicles in 2035. All the key intersections that constrain the 24th Street corridor are forecast to operate deficiently during one or both peak hours for 2035 No-build conditions. The delay (in seconds) corresponding to each Level of Service is provided in Table 2.9 in Section 2.1.4.

Limited improvements to the State Route 99/24th Street interchange would be needed to ensure that traffic flow between 24th Street and State Route 99 would work well. The inclusion of the interchange in the project limits satisfies the federal requirement to have logical termini. Without any improvements, the State Route 99 northbound exit ramp during morning peak-hour to 24th Street would back traffic up onto the freeway. Similarly, the State Route 99 southbound on-ramp during evening peak-hour would back up traffic on State Route 99 as well as 24th Street.

Table 1.2 summarizes existing, 2015 and 2035 "No-build" conditions intersection Levels of Service at State Route 99 study ramps. As shown in Table 1.2 the Level of Service deteriorates over time as traffic demand grows from existing to 2015 to 2035 No-build conditions.

Table 1.2. State Route 99 Study Ramps Level of Service

State Route 99 Study Ramps	Existing Conditions Level of Service (2008)		Forecast 2015 No-Build Level of Service		Forecast 2035 No-Build Level of Service	
	Morn Peak Hour	Eve Peak Hour	Morn Peak Hour	Eve Peak Hour	Morn Peak Hour	Eve Peak Hour
State Route 99 Traffic Demand South of 24th Street (vehicles/hour)[1]	9,893	11,800	11,299	12,683	13,880	16,047
24th Street Northbound Off-Ramp	**E**	**E**	**F**	**F**	**F**	**F**
Buck Owens Boulevard Northbound Off-Ramp	C	B	C	C	**D**	C
Buck Owens Boulevard Northbound On-Ramp	B	B	C	B	C	C
Rosedale Highway Southbound Off-Ramp	C	**D**	C	**D**	**D**	**E**
Rosedale Highway Loop Southbound On-Ramp	B	**D**	C	**D**	**D**	**D**
Rosedale Highway Direct Southbound On-Ramp	C	**D**	**D**	**E**	**D**	**F**

Source: Data based on *Traffic Analysis* (July 2010).
Note: Deficient intersection operations are shown in **bold**.
[1] Traffic volumes presented provide a snapshot of traffic volumes on State Route 99 and vary based on location.

Note that the morning traffic demand grows on State Route 99 from about 10,000 vehicles under existing conditions to about 14,000 vehicles in 2035, and that the evening traffic demand grows from about 12,000 vehicles under existing conditions to about 16,000 vehicles in 2035.

Logical Termini

The project meets the Federal Highway Administration's logical termini criteria. Logical termini for a project are defined as rational endpoints for transportation improvements. These rational endpoints facilitate a thorough review of the

environmental impacts. In addition, the impact analysis in Chapter 2 documents that the context and intensity of environmental impacts are fully addressed. The project limits extend from State Route 99 to the beginning of State Route 178 (east of M Street) where the freeway portion begins to the east. These limits make sense because congestion within the project limits can be fully addressed. However, as noted above in the Need section, the specific project limits at the State Route 99 interchange at 24th Street were expanded to include the entire interchange. This was necessary to ensure that the project met the independent utility element of logical termini. Because this is an existing route, the project would not restrict the range of alternatives for projects in adjacent segments.

1.3 Alternatives

This section describes the proposed project alternatives: the No-Build Alternative and two build alternatives (Alternatives 1 and 2).

The proposed project was initially two separate projects. One project consisted of a new intersection at State Route 178 and Oak Street, and the other project consisted of the widening of State Route 178 between Oak Street and D Street. The two projects were combined to become the project discussed in this document.

The alternatives were developed by the Project Design Team through preparation of two Project Study Reports in 2005 and two Supplemental Project Study Reports in 2009. The Supplemental Project Study Reports identified two build alternatives along 24th Street and 23rd Street and an at-grade intersection alternative at Oak Street and 24th Street. These alternatives were determined to be the most viable. The rationale for inclusion of Alternatives 1 and 2 is based on engineering, environmental protection, and cost. Adding capacity to an existing road to relieve traffic congestion involves some combination of widening to one or both sides of the road. Alternatives 1 and 2 were developed to minimize environmental impacts.

1.3.1 Build Alternatives

The two build alternatives—Alternative 1 (Widen to the North) and Alternative 2 (Widen to the South)—are described below along with the No-Build Alternative.

The footprint of the build alternatives shown in this document includes temporary construction easements potentially required for these improvements.

Common Design Features of the Build Alternatives

The project is divided into the following four segments (see Figure 1-2):

- **Segment 1:** State Route 99/State Route 58/State Route 178 interchange improvements (from the southbound State Route 99 off-ramp intersection to the west end of the Kern River bridge) including addition of the northbound State Route 99 auxiliary lane
- **Segment 2:** 24th Street/Oak Street intersection and 24th Street widening (from the west end of the Kern River bridge to Olive Street)
- **Segment 3:** 24th Street widening (from Olive Street to D Street)
- **Segment 4:** 23rd Street/24th Street couplet (from D Street to 0.2 mile east of M Street).

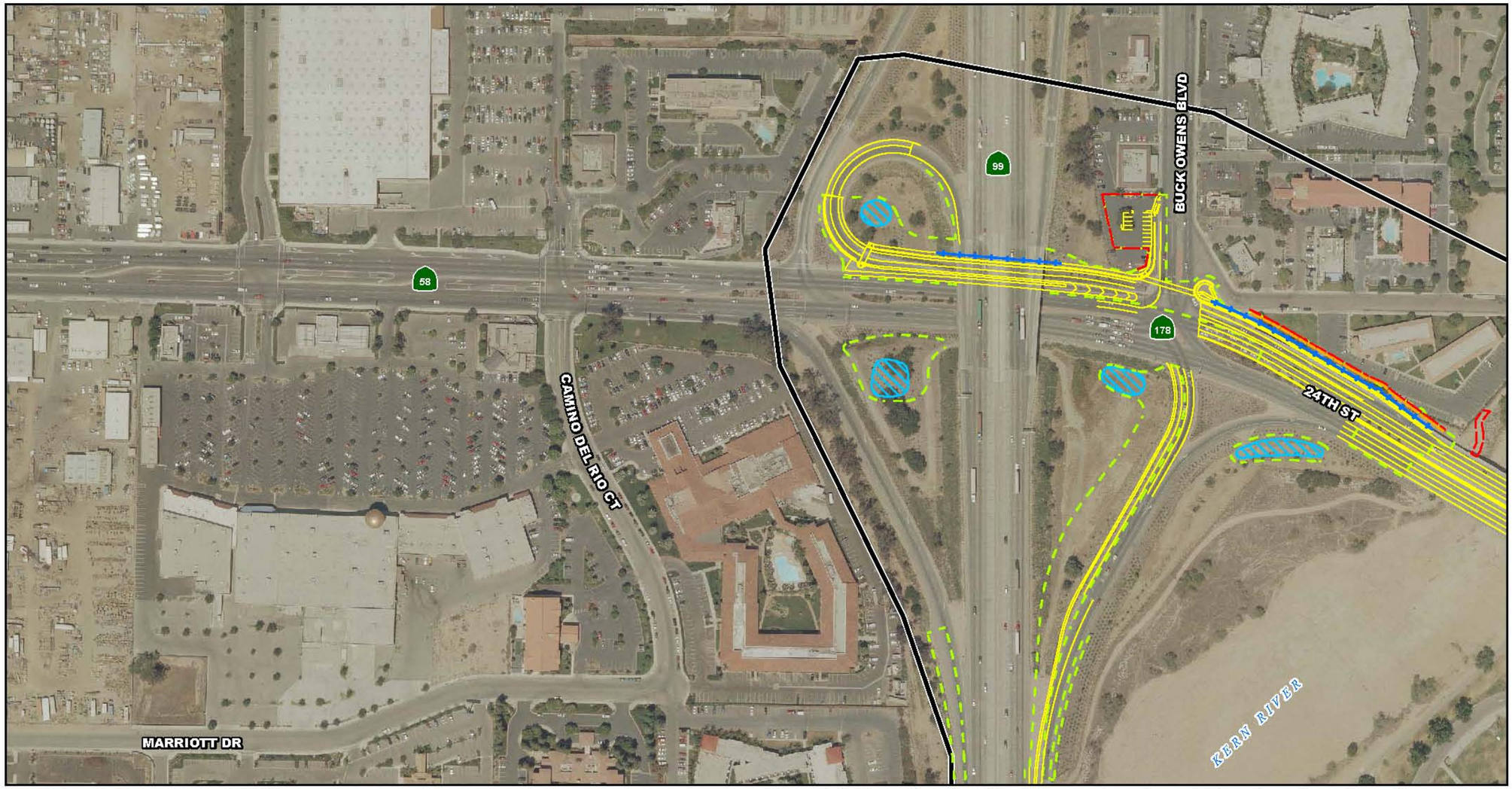
The following design features are the same for both Alternatives 1 and 2:

- State Route 99 interchange and State Route 99 auxiliary lane (Segment 1)
- Oak Street intersection (Segment 2)
- 24th Street Bridge over the Kern River (Segment 2)
- Three bus stop locations: (1) eastbound and westbound 24th Street near Oak Street; (2) eastbound and westbound 24th Street just west of A/Alder Street; and (3) near F Street (24th Street east of E Street and 23rd Street east of G Street).
- Reverse curve (S curve) (Segment 3)
- Two-way frontage road connecting Elm Street to Beech Street (Segment 3)
- 23rd Street/24th Street couplet (from D Street to 0.2 mile east of M Street) (Segment 4)
- A hammerhead (which would allow large vehicles to turn around and accommodate entry and exit) per City standards at Drake Street (D Street)

Segments of each build alternative are described below.

Segment 1—State Route 99/State Route 58/State Route 178 Interchange Improvements and Northbound State Route 99 Auxiliary Lane

Improvements to the State Route 99 ramps would include the following changes at the interchange intersections with 24th Street/Rosedale Highway (State Route 58) (see Figures 1-5 and 1-6):



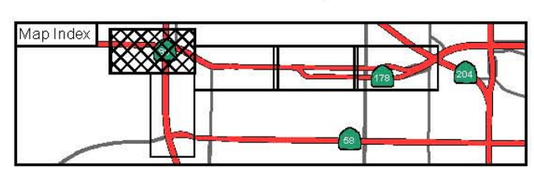
LEGEND

- Project Improvements
- Project Location and Study Area
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP

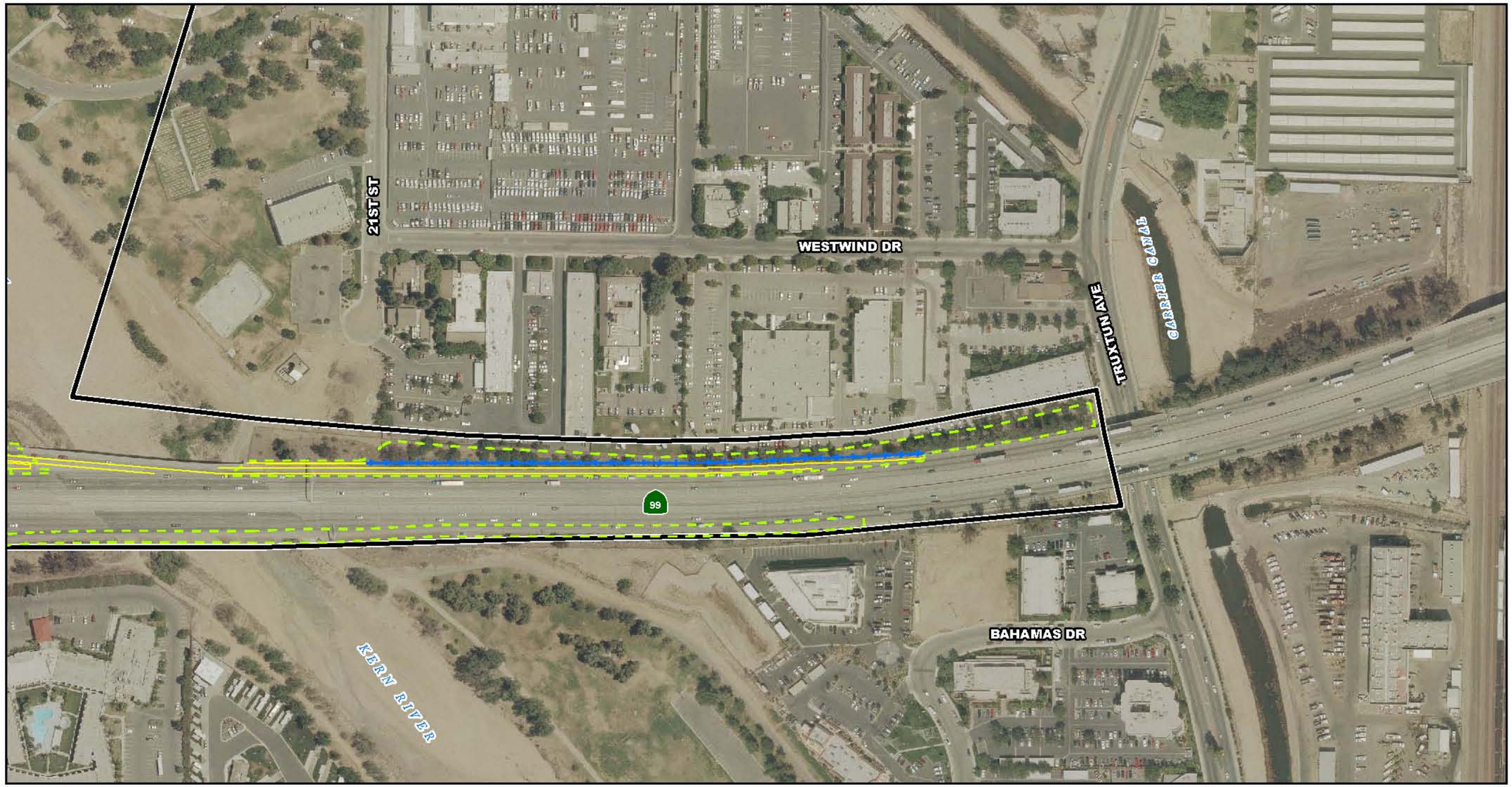
0 115 230
FEET

SOURCE: Draft Project Report (2011); Aerial: City of Bakersfield (2008)

Figure 1-5 Alternatives 1 and 2 - Proposed State Route 99/24th Street Interchange Improvements



EA 06-493900
EA 06-484700



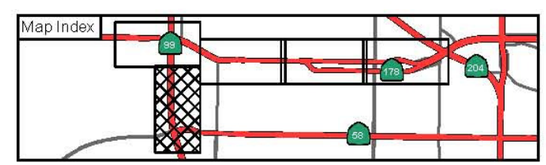
LEGEND

- Project Improvements
- Project Location and Study Area
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP

0 115 230
FEET

SOURCE: Draft Project Report (2011); Aerial: City of Bakersfield (2008)

Figure 1-6 Alternatives 1 and 2 - Proposed Auxiliary Lane State Route 99



EA 06-493900
EA 06-484700

- Improve the westbound loop on-ramp from Rosedale Highway (State Route 58) to southbound State Route 99 from one lane to two lanes within the existing pavement width.
- Improve northbound State Route 99 to include a 1,300-foot auxiliary lane (an extra lane to help traffic smoothly enter and exit the freeway) before the State Route 99 northbound off-ramp at 24th Street (State Route 178). With the auxiliary lane option, the northbound off-ramp would be changed from a one-lane off-ramp to a two-lane off-ramp. A retaining wall up to 11 feet high (exposed height) with a concrete barrier on top would be built at the edge of shoulder from the beginning of the improvements to the existing Kern River bridge. No structural improvements would be made to the existing State Route 99 Kern River bridge; however, there would be restriping for the auxiliary lane and a two-lane departure.
- Improve the westbound 24th Street (State Route 178) approach to Buck Owens Boulevard from three through lanes and one right-turn lane to three through lanes and two lanes aligning with the southbound State Route 99 loop on-ramp, one on-ramp lane, and one shared through/right-turn lane. The section would include a bike lane, 12-foot-wide lane, 5-foot-wide shoulder, 5-foot-wide sidewalk, 10- to 12-foot-high (exposed height) retaining wall, and a 3-foot-high concrete barrier. The three westbound lanes, which would go under the State Route 99 superstructure, would be separated from the on-ramp lanes by a raised median. The bike lane begins at the beginning of the right turn pocket, approximately 200 feet west of the Kern River bridge and extends to Buck Owens Boulevard. The bike lane would align with the 8-foot wide right shoulder of the westbound through lanes along 24th Street (State Route 178) under State Route 99. The three westbound through lanes continue westerly on 24th Street. A retaining wall would be required under State Route 99 to support the north abutment slope. The lanes would be 12 feet wide with an 8-foot-wide shoulder, an 8-foot-wide sidewalk, and a 4- to 8-foot-high (exposed height) retaining wall. Figure 1-5 shows the proposed improvements at State Route 99/24th Street, and Figure 1-6 shows the proposed auxiliary lane along State Route 99 south of 24th Street.
- Improve the southbound Buck Owens Boulevard approach to 24th Street from two left-turn lanes and one right-turn lane to two left-turn lanes and two right-turn lanes. All lanes of the approach would be 12 feet wide.
- Improve the northbound State Route 99 northbound off-ramp from two left-turn lanes and one free right-turn lane to three left-turn lanes and one free right-turn lane. The additional left-turn lane would be 12 feet wide with a 4-foot-wide left

shoulder. Eastbound 24th Street would remain as is with three through lanes and an additional lane at the northbound State Route 99 off-ramp free right.

Segment 2—24th Street/Oak Street Intersection and 24th Street Improvements (from the west end of the Kern River bridge to Olive Street)

Improvements to the Oak Street/24th Street intersection include the following:

- The existing 24th Street bridge over the Kern River, between Oak Street and Buck Owens Boulevard, would require construction within the limits of the bridge toremove the existing raised median and rebuild a 3-foot, 3-inch-wide raised median near the middle of the bridge to accommodate four 12-foot-wide lanes, a 6-foot-wide right shoulder, and a 1-foot-wide left shoulder in each direction. The existing curb and 5-foot-wide sidewalks in the westbound direction and the existing concrete barrier in the eastbound direction would stay.
- Improve the northbound Oak Street approach to 24th Street from one left-turn lane, one shared left-turn/through lane, and one right-turn lanes to two left-turn lanes, one shared left-turn/through lane, and two right-turn lanes. The section would consist of three through lanes, shoulders, a bike lane, and an 8-foot-wide parkway (the area between the travel lanes and sidewalks, ordinarily used as a planting area). A new 6-foot-wide sidewalk would be built next to the existing curb on the west side of Oak Street from the 24th Street intersection toward 22nd Street. Curb, gutter, and sidewalk would be built on the east side of Oak Street from the 24th Street intersection toward 22nd Street.
- Restripe the southbound Oak Street lane approach to 24th Street from one shared left-turn/through lane and one right-turn lane to one left-turn lane and one shared through/right-turn lane and would keep the existing curb and sidewalk.
- Improve the eastbound 24th Street approach to Oak Street from two through lanes to four through lanes leaving the existing one left-turn lane and one right-turn lane. A 9-foot-high (exposed height) retaining wall with a 3-foot-high barrier at Beach Park at the southwest quadrant of the intersection would be built.
- Improve the westbound 24th Street approach to Oak Street from one through lane to three through lanes.
- Build westbound and eastbound bus turnouts.

Segment 3—24th Street Widening (from Olive Street to D Street), with a Reverse Curve (S-curve)

- Build raised medians along 24th Street, restricting cross-street access to right-in/ right-out-only vehicular movements, with left-turn movements off of 24th Street

allowed at three intersections (Beach Street, Spruce Street, and Cedar Street) where median breaks can be accommodated within design standards.

- Provide two bus turnouts between Cedar Street and A Street: one of the turnouts would be on the south side near the pedestrian crossing at A Street and the other turnout would be on the north side near the same pedestrian crossing at A Street.
- Add a frontage road between Elm Street and Beech Street. On the north side of 24th Street, a two-way frontage road connecting Elm Street to Beech Street would provide additional access to Elm Street. On the south side of 24th Street, Elm Street (which is currently barricaded) would be improved to a cul-de-sac per City fire department standards.

This segment of the 24th Street widening includes a reverse curve (the street curves from one direction to the other) that begins along 24th Street near A Street and ends along 23rd Street near D Street. The reverse curve would include the following features:

- Close D Street north leg at 23rd Street intersection due to sight distance (the distance drivers can see ahead) limitations. A cul-de-sac shaped like a hammerhead (which would allow large vehicles to turn around and accommodate entry and exit) per City standards would be built on D Street at this location. A permanent easement would be required within the existing parking area north of the alley on the west side of D Street to provide a turnaround for fire trucks.
- Add a lane on 23rd Street at B Street. The additional lane would allow vehicles coming from northbound B Street to turn right onto 23rd Street, plus eliminate intersection sight distance conflicts for the turning vehicles.
- Open the southbound approach of C Street onto 23rd Street to allow left-in, left-out access and to help circulation to and from existing buildings.

Segment 4—23rd Street/24th Street Couplet (from D Street to 0.2 mile east of M Street)

Under Alternatives 1 and 2, improvements would be made to the 23rd Street/24th Street couplet (a pair of one way streets), including removing existing on-street parking along both sides of 23rd and 24th Streets, rehabilitating the roadway, and restriping to allow an additional travel lane in each direction. The roadway rehabilitation would include rebuilding the pavement, improving curb and drainage facilities, providing Americans with Disabilities Act pedestrian curb ramps, changing traffic signals and adding bus turnouts.

The limits of the couplet area extend from D Street to 0.2 mile east of M Street, consisting of four through lanes in each direction (24th and 23rd Streets) and shoulders on each side. The existing sidewalk and parkway would remain. The design of the couplet area would include the following:

- The intersection of 24th Street and K Street would be changed to prevent a right turn from southbound K Street onto westbound 24th Street. A raised curb and sidewalk would extend halfway into K Street to prevent the right turn. A permanent easement within the existing parking area would be required on the west side of K Street, just north of the intersection, to provide a hammerhead cul-de-sac design for fire truck movements.
- Along westbound 24th Street, the project would end at the State Route 178 undercrossing, about 0.2 mile east of M Street. The existing undercrossing consists of three through lanes. A fourth lane would be added just west of the undercrossing. No construction on the undercrossing is expected. The 24th Street Frontage Road would join 24th Street just east of M Street as it is under the existing condition, and a fifth through lane of traffic would be added at the M Street intersection. The rightmost lane would be dropped between M Street and K Street.
- Along eastbound 23rd Street, the project would end at the Union Avenue off-ramp, about 0.2 mile east of M Street. Four eastbound through lanes would be built through the M Street intersection. The fourth through lane would become the off-ramp, and the three existing through lanes would continue to the undercrossing. No construction on the undercrossing is planned.
- A midblock bus turnout would be provided on westbound 24th Street between E Street and F Street. A far-side bus turnout would be provided on eastbound 23rd Street just east of G Street.

Unique Features of the Build Alternatives

Alternatives 1 and 2 differ only in Segment 3. Alternative 1 would widen 24th Street between Olive and D Street to the north of its existing alignment, and Alternative 2 would widen 24th Street to the south of the existing roadway alignment adding two travel lanes (one in each direction). Both alternatives include the State Route 99 interchange and auxiliary lane, the Oak Street/24th Street intersection, the 24th Street widening, and the 24th Street couplet area. The two alternative designs are described in detail below.

Alternative 1 (Widen to the North)

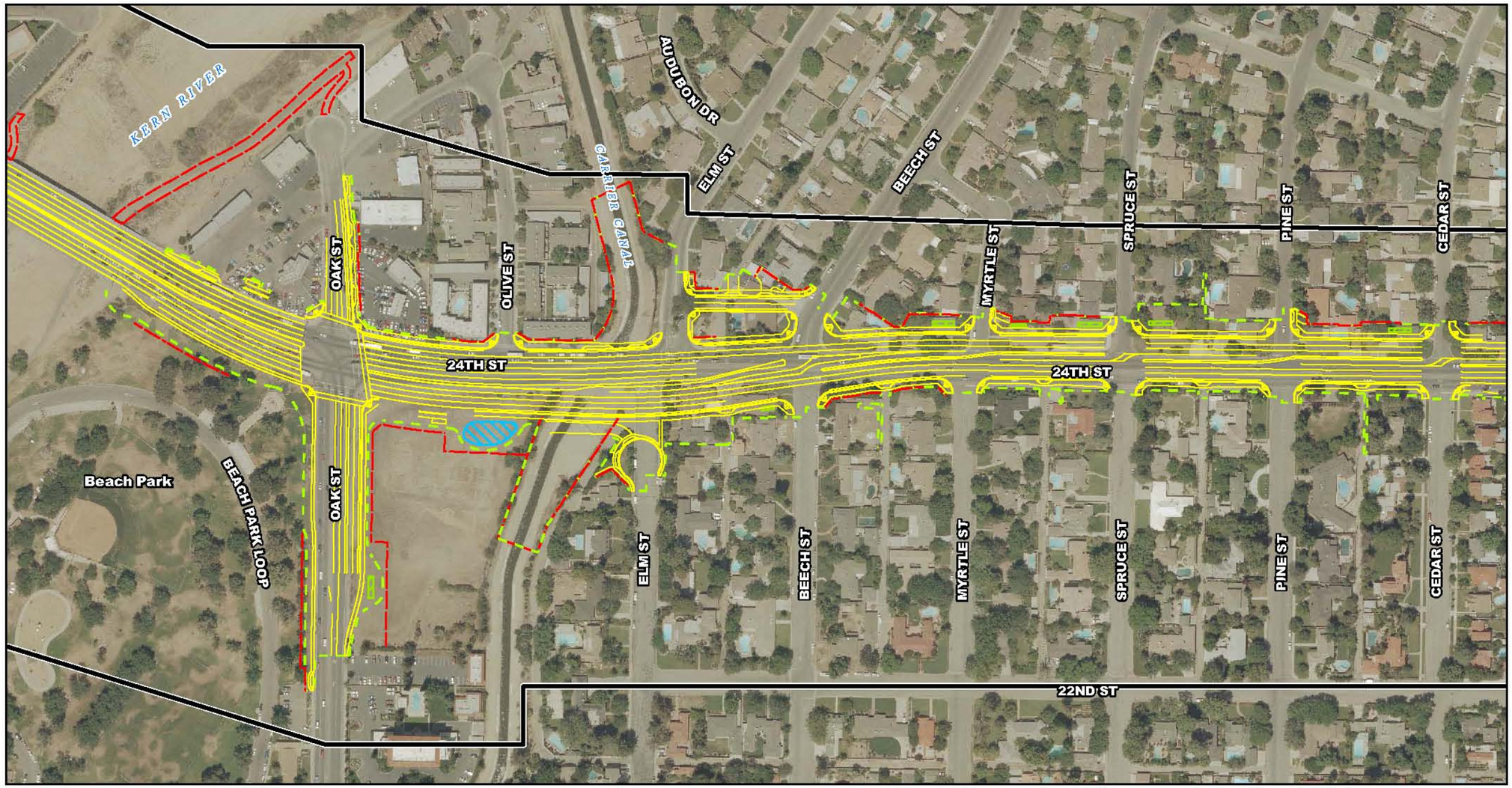
Alternative 1 would widen 24th Street between Olive Street and D Street to the north, adding two travel lanes (one in each direction). See Figures 1-7, 1-8, and 1-9. The proposed roadway alignment would be shifted north of the existing alignment about 17 feet, which would minimize the right-of-way acquisition on the south side of 24th Street required for the roadway widening and would accommodate a bus turnout at A Street. Eleven driveways along the north side of 24th Street would be eliminated, and there would be fewer driveways at bus turnout locations. The impacts include reconstruction of Carrier Canal on the north and south sides of 24th Street to accommodate the widening. The parkway (the area between the travel lanes and sidewalks, ordinarily used as a planting area) on the north side, between Olive Street and Carrier Canal, would vary in width from 10 feet to 15 feet to accommodate sight distance at Olive Street. Carrier Canal would be extended on the north and south sides of 24th Street to accommodate widening of 24th Street. The north side would require about 10 feet of culvert extension in addition to reconstructing about 30 feet of transition area; the south side would require about 100 feet of culvert extension in addition to reconstructing about 30 feet of transition.

Alternative 2 (Widen to the South)

Alternative 2 would widen 24th Street between Olive Street and D Street to the south, adding two travel lanes (one in each direction). See Figures 1-10 and 1-11. The roadway alignment would be shifted south of the existing alignment about 21 feet, which would minimize the right-of-way acquisition on the north side of 24th Street required for the roadway widening, accommodate a bus turnout at A Street, and accommodate residential garage access from the north properties directly to 24th Street.

The total number of driveways along 24th Street would not change with construction of Alternative 2. The impacts include rebuilding Carrier Canal on the south side of 24th Street to accommodate the widening.

Carrier Canal would be extended on the south side of 24th Street to accommodate the widening of 24th Street. The south side would require about 100 feet of culvert extension, in addition to reconstructing about 30 feet of transition area. This work would result in the partial acquisition of the Carrier Canal property on the south side.



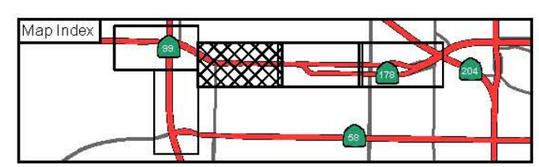
LEGEND

- Project Improvements
- Project Location and Study Area
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP

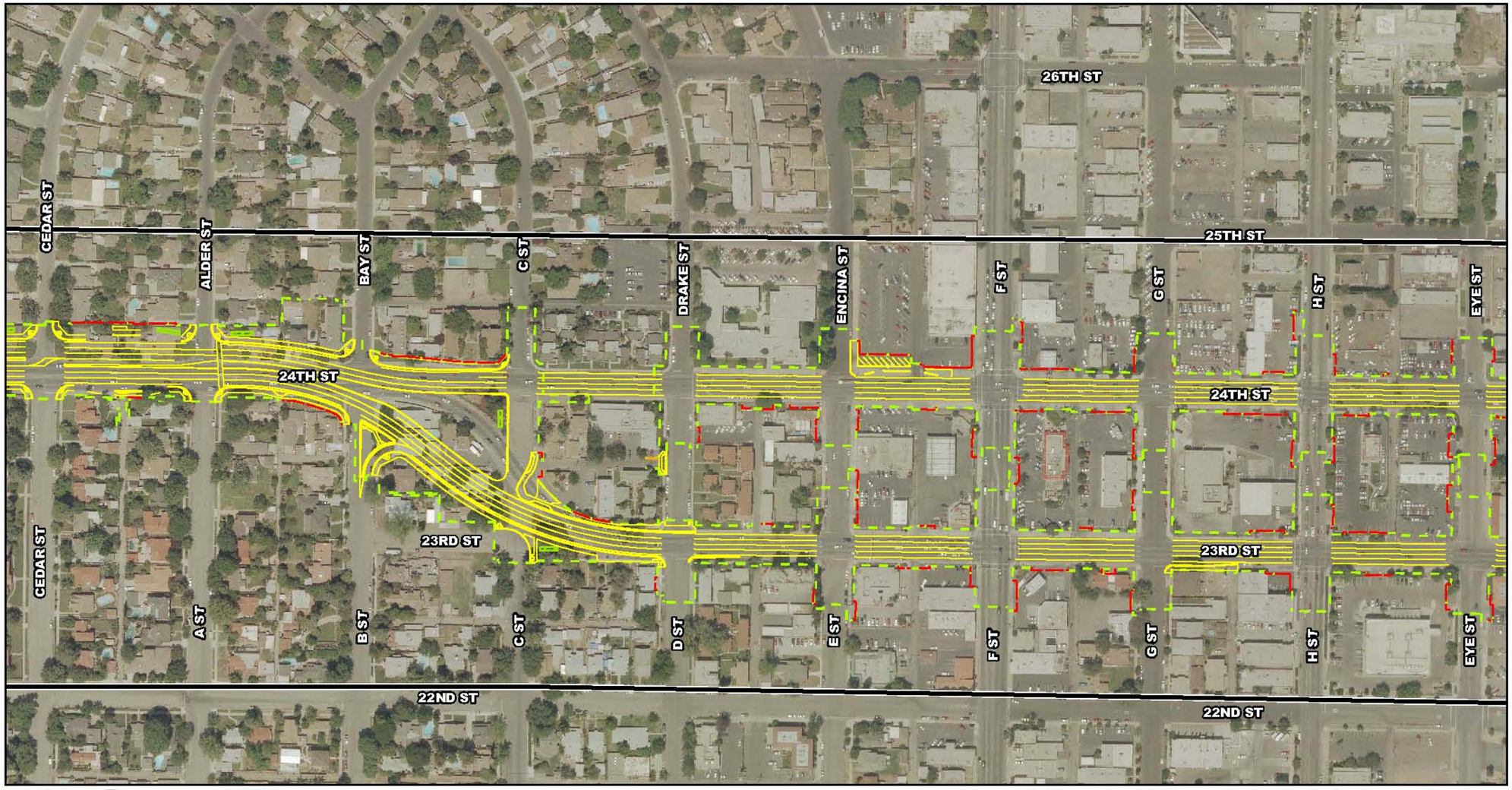
0 115 230 FEET

SOURCE: Draft Project Report (2011); Aerial: City of Bakersfield (2008)

Figure 1-7 Alternative 1, Widen to the North - West of Oak Street to Cedar Street



EA 06-493900
EA 06-484700



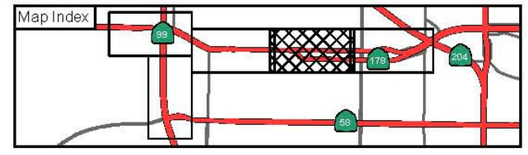
LEGEND

- Project Improvements
- Project Location and Study Area
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP

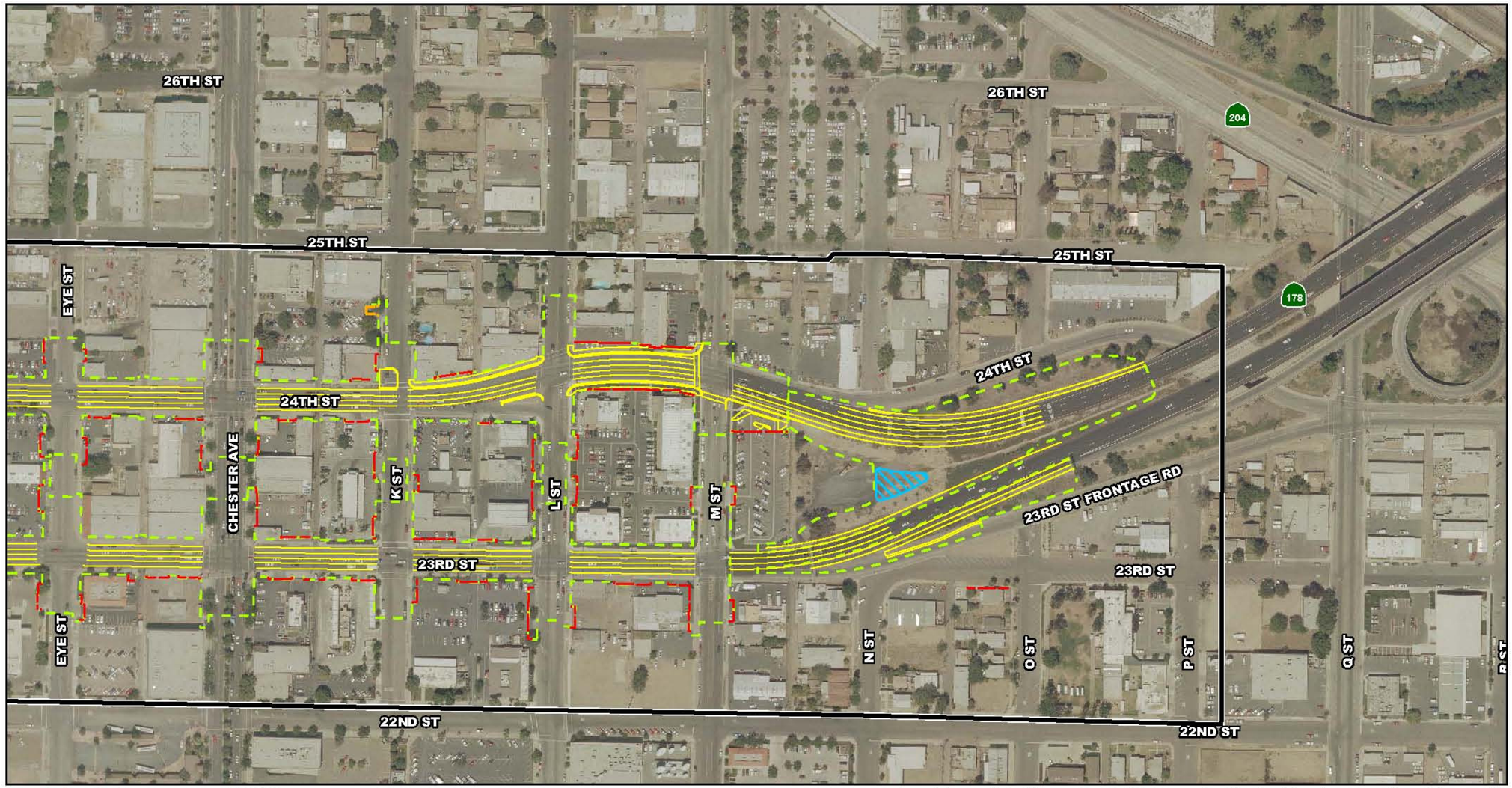
0 115 230
FEET

SOURCE: Draft Project Report (2011); Aerial: City of Bakersfield (2008)

Figure 1-8 Alternative 1, Widen to the North - Cedar Street to Eye Street



EA 06-493900
EA 06-484700



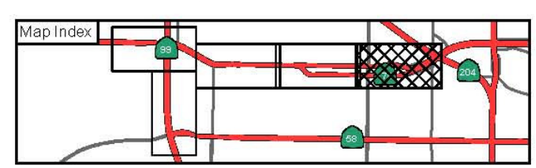
LEGEND

- Project Improvements
- Project Location and Study Area
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP

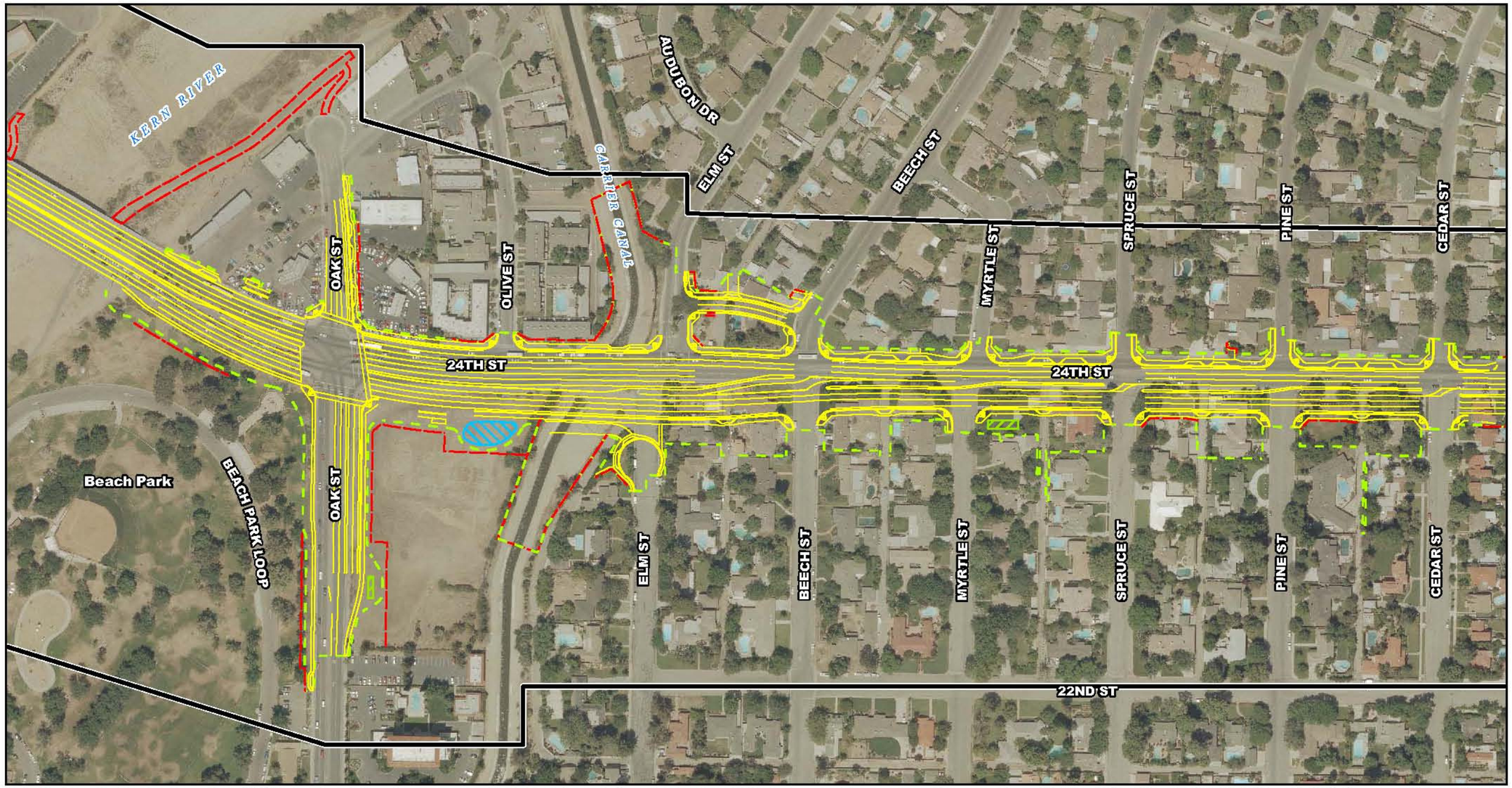
0 115 230
FEET

SOURCE: Draft Project Report (2011); Aerial: City of Bakersfield (2008)

Figure 1-9 Alternative 1, Widen to the North - Eye Street to State Route 178



EA 06-493900
EA 06-484700



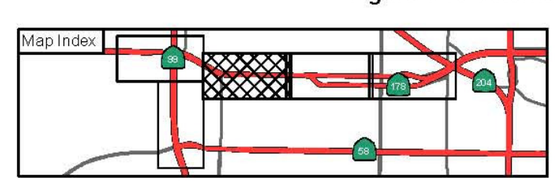
LEGEND

- Project Improvements
- Project Location and Study Area
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP

0 115 230
FEET

SOURCE: Draft Project Report (2011); Aerial: City of Bakersfield (2008)

Figure 1-10 Alternative 2 - West of Oak Street to Cedar Street



EA 06-493900
EA 06-484700

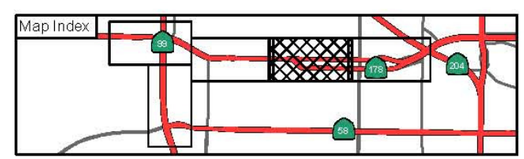
LEGEND

- Project Improvements
- Project Location and Study Area
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP

0 115 230
FEET

SOURCE: Draft Project Report (2011); Aerial: City of Bakersfield (2008)

Figure 1-11 Alternative 2 - Cedar Street to Eye Street



EA 06-493900
EA 06-484700

Temporary Project Components

Construction

The project would be built in the following phases:

- The Oak Street intersection (Segment 2) would be built in Phase 1.
- Improvements to the State Route 99 interchange (Segment 1) would be built in Phase 2.
- The 24th Street widening and improvements to the 23rd Street/24th Street couplet (Segments 3 and 4) would be built in Phase 3.
- The State Route 99 auxiliary lane (Segment 1) would be built in Phase 4.

The four phases would be broken into four construction stages to minimize the impacts to traffic and adjacent communities. Construction staging would be similar for both build alternatives, the main difference being the segment between Elm Street and D Street. For Alternatives 1 and 2, Stage 1A would include building most of the proposed project components on State Route 99, 24th Street, and 23rd Street. During this first stage, all lanes would be maintained and shoulders with reduced widths would be required along State Route 58, State Route 99, State Route 178, and 24th Street from Buck Owens Boulevard to D Street. During construction along 23rd Street and 24th Street from D Street to M Street, the available lanes would be reduced from three to two lanes and shoulders would be reduced in width. Detours would be provided where feasible.

For Stages 1B and 3, depending on the specific construction component, traffic lanes would be maintained but shifted for construction work. New pavement sections built in the prior phase would be used by the shifted traffic. Stage 2 would be similar to Stage 1A as all through-lanes from Beech Street to D Street would be maintained; however, to build the new curb along eastbound 24th Street from Beech to just before B Street, traffic would be shifted to the north and would use the pavement built during previous stages. Between D Street and M Street, 23rd Street and 24th Street would be reduced from three lanes to two lanes and shoulders would be reduced.

The number of existing through lanes would be maintained by restriping the existing lanes and by shifting traffic within the corridor to maintain the existing capacity, except at the couplet, where the number of lanes would be reduced from three to two lanes in each direction. During the reconstruction of the intersections in the couplet, north-south movements would be restructured.

Carrier Canal Extension and Water Diversion

Reconstruction of Carrier Canal on the north and south sides would require diversion of canal waters. As a result, a diversion structure would be placed to divert flows during construction. The diversion structure would begin about 350 feet north of the proposed edge of roadway on the north side of 24th Street, go between the canal and Elm Street on the east and extend about 350 feet south of the proposed edge of roadway on the south side of 24th Street.

Construction Vehicle Access and Materials Staging

Construction vehicle access and staging of construction materials would occur within disturbed or developed areas inside the existing right-of-way or the proposed additional right-of-way. The parcel at the southeast quadrant of Oak Street and 24th Street is a City-owned detention basin and may be used as a materials staging area. The parcel is included in the defined project disturbance limits. All construction vehicle access, materials staging and storage and other construction activities would occur within the defined disturbance limits for the proposed project.

Construction Lighting

The project may require nighttime construction activities in some portions of the project area over multiple periods of 6 to 12 months. Nighttime construction along 23rd and 24th Streets would be limited to the hours of 10:00 p.m. to 6:00 a.m. If work is performed at night, necessary lighting would be directed away from land uses outside the project limits and contained and directed toward the specific area of construction.

Additional Temporary Construction Easements

Temporary construction easements would be necessary for construction along the proposed right-of-way. Temporary construction easements may also be necessary at areas of driveway reconstruction within the 24th Street widening and couplet sections.

Kern River Construction Activity

As discussed above under the Segment 2 discussion, the Kern River bridge median would be replaced. Removal and replacement of the existing overhang would require access to the underside of the Kern River bridge by means of a series of temporary construction easements. Construction vehicles would enter the Kern River right-of-way through a single entrance and exit at the cul-de-sac at the northernmost end of Oak Street. Construction vehicles would then reach the underside of the Kern River bridge by means of the existing Kern River Parkway Bike Trail on the east side of the

Kern River within a 30-foot temporary construction easement. Construction would be accomplished from the bridge deck and from the Kern River Parkway Bike Trail.

Construction vehicles would remove the bridge joint from above the bike trail so that no scaffolding would be required on and between the bike trail and bridge abutment. This method of construction access to the underside of the Kern River bridge may require temporary closure of the bike trail, lasting for no more than 10 days, which may or may not be consecutive. Construction would not occur from the riverbed.

Transportation Systems Management and Transportation Demand Management Alternatives

Transportation systems management and transportation demand management alternatives were identified for the project.

Transportation systems management alternatives enhance the capacity of the existing transportation systems by implementing a wide array of operational improvements. Typical transportation systems management strategies include intersection and signal lighting, signal timing optimization, turn lanes, pavement striping, acceleration lane improvement on freeways, and lane-change sections. Although transportation systems management measures alone could not satisfy the purpose and need for the proposed project, all of the strategies listed above were incorporated in all four segments of the build alternatives for the proposed project.

Transportation demand management alternatives focus on moving people through the study area more efficiently by using alternative means of transportation. The build alternatives were designed to include sidewalks, allow for safe bicycle movement (under the State Route 99 bridge), and improve the location of existing bus stops.

Public Transportation

The build alternatives were designed to improve public transportation through improved bus turnouts and consolidation of bus stop locations. Based on coordination with Golden Empire Transit, the local transit agency, the proposed bus stop locations would be consolidated from five locations to three while still accommodating ridership demands. The reduction in the number and location of existing bus stops would provide more efficient operations for the applicable fixed bus routes.

Three bus stops would be provided at the following locations: (1) eastbound and westbound 24th Street near Oak Street; (2) eastbound and westbound 24th Street just west of A/Alder Street; and (3) near F Street (24th Street east of E Street and 23rd

Street east of G Street). Design of the bus turnouts is consistent with Golden Empire Transit's requirements and has been reviewed and approved by Golden Empire Transit staff.

The build alternatives improve transit operations and headway reliability through reduced vehicular congestion along 24th Street, provide new bus turnouts, and consolidate bus stop locations.

1.3.2 No-Build Alternative

No improvements would be made under the No-Build Alternative, other than routine roadway maintenance such as roadway cleaning, pothole repair, landscape maintenance, irrigation repair, inspections, etc. The No-Build Alternative is a baseline by which to measure and compare the build alternatives. Traffic modeling for the No-Build Alternative reflects the current highway network augmented by other planned transportation projects that are reasonably expected to take place in the design year (see Section 2.4, Cumulative Impacts, for more on area transportation projects).

Currently it takes about 3 to 4 minutes to drive through the project (from Buck Owens Boulevard/24th Street intersection to M Street/24th Street intersection) area during the evening peak period (the busiest time). Without the project this would increase to about 20 to 23 minutes in 2035. With the project, it would take about 7 to 8 minutes. Put in terms of money, this means that without the project an additional $43.6 million of costs to drivers would be incurred (based upon the analysis using the Surface Transportation Efficiency Analysis Model, which converts the cost of congestion to dollars).

1.3.3 Comparison of Alternatives

Criteria for evaluation of project alternatives included (1) whether the alternative met the stated purpose and need of the proposed project (congestion relief); (2) the required right-of-way and property acquisitions (number of full parcel acquisitions, number of partial parcel acquistions, number of temporary construction easements, number of permanent easements, and number of residential relocations); (3) the environmental footprint and types and number of substantial environmental effects, particularly cultural resources, Section 4(f) resources, and noise ; and (4) viability and economic feasibility (cost). These criteria were selected in an attempt to define the important differences between alternatives. The most weight is given to the cultural resources criteria which would have the largest difference between the two build alternatives. All other criteria are pretty much a wash (see Table 1.3).

Table 1.3. Comparison of Project Alternatives

Criteria		Build Alternative 1	Build Alternative 2	No-Build Alternative
Meets the project purpose and need/objectives		Yes	Yes	No
Reduction of driveway in/out points		Elimination of 11 driveways on the north side of 24th Street and fewer driveways at bus turnouts	0	0
Requires acquisition of the least amount of right-of-way necessary from adjacent property owners	Number of full acquisitions	23	23	0
	Number of partial acquisitions	29 (Totaling 59,281 square feet)	21 (Totaling 66,309 square feet)	0
	Number of Temporary Construction Easements (TCEs)	110	97	0
	Number of permanent easements	3	3	0
Relocations	Residential	49 residents	49 residents	0
	Nonresidential	0	0	0
Viability and economic feasibility		$42.8 million	$43.7 million	$0
Environmental Footprint and Project Effects				
Cultural Resources	Historic district north of 24th Street	12 full parcel acquisitions (5 contributing properties), 2 partial parcel acquisitions (1 contributing property), and 14 TCEs (2 on contributing properties). The direct physical impacts to the 8 contributing properties represents 18% of contributing properties identified in the APE and about 3% of contributors within the district as a whole (based on the approximate ratio of 75% contributing to 25% noncontributing properties within the historic district to the north). 4 potential soundwalls are proposed (2 on contributing properties) and are likely to have minimal impacts due to the comparable hardscape features currently present.	1 full parcel acquisition of a contributing property, no partial parcel acquisitions, and 5 TCEs (2 on contributing properties). The direct physical impacts to the 3 contributing properties represents 7% of contributing properties identified in the APE and about 16% of contributors within the district as a whole (based on the approximate ratio of 75% contributing to 25% noncontributing properties within the historic district to the north). 1 potential soundwall is proposed (on a contributing property) and is likely to have minimal impacts due to the comparable hardscape features currently present.	0

Table 1.3. Comparison of Project Alternatives

Criteria		Build Alternative 1	Build Alternative 2	No-Build Alternative
Cultural Resources	Historic district south of 24th Street	9 full parcel acquisitions (7 contributing properties), 6 partial parcel acquisitions (1 contributing property), and 12 TCEs (3 on contributing properties). The direct physical impacts to the 11 contributing properties represents 25% of contributing properties identified in the APE and about 10% of contributors within the district as a whole (based on the approximate ratio of 85% contributing to 15% noncontributing properties within the historic district to the south). No potential soundwalls are proposed within the district to the south..	22 full parcel acquisitions (10 contributing properties), 1 partial acquisition, 2 partial parcel acquisitions (2 contributing properties), and 9 TCEs (4 on contributing properties). The direct physical impacts to the 16 contributing properties represents 36% of contributing properties identified in the APE and about 16% of contributors within the district as a whole (based on the approximate ratio of 85% contributing to 15% noncontributing properties within the historic district to the south). 3 potential soundwalls are proposed (on noncontributing properties) and are likely to have minimal to moderate impacts to the viewshed based on current hardscape features and viewshed at those locations.	
		No permanent or temporary use of land from the three Bungalow Courts (2100 23rd Street, 2300 D Street, and 2210 D Street) or the commercial office building (Healthland) at 2323 E Street, which are all identified as eligible for listing on the National Register of Historic Places.	No permanent or temporary use of land from the three Bungalow Courts (2100 23rd Street, 2300 D Street, and 2210 D Street) or the commercial office building (Healthland) at 2323 E Street, which are all identified as eligible for listing on the National Register of Historic Places.	
Section 4(f) Properties	Beach Park	0.11 acre (ac) TCE, 0.8 ac permanent acquisition	0.11 ac TCE, 0.8 ac permanent acquisition	0
	Kern River Parkway Bike Trail	0.37 ac TCE	0.37 ac TCE	0
	Cultural Resources	(see cultural resources above)	(see cultural resources above)	0
Noise		6 soundwalls (829 feet total length)	6 soundwalls (559 feet total length)	0
		Approach or exceed noise abatement criteria at 25 sensitive receptors; reduced through abatement measures.	Approach or exceed noise abatement criteria at 22 sensitive receptors; reduced through abatement measures.	14

TCE = Temporary Construction Easement

Table 1.3 compares the alternatives based on the evaluation criteria for the project, whether or not the project objectives are met, and the three environmental impact topics for which the alternatives differ.

Alternatives 1 and 2 would meet the project's purpose and need by reducing traffic congestion to meet Caltrans and the City's Level of Service goals. The build alternatives would provide an additional through lane in each direction of 24th Street, add turn lanes at the intersection of Oak Street and 24th Street, and remove 11 driveways along 24th Street. Alternative 1 would result in 110 temporary construction easements and 23 full residential parcel and 29 partial acquisitions (14 residential, 12 nonresidential, and three vacant). Alternative 2 would result in 97 temporary construction easements and 23 full residential parcel and 21 partial acquisitions (seven residential, 11 nonresidential, and three vacant).

Alternative 1 is estimated to cost $42.8 million, which includes $29.4 million for road and structure construction and $13.4 million for right-of-way acquisition and utility relocation.

Alternative 2 is estimated to cost $43.7 million, which includes $29.3 million for road and structure construction and $14.4 million for right-of-way acquisition and utility relocation.

Alternatives 1 and 2 would affect two historic districts north and south of 24th Street which are eligible for listing in the National Register of Historic Places for the purposes of this undertaking only. Specifically, Alternative 1 would result in 12 full parcel and 2 partial parcel acquisitions and 14 temporary construction easements in the historic district north of 24th Street, and 9 full parcel and 6 partial parcel acquisitions and 12 temporary construction easements in the historic district south of 24th Street.

Alternative 2 would result in 1 full parcel acquisition and 5 temporary construction easements in the historic district north of 24th Street. Alternative 2 would also result in 22 full acquisitions, 1 partial acquisition, 2 partial parcel acquisitions with TCEs, and 9 temporary construction easements in the historic district south of 24th Street.

The residential structures on the south side of 24th Street are generally older, on larger-sized parcels with large trees and mature landscaping, and represent a range of architectural styles. Because the properties on the south side of 24th Street tend to be larger-sized parcels, there would be more residual property left over after acquisition,

requiring additional landscaping and long-term maintenance and/or sale of those remainder parcels to other parties such as the adjacent property owners.

Alternative 1 would result in fewer full parcel acquisitions and more partial acquisitions and temporary construction easements combined at the two historic districts than Alternative 2.

Alternatives 1 and 2 would have no permanent or temporary use of land from the commercial office building (Healthland) at 2323 E Street, or the three bungalow court properties (23rd and D Streets), which are not contributors to either historic district but are identified as individually eligible for listing in the National Register of Historic Places.

In summary, Alternative 1 better preserves a historically significant and architecturally diverse segment of 24th Street because it results in fewer full parcel acquisitions in the two historic districts.

All other potential impacts resulting from implementation of the project would be the same for implementation of either build alternative. The No-Build Alternative would incur no capital expenditure but, unlike the build alternatives, it would not improve traffic functionality of the corridor. After the public circulation period, all comments will be considered, and the City and Caltrans will select a Preferred Alternative and make the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act, the City will certify that the project complies with the act, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that would not be mitigated below a level of significance, and certify that the Findings and Statement of Overriding Considerations have been considered before project approval. The City would then file a Notice of Determination with the State Clearinghouse and the Kern County Clerk's Office to identify whether the project would have significant impacts, whether mitigation measures were included as conditions of project approval, whether findings were made, and whether a Statement of Overriding Considerations was adopted. Similarly, if Caltrans, as assigned by the Federal Highway Administration, determines the National Environmental Policy Act action does not significantly affect the environment, Caltrans will issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

1.3.4 Locally Preferred Alternative

Identification of Locally Preferred Alternative under the California Environmental Quality Act

The City of Bakersfield, as the project sponsor, is the California Environmental Quality Act lead agency for the proposed project. A California Environmental Quality Act lead agency may wait until after the environmental document is circulated for public review and comment and then select the preferred alternative based on the comments received and the technical analysis presented in the environmental document. However, the California Environmental Quality Act does allow the designation of a recommended preferred alternative by the California Environmental Quality Act lead agency before circulation of the draft environmental document. As project sponsor, the City may choose to designate its recommended preferred alternative before public circulation of the environmental document if it has determined that one of the project alternatives best meets the project objectives and is also determined to be superior based on specific engineering and environmental considerations.

Identification of a recommended preferred alternative by the City, before circulation of the environmental document for public review and comment, is consistent with the requirements of the California Environmental Quality Act. The early identification of a recommended preferred alternative by the City does not minimize or compromise the legally prescribed environmental analysis and documentation processes under the California Environmental Quality Act. Both build alternatives and the No-Build Alternative are evaluated at a comparable level of detail in the technical studies and are all analyzed and presented at comparable levels of detail in the environmental document.

Based on information from the technical studies prepared for the No-Build Alternative and the two build alternatives, the City has identified Alternative 1–Widen to the North as its recommended preferred alternative based on the ability of the recommended preferred alternative to meet the defined project objectives, engineering considerations, key project characteristics, and potential environmental impacts, as described in the following sections and as summarized in Table 1.3.

Because the City has identified a recommended preferred alternative, the City is publicly disclosing its selection of Alternative 1 as the City-recommended preferred alternative before circulation of the draft environmental document.

Ability to Meet the Project Objectives

As stated in Section 1.2.1 and repeated here, the purpose of the project is to address existing traffic congestion and future travel demand (amount of additional traffic expected by 2035) along 24th Street. The project area extends from southbound State Route 99 to just east of M Street, including 23rd Street and 24th Street within the couplet (a pair of one-way streets).

Alternatives 1 and 2 both add capacity and reduce traffic congestion. These improvements would increase the vehicle, person, and goods movement on 24th Street and at the Oak Street intersection, resulting in improved mobility in this area as shown on Table 2.9. As shown in the table, the traffic Level of Service would improve overall in the project corridor in the future "with project" condition, with forecast traffic volume increases being accommodated by the additional travel lanes, turn lanes, and other operational improvements proposed with the build alternatives. Build Alternatives 1 and 2 are consistent with applicable federal, state, regional, and local transportation plans and policies. As a result, Alternatives 1 and 2 meet the project purpose.

Engineering Design Considerations

Alternative 1 is superior to Alternative 2 on engineering considerations. Both alternatives increase traffic capacity and enhance traffic flow along 24th Street by providing an additional lane of travel in each direction and by providing Golden Empire Transit bus turnouts to allow buses to pull out of the traffic flow to board and disembark passengers. In addition, both alternatives change the geometry of the S curve in the eastbound direction between B Street and D Street to improve the design speed of eastbound 24th Street.

However, Alternative 1 provides a minimum number of driveway in/out points, resulting in a more efficient movement of traffic through the project segment of 24th Street compared to Alternative 2. Specifically, under Alternative 1, the elimination of 11 driveways on the north side of 24th Street would result in fewer potential conflict points and may reduce the potential risk of vehicle collisions along 24th Street. Alternative 1 also provides fewer driveways at bus turnouts, which would reduce the potential for vehicle/conflicts. Under Alternative 2, drivers entering driveways would require traffic on the street to slow, and drivers exiting from driveways would have to back into the street. Both movements would adversely affect traffic flow.

As a result, Alternative 1 is superior to Alternative 2 on engineering design considerations.

Project Features

As shown in Table 1.3, the cost for Alternative 1 is $42.8 million compared to $43.7 million for Alternative 2, a difference of about $1 million, or about 1 percent. That difference is not enough to make Alternative 1 substantially superior to Alternative 2.

Table 1.3 also provides detailed information on the property acquisitions needed for Alternatives 1 and 2. As shown in that table:

- Alternatives 1 and 2 would result in the same number of full parcel acquisitions.
- Alternative 1 results in more partial parcel acquisitions but less total acreage in partial parcel acquisitions than Alternative 2.
- Alternative 1 results in more temporary construction easements (110 temporary construction easements, or about 14 percent) and more acreage in temporary construction easements than Alternative 2 (97 temporary construction easements).
- Alternatives 1 and 2 each result in 3 permanent easements.

The minor differences in partial parcel acquisitions and temporary construction easements between Alternatives 1 and 2 are not sufficient to identify one alternative as substantially superior to the other for property acquisition. As a result, neither build alternative is superior based on property acquisition.

As shown in Table 1.3, Alternatives 1 and 2 would result in the same number of residential (49 residents) and nonresidential (0) relocations. As a result, neither build alternative is superior based on relocations.

Potential Environmental Impacts

As described in Chapter 2 of this environmental document, Alternatives 1 and 2 would result in the same or very similar effects, with neither alternative superior to the other related to consistency with state, regional, and local plans, community character and cohesion (temporary construction impacts), utilities, emergency services, traffic and transportation/pedestrian and bicycle facilities, visual/aesthetics, water quality and storm water runoff, paleontology, hazardous waste/materials, air quality, natural communities, wetlands and other waters, animal species, threatened and endangered species, invasive species, and cumulative impacts.

As shown in Table 1.3, Alternatives 1 and 2 differ more substantially for three environmental parameters in addition to property acquisition and relocations: cultural resources, Section 4(f), and noise, as discussed below.

Cultural Resources

Both Alternatives 1 and 2 would affect the historic properties in the APE through a combination of full acquisitions, partial acquisitions and temporary construction easements. The No-Build alternative would not affect any of the historic properties within the APE but would not meet the project's purpose and need.

Alternative 1 – Widen to the North

Historic District North of 24th Street

Of the approximately 400 properties within this district that is assumed to be eligible for the National Register for this project only, there 12 full parcel acquisitions (5 contributing and 7 noncontributing properties), 2 partial parcel acquisitions with temporary easements (1 contributing and 1 noncontributing property), and 14 temporary construction easements (2 contributing properties and 12 noncontributing properties). A total number of 8 contributing properties and 20 noncontributing properties in this district would be affected, or about 7 percent of the total properties in the district. About 75 percent of the properties within the historic district north of 24th Street appear to be contributors, with 25 percent noncontributors.

Historic District South of 24th Street

Of the approximately 120 properties within this district that is assumed to be eligible for the National Register for this project only, there would be 9 full acquisitions (7 contributing and 2 noncontributing properties), 6 partial acquisitions with temporary construction easements (1 contributing and 5 noncontributing properties), and 12 temporary construction easements (3 contributing and 9 noncontributing properties). A total number of 11 contributing and 16 noncontributing properties in this district would be affected, or about 23 percent of the total properties in the district. About 85 percent of the properties within the historic district south of 24th Street appear to be contributors, with 15 percent noncontributors.

Alternative 2 – Widen to the South

Historic District North of 24th Street

Of the approximately 400 properties within this district that is assumed to be eligible for the National Register for this project only, there would be 1 full parcel acquisition (a contributor) and 5 temporary construction easements (2 contributing properties and

3 noncontributors). A total number of 3 contributing properties and 3 noncontributing properties in this district would be affected, or about 2 percent of the total properties in the district. About 75 percent of the properties within the Historic District north of 24th Street appear to be contributors, with 25 percent noncontributors.

Historic District South of 24th Street

Of the approximately 120 properties within this district that is assumed to be eligible for the National Register for this project only, there would be 22 full acquisitions (10 contributing and 12 noncontributing properties), 1 partial acquisition (noncontributing property), 2 partial acquisitions with temporary construction easements (2 contributing properties), and 9 temporary construction easements (4 contributing and 5 noncontributing properties). A total number of 16 contributing and 18 noncontributing properties in this district would be affected or about 28 percent of the total properties in the district. About 85 percent of the properties within the historic district south of 24th Street appear to be contributors, with 15 percent noncontributors.

For both build alternatives there would be no direct effects to the Bungalow Court at 2100 23rd Street, the El Encanto Bungalow Court at 2210 D Street, or the Bungalow Court at 2300 D Street.

Alternatives 1 and 2 would have no permanent or temporary use of land from the commercial office building (Healthland) at 2323 E Street, or the three Bungalow Court properties (23rd and D Streets), which are not contributors to either historic district but are identified as individually eligible for listing in the National Register of Historic Places.

Alternative 1 would result in fewer full parcel acquisitions and more partial acquisitions and temporary construction easements combined in the two historic districts than Alternative 2.

In summary, Alternative 1 preserves a historically significant and architecturally diverse segment of 24th Street, and it results in fewer full parcel acquisitions in the two historic districts.

As shown in Table 1.3, Alternatives 1 and 2 result in the same temporary construction easement (0.11 acre) and permanent acquisition of land (0.8 acre) at Beach Park and the same (0.37 acre) temporary construction easement on the Kern River Parkway Bike Trail.

Noise

As shown in Table 1.3, Alternatives 1 and 2 would result in noise levels at 25 and 22 receivers, respectively, approaching or exceeding the noise abatement criteria or substantial noise increase of 12 dBAs or more. These are 11 and 8 more receivers, respectively, than would be affected under the No-Build Alternative.

The noise abatement analysis determined that:

- Alternative 1 would consider a total of 6 soundwalls from 6 to 16 feet high, totaling about 829 feet long, which would benefit about 19 to 27 residences.
- Alternative 2 would consider a total of 6 soundwalls from 6 to 16 feet high totaling about 559 feet long, which would benefit about 8 to 14 residences.

There are three additional affected receivers with longer sound barriers and more benefited residences under Alternative 1 compared to Alternative 2; however, implementation of noise abatement measures (soundwalls) would provide the required noise level reduction under both build alternatives. Most of the six soundwalls proposed for each of the two build alternatives would not be in the same locations due to the differences in the proposed improvement between the two alternatives (north side widening versus south side widening). As such, neither build alternative would be considered superior to the other for noise impacts.

1.3.5 Alternatives Considered but Eliminated from Further Discussion

The following alternatives were considered for the proposed project but eliminated:

- **Alternative A-Northeast/Northwest Loop Ramps Interchange:** This alternative included a grade separated interchange with two loop ramps. The interchange alternative was eliminated due to forecast traffic volumes lower than originally estimated in the Project Study Report, yet significantly increased from existing volumes as shown in the Kern Council of Governments Regional Traffic Model, and the fact that a new crossing on Oak Street over the Kern River was no longer considered necessary.
- **Alternative B-Single Point Interchange:** This alternative included a grade separated interchange design that focused all ramps into one common intersection. The interchange alternative was eliminated due to forecast traffic volumes lower than originally estimated in the Project Study Report, yet significantly increased from existing volumes as shown in the Kern Council of Governments Regional Traffic Model, and the fact that a new crossing on Oak Street over the Kern River was no longer considered necessary.

- **Two Depressed Alternatives to Widen 24th Street to Six Lanes:** These alternatives included the widening of 24th Street as a six lane arterial roadway which would be at grade with Oak Street and depressed within the residential neighborhood north of 24th Street. One alternative required the construction of retaining walls. The other did not require retaining walls. These alternatives were eliminated due to excessive cost, right-of-way, alignment issues, and environmental issues, including:
  - Excessive cost (between $38 and $40 million in 2005 dollars);
  - Property takes (about 20–35 properties, depending on the alternative, with retaining wall or embankment);
  - An additional 50 feet of right-of-way required if slope is changed to a 4:1 ratio;
  - Cul-de-sacs on Elm, Myrtle, Spruce, Cedar, and Alder Streets;
  - North-south access limited to three locations;
  - Kit fox movement restricted;
  - High noise levels during construction and substantial dust due to the large amount of soil to be removed;
  - Potential for groundwater containment;
  - Potential impacts to archaeological resources due to deep excavation requirements (19 to 21 feet); and
  - Provision of a frontage road to provide access to properties on the north side.
- **Kern River Crossing Alternative:** This alternative included extending Oak Street across the Kern River by adding an additional bridge over the river to tie into Sillect Avenue. The Kern River crossing alternative was eliminated due to a reduction in planned land use north of the Kern River and the fact that a new crossing on Oak Street over the Kern River was no longer considered necessary.
- **Interchange Alternative:** This alternative would have provided access to 24th Street in all directions by providing loop and direct ramps. The interchange alternative was eliminated due to forecast traffic volumes lower than originally estimated in the Project Study Report, yet significantly increased from existing volumes as shown in the Kern Council of Governments Regional Traffic Model, and the fact that a new crossing on Oak Street over the Kern River was no longer considered necessary.
- **Alternative A16-Jug Handle Alternative:** This alternative would change the northbound left turn movement on Oak Street to a through movement that loops to the west with a right turn onto 24th Streeet. This alternative would also change the westbound left turn to a through movement that loops to the north with a right

turn onto southbound Oak Street. This alternative was eliminated due to traffic operations safety concerns resulting from the fact that drivers might be unaccustomed to this roadway configuration.

- **Frontage Road Alternative:** This alterntive included a frontage road along 24th Street and was eliminated due to the substantial increase in right-of-way impacts and costs without providing a benefit to 24th Steet traffic operations.
- **Alternatives Widening Both Sides of 24th Street:** The alternatives widening both sides of 24th Street were eliminated because they would result in severe right-of-way impacts to adjacent properties and the same benefit could be accomplished by widening only one side of 24th Street.

Of the multiple alternatives considered, only two alternatives (Alternative 1-widen to the north and Alternative 2-widen to the south) were considered viable. These two alternatives are analyzed in Chapter 2 of this environmental document.

1.4 Permits and Approvals Needed

The following permits and project approvals would be needed for the project.

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Section 7 Endangered Species Act Consultation	A Biological Assessment evaluating the project's potential impacts to federally listed threatened and endangered species would be submitted to the U.S. Fish and Wildlife Service during Section 7 consultation.
U.S. Army Corps of Engineers	Section 404 Permit, Clean Water Act	Obtain after Jurisdictional Delineation approval and before start of construction.
California Department of Fish and Game	Section 1602 Streambed Alteration Agreement	Obtain after Jurisdictional Delineation approval and before start of construction.
California Department of Fish and Game	Section 2080.1 Consistency Determination for State Listed Threatened and Endangered Species	Concurrent review with Section 7 consultation.
State Historic Preservation Officer	Finding of Effect	Obtain before Final Environmental Document approval.
State Historic Preservation Officer	Memorandum of Agreement	Obtain before Final Environmental Document approval.
Regional Water Quality Control Board	Section 401 Water Quality Certification	Obtain after Jurisdictional Delineation approval and before start of construction.
State Water Resources Control Board	General Construction Storm Water Permit- Caltrans	Obtain after Jurisdictional Delineation approval and before start of construction.
Kern County	Flood Control Permit	Obtain after Jurisdictional Delineation approval and before start of construction.
San Joaquin Valley Air Pollution Control District	Air Quality Dust Control Plans	Obtain before start of construction.
San Joaquin Valley Air Pollution Control District	Air Impact Assessment	Obtain before start of construction.
Central Valley Flood Protection Board	Encroachment Permit	Obtain before start of construction.
State Water Resources Control Board	Section 402 Caltrans National Pollution Discharge Elimination System Permit CAS00003	Obtain before start of construction.
City of Bakersfield and Kern Delta Water District	Encroachment Permit	Obtain before start of construction.

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the impacts that the proposed project would have on the human, physical, and biological environments in the project study area. It describes the existing environment that could be affected by the project, potential impacts from each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

As part of the scoping and environmental analysis done for the project, the following environmental issues were considered, but no adverse impacts were found. Therefore, there is no further discussion of these issues in this document.

- **Growth:** The project area is essentially built out, with few remaining parcels available for redevelopment. The project would not influence potential growth because the improvements are proposed to better accommodate existing and planned traffic volumes in an already-developed area (*Community Impact Assessment*, April 2011).
- **Farmlands/Timberlands:** No designated farmlands or timberlands lie in the project study area, and there is no indication that the project study area was used for agricultural production in the past (*Community Impact Assessment*, April 2011).
- **Geology/Soils/Seismic/Topography:** The project study area is not within a designated Alquist-Priolo Special Studies Zone for fault rupture hazard. The proposed project does not involve the installation of septic tanks or wastewater disposal systems; therefore, soil issues related to these facilities would not be encountered. In addition, the project design would be required to meet Caltrans seismic design criteria and all applicable county and state standards pertaining to seismic activity (*Preliminary Roadway and Foundation Report*, December 2010).
- **Hydrology and Floodplain**: No work would be performed within the 100-year floodplain of the Kern River. All work would be performed from the 24th Street bridge deck and would not extend below the Base Flood Elevations established by

the Federal Emergency Management Agency. Therefore, the project would not affect the Kern River floodplain or any of the natural and beneficial floodplain values (*Location Hydraulic Study*, September 2011).

- **Plant Species:** The project would not affect plant species considered to be of special-status by the U.S. Fish and Wildlife Service, the California Department of Fish and Game, or the California Native Plant Society (*Natural Environment Study,* April 2011).

2.1 Human Environment

2.1.1 Land Use

This section addresses the potential project effects on existing and future land uses, consistency with land use plans and policies, and parks and recreational resources. The project is not in the coastal zone, and no designated wild and scenic rivers are within the study area or sphere of influence.

2.1.1.1 Existing and Future Land Use

Affected Environment

The information in this section is based on the *Community Impact Assessment* (April 2011), the Metropolitan Bakersfield General Plan (December 2002) and associated Elements, and Kern Council of Governments planning documents. Most of the project study area is developed with commercial, residential, and mixed land uses. Although the western one-third of the project study area includes the Kern River and Beach Park, most of the project study area is highly urbanized, with few remaining parcels available for new development.

Running through the project area is 24th Street, a former state highway that was relinquished to the City of Bakersfield on July 11, 2011 and is now a local major street. The relinquished portion of the highway is from the west end of the Kern River bridge (post mile 0.20) to just east of M Street (post mile 1.70). The Metropolitan Bakersfield General Plan (see General Plan land uses in Figure 2-1) was reviewed to understand the development trends, land use-related goals, and specific policies of the City that could affect, or could be affected by, the project improvements.

Existing Land Use Patterns

According to the General Plan Land Use Element, the existing study area land uses include commercial, open space, residential, and mixed-use. These uses are interspersed among all project segments and are consistent with the General Plan Land Use Plan designations (see Figure 2-1).

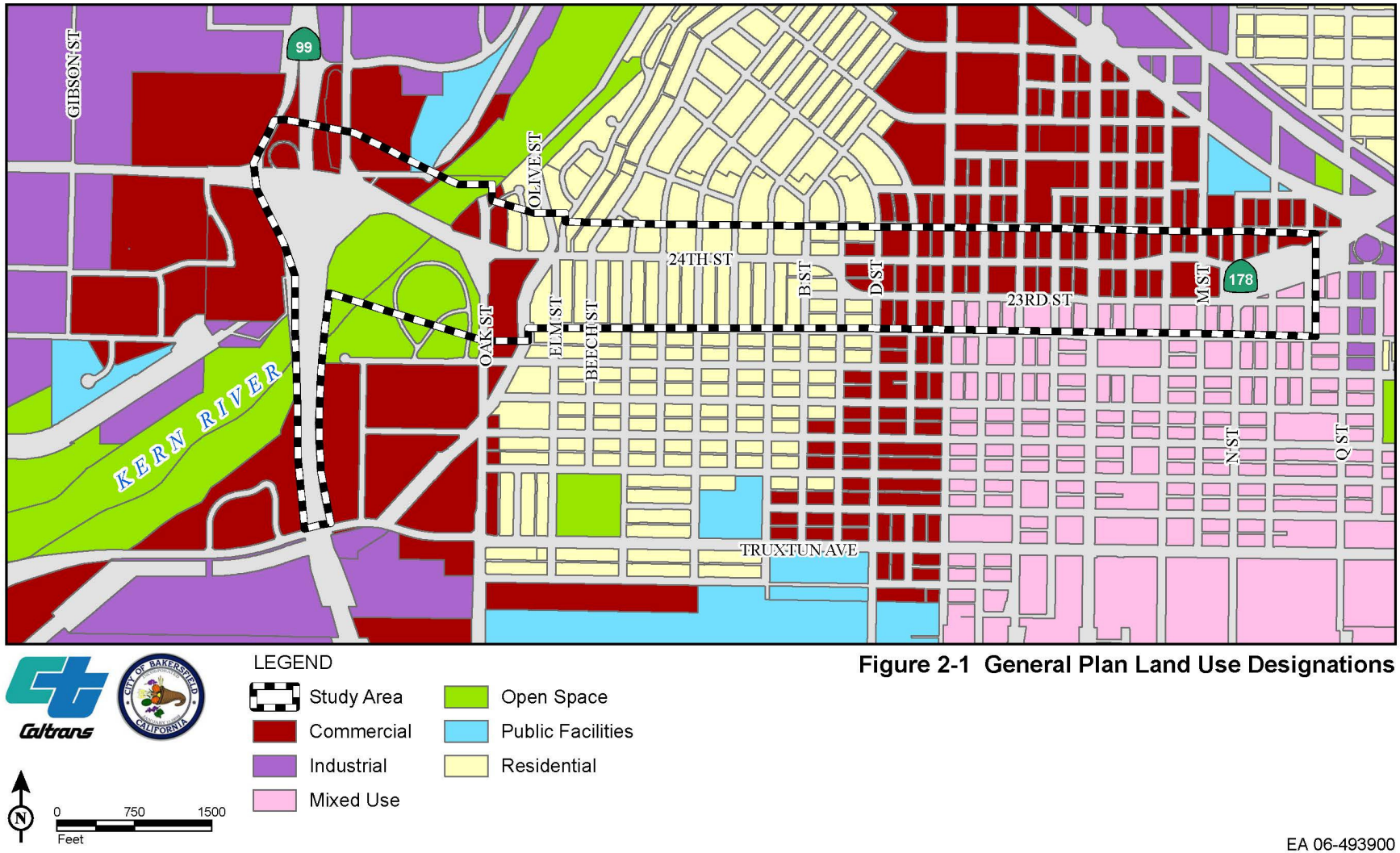


Figure 2-1 General Plan Land Use Designations

SOURCE: General Plan: City of Bakersfield (2008)

EA 06-493900
EA 06-484700

Land uses east of the Kern River bridge, in Segment 2, are designated as open space and commercial. The area from about Carrier Canal eastward to about Encina Street/E Street, in Segment 3, is designated residential. This area is composed mostly of post-World War II single-family residences. Continuing to the eastern project limits, in Segment 4, are commercial uses, with mixed-uses south of 23rd Street. The commercial uses include a variety of small, independently owned businesses, franchises, strip malls, small business offices, and fast-food restaurants.

Development Trends

The City is undergoing change; however, the project area is essentially built out with few remaining parcels available for development.

An excess of available homes, high land prices, and investor speculation during the late 1990s real estate boom severely affected small builders and caused large developers to scale back building plans. In the first three months of 2007, the City issued just 689 new home construction permits, compared with 1,380 issued during the first three months of 2006. Also, since 2008, difficulties in the financial, real estate, and private mortgage sectors have limited construction of new homes and development.

It is expected that new development in the future will occur in the southwest, northwest, and northeast suburbs of the City, outside the project study area. There are development constraints in the northeast due to topography, seismic zone locations, inadequate accessibility, and petroleum production, and in the southwest due to agricultural resources and the Kern River corridor.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would keep the project area as it is. No proposed project improvements would be made; therefore, no adverse temporary impacts would result to existing and future land uses in the project study area.

Build Alternatives

Temporary work associated with the build alternatives include: reducing the number of operating lanes at the couplet, which would restrict north-south movements; closing intersections; and using temporary construction easements for construction along the 24th Street proposed widening area, the couplet section, at the northernmost of Oak Street cul-de-sac, and along the east bank of the Kern River north of the 24th

Street bridge. Under Alternatives 1 and 2, 110 parcels (280,755 square feet) and 97 parcels (275,349 square feet), respectively, would be affected by temporary construction easements.

A vacant lot sits in the southeast quadrant of the 24th Street/Oak Street intersection. The vacant lot is designated as a commercial land use, but is currently used as a detention basin. The lot would be used for a temporary construction easement during construction of the project.

All temporary activities and land use impacts would stop when the project were completed and, therefore, none of the proposed temporary activities would result in permanent or long-term land use impacts.

Permanent Impacts

No-Build Alternative

Under the No-Build Alternative, no proposed project improvements would be made. No permanent land use-related impacts would occur. However, the No-Build Alternative is not consistent with the implementation of regional goals and objectives of the City and county and would therefore hinder the implementation of transportation improvements planned by the local and regional planning agencies.

Build Alternatives

The project would require the full and partial acquisition of private property, including residential and nonresidential uses. In the case of full acquisitions, it is expected that displaced uses could be relocated within the area. Properties affected by partial acquisitions would not result in displacements.

Table 2.1 shows the acreage of existing land use types that would be converted to a transportation public right-of-way land use for each build alternative. Impacts to land uses were calculated based on full and partial acquisitions of the areas being directly affected by the proposed build alternatives.

Table 2.1. Existing Land Use Impacts by Alternative (acres)

Alternative	Commercial	Industrial	Public	Office	Residential	Vacant[1]	Total
Alternative 1	0.18	0.0012	0.22	0.0052	5.35	0.66	6.42
Alternative 2	0.18	0.010	0.21	0.0073	5.67	0.65	6.73

Source: *Community Impact Assessment* (April 2011).
[1] Designated commercial land use (Metropolitan Bakersfield General Plan, December 2002).

As shown in Table 2.1, the largest land use type affected is residential. The build alternatives would acquire 23 single-family residences. The land use categories that would be the least affected are industrial, commercial, office, and public. Impacts to commercial office and public land uses would be low because of partial takes, which do not involve acquisition of the structures, but rather slivers of the parcels. For example, 0.8 acre of landscaped areas (no recreational facilities) in Beach Park would become part of the proposed project improvements and/or right-of-way.

Land use changes associated with the build alternatives would be consistent with the approved local and regional land use and transportation plans. Land use character within the study area would basically mimic the existing conditions post-construction of the project.

Avoidance, Minimization, and/or Mitigation Measures

Although the land use designation of some parcels would change, the project would not drastically change land uses in the area because the project involves the reconfiguration of an existing highway. The overall land use in the project vicinity would remain the same, so no avoidance, minimization, or mitigation measures are proposed. Mitigation Measure R-1 in Section 2.1.2.2 would address conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act.

2.1.1.2 Consistency with State, Federal, Regional and Local Plans and Programs

Affected Environment

The Kern Council of Governments has developed strategies that specifically address the growth and transportation issues facing Southern California as documented in adopted plans, including the Regional Transportation Plan (adopted in May 2007), Regional Transportation Improvement Program, and Federal Transportation Improvement Program. The Kern Council of Governments also conducted the *Route 178 Corridor Study* in 1986 that focused on the transportation plans for State Route 178, which includes the current project study area.

Metropolitan Bakersfield General Plan

Table 2.2 on the next page summarizes the policies and goals of the General Plan relevant to the proposed project.

Table 2.2. Metropolitan Bakersfield General Plan Policies and Goals Relevant to the Proposed Project

MBGP Element Policy/Goal	Policy/Goal Content
Land Use Element	
Policy 55	Provide for the mitigation of significant noise impacts on adjacent sensitive uses from transportation corridor improvements (I-6, I-7).
Policy 75	Provide adequate land area for the expansion of existing uses and development of new uses consistent with the policies of the general plan (I-1).
Policy 82	Preserve existing significant sound residential neighborhoods, commercial districts, and industrial areas (I-1, I-6, I-8).
Policy 104	As part of the environmental review procedure, an evaluation of the significance of paleontological, archaeological, and historical resources and the impact of proposed development on those resources shall be conducted and appropriate mitigation and monitoring included for development projects.
Circulation Element	
Goal 1	Provide a safe and efficient street system that links all parts of the area for movement of people and goods.
Goal 4	Provide a street system that creates a positive image of Bakersfield and contributes to residents' quality of life.
Goal 6	Provide a local street network that contributes to the quality and safety of residential neighborhoods and commercial districts.
Goal 7	Develop and maintain a circulation system that supports the land use plan show in the general plan.
Policy 21	Maintain the integrity of the circulation system (I-12).
Policy 22	Design transportation improvements to minimize noise impacts on adjacent uses (I-19).
Policy 32	Reserve or acquire right-of-way for all future transportation facilities in conformance with the Circulation Plan Map (I-24).
Policy 33	Provide new transportation facilities as needed based on existing usage and future demand (I-25, I-26, I-27).
Conservation Element/Biological Resources	
Goal 1	Conserve and enhance Bakersfield's biological resources in a manner which facilitates orderly development and reflects the sensitivities and constraints of these resources.
Goal 2	To conserve and enhance habitat areas for designated "sensitive" animal and plant species.
Policy 1	Direct development away from "sensitive biological resource" areas, unless effective mitigation measures can be implemented (I-1, I-3, I-4).
Conservation Element/Air Quality	
Goal 1	Promote air quality that is compatible with health, well being, and enjoyment of life by controlling point sources and minimizing vehicular trips to reduce air pollutants.
Goal 2	Continue working toward attainment of Federal, State and Local standards as enforced by the San Joaquin Valley Unified Air Pollution Control District.
Goal 3	Reduce the number of vehicular emissions in the planning area.
Policy 3	Require dust abatement measures during significant grading and construction operations (I-1).
Noise Element	
Goal 1	Ensure the residents of the Bakersfield Metropolitan Area are protected from excessive noise and existing moderate levels of noise are maintained.
Goal 2	Protect the citizens of the planning area from the harmful effects of exposure to excessive noise, and protect the economic base of the area by preventing the encroachment of incompatible land uses near known noise-producing roadways, industries, railroads, airports and other known sources.
Policy 1	Identify noise-impact areas exposed to existing or projected noise levels exceeding 65 decibel community noise equivalent level (exterior) or the performance standards described in Table VII-2 of the Circulation Element. The noise exposure contour maps on file at the City of Bakersfield and County of Kern indicate areas where existing and projected noise exposures exceed 65 decibel community noise equivalent level (exterior) for the major noise sources identified. (I-1).
Policy 7	Establish threshold standards for the determination of the existence of cumulative noise impacts that are significant, and would therefore require mitigation to achieve noise standards that do not exceed the standards contained in this element (I-9).

Source: *Metropolitan Bakersfield General Plan* (December 2002).

Assembly Bill 1358—Complete Streets Act

Assembly Bill 1358, the Complete Streets Act, was signed into law in California in September 2008 and took effect in January 2011. The new law requires cities and counties, when updating their general plans, to ensure that all local streets and roads accommodate the needs of bicyclists, pedestrians and transit riders, as well as motorists.

Bakersfield Systems Plan

The Bakersfield Systems Plan, adopted by the City and the County Board of Supervisors in July 2001, identified the 24th Street widening (six-lane arterial from Oak Street to D Street) and the 24th Street/Oak Street intersection improvements (new grade-separated interchange) as part of the plan's preferred alternative.

Environmental Consequences

No-Build Alternative

The No-Build Alternative is not consistent with the goals of the proposed project because it would not improve 24th Street, which now experiences traffic congestion and delay and is forecast to have even more congestion and delay in the future. The existing conditions of the 24th Street corridor are not consistent with the regional mobility goals and objectives of the Kern Council of Governments, including the Regional Transportation Plan (adopted in May 2007), Regional Transportation Improvement Program (adopted 2010), Federal Transportation Improvement Program (adopted 2009), the Route 178 Corridor Study (adopted 1986), and SAFETEA-LU Section 1302, National Corridor Infrastructure Improvement Program. The No-Build Alternative would also not meet the standards and goals of the City's General Plan.

Build Alternatives

The build alternatives—Alternatives 1 and 2—are consistent with the regional mobility goals of Kern Council of Governments, Caltrans and the City of Bakersfield.

Metropolitan Bakersfield General Plan

The build alternatives are consistent with applicable City General Plan goals and policies as listed in Table 2.2 to improve transportation corridors, provide adequate infrastructure, maintain efficient traffic operations on City streets, and work with Kern Council of Governments and Caltrans to improve the corridor.

Kern Council of Governments Federal Transportation Improvement Program

The projects in the 2011 Kern Council of Governments Federal Transportation Improvement Program[1], including the proposed project, were found to be conforming by the Federal Highway Administration/Federal Transit Administration in May 2011. The proposed project is also included in the 2011 Regional Transportation Plan Amendment No. 1, which was found to be conforming by Federal Highway Administration/Federal Transit Administration in the 2011 Federal Transportation Improvement Program[2] to reduce traffic congestion and improve operations. Therefore, the land use changes associated with the build alternatives are consistent with these approved land use and transportation plans.

Assembly Bill 1358-Complete Streets Act

The proposed project would be consistent with the requirements of the Complete Streets Act by providing a 5-foot-wide bicycle lane along the northbound and southbound Oak Street approaches, where currently no bicycle lanes exist. The Metropolitan Bakersfield General Plan does not plan for any new bicycle facilities on 24th Street or State Route 58/Rosedale Highway; however, the 24th Street westbound approach to the Buck Owens Boulevard intersection would be constructed with a bike lane for through traffic. The bike lane would align with the 8-foot wide shoulder of the westbound through lanes along 24th Street (State Route 178) under State Route 99. In addition the project would provide pedestrian sidewalks and transit stops along 24th Street and bicycle lanes along the northbound and southbound Oak Street approaches. The City would be required to address the Complete Streets Act upon updating the City of Bakersfield General Plan to include these facilities.

Bakersfield Systems Plan

The proposed project is included in the Bakersfield Systems Plan preferred alternative and is therefore consistent with the plan.

---

1 Federal Transportation Improvement Program Project ID: KER050110; Description: In Bakersfield: SR-178 widening (24th/23rd St) from Oak St to east of M Street; widen existing highway. KER020605; Description; In Bakersfield: 24th Street (SR 178) and Oak Street; construct intersection improvements.

2 Regional Transportation Plan Project ID: KER08RTP014; Description: 24th Street- RT178- Rt 178 (24th and 23rd St) Oak St to M Street – widen existing highway. KER08RTP012; Description: Oak St/24th Street – Rt 178 (24th St) and Oak St – construct improvements.

Avoidance, Minimization, and/or Mitigation Measures

No adverse impacts are anticipated for consistency with federal, state, regional, and local plans; therefore, no avoidance, minimization, or mitigation measures would be required.

2.1.1.3 Parks and Recreation

Affected Environment

Parks and Recreation Facilities

The City of Bakersfield's General Plan Parks and Open Space Elements were reviewed to provide an overview of the existing recreational resources within the study area. According to the General Plan, there is one City park (Beach Park) and one bike trail (the Kern River Parkway Bike Trail) in the study area. These properties are subject to the provisions of Section 4(f).

Section 4(f) Properties

- **Beach Park:** Located on the southwest corner of Oak and 24th Streets. Triggers the requirements for protection under Section 4(f) as a publicly owned recreation resource.
- **Kern River Parkway Bike Trail:** Begins at the mouth of Kern Canyon and extends to Interstate 5. Triggers the requirements for protection under Section 4(f) as a publicly owned recreation resource. Beach Park and the Kern River Parkway Bike Trail are described below.

Beach Park

Beach Park is owned and operated by the City. It is a public park open to use by residents and other visitors to the area. The park is on the southwest corner of Oak and 24th Streets (see Figure 2-2). The park covers about 26.3 acres and is bordered on the northwest side by the Kern River. Beach Park can be accessed by pedestrians and bicyclists from 24th, 21st, and Oak streets and from the Kern River Parkway Bike Trail. The bike trail, along the east bank of the Kern River, is adjacent to Beach Park. Vehicular access to Beach Park is available from 21st Street. Beach Park Loop, an internal road that provides access to various areas in the park, is accessible from 21st Street.

The recreation facilities and amenities provided in Beach Park include green space and passive play areas, benches, picnic areas, lighted softball diamond, lighted rugby field, lighted soccer field, lighted volleyball courts, horseshoe pits, playground and sandpit, skate park, and on-site parking along Loop Road.

Figure 2-2 Beach Park and Kern River Parkway Bike Trail

LEGEND

Beach Park (26.3 ac)

Kern River Parkway Bike Trail

0 150 300
FEET

SOURCE: City of Bakersfield (2008).

EA 06-493900
EA 06-484700

In addition to these recreation amenities, a prominent feature in Beach Park is the Cancer Survivor Memorial. The memorial, in the northeast corner of the park, depicts a man, woman, and child entering and going through cancer treatment to emerge whole and well again. The memorial provides encouragement to cancer patients, survivors, and family members of those affected by cancer.

Beach Park includes mature ornamental trees and shrubs as well as grassy fields. Because it is next to the Kern River and the river is likely used as a wildlife corridor (see Section 2.3.1), the vegetation in Beach Park may present opportunities for wildlife to rest and forage. Although not a defined recreation resource, the proximity of the Kern River itself to the park allows park visitors to enjoy views of the river (south of the 24th Street bridge) from within the park and from along the bike trail. As a result, the park provides some opportunities for park visitors to see wildlife such as birds, small mammals, amphibians, and reptiles.

Kern River Parkway Bike Trail

The bike trail is a major focal point of the Kern River Parkway. The Kern River Parkway begins at the mouth of Kern Canyon and extends more than 30 miles along the Kern River to Interstate 5. The bike trail provides opportunities for walking, jogging, bicycling, and inline skating. In addition, the trail is accessible for wheelchairs.

The bike trail is owned and maintained by the City. It is about 20 miles long, with a substantial amount of the trail alignment along the banks of the Kern River. The west end of the bike trail is at Enos Lake, north of Interstate 5, and the east end is just east of Hart Park. The bike trail is on the east bank of the Kern River next to Beach Park and passes under the 24th Street bridge west of the park. The bike trail can be accessed from several City parks off Truxtun Avenue west of State Route 99 and from a number of local streets at their crossings of the bike trail. Bike trail parking is provided on the north side of the Kern River on Manor Street.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed project improvements and, therefore, would not result in any adverse temporary impacts to parks and other recreation uses in the project study area.

Build Alternatives

Beach Park

As shown in Table 2.3 and in Figure 2-3, Alternatives 1 and 2 would require an 0.11-acre temporary construction easement at Beach Park south of 24th Street during construction. The area in the park proposed for the temporary construction easement is currently landscaped but does not contain any recreation or park facilities. As a result, the temporary construction easement would not impair the recreational activities, features, and attributes that qualify the park for protection under the requirements of Section 4(f).

Table 2.3. Summary of Temporary Occupancies and Permanent Uses at Beach Park by Build Alternative

Section 4(f) Property	Alternative 1		Alternative 2	
	Permanent Impacts (acres)	Temporary Construction Easement (acres)	Permanent Impacts (acres)	Temporary Construction Easement (acres)
Beach Park	0.8	0.11	0.8	0.11

Short-term noise levels during construction of Alternatives 1 and 2 could reach a dBA L_{max} of 91 at a distance of 50 feet from an active construction area. Short-term noise associated with construction-related activities for the project would be temporary and intermittent. Because these impacts would be limited in duration, they are not expected to substantially interfere with the use and enjoyment of Beach Park.

Consultation with the City of Bakersfield. As a result of discussions between Caltrans and the City, the designs of Alternatives 1 and 2 were refined to minimize the use of land from the park. The City provided a letter (dated August 4, 2010) to Caltrans (see Appendix C) about the potential project effects on Beach Park. The letter included the following statement: "In addition, the City concurs that the short-term use of 0.11 acre of land for a Temporary Construction Easement during construction of Alternatives 1 and 2 and the indirect impacts of the construction and operation of Alternatives 1 and 2 will not result in impacts that would substantially impair the activities, features and/or attributes that qualify the Park for protection under the requirements of Section 4(f)."

Figure 2-3 Impacts to Beach Park

LEGEND

- Beach Park (26.3 ac)
- Land Permanently Used (0.8 ac)
- Project Improvements
- Grading Limit
- Temporary Construction Easement (0.11 ac)

0 37.5 75 FEET

SOURCE: City of Bakersfield (2008); Draft Project Report (2011)

EA 06-493900
EA 06-484700

Kern River Parkway Bike Trail

As shown in Figure 2-4, a temporary construction easement along the east bank of the Kern River would be required for construction work beneath the east end of the 24th Street bridge for both Alternatives 1 and 2. Construction vehicles would enter the Kern River right-of-way through a single entrance and exit at the cul-de-sac at the northernmost end of Oak Street.

Construction vehicles would reach the Kern River bridge construction area via a 30-foot-wide temporary construction easement on the bike trail on the east side of the Kern River. Most of the construction on the bridge would occur from the bridge structure itself.

The bike trail would be closed for about 5 days for removal of the bridge deck and installation of formwork on the Kern River bridge over the trail. The bike trail would be closed again for about 5 days during the pouring of concrete on the bridge deck and the removal of formwork. During those times, the bike trail at the 24th Street bridge crossing would be closed temporarily to protect the safety of the bike trail users and the construction workers. All trail users would be stopped north and south of the construction area by flag persons and directed to the detour around the construction area. Figure 2-4 shows the locations where trail users would be directed to the detour and the detour alignments. Trail users would be provided with maps showing the trail detour alignment.

Temporary construction-related activities associated with Alternatives 1 and 2 would not substantially impair the activities, features or attributes of the Kern River Parkway Bike Trail, as a detour would be provided during construction.

Consultation with the City of Bakersfield. As a result of discussions between the Caltrans and the City, the designs of Alternatives 1 and 2 were refined to minimize the temporary occupancy of land from the bike trail. The City provided a letter dated September 16, 2010 (see Appendix C) about the potential effects on the Kern River Parkway Bike Trail. The letter stated that the City concurs that the temporary occupancy of any part of the trail right-of-way for a temporary construction easement during construction would not result in impacts that would substantially impair the activities, features, and/or attributes that qualify the trail for protection under the requirements of Section 4(f).

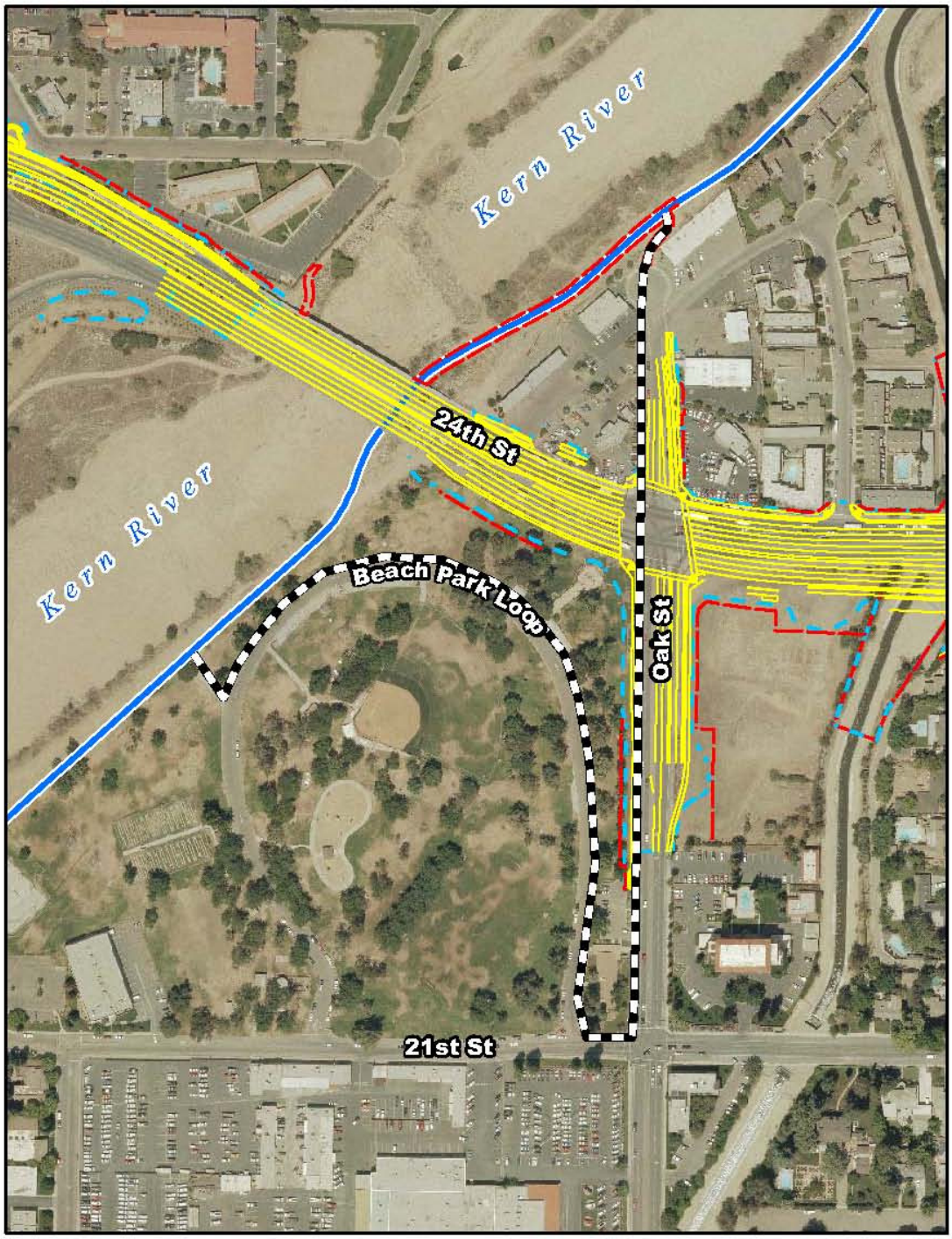


Figure 2-4 Kern River Parkway Bike Trail Temporary Construction Detour

LEGEND

- Kern River Parkway Bike Trail
- Kern River Parkway Bike Trail Under Bridge
- Project Improvements
- Grading Limit
- Temporary Construction Easement
- Kern River Parkway Bike Trail Construction Detour

0 165 330 FEET

SOURCE: City of Bakersfield (2008); Draft Project Report (2011)

EA 06-493900
EA 06-484700

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed project improvements and, therefore, would not result in any permanent impacts to parks and other recreational uses in the project area.

Build Alternatives

Beach Park

Alternatives 1 and 2 would result in the permanent use of 0.8 acre of land from the total 26.3 acres in Beach Park (see Table 2.3). This represents about 3 percent of the total area of this park. This land would be permanently incorporated in the public right-of-way to accommodate the widened 24th and Oak streets. Specifically, Alternatives 1 and 2 would use a narrow strip of land along the north boundary of Beach Park next to the existing right-of-way for 24th Street and a narrow strip of land along the east boundary of Beach Park next to the existing right-of-way for Oak Street. The two strips of land would be used for construction of an embankment next to the improved 24th and Oak streets. This would be a permanent use of 0.8 acre of land from Beach Park. Alternatives 1 and 2 would not result in changes to the existing access to or from the park from 21st Street or the Kern River Parkway Bike Trail.

The areas in Beach Park that would be acquired under Alternatives 1 and 2 are currently landscaped with plants and trees, but do not include or encroach into any developed park facilities. Use of these two strips of land along the east and north edges of Beach Park would not restrict or prevent the continued use of the park for sporting events, picnics, passive recreation, the Kern River Parkway Bike Trail, or other recreational pursuits. Use of this land would also not affect or interfere with visits to the Cancer Survivor Memorial in the northeast corner of Beach Park.

Long-term noise impacts associated with project operations would stem solely from traffic. Existing traffic noise levels at Beach Park approach 67 dBA L_{eq} under existing conditions. Noise levels at Beach Park with implementation of Alternatives 1 and 2 are estimated to be about 65 dBA, which is a reduction from the existing noise levels; therefore, Alternatives 1 and 2 would not result in adverse noise-related impacts to Beach Park. Alternatives 1 and 2 would not require any permanent aerial, surface, or subsurface easements at Beach Park.

Alternatives 1 and 2 would not result in indirect permanent impacts that would impair the activities, features, and/or attributes that qualify Beach Park for protection under

Section 4(f). As a result, operation of either Alternative 1 or 2 would not result in a constructive use at Beach Park.

As a result of discussions between Caltrans and the City, the designs of Alternatives 1 and 2 were refined to minimize the permanent acquisition of land from Beach Park. The City letter dated August 4, 2010 (see Appendix C) about the potential project effects on Beach Park included the following statement: "In summary, the City has determined that the proposed 24th Street Improvement Project (Alternatives 1 and 2) will result in the actual use of 0.8 acre of land from Beach Park and further determined with the payment of a fee to be used for park improvements that the use of 0.8 acre from this park will not substantially impair the activities, features, and/or attributes of Beach Park that qualify the park for protection under the requirements of Section 4(f)."

Kern River Parkway Bike Trail

Alternatives 1 and 2 would not require the permanent acquisition of any land from the Kern River Parkway Bike Trail for use in the proposed project improvements. Alternatives 1 and 2 would not require any permanent aerial, surface, or subsurface easements at the Kern River Parkway Bike Trail.

The potential indirect effects during operation of the proposed project would not substantially impair the activities, features, or attributes of the bike trail; therefore, Alternatives 1 and 2 would not result in a constructive use of the Kern River Parkway Bike Trail as a result of operation-related effects.

As a result of discussions between Caltrans and the City, the designs of Alternatives 1 and 2 were refined to avoid the permanent acquisition of any land from the bike trail. A City letter dated September 16, 2010 (see Appendix C) about the potential effects on the Kern River Parkway Bike Trail included the following determination: "The Build Alternatives (Alternatives 1 and 2) would not result in permanent use of any land from the Trail right-of-way."

Section 4(f) De Minimis Findings

Regulatory Setting

Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 United States Code 138 and 49 United States Code 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f).

Federal Highway Adiminstration's final rule on Section 4(f) de minimis findings is codified in 23 Code of Federal Regulations 774.3 and 23 Code of Federal Regulations 774.17.

In the first substantive revision to Section 4(f) since its enactment, SAFETEA-LU amended the law to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This revision provides that once the U.S. Department of Transportation determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. Responsibility for compliance with Section 4(f) have been assigned to the Caltrans pursuant to the memoranda of understandings under SAFETEA-LU Sections 6004 and 6005, including determinations and approval of Section 4(f) evaluations as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

Potential Use of the Section 4(f) Properties

Based on the analysis of Beach Park and the Kern River Parkway Bike Trail above, Caltrans has preliminarily determined that the proposed project would result in a de minimis use (a minimal impact/use to a Section 4(f) resource that is not considered to be adverse) of these two Section 4(f) properties.

The build alternatives would result in the permanent use of 0.8 acre of land from Beach park (about 3 percent of the total area of this park). The build alternatives would use a narrow stip of land along the north boundary of Beach Park next to the existing right-of-way for 24th Street widening and a narrow strip of land along the east boundary of Beach Park next to the existing right-of-way for Oak Street widening.

Construction of the build alternatives would require a 30-foot-wide temporary construction easement along the east bank of the Kern River to allow construction vehicles to reach the Kern River bridge construction area. The Kern River Parkway Bike Trail would be closed for two periods of 5 days. No permanent acquisistion of land from the Kern River Parkway Bike Trail would be required.

Why the Use is De Minimis

The areas in Beach Park that would be acuqired under the Build Alternatives is currently landscaped with plants and trees, but does not include or encroach into any

developed park facilities. Use of this land along the east and north edges of Beach Park would not restrict or prevent the continued use of the park for sporting events, picinics, passive recreation, the Kern River Parkway Bike Trail, or other recreational pursuits. During temporary closure of the Kern River Parkway Bike Trail a detour would be provided around the construction area for pedestrians and bicyclists.

Public Notice Process

The public notice published in Bakersfield, California, on May 23, 2012 announced the availability of this document and the date, location, and time of the public hearing.

Avoidance, Mitigation, and/or Enhancement Measures

Avoidance and Minimization Measures LU-1 and LU-2 described below would reduce impacts associated with construction of the project on these Section 4(f) properties.

Because the project would not adversely affect the activities, features, or attributes of Beach Park or the Kern River Parkway Bike Trail and because of the avoidance and minimization measures listed below, Caltrans requested that the City of Bakersfield concur with a Section 4(f) de minimis finding for the Build Alternatives. The City of Bakersfield concurred with the de minimis finding for Beach Park on August 4, 2010 and with the de minimis finding for the Kern River Parkway Bike Trail on September 16, 2010. See Appendix C for copies of the correspondence with the City of Bakersfield regarding the de minimis Section 4(f) findings.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would reduce impacts associated with construction of the project:

LU-1 When temporary closures of the Kern River Parkway Bike Trail are necessary to accommodate construction on the 24th Street bridge from under the bridge, trail users shall be stopped north and south of the closure by flag persons and directed to a temporary detour route. Trail users shall be provided maps showing the detour route and shall be provided information on the anticipated length of time each closure will be in effect. The detour for southbound bicyclists shall begin at the cul-de-sac at the north end of Oak Street, north of 24th Street, and then travel southbound, cross 24th Street, and turn west onto 21st Street. Bicyclists shall then travel through Beach Park and reconnect

with the Kern River Parkway Bike Trail using the existing paved path from Beach Park. The detour for northbound bicyclists shall be opposite the detour for southbound bicyclists, beginning at the existing paved path from the bike trail to Beach Park and ending at the Oak Street cul-de-sac.

LU-2 Land affected by the Temporary Construction Easements within Beach Park and the Kern River Parkway Bike Trail shall be restored to its existing or better condition at the completion of the construction of Alternatives 1 or 2 in those areas.

See Appendix B, Section 4(f) for additional Section 4(f) analysis.

2.1.2 Community Impacts

2.1.2.1 Community Character and Cohesion

Regulatory Setting

The National Environmental Policy Act of 1969, as amended, established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 U.S. Code 4331(b)(2)]. The Federal Highway Administration in its implementation of National Environmental Policy Act [23 U.S. Code 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the California Environmental Quality Act, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

Affected Environment

Information in this section is based on the *Community Impact Assessment* (April 2011) and the *Relocation Impact Statement* (April 2011). Socioeconomic and demographic data for the project area are based on 2000 U.S. Census data (U.S. Department of Commerce, Bureau of Census 2000). The study area for the proposed

project (both build alternatives) lies in three tracts from the 2000 Census: Census Tracts 5.07, 16.00, and 17.00 (see Figure 2-5). Census Tract 5.07 includes the western portion of the project area, Census Tract 17.00 includes the central portion of the project area, and Census Tract 16.00 includes the eastern portion of the project area. For context and comparison, information for certain topics is also provided at City of Bakersfield and county levels.

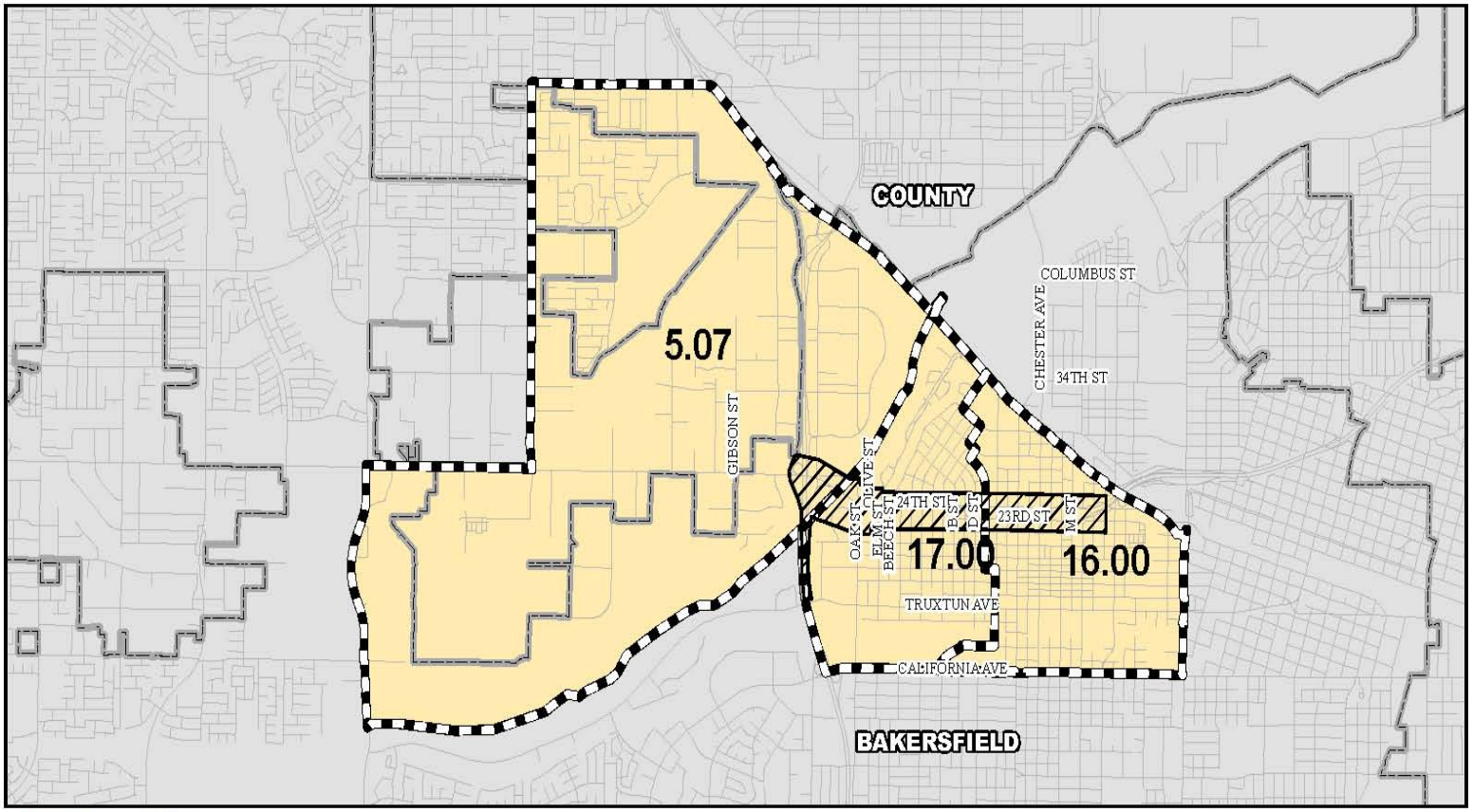
Community Cohesion

Community cohesion is the degree to which residents have a sense of belonging to their neighborhood, a level of commitment to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Elements of community cohesion can be found in the demographic data used to profile communities from the 2000 U.S. Census. Some specific indicators of community cohesion, as described in Caltrans' Community Impact Assessment, Environmental Handbook, Volume 4 (June 1997), include ethnicity, household size, housing tenure, and whether the population if dependent on mass transit.

Indicators of a community with a high degree of cohesion include ethnic similarity, long-term residency, households of two or more people, high rates of home ownership and a high percentage of elderly residents. Residential communities often form homeowners associations, which serve the purpose of controlling the appearance of the community and managing any common areas. Four homeowners associations exist within the project area.

The community on the north side of 24th Street is known as the Westchester Community to local residents, and the community on the south side of 24th Street is referred to as Downtown Bakersfield. Based on the low level of common activities and the fact that these two communities are separated by 24th Street, members of the two communities do not seem to form one cohesive community. Rather, they tend to form two distinct neighborhoods. In the past, the Westchester Community was home to several community leaders that encouraged community cohesion through political activism. Currently, only one community leader lives in the Downtown Bakersfield community.

The Downtown Bakersfield or Central Bakersfield area has observed more community cohesion. Members of the community frequently have meetings at the Franklin Elementary School or Bakersfield Racquet Club, south of and outside of the project study area. Jastro Park, between 18th Street and Truxtun Avenue, is another



LEGEND

- Study Area Census Tracts
- Study Area
- City Boundaries

0 0.5 1 Miles

SOURCE: Kern County (2008); U.S. Census Bureau (2000)

Figure 2-5 Study Area Census Tracts

EA 06-493900
EA 06-484700

facility that is commonly used for recreational purposes by members of the Downtown Bakersfield community and is outside of the project study area. Even though Beach Park is in the vicinity to the two communities, due to the existing street system, it is not used as a primary recreational facility for the Downtown Bakersfield community.

Ethnicity

Most of the population in the study area census tracts is white. Hispanics are the next highest population. See Table 2.4 for the ethnic composition of the study area. Ethnic similarity is one indicator of community cohesion.

Table 2.4. Ethnic Composition for the County, City and Study Area Census Tracts

Jurisdiction	Percentage[1]						
	White	Black	American Indian/ Native Alaskan	Asian[2]	Hawaiian[3]/ Islanders	Other	Hispanic[4]
Counties							
Kern County	61.6 (407,581)	6.0 (39,798)	1.0 (7,539)	3.4 (22,268)	0.1 (972)	23.2 (153,610)	38.8 (268,255)
Affected Communities							
City of Bakersfield	61.9 (152,849)	9.2 (22,641)	1.4 (3,454)	4.3 (10,708)	0.1 (298)	18.7 (46,151)	33 (85,454)
Study Area Census Tracts							
Census Tract 5.07	91.4% (1,407)	0.1% (2)	1.2% (19)	2.3% (36)	0.1% (1)	4.9% (47)	8.22% (129)
Census Tract 16.00	47.4% (754)	8.1% (128)	2.3% (36)	6.4% (101)	0	29.7% (473)	43.9% (744)
Census Tract 17.00	83.3% (4,195)	3.3% (145)	0.7% (30)	1.9% (82)	0.1% (6)	6.8% (295)	17.5% (798)

Source: U.S. Census Bureau, 2000 Census. *Summary File 1(SF1) Table P-10.

1 Percentages do not add to 100 percent because the White, Black, American Indian and Alaska Native, Hawaiian and Pacific Islander, and Other categories include persons identified with one race only; the Hispanic category overlaps with other categories.

2 In 1990, the Asian population included Hawaiian and Other Pacific Islanders; in 2000, the Asian population did not include Hawaiian and Other Pacific Islanders.

3 In the 1990 U.S. Census, the Hawaiian and Other Pacific Islanders race was included with the Asian population.

4 The Census Bureau recognizes Hispanic heritage as an ethnic group rather than as a separate race. If the Hispanic group is added to other racial groups, the total may exceed the total population.

Housing Demographics

Table 2.5 shows the housing stock for the county, city, and study area census tracts. Between 2000 and 2007, multi-family construction increased by 18.1 percent, and single-family construction increased by 41.6 percent. A total of 26,173 building permits were issued in the city between 2000 and 2007, of which 98 percent were for single-family units. Housing prices peaked in Bakersfield in 2006, but have since fallen due to the current financial crisis in the national market. Foreclosures have since increased along with the available supply of housing in the city and county.

Table 2.5. Housing Profile for the County, City and Study Area Census Tracts

Profiled Element	Kern County	City of Bakersfield	Census Tract 16.00	Census Tract 17.00	Census Tract 5.07
Total housing units	231,564	88,262	630	2,092	610
Housing units occupied	208,652 (90.1%)	83,441 (94.5%)	521 (82.7%)	1,994 (95.3%)	591 (96.9%)
Owner-occupied housing units	129,609 (62.1%)	50,502 (60.5%)	94 (18.0%)	1,116 (56.0%)	515 (87.1%)
Renter-occupied housing units	79,043 (37.9%)	32,939 (39.5%)	427 (82.0%)	878 (44.0%)	76 (12.9%)
Median home price (January 2009)	$130,000	$132,000	N/A	N/A	N/A
Year Householder Moved Into Unit					
1999–2000	49,856 (23.9%)	22,213 (26.6%)	68 (11.6%)	183 (33.8%)	517 (25.9%)
1995–1998	62,883 (30.1%)	28,124 (33.7%)	187 (32.0%)	199 (36.8%)	410 (20.6%)
1990–1994	35,889 (17.2%)	13,583 (16.3%)	159 (27.2%)	64 (11.8%)	290 (14.5%)
1980–1989	30,956 (14.8%)	10,716 (12.8%)	80 (13.7%)	48 (8.9%)	393 (19.7%)
1970–1979	16,164 (7.7%)	4,777 (5.7%)	82 (14.0%)	0 (0.0%)	210 (10.5%)
1969 or earlier	12,904 (6.2%)	4,015 (4.8)	9 (1.5%)	47 (8.7%)	174 (8.7%)

Source: U.S. Census Bureau, 2000 Census.
N/A = not applicable

As shown in Table 2.5, in the city and the county, over half of the housing units are owner-occupied. In the project area, most residents have lived in their residences 10 years or more. Compared to the county and city, as a whole, Census Tracts 16.00 and 17.00 have a substantially higher proportion of residents who have lived in their dwelling units 40 years or more. Home ownership and long-term residency indicate of community cohesion.

Age

The age distribution of the population in the project area is shown in Table 2.6. A higher median age is often characteristic of a more mature and affluent community, while a lower median age is often characteristic of a younger, less affluent community.

The median age in the affected census tracts is moderately higher than the City and county average. Census Tracts 17.00 and 5.07 have the highest percentage of the population over 64 years of age (about 18 percent), while census Tract 5.07 has the lowest percentage under age 19 (2.4 percent).

Table 2.6. Age Distribution for the County, City, and Study Area Census Tracts

Jurisdiction	Median Age (years)	Percentage		
		Population younger than 19 years old	Population 19–64 years old	Population older than 64 years old
Counties				
Kern County	30.6	232,134 (25%)	367,457 (66%)	62,054 (9%)
Affected Communities				
City of Bakersfield	30.1	88,361 (35.7%)	137,015 (55.6%)	21,681 (8.7%)
Study Area Census Tract				
Census Tract 5.07	46.7	345 (2.4%)	922 (60%)	273 (17.7%)
Census Tract 16.00	31.3	447 (28.1%)	974 (64.3%)	121 (7.6%)
Census Tract 17.00	38.9	995 (22.7%)	2,573 (59%)	798 (18.3%)

Source: U.S. Census Bureau, 2000 Census.

Each of the study area census tracts reports an average of two persons per household. Two of the census tracks have substantial populations over age 64. Based on those indicators and the mix of land uses in the area, the project area has a reasonably high degree of community cohesion.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed project improvements and therefore would not result in adverse temporary impacts to community character and cohesion.

Build Alternatives

Implementation of either of the build alternatives could result in short-term effects to neighborhoods as a result of construction activities. Road detours and access restrictions due to construction would result in some traffic delays for local residents, businesses, and commuters. However, substantial disruptions (construction dust and noise) to the local neighborhoods in the project area are not expected. Disruptions would be avoided with implementation of standard construction practices as referenced in Section 2.2.4, Air Quality, and Section 2.2.5, Noise. Permanent property acquisitions are discussed later under Relocations (Section 2.1.2.2).

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not result in construction of any of the proposed project improvements and, therefore, would not result in adverse permanent impacts to community character and cohesion.

Build Alternatives

The project would affect existing transportation facilities that are being considered for widening and intersection/interchange improvements to improve traffic operations, accommodate existing and forecast traffic volumes, and achieve acceptable Levels of Service. By making improvements to 24th Street, 23rd Street, and State Route 99, the project would not divide an existing community or create a barrier between communities since currently there are no strong interactions between these two communities. Also, 24th Street is an existing road between the communities. The roadway would remain in the future, and the project improvements would not create a new separation or boundary between the two communities. Improvements to 24th Street would not affect Bakersfield Racquet Club or Jastro Park, which are common meeting grounds for the Downtown Bakersfield community, and therefore, would not interfere with the activities of this community. The predominant impacts to the community cohesion would occur from residential displacements; however, ample residential properties exist in the Bakersfield area. Therefore, after project construction, impacts to community character and cohesion are not expected.

Avoidance, Minimization, and/or Mitigation Measures

See Section 2.1.1, Land Use, Section 2.2.4, Air Quality, and Section 2.2.5, Noise, for applicable avoidance and minimization measures for temporary construction impacts. The build alternatives would not permanently divide an existing community or create a barrier between communities; therefore, no additional avoidance, minimization, and/or mitigation measures are required.

2.1.2.2 Relocations and Real Property Acquisitions

Regulatory Setting

The Caltrans Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations Part 24. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such

persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 U.S. Code 2000d, et seq.).

Affected Environment

Information in this section is based on the *Draft Relocation Impact Report* (April 2011). Within the study area, residential uses are on both sides of 24th Street and 23rd Street (see Figure 2-6 for Alternative 1 and Figure 2-7 for Alternative 2). Nonresidential properties are also within the study area and include retail trade, finance, insurance, services, government, and other types of nonresidential land uses. More specifically, the western boundary of the project limits, in Segment 1, and west of the Kern River, includes commercial and vacant land uses. The land uses east of the Kern River bridge, in Segment 2, are designated as open space and commercial. The area in Segment 3 from about Carrier Canal eastward to about Encina Street/E Street is designated residential. This area is composed mostly of post-World War II single-family residences. In Segment 4, to the eastern project limits, there are commercial uses, with mixed-uses south of 23rd Street. The commercial uses include small, independently owned businesses, franchises, strip malls, small business offices, and fast-food restaurants.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative makes no improvements to the project area other than routine maintenance. Therefore, no temporary construction easements would occur under the No-Build Alternative.

Build Alternatives

The project would require the use of temporary construction easements to allow construction along the proposed right-of-way and for the construction of potential soundwalls along property lines within the 24th Street widening section. Temporary construction easements would generally be at intersection points and driveways along the 24th Street widening and the 24th/23rd Street couplet sections. A temporary construction easement is also proposed for the east shore of the Kern River to the north of the 24th Street bridge.

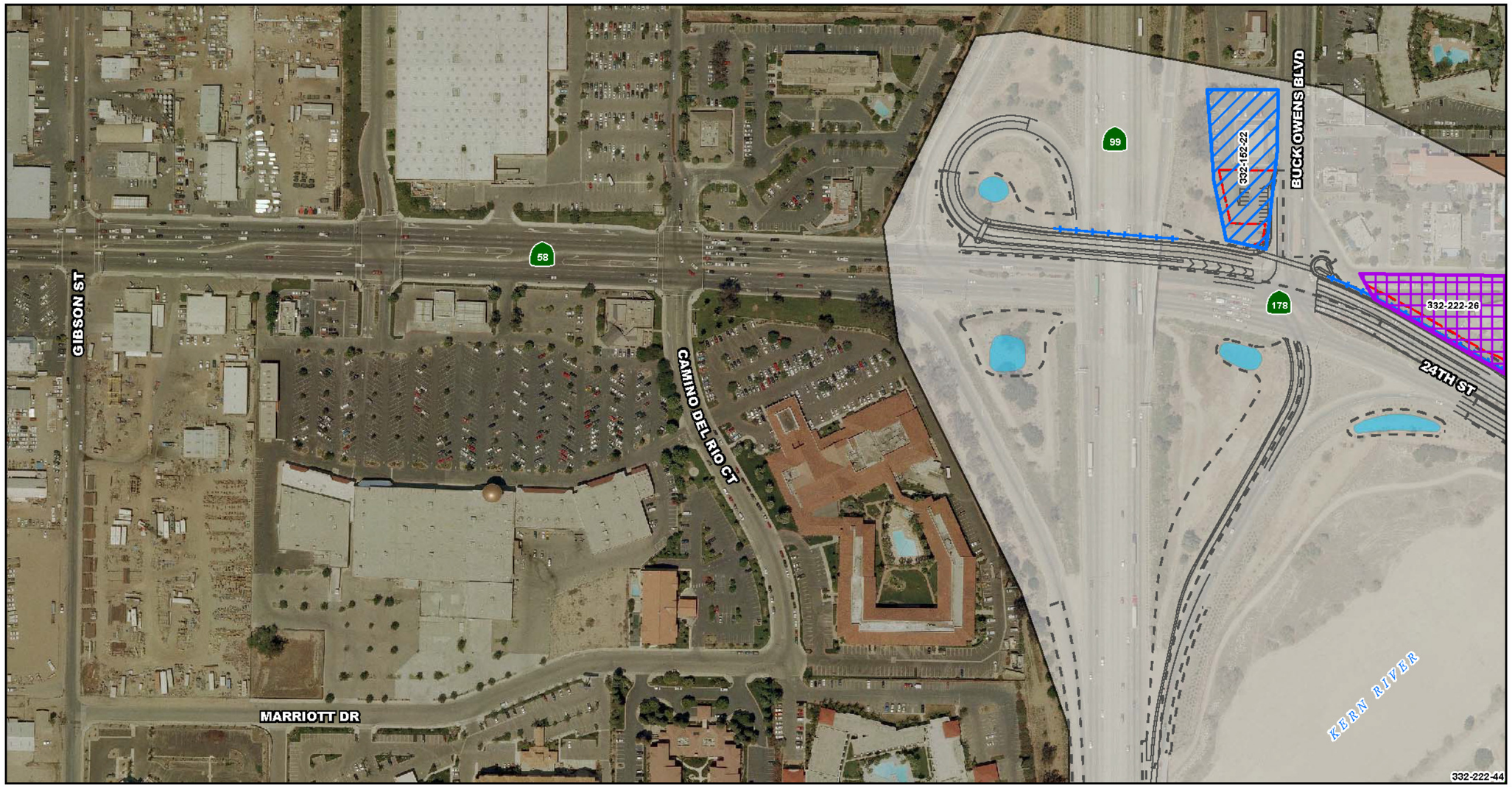


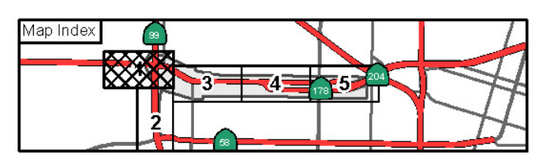
Figure 2-6 Potential Acquisitions/Relocations - Alternative 1 - Widen to the North

Sheet 1 of 5

LEGEND

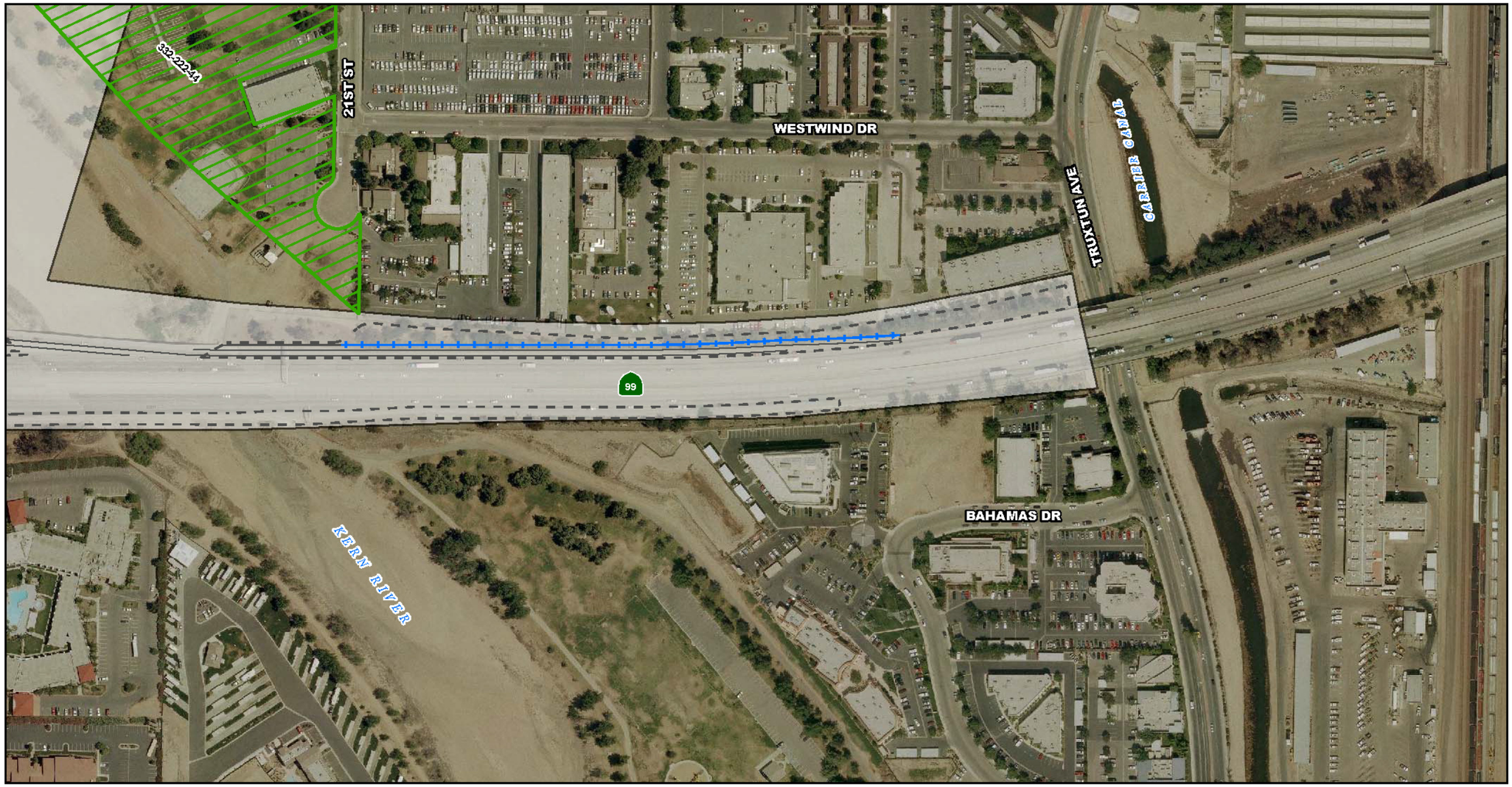
- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET



SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

EA 06-493900
EA 06-484700



LEGEND

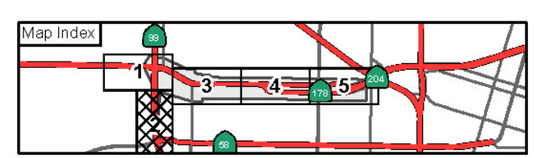
- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-6 Potential Acquisitions/Relocations - Alternative 1 - Widen to the North

Sheet 2 of 5



EA 06-493900
EA 06-484700

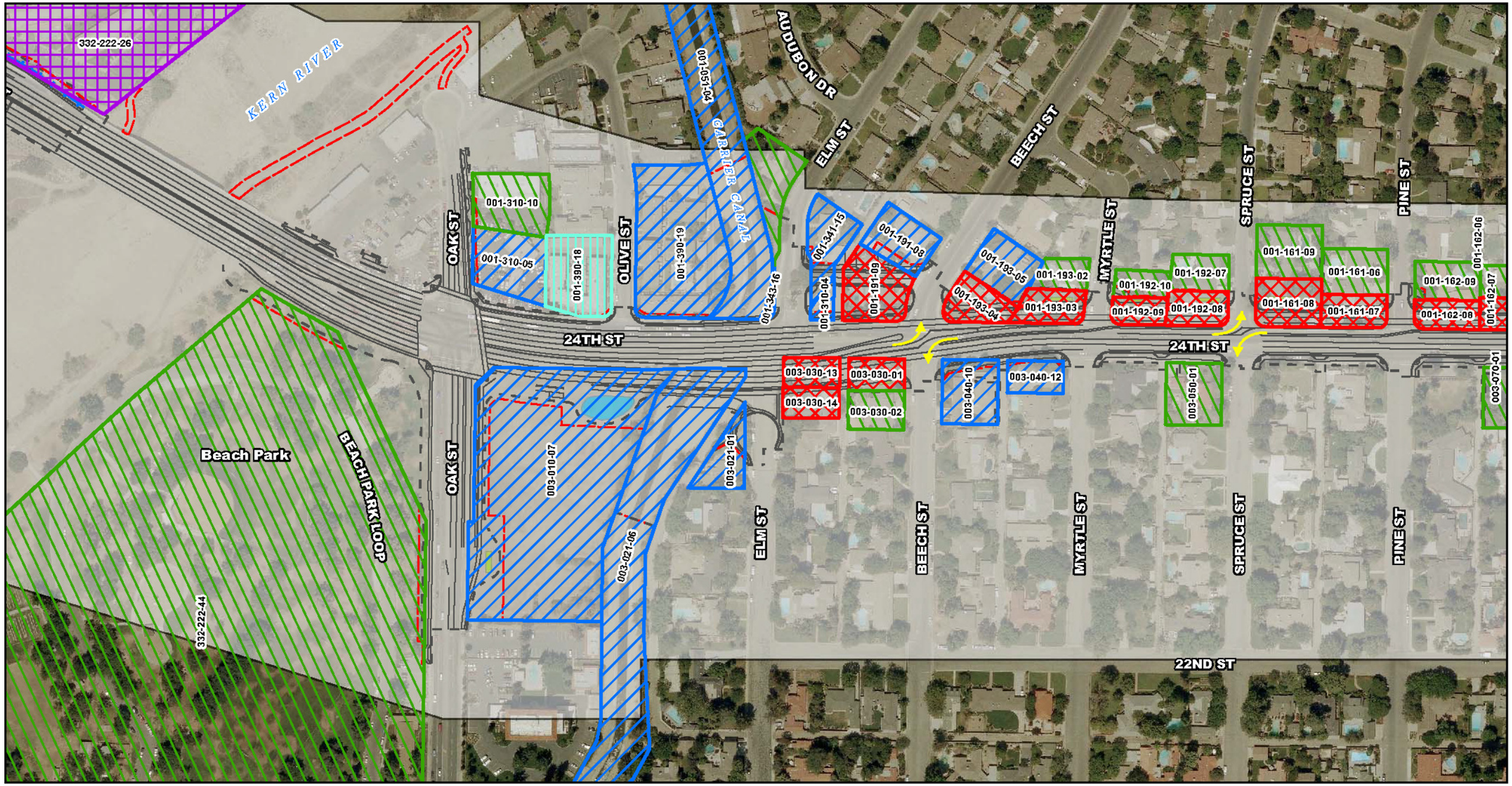


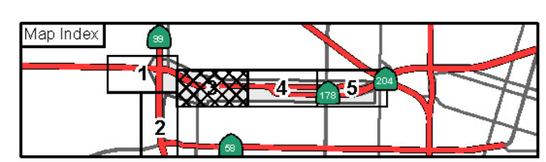
Figure 2-6 Potential Acquisitions/Relocations - Alternative 1 - Widen to the North

Sheet 3 of 5

LEGEND

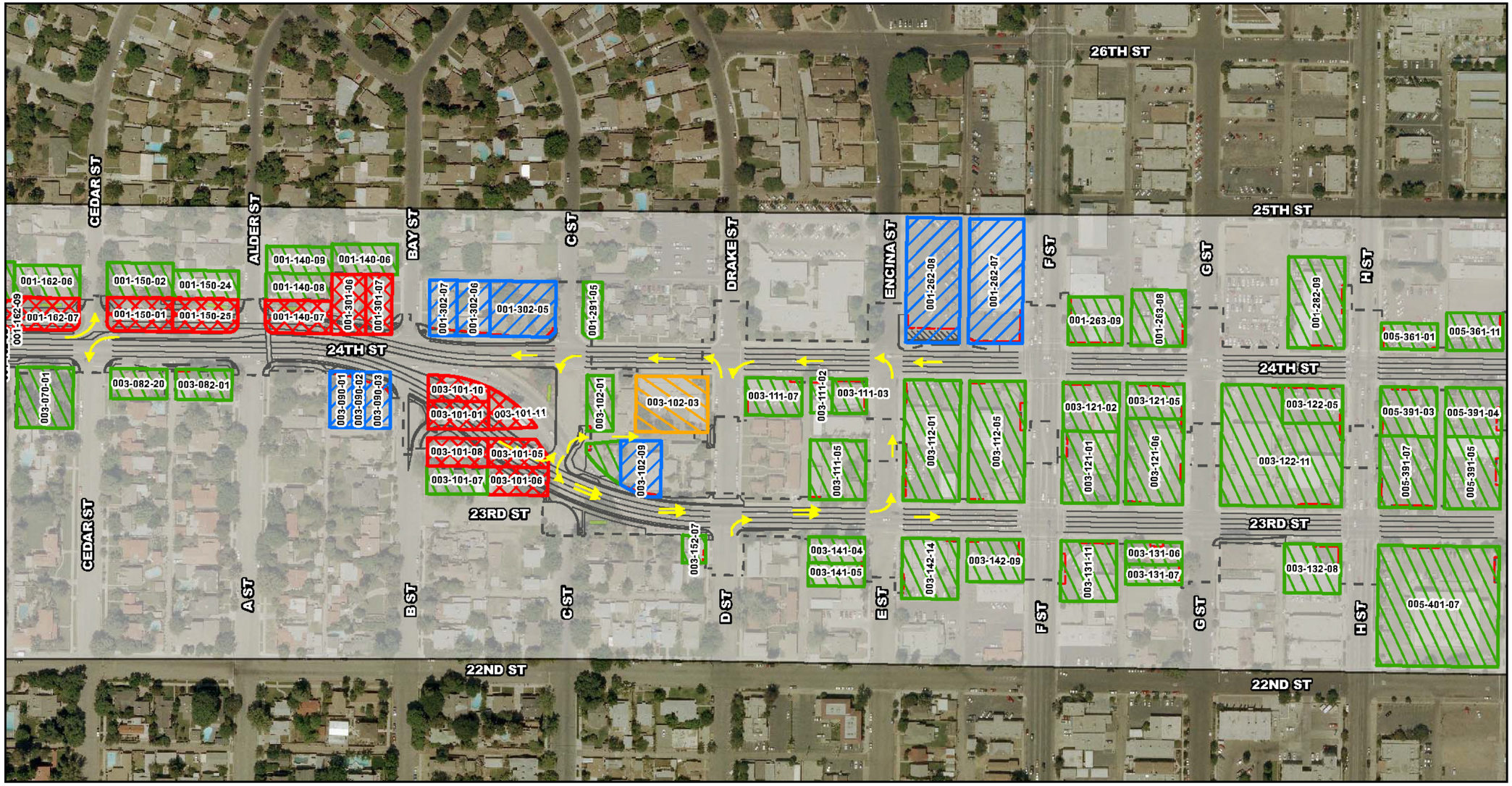
- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET



SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

EA 06-493900
EA 06-484700



LEGEND

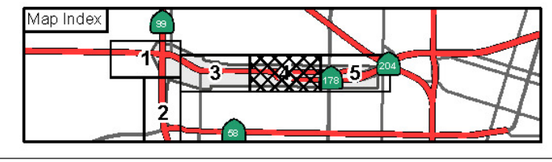
- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET

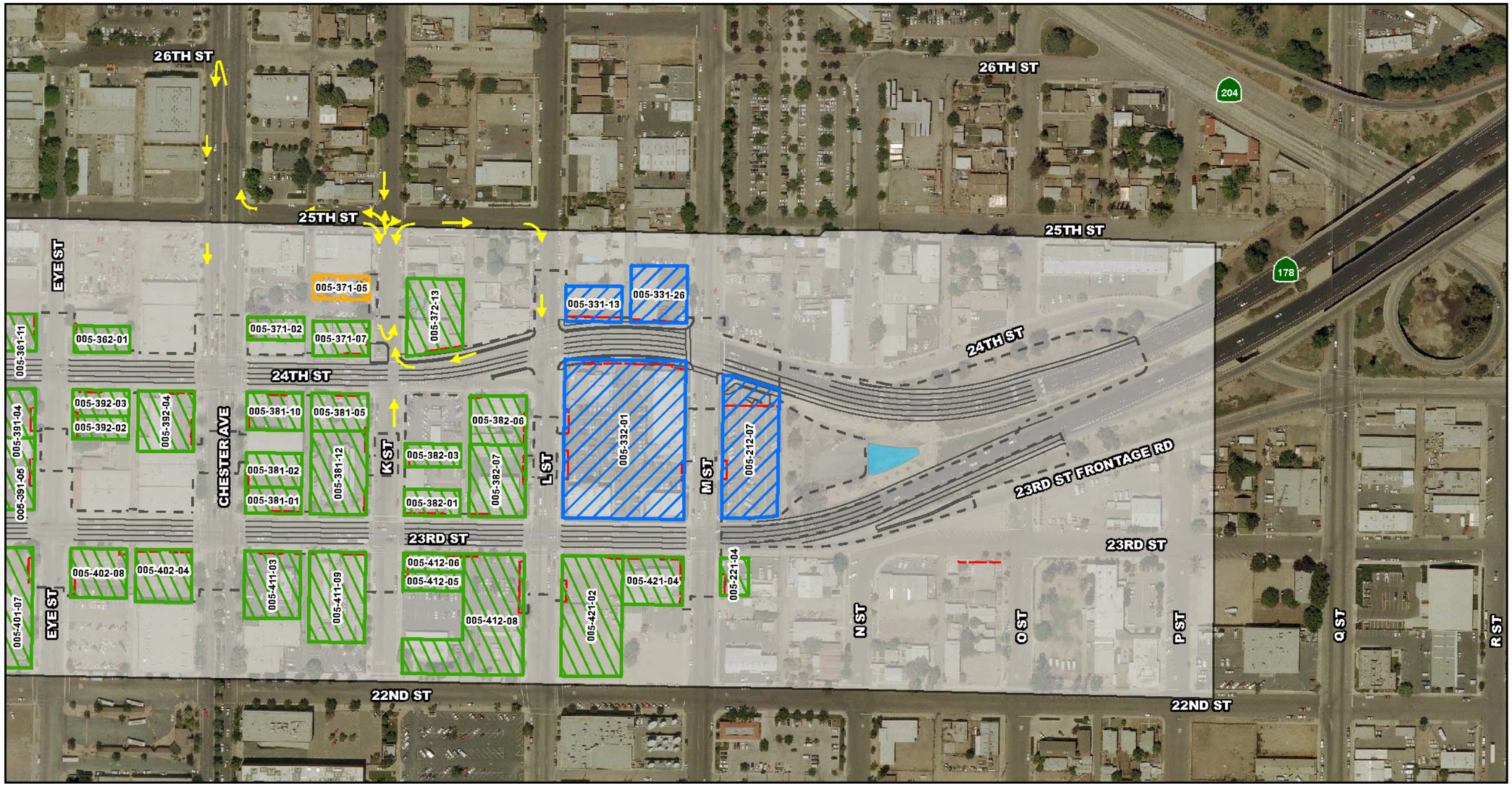
SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-6 Potential Acquisitions/Relocations - Alternative 1 - Widen to the North

Sheet 4 of 5



EA 06-493900
EA 06-484700



LEGEND

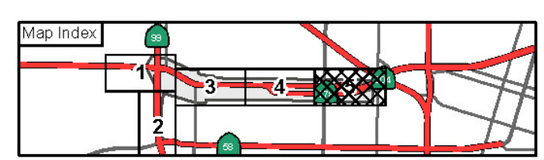
- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-6 Potential Acquisitions/Relocations - Alternative 1 - Widen to the North

Sheet 5 of 5



EA 06-493900
EA 06-484700

Figure 2-7 Potential Acquisitions/Relocations - Alternative 2 - Widen to the South

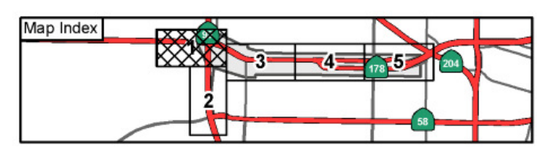
Sheet 1 of 5

LEGEND

- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).



EA 06-493900
EA 06-484700

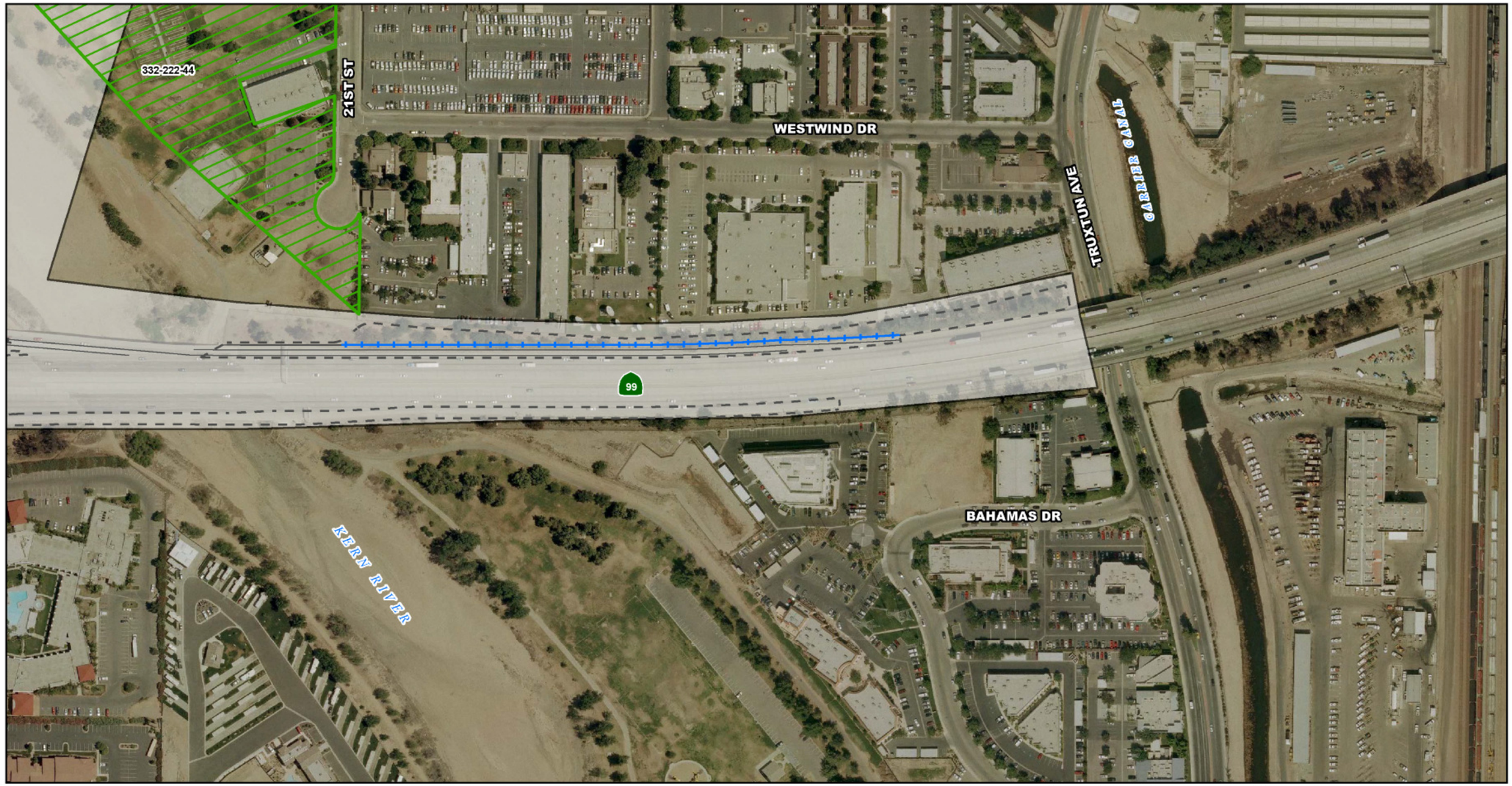


Figure 2-7 Potential Acquisitions/Relocations - Alternative 2 - Widen to the South

Sheet 2 of 5

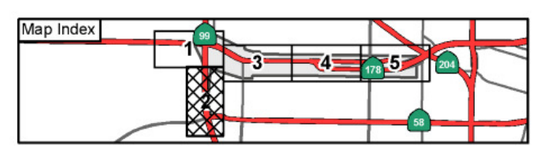
LEGEND

- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Map Index



EA 06-493900
EA 06-484700

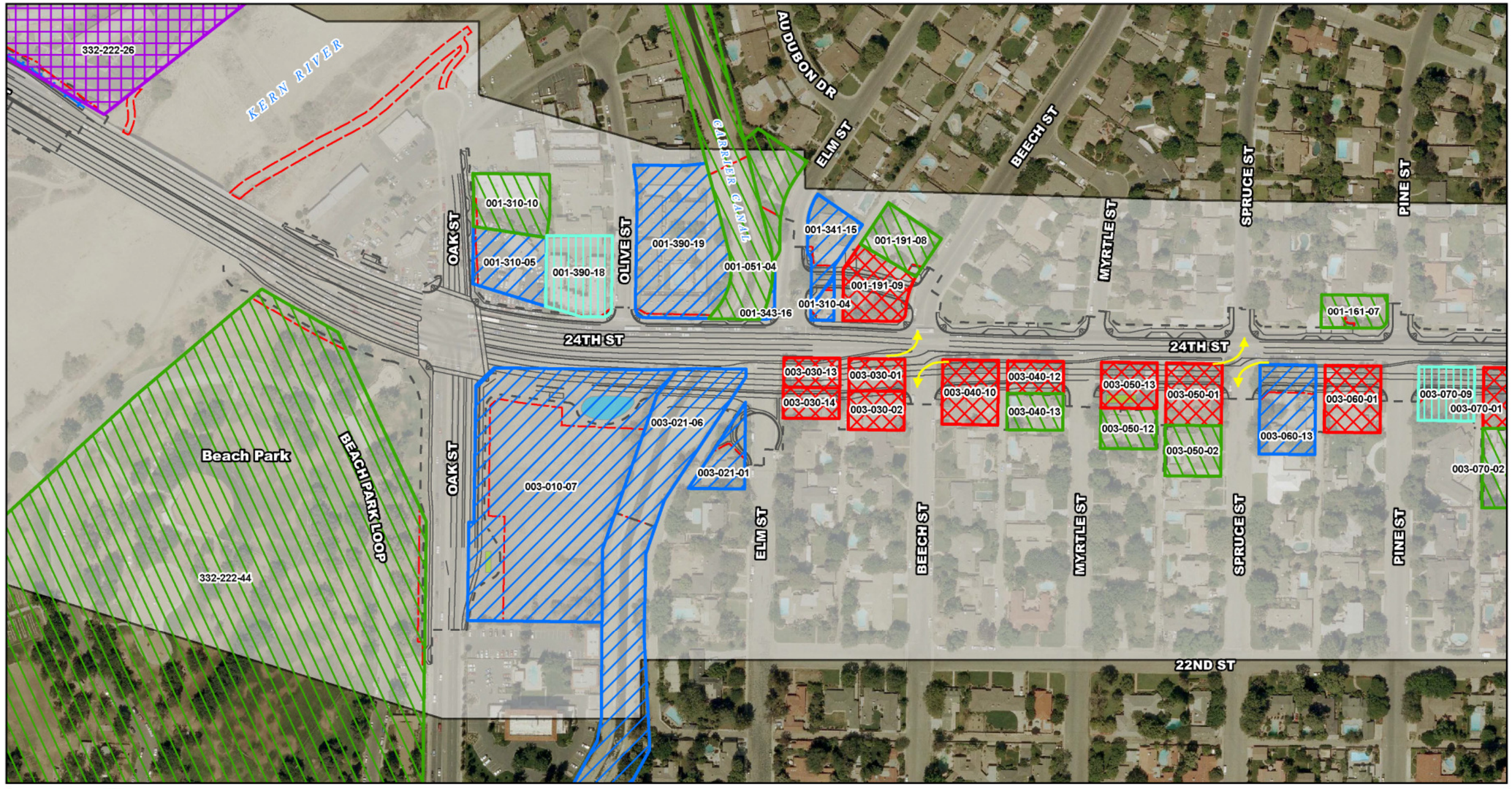


Figure 2-7 Potential Acquisitions/Relocations - Alternative 2 - Widen to the South

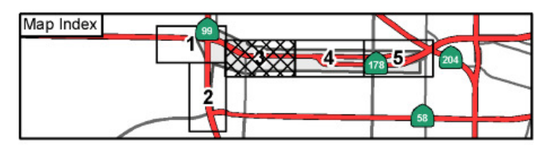
Sheet 3 of 5

LEGEND

- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).



EA 06-493900
EA 06-484700

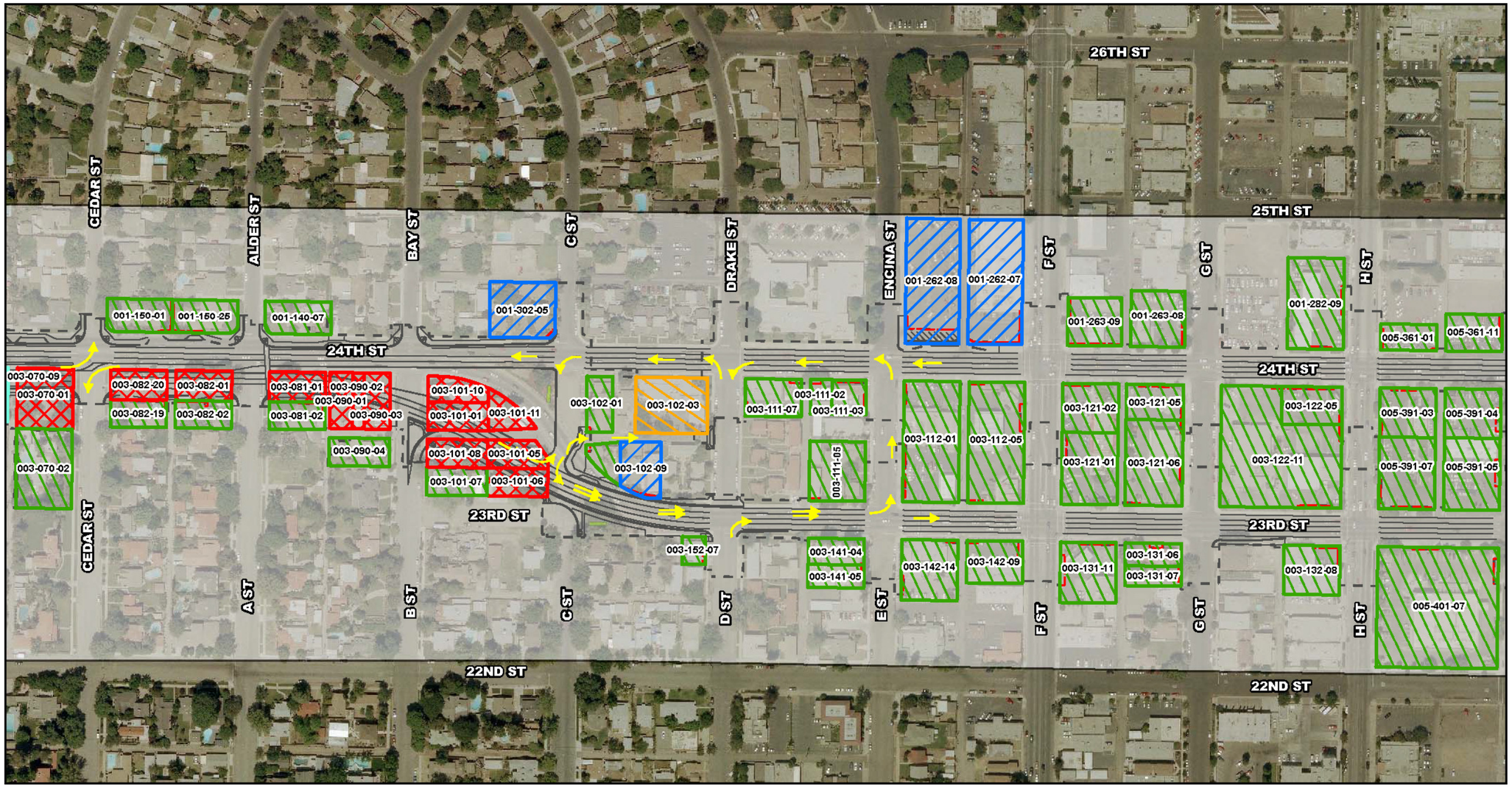


Figure 2-7 Potential Acquisitions/Relocations - Alternative 2 - Widen to the South

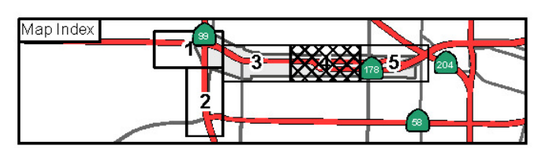
Sheet 4 of 5

LEGEND

- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).



EA 06-493900
EA 06-484700

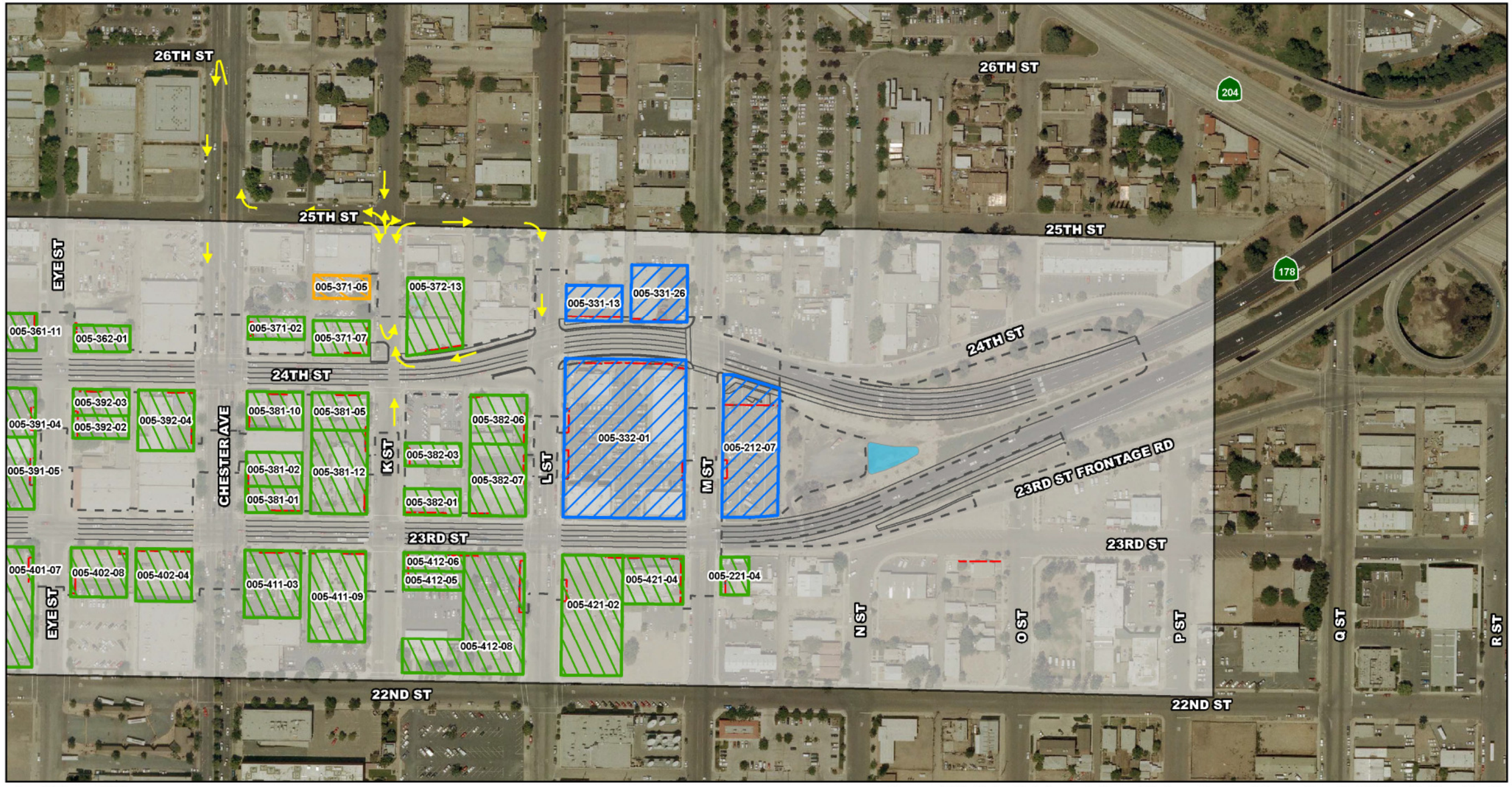


Figure 2-7 Potential Acquisitions/Relocations - Alternative 2 - Widen to the South

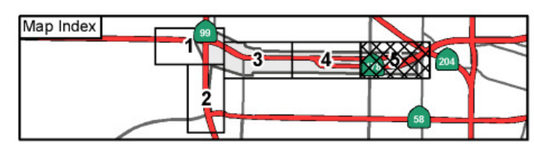
Sheet 5 of 5

LEGEND

- Study Area
- Full Acquisition
- Partial Acquisition
- Partial Acquisition with Temporary Construction Easement
- Partial Acquisition with Permanent and Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement
- Parcel with Permanent Easement
- Project Improvements
- Temporary Construction Easement
- Retaining Wall
- Grading Limit
- Small Footprint BMP
- Large Footprint BMP
- Circulation

0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).



EA 06-493900
EA 06-484700

The temporary construction easement would be accessed by a cul-de-sac at the northernmost end of Oak Street. Alternative 1 would result in 110 temporary construction easements (6.45 acres); Alternative 2 would result in 97 temporary construction easements (6.32 acres). See Table 2.7, Figure 2-6 (Sheets 1–5), and Figure 2-7 (Sheets 1–5) for the location of temporary construction easements for Alternatives 1 and 2.

Table 2.7. Summary of Property Acquisitions for the Build Alternatives

Permanent Acquisitions				Temporary Construction Easements (TCEs)		Permanent Easements	
Full Parcels		Partial Parcels					
Number of Parcels	Size (acres/ square feet)	Number of Parcels	Size (acres/ square feet)	Number of Parcels	Size (acres/ square feet)	Number of Parcels	Size (acres/ square feet)
Alternative 1:							
Total: 23 Residential: 23 Nonresidential: 0 Vacant: 0	5.07/ 220,899	**Total: 29** Residential: 14 Nonresidential: 12 Vacant: 3	1.36/ 59,281	110	6.45/ 280,755	3	0.114/ 4,958
Alternative 2:							
Total: 23 Residential: 23 Nonresidential: 0 Vacant: 0	5.21/ 227,015	**Total: 21** Residential: 7 Nonresidential: 11 Vacant: 3	1.52/ 66,309	97	6.32/ 275, 349	3	0.114/ 4,958

Source: *Draft Relocation Impact Report* (April 2011).

Temporary activities associated with the build alternatives would also reduce parking and temporarily affect accessibility to businesses within the couplet area during construction. During construction, access and on-site parking may be affected at businesses next to the project improvements for 2 to 7 days, subject to construction phasing and staging. Surplus/unoccupied on-street parking is available within a one- to two-block radius for business-related parking during construction. In addition, commercial businesses such as gas stations may experience a temporary reduction in clientele due to the closure of one lane in each direction and temporary reconfiguration of access during construction.

Permanent Impacts

No-Build Alternative

The No-Build Alternative makes no improvements to the project area other than routine maintenance. Therefore, no full or partial parcel acquisitions would occur under the No-Build Alternative.

Build Alternatives

Full Acquisitions

A full acquisition of a property is defined as an area within which occupants of residential and nonresidential units would be displaced by the project and would be expected to be relocated as part of a project. A partial acquisition occurs when a small area of a property is acquired, but full use of the property and structures, such as multifamily units, would remain. Generally, partial acquisitions consist of portions of a back, side, or front yard; landscaping; and/or parking.

Alternative 1 would result in 23 full parcel acquisitions of residential (single-family) properties totaling 5.07 acres, and Alternative 2 would result in 23 full parcel acquisitions of residential (single-family) properties totaling 5.21 acres. The estimated totals of acquired parcels and permanent easements are shown in Table 2.7 and Figure 2-6 (Sheets 1–5) for Alternative 1 and Figure 2-7 (Sheets 1–5) for Alternative 2. The project would not require full, permanent acquisition of nonresidential parcels and therefore, no employee displacement impacts would occur.

Finding replacement dwellings in the Bakersfield area would depend on the current demand for housing in the area at the time the displacements occur. The housing vacancy rate in the City is above 5 percent, which is needed for flexible population mobility. It is anticipated that adequate comparable replacement dwellings would be available within the project area or in neighboring communities. No special issues related to minority, ethnic, large family, handicapped, elderly, income level, and owner/tenant status (see Tables 2.4, 2.5, and 2.6).

Partial Acquisitions

Alternative 1 would result in the larger number of partial parcel acquisitions, with 14 residential and 15 nonresidential. Alternative 2 would result in seven residential and 14 nonresidential partial parcel acquisitions. These parcels are shown in Figures 2-6 and 2-7.

Some on-street parking would be removed permanently, and there would also be some permanent impacts to off-street parking due to the project. See Section 2.1.4 for information on permanent impacts to parking.

Avoidance, Minimization, and/or Mitigation Measures

All relocation and real property acquisition impacts would be minimized through implementation of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

Implementation of the following mitigation measure would reduce or eliminate the adverse effects of Alternatives 1 and 2 related to property acquisition and relocation:

Mitigation Measure

R-1 Where acquisition and relocation are unavoidable, the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the 1987 Amendments, as implemented by the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs adopted by the U.S. Department of Transportation (March 2, 1989) shall be followed. Relocation advisory assistance shall be provided to any person, business, farm, or nonprofit organization displaced as a result of the acquisition of real property for public use.

2.1.2.3 Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President Bill Clinton on February 11, 1994. This executive order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2011, this was $22,350 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix E of this document.

Affected Environment

Information in this section is based on the *Community Impact Assessment* (April 2011). The environmental justice analysis used census tract information from the 2000 U.S. Census. The analysis used five measures by which to evaluate potential environmental justice impacts:

- Percentage of non-white residents in the study area census tracts
- Percentage of Hispanic residents (the Census Bureau considers Hispanic and Latino ethnicity distinct from racial background) in the project study area census tracts
- Percentage of the population below poverty level in the study area census tracts
- Median household income in the study area census tracts
- Transit-dependent population in the study area census tracts

Table 2.8 shows the environmental justice populations for the three study area census tracts based on the five measures listed above.

Table 2.8. Environmental Justice Populations

Jurisdiction	Non-White Residents (not including Hispanic residents	Hispanic Residents[1]	Percentage Below Poverty Level	Median Household Incomes	Transit-Dependent (younger than 18 and older than 64)
County of Kern	226,647 (34.2%)	268,255 (39%)	20.6%	43,106	294,188 (34%)
City of Bakersfield	83,252 (66.7%)	85,454 (33%)	18%	39,982	110,042 (44.4%)
Census Tract 5.07	234 (8.6%)	129 (8.22%)	0.5%	$56,685	618 (20.1%)
Census Tract 16.00	741 (90.6%)	744 (43.9%)	41%	17,500	568 (35.7%)
Census Tract 17.00	558 (12.8%)	798 (17.5%)	10.4%	45,290	1,793 (41%)

Source: U.S. Census Bureau, 2000 Census.

1. Percentages do not add to 100 percent because the categories include persons identified with one race only. The Census Bureau recognizes Hispanic heritage as an ethnic group rather than as a separate race and can overlap with other categories.

Environmental justice indicators in the project area vary substantially; Census Tract 5.07 has the lowest percentage of environmental justice residents, while Census Tract 16.00 has the highest percentage of environmental justice residents.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would make no proposed project improvements, and therefore would not result in adverse temporary impacts to environmental justice populations.

Build Alternatives

Temporary impacts associated with the construction of the either build alternative (Alternative 1 or 2) would affect the entire study area and would not result in

disproportionate impacts to low-income or minority populations because these populations are dispersed throughout the study area.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would make no proposed project improvements and, therefore, would not result in adverse permanent impacts to environmental justice populations.

Build Alternatives

The project would improve existing study area highways and address deficiencies of the existing transportation system. The build alternatives would benefit most project area residents, including minority and low-income populations, by improving mobility and circulation through the project area.

The build alternatives would not result in property acqisitions or relocations in Census Tract 16, which has the largest percentage of minority and low-income populations. All residential displacements would occur within Census Tract 17, which is the most affluent of all affected tracts. Low-income displacements are not expected. This tract also has a substantially lower number of minorities than the City and County averages (see Table 2.4). All the residential properties expected to be displaced from the study area are owner-occupied, single-family residential units. However, as noted earlier, ample replacement housing is available for relocations. All displacements would be treated in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the California Relocation Act.

Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, Alternatives 1 and 2 would not cause disproportionately high and adverse effects on any minority or low-income populations as per Executive Order 12898 regarding environmental justice.

2.1.3 Utility and Emergency Services

Affected Environment

Analysis of impacts of the proposed project on existing utility and emergency services is based on information in the *Community Impact Assessment* (April 2011), *Traffic Analysis* (July 2010), *Draft Relocation Impact Statement* (April 2011), and Draft Project Reports (January 2012) prepared for the project.

Physical impacts of the build alternatives on the utilities and emergency services in the project area would be confined to the project right-of-way. This discussion of the affected environment focuses on services and utilities within the right-of-way or close enough to the right-of-way to be affected by the build alternatives. While services and utilities are generally provided in large service areas, this discussion focuses on the services and service providers within the project area.

Existing Utility Facilities

Utility companies that serve the project area include AT&T Communications, Bright House Networks, California Water Service, Chevron, Kern County Water Agency, Pacific Gas & Electric, Time Warner, and City of Bakersfield. See Figure 2-8 for the location of existing utilities in the project area.

Public utility facilities exist in the area. Utility lines within the project area include electric, natural gas, fuel oil, potable and nonpotable water, and wastewater, plus telephone, communication, and cable television cables.

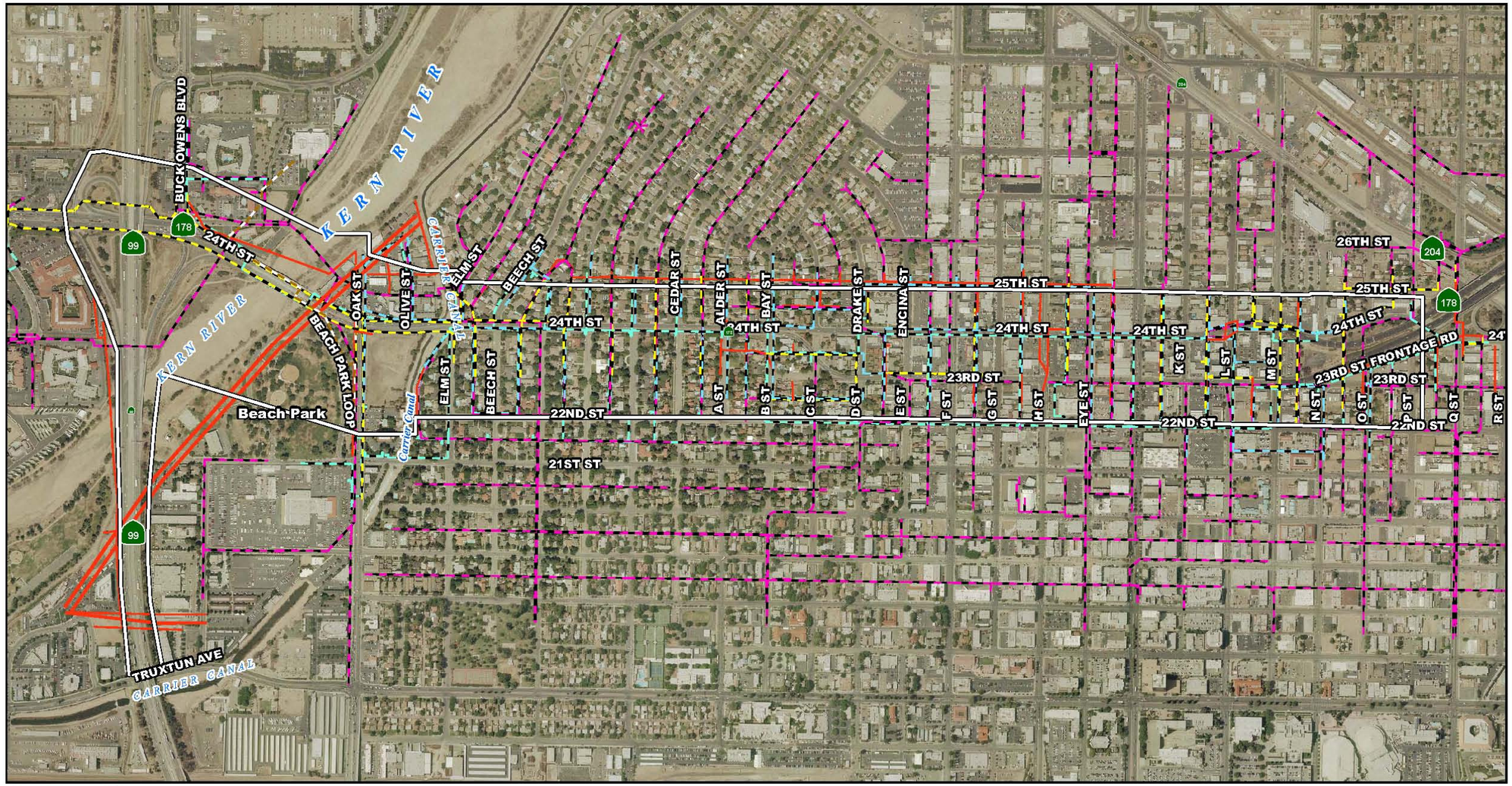
Overhead power lines, including several power pole-mounted electrical transformers, are in the project area along the south side of 23rd Street and on the east and west sides of Oak Street as seen during site surveys on May 14, 2008 and March 11, 2009.

Existing underground utilities within the project area include gas lines, water lines, a 3-foot by 3-foot concrete telephone conduit box running parallel to the north side of State Route 178, and an inactive 10-inch oil pipeline between Buck Owens Boulevard and the Kern River bridge.

Fire Protection Services

Bakersfield Fire Department Station 1 at 2101 H Street serves the project area. It is within 0.25 mile of the project area.

The Bakersfield Fire Department provides fire protection and emergency medical services for the City of Bakersfield. The department also has a swift water rescue team, technical and heavy rescue team, and a hazardous materials team. The fire department provides basic life support services to the public. All fire suppression personnel are trained in emergency medical technician/defibrillation and combi-tube level airway management. Additional advanced life support training has been given to about 15 firefighters. Those firefighters/paramedics are authorized to provide advanced life support in specific rescue-related situations.



LEGEND

- Study Area
- Electric (Overhead)
- Electric (Underground)
- Phone/Cable (Underground)
- Gas (Underground)
- Oil (Underground)
- Sewer (Underground)
- Water (Underground)

0 400 800

SOURCE: Aerial: City of Bakersfield (2008)

Figure 2-8 Existing Utilities within the Study Area

EA 06-493900
EA 06-484700

Police Protection Services

The City of Bakersfield Police Department provides law enforcement and security for the City, including the project area. The police department also provides crime prevention, intervention, and law enforcement services. The police station is just south of the project area at 1601 Truxtun Avenue.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not alter the existing 24th Street and 23rd Street roadway structure and, therefore, would not result in temporary impacts to utility facilities or emergency service providers. No utility facilities would be relocated or adjusted, and there would be no delays due to detours or closures for emergency service providers.

Build Alternatives

Utilities

Utilities can be affected in three ways during project construction: (1) relocation, (2) removal, and (3) protection in place. Relocation and removal of utilities are discussed below under permanent impacts. Services would be maintained during construction of the project.

Fire, Law Enforcement, and Emergency Services

On May 14, 2008, a meeting was held with representatives from the City, Thomas Roads Improvement Program, Parsons, RBF Consulting, LSA Associates, the City of Bakersfield Police Department, and the City of Bakersfield Fire Department. Talks centered on access alternatives, cul-de-sacs provided at the Westchester neighborhood north and/or south of 24th Street, the use of raised medians, left turns and emergency response vehicles, fire truck turning radiuses, and the frontage road design for the Westchester neighborhood north of 24th Street.

Construction of the project would not affect public service facilities, including the police department station or fire department station, as these facilities are outside of the project study area.

Emergency services could experience temporary, short-term traffic delays and temporary and intermittent road detours around the project area during construction. This could result in delayed response times for police, fire protection, and emergency services. All circulation changes would be designed to help entry and exit of

emergency response vehicles during construction phases. Potential temporary impacts to service providers would be minimized through implementation of a Transportation Management Plan as described in Avoidance and Minimization Measure U-3.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would make no roadway improvements in the project area. Traffic congestion would continue to increase along 24th Street, and vehicle density would increase due to future traffic volume increases. These future conditions could result in increased delays for fire, law enforcement, and emergency service providers and affect these providers' ability to respond to emergency situations.

Build Alternatives

Utilities

Alternative 1 would remove or relocate 19 existing wooden power poles.
Alternative 2 would remove or relocate 16 existing wooden power poles.
Alternative 1 would relocate water line/well pump stations and gas lines at five locations to allow for installation of new drainage improvements (including inlets, catch basins, and lateral connections to existing storm drain facilities).

Alternative 2 would relocate water line/well pump stations and gas lines at four locations. The existing 3-foot by 3-foot concrete telephone conduit box running parallel to State Route 178 (to the north) and inactive 10-inch oil pipeline between Buck Owens Boulevard and the Kern River bridge may need to be relocated to allow for construction of the proposed retaining wall for both alternatives. If necessary, about 630 linear feet of the telephone conduit would be relocated, and a total of 100 linear feet of the oil pipeline would be relocated at two locations.

Fire, Law Enforcement, and Emergency Services

There are no public service facilities within the project study area; therefore, no direct physical impacts would occur from long-term operation of the build alternatives.

The build alternatives would benefit circulation flow through the project area. The circulation improvements would enable fire, law enforcement, and emergency service providers to respond to emergency situations and move emergency equipment more efficiently through the improved transportation corridor. The overall emergency service response times through the study area would be maintained or improved.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would reduce impacts related to utilities and emergency services during construction of the project:

U-1 Notice shall be given to owners of utility companies before the relocation of any utilities, and an encroachment permit shall be obtained for relocated utilities.

U-2 During construction, the City shall be required to coordinate in advance of all temporary street or lane closures and detour plans with fire, emergency, medical, and law enforcement providers to minimize temporary delays in emergency services response times.

U-3 Per Caltrans Deputy Directive 60-R1 (September 2007), a Transportation Management Plan shall be prepared in consultation with the City and with all emergency service providers within the project study area.

2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

The Department, as assigned by the Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

The Department is committed to carrying out the 1990 Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

Affected Environment

The information in this section is based on the *Traffic Analysis* (July 2010) and the *Draft Project Reports* (January 2012). The *Traffic Analysis* cites additional source documents used for the analysis.

Roadway Segments and Intersections

The traffic analysis study area included 39 intersections along 24th Street and 23rd Street and State Route 99, grouped into three areas:

- Area 1—24th Street between Camino del Rio Court and Oak Street; Oak Street from Route 178 to Truxtun Avenue
- Area 2—24th Street between Olive Street and B Street
- Area 3—23rd Street and 24th Street couplet with one-way east-west roadways between C Street and M Street

Although 39 intersections were analyzed in the traffic study, only 34 intersections sit in the project area. The 34 intersections are shown in Figure 2-9.

Bicycle Facilities

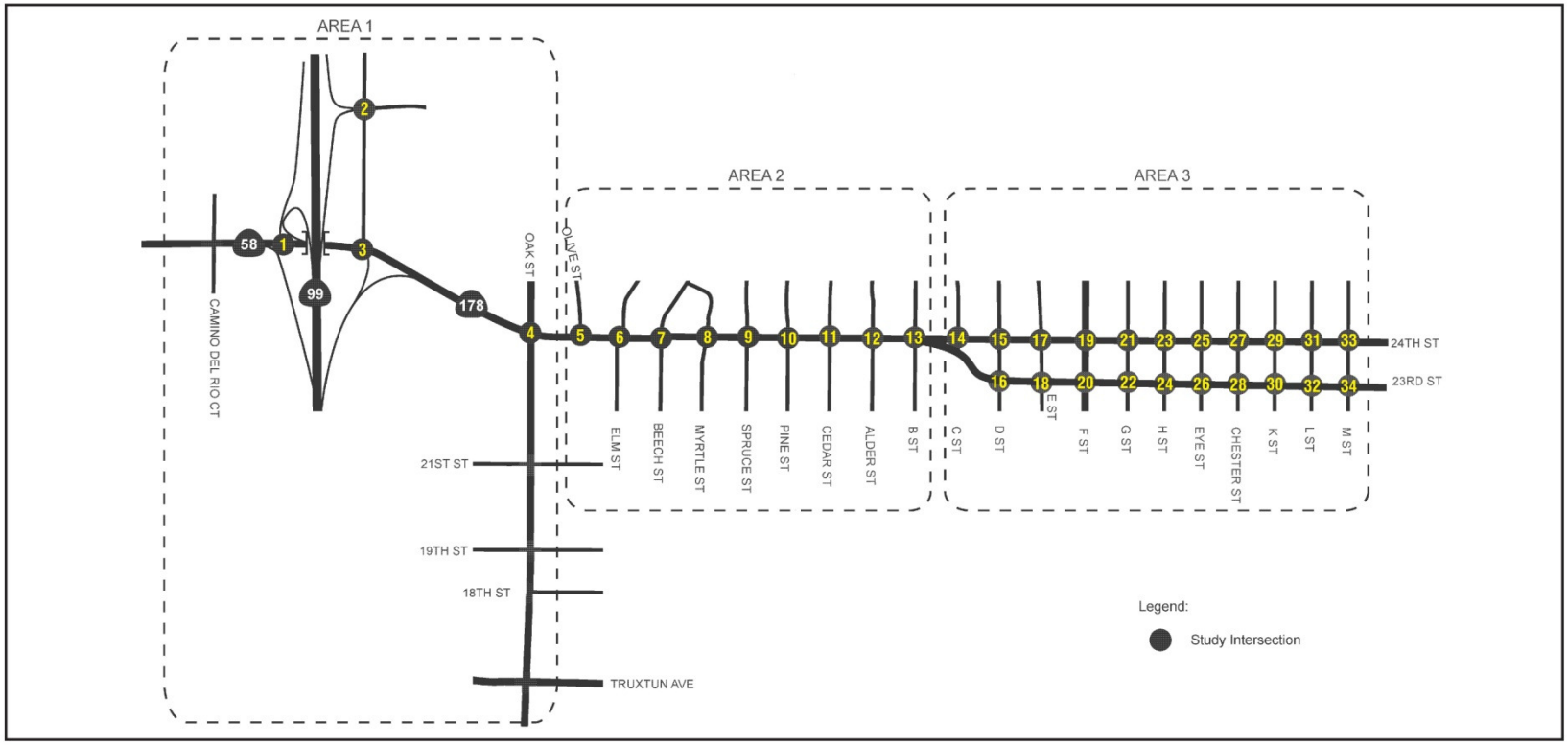
Neither 24th Street nor 23rd Street within the study area have any Class I (off-street) bicycle paths, Class II (on-street) bicycle lanes, or Class III (on-street with signs) bicycle routes. The Kern River Parkway Bike Trail (Class I) along the Kern River crosses under 24th Street (State Route 178) in the western end of the study area and does not share bicycle traffic with 24th Street. There is also an existing Class II bike lane on Chester Avenue that runs perpendicular to 24th and 23rd Streets.

Pedestrian Facilities

Sidewalks run along the north side of 24th Street from Camino del Rio Court on the west to the Carrier Canal on the east. Between Carrier Canal and Cedar Street, sidewalks are provided here and there on the north and south sides of 24th Street. Sidewalks run along the north and south sides of 24th Street and 23rd Street between Cedar Street and M Street. Crosswalks are also provided at Camino del Rio Court, Oak Street, Alder (A) Street, D Street, F Street, H Street, K Street, L Street, M Street, and Chester Avenue.

Transit Facilities and Users

Within the project area, bus stops exist at five spots in each direction on 23rd Street and 24th Street. Three fixed bus routes provide service along 24th and 23rd Street (Routes 3, 14 and 17). The Transit Center, on 22nd Street between Eye Street and Chester Avenue, is outside of the project area.



LEGEND

1 - Study Intersection

Figure 2-9 Study Intersection Locations

NOT TO SCALE

SOURCE: Traffic Analysis (July 2010)

EA 06-493900
EA 06-484700

The Federal Transit Administration defines low-income and minority residents as part of the transit-dependent population. Furthermore, the transit-dependent population is typically described as persons under the age of 18 and over 65, the populations who tend to walk or use public transportation for travel.

No Caltrans park-and-ride lots sit in the project area.

Parking

In accordance with the proposed project traffic analysis, 23rd Street and 24th Street within the couplet area (D Street to M Street) have capacity for about 293 parking spaces. North-to-south streets crossing the couplet area have about 521 spaces, for a total of 814 on-street parking spaces. The parking demand analysis concluded that during the peak parking hour (11:00 a.m. to noon) only 29 percent of the on-street parking was used, including 24 cars parked on 23 rd or 24th Street.

Parking is also allowed along the north side of 24th Street between the Kern River and Carrier Canal. Off-street parking lots for area businesses are next to the proposed improvement areas of 23rd Street and 24th Street.

Level of Service

Existing Peak-Hour Intersection Operations

The existing operation of the intersections was determined from weekday morning peak period (7:00 a.m. to 8:00 a.m.) and weekday evening peak period (4:00 p.m. to 5:00 p.m.). Intersection movement counts collected in December 2007 and February 2008 indicate traffic volumes on 24th Street. Table 2.9 summarizes the existing conditions (2008 is the baseline for the purpose of evaluating the Level of Service in future years) for one hour of morning and one hour of evening Level of Service for the study area intersections.

As shown in Table 2.9, 23 intersections in the study area currently operate at a low Level of Service either in the morning peak hour, the evening peak hour, or both.

Queuing Analysis

A queuing analysis (where vehicles line up and wait) was done for 16 major study area intersections with traffic signals. The queuing analysis determines if each turn lane and through lane is long enough to accommodate the waiting vehicles. The analysis results show inadequate storage capacity (lanes are not long enough to accommodate the queued vehicles) during the morning and evening peak periods at specific through and turn lanes in the following intersections:

Table 2.9. 24th Street Project-Level of Service Summary Table

Location per Figure 2.9	Study Intersections	Existing Conditions (2008)		Forecast Year 2015 No-Build		Forecast Year 2015 With Project		Forecast Year 2035 No-Build		Forecast Year 2035 With Project	
		Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour
		Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service
	24th Street Traffic Demand West of Oak Street (vehicles/hour)*	3,947	4,266	4,810	5,470	4,810	5,470	5,455	5,985	5,455	5,985
3	SR-99 SB Ramps/Rosedale Hwy (SR-58) [1]	**38.4 – D**	**44.2 – D**	**49.3 – D**	***78.6 – E***	13.4 – B	13.4 – B	***> 80.0 – F***	***> 80.0 – F***	30.0 – C	***77.4 – E***
2	Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue[1]	28.4 – C	**40.5 – D**	***65.2 – E***	**44.6 – D**	**38.7 – D**	**44.5 – D**	***59.6 – E***	***68.9 – E***	**39.4 – D**	**49.0 – D**
1	Buck Owens Blvd/SR-99 NB Ramps/24th St (SR-178)	**48.0 – D**	***> 80.0 – F***	***65.0 – E***	***> 80.0 – F***	22.7 – C	**41.0 – D**	***> 80.0 – F***	***> 80.0 – F***	22.4 – C	**36.7 – D**
4	Oak St/24th St (SR-178)	***59.8 – E***	***66.1 – E***	***> 80.0 – F***	***> 80.0 – F***	26.2 – C	29.4 – C	***> 80.0 – F***	***> 80.0 – F***	30.3 – C	**41.5 – D**
5	Olive St/24th St (SR-178)[2]	20.0 – C	24.4 – C	**28.1 – D**	**33.9 – D**	13.6 – B	14.4 – B	***42.4 – E***	***39.8 – E***	15.8 – C	15.3 – C
6	Elm St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	17.0 – C	21.0 – C	***> 50.0 – F***	***> 50.0 – F***	21.4 – C	23.4 – C
7	Beech St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	20.2 – C	21.9 – C	***> 50.0 – F***	***> 50.0 – F***	**28.3 – D**	24.8 – C
8	Myrtle St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	20.8 – C	22.4 – C	***> 50.0 – F***	***> 50.0 – F***	23.9 – C	**28.4 – D**
9	Spruce St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	20.4 – C	21.5 – C	***> 50.0 – F***	***> 50.0 – F***	23.5 – C	**27.0 – D**
10	Pine St/24th St (SR-178)[2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	21.0 – C	**25.1 – D**	***> 50.0 – F***	***> 50.0 – F***	24.3 – C	**33.9 – D**
11	Cedar St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	19.9 – C	21.0 – C	***> 50.0 – F***	***> 50.0 – F***	22.8 – C	**26.3 – D**
12	Alder St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	20.1 – C	21.5 – C	***> 50.0 – F***	***> 50.0 – F***	23.1 – C	**27.2 – D**
13	B St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	17.2 – C	18.7 – C	***> 50.0 – F***	***> 50.0 – F***	21.9 – C	20.4 – C
14	C St/24th St (SR-178) [2,3]	20.1 – C	**> 50.0 – F**	**31.1 – D**	***> 50.0 – F***	14.5 – B	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	16.6 – C	***> 50.0 – F***
15	D St/24th St (SR-178) [2,3]	24.9 – C	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***44.8 – E***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
17	E St/24th St (SR-178) [2,3]	24.5 – C	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***43.2 – E***	**30.9 – D**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***38.2 – E***
19	F St/24th St (SR-178)	11.6 – B	30.4 – C	14.7 – B	17.1 – B	11.5 – B	15.1 – B	***63.2 – E***	***56.5 – E***	26.0 – C	25.9 – C
21	G St/24th St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
23	H St/24th St (SR-178)	6.5 – A	10.8 – B	7.0 – A	15.9 – B	4.7 – A	8.3 – A	***65.4 – E***	30.1 – C	4.2 – A	6.6 – A
25	Eye St/24th St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
27	Chester St/24th St (SR-178)	11.3 – B	19.4 – B	**51.3 – D**	**42.6 – D**	13.8 – B	26.9 – C	***> 80.0 – F***	***59.0 – E***	25.3 – C	34.4 – C

Table 2.9. 24th Street Project-Level of Service Summary Table

Location per Figure 2.9	Study Intersections	Existing Conditions (2008)		Forecast Year 2015 No-Build		Forecast Year 2015 With Project		Forecast Year 2035 No-Build		Forecast Year 2035 With Project	
		Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour	Morning Peak Hour	Evening Peak Hour
		Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service	Delay – level of service
29	K St/24th St (SR-178) [2,3]	**45.0 – E**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
31	L St/24th St (SR-178)[4,5]	4.8 – A	9.8 – A	12.1 – B	10.8 – B	2.0 – A	3.9 – A	**38.5 – D**	12.0 – B	2.9 – A	4.3 – A
33	M St/24th St (SR-178)[5]	24.6 – C	16.5 – B	***> 80.0 – F***	25.9 – C	16.0 – B	16.2 – B	***> 80.0 – F***	***41.0 – D***	17.2 – B	17.0 – B
16	D St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**47.4 – E**	***> 50.0 – F***	***> 50.0 – F***	15.4 – C	16.0 – C	***> 50.0 – F***	***> 50.0 – F***	16.9 – C	18.7 – C
18	E St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
20	F St/23rd St (SR-178)	29.7 – C	29.0 – C	**45.5 – D**	***> 80.0 – F***	18.3 – B	22.2 – C	***> 80.0 – F***	***> 80.0 – F***	34.4 – C	***58.7 – E***
22	G St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**47.1 – E**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
24	H St/23rd St (SR-178)	10.0 – B	16.6 – B	16.6 – B	**51.2 – D**	11.6 – B	15.0 – B	***72.4 – E***	***> 80.0 – F***	23.0 – C	21.6 – C
26	Eye St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
28	Chester St/23rd St (SR-178)	18.2 – B	19.3 – B	**44.2 – D**	***> 80.0 – F***	9.0 – A	16.2 – B	***> 80.0 – F***	***> 80.0 – F***	24.2 – C	32.6 – C
30	K St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
32	L St/23rd St (SR-178)	10.3 – B	8.7 – A	10.0 – B	**38.3 – D**	9.7 – A	7.7 – A	29.2 – C	**> 80.0 – F**	9.0 – A	11.6 – B
34	M St/23rd St (SR-178)	13.1 – B	15.8 – B	11.8 – B	***79.5 – E***	5.3 – A	7.0 – A	30.6 – C	**> 80.0 – F**	4.1 – A	9.8 – A

Source: Data based on *Traffic Analysis* (July 2010)

Note: Delay shown in seconds; deficient intersection operation shown in **bold**.

1 = Delay results may change when comparing No-Build to Build conditions where no geometric changes occur due to optimized traffic signal timing and phasing.

2 = level of service and delay for stop-controlled intersections are based worst-case minor street approach.

3 = level of service analysis conservatively reports notable delay, however, visual observations indicate lower amount of delay for motorists crossing high volume major roadway.

4 = Counts at L Street/24th Street collected before intersection signalized in August 2009.

5 = Operation may be affected by queue spillback from downstream intersection.

* = Traffic volumes presented provide a snapshot of traffic volumes on 24th Street and vary based on location.

level of service D **Bold**. . . level of service E or F ***Bold and Italics***

level of service = Level of Service

NB = northbound

SB = southbound

SR-58= State Route 58

SR-99 = State Route 99

SR-178 = State Route 178

- State Route 99 southbound ramps and 24th Street (State Route 58)
- Buck Owens Boulevard and State Route 99 northbound ramps–Sillect Avenue
- Buck Owens Boulevard and State Route 99 northbound ramps and 24th Street (State Route 58)
- H Street and 23rd Street (State Route 178)
- H Street and 24th Street (State Route 178)
- L Street and 24th Street (State Route 178)
- Oak Street and 24th Street (State Route 178)
- Chester Avenue and 24th Street (State Route 178)
- F Street and 23rd Street (State Route 178)
- Chester Avenue and 23rd Street (State Route 178)
- L Street and 23rd Street (State Route 178)
- M Street and 23rd Street (State Route 178)

Freeway Level of Service

Two State Route 99 freeway study segments are operating at low Levels of Service during one or both peak hours in the existing condition. These segments include the following:

- State Route 99 northbound from the California Avenue on-ramp to the Rosedale Highway off-ramp (morning peak hour Level of Service D)
- State Route 99 southbound from the Rosedale Highway on-ramp to the California Avenue off-ramp (evening peak hour Level of Service D)

Four study area freeway ramps are operating at low Levels of Service during one or more peak hours in their existing conditions:

- State Route 99 northbound 24th Street off-ramp (morning and evening peak hours)—Level of Service E
- State Route 99 southbound Rosedale Highway off-ramp (evening peak hour)—Level of Service D
- State Route 99 southbound Rosedale Highway loop on-ramp (evening peak hour)—Level of Service D
- State Route 99 Rosedale Highway direct on-ramp (evening peak hour)—Level of Service D

Traffic Accident Data

Table 2.10 provides three-year traffic accident data (January 2005 to December 2007) for 24th Street between State Route 99 and State Route 204. The data shows that the total accident rate for 24th Street between State Route 99 and B Street is well below the statewide average for similar highways. Between B Street and N Street westbound on the 24th Street couplet, the accident rate is slightly below the statewide average. In the eastbound direction of the couplet on 23rd Street, the total accident rate is below the statewide average. The rate of fatal and injury accidents is slightly above the statewide average.

Table 2.10. Traffic Accident Data for 24th/23rd Street Couplet and State Route 178

Description	Accident Statistical Data			Actual Accident Rates			Statewide Average Accident Rates		
	Total	Fatal	Injury	FAT	F+I	Total	FAT	F+I	Total
24th St (State Route 178) between State Route 99 and B Street (Post Mile 0.0/0.963)	48	1	36	0.015	0.55	0.72	0.020	1.81	3.89
Westbound 24th Street (State Route 178) between B Street and N Street (Post Mile 0.964/1.748)	52	0	26	0.000	1.05	2.09	0.017	1.32	2.46
Eastbound 23rd Street (State Route 178) between B Street and O Street (Post Mile 0.964/1.821)	49	1	34	0.035	1.22	1.71	0.015	1.18	2.29
24th Street (State Route 178) between O Street and State Route 204 (Post Mile 1.821/2.0)	16	0	8	0.000	0.80	1.60	0.004	0.21	0.68

Source: *Traffic Analysis* (July 2010)
F+I = fatal and injury
FAT = fatal

Rear-end, broadside, and hit-object accidents account for 83 to 85 percent of the accidents along 24th Street between State Route 99 and B Street and between westbound B Street and N Street. Sideswipe, rear-end, and broadside accidents account for 76 percent of accidents along eastbound 23rd Street between B Street and O Street. Rear-end and hit-object accidents account for 75 percent of the accidents along 24th Street between O Street and State Route 204. Rear-end accidents are the most common accident type along 24th Street between State Route 99 and B Street; between O Street and State Route 204; and along eastbound 23rd Street between B Street and O Street. Rear-end accidents are typically associated with congested traffic conditions. Broadside accidents are the most common accident type along westbound 24th Street between B Street and N Street. Broadside accidents are typically associated with speeding and improper turns.

Table 2.11 provides three-year data for the S-curve on 23rd Street between B Street and D Street. The data is from the Traffic Accident Surveillance and Analysis System for April 2005 to March 2008. Three accidents were recorded within the S-curve limits during that period.

Table 2.11. Traffic Accident Data for 23rd Street S-Curve (Post Miles 0.964 to 1.120)

Post Mile	Type of Collision	Injury	Fatal	Weather	Lighting
0.980	Hit Object	Yes	No	Clear	Dark (Night)
1.000	Hit Object	Yes	No	Clear	Dark (Night)
1.070	Sideswipe	No	No	Clear	Dark (Night)

Source: *Traffic Analysis* (July 2010)

The three recorded accidents occurred in good weather at night. Two of the collisions were categorized as Hit Object; the third was categorized as Sideswipe. The collisions occurred in the S-curve where a curve right and then left requires driver attention. No forecast data is available to provide comparison to actual collision history. However, the low number of total recorded collisions (one collision per year) appears to indicate the roadway functions acceptably with sporadic collision history.

Environmental Consequences

Temporary Impacts

No-Build Alternative

Under the No-Build Alternative, the temporary traffic circulation impacts discussed below for the build alternatives would not occur. Temporary traffic impacts, however, would occur during construction of the other transportation improvements projects included in the No-Build Alternative. See Section 2.4, Table 2.30, for other transportation improvement projects in the study area. The No-Build Alternative would not result in any impacts to existing parking, pedestrian, bicycle, or transit facilities.

Build Alternatives

For purposes of the traffic and circulation analysis, Alternative 1 (widen to the north) and Alternative 2 (widen to the south) are discussed in this section as the build alternatives since the two alternatives do not substantially vary in intersection or roadway traffic impacts.

Roadway Segments and Intersections

Building the proposed project would require a number of traffic circulation changes such as the closure of neighborhood streets and delays and detours to allow for building the proposed improvements. All circulation changes would be temporary and limited to the construction phase of the project. Traffic circulation changes would be designed for the entry and exit of emergency response vehicles.

Pedestrian, Transit, and Bicycle Facilities During Construction

During each build stage, bicycle and pedestrian traffic in the project study area would be maintained or a detour route would be provided. Transit service would be maintained in the study area throughout each construction stage. Therefore, the build alternatives would not result in any substantial temporary impacts to bicycle, pedestrian, or transit facilities during construction. Analysis on available parking is provided later in this section.

Permanent Impacts

The "with project" analysis scenarios apply to both Alternatives 1 and 2. The following analysis scenarios were evaluated:

- Forecast Year 2015 No-Build Alternative
- Forecast Year 2015 "with project" conditions
- Forecast Year 2035 No-Build Alternative
- Forecast Year 2035 "with project" conditions

Intersection operations were analyzed using the Level of Service method. Level of Service is a scoring system similar to a report card with letter grades A through F, with A meaning best Level of Service and F meaning worst. Table 2.12 shows the delay in seconds for each Level of Service at intersections.

The City's goal for peak-hour intersection operation is Level of Service C or better. Caltrans has a target Level of Service at the transition between Level of Service C and Level of Service D.

The following State Route 99 freeway segments were analyzed:

- Northbound State Route 99 between the California Avenue on-ramp and the Rosedale Highway off-ramp
- Northbound State Route 99 between the Buck Owens Boulevard on-ramp and the Airport Drive off-ramp

Table 2.12. Level of Service and Delay Ranges

Level of Service	Delay (in seconds)		
	Intersections with Signals	Intersections without Signals	Description
A	≤ 10.0	≤ 10.0	Free-Flow/Insignificant Delays: No approach phase is fully used by traffic, and no vehicle waits longer than one red signal indication.
B	10.0 to ≤ 20.0	10.0 to ≤ 15.0	Stable Operation/Minimal Delay: An occasional approach phase is fully used. Many drivers begin to feel somewhat restricted within groups of vehicles.
C	20.0 to ≤ 35.0	15.0 to ≤ 25.0	Stable Operation/Acceptable Delays: Major approach phase fully used. Most drivers feel somewhat restricted.
D	35.0 to ≤ 55.0	25.0 to ≤ 35.0	Approaching Unstable/Delays: Drivers may have to wait through more than one red signal. Queues may develop but dissipate rapidly, without excessive delay.
E	55.0 to ≤ 80.0	35.0 to ≤ 50.0	Unstable Operation/Significant Delays: Traffic volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
F	> 80.0	> 50.0	Forced Flow/Excessive Delays: Represents jammed conditions. Intersection operates below capacity with low traffic volumes. Queues may block upstream intersections.

Source: Transportation Research Board, *Highway Capacity Manual*, HCM 2000 Edition (2000)

- Southbound State Route 99 between the Airport Drive on-ramp and Rosedale Highway off-ramp
- Southbound State Route 99 between the Rosedale Highway on-ramp and the California Avenue off-ramp

The following State Route 99 ramps were also analyzed:

- Northbound State Route 99 off-ramp to 24th Street
- Northbound State Route 99 off-ramp to Buck Owens Boulevard
- Northbound State Route 99 on-ramp from Buck Owens Boulevard
- Southbound State Route off-ramp to Rosedale Highway
- Southbound State Route 99 loop on-ramp from Rosedale Highway
- Southbound State Route 99 direct on-ramp from Rosedale Highway

The results of this analysis are reported in Table 2.9.

Although Table 2.9 has detailed information, there are a couple of simple ways in which this information can be conveyed (time and money). Currently it takes about

3 to 4 minutes to drive through the project (from Buck Owens Boulevard/24th Street intersection to M Street/24th Street intersection) area during the evening peak period (the busiest time). Without the project this would increase to about 20 to 23 minutes in 2035. With the project, it would take about 7 to 8 minutes. Put in terms of money, this means that without the project an additional $43.6 million of costs to drivers would be incurred when compared to the build alternative.

The next two sections, Intersection Levels of Service and Freeway Level of Service, provide information at a greater level of detail.

Intersection Levels of Service

Table 2.9 provides a summary of the project traffic study Level of Service analysis for the No-Build Alternative and build alternatives in the existing condition and forecast years 2015 and 2035.

Intersection Levels of Service with the project in the interim 2015 time frame are generally improved overall compared to the 2015 no-build condition. Eighteen intersections are improved to acceptable operations (improving existing Level of Service from D, E, or F to C or above) (see Figure 2-9 study intersection numbers 1, 4–9, 11-13, 27, 33, 16, 20, 24, 28, 32 and 34. A full comparison of all alternatives to the baseline is also provided in Table 2.9).

The proposed build alternative improvements would also improve operations at 10 of the study area intersections to acceptable conditions in 2015 compared with the existing operations (improving existing Level of Service from D, E, or F to C or above) (see Figure 2-9 study intersection numbers 1, 4, 6–9, 11-13 and 16).

The year 2035 No-Build Alternative Level of Service traffic model runs indicate that all study area intersections would operate at a deficient Level of Service in accordance with agency performance criteria during one or both peak hours.

Thirteen intersections would experience improved operations to acceptable levels with the project improvements in the 2035 condition compared to the future no-build condition (see Figure 2-9 study intersection numbers 5, 6, 13, 16, 19, 23, 24, 27, 28, and 31–34. A full comparison of all alternatives to the baseline is also provided in Table 2.9).

Operations at key intersections with traffic signals would be as follows:

- Buck Owens Boulevard/State Route 99 northbound ramps and 24th Street intersection and Oak Street and 24th Street intersection—these intersections with signals are forecast to remain operating deficiently with building the project; however, with the project, operations are projected as better than the no-build condition and better than the existing condition.
- Buck Owens Boulevard/State Route 99 northbound ramps/Sillect Avenue—although still forecast to operate below performance criteria levels, the Levels of Service at this intersection would improve from the no-build condition.

F Street and 23rd Street intersection—although forecast to remain operating at deficient levels after building the proposed project, the Level of Service would improve over the future no-build scenario. Operations would worsen from Level of Service C in the existing condition to Level of Service C and E (morning and evening peak hours, respectively) with 2035 build alternative conditions. The 2035 no-build condition is forecast at Level of Service F for both the morning and evening peak hours. Additional widening of the intersection to achieve acceptable operations in the evening peak hour is considered not feasible considering the right-of-way acquisition required and the cross-section consistency needed with adjacent segments.

Freeway Level of Service

In forecast year 2015 for the no-build and build alternatives, two study area freeway segments are forecast to operate at deficient Levels of Service during one or both peak hours: northbound State Route 99 from the California Avenue on-ramp to the Rosedale Highway off-ramp in both peak hours and southbound State Route 99 from the Rosedale Highway on-ramp to the California Avenue off-ramp in both peak hours. The project, however, would not further degrade operations of the State Route 99 freeway study segments in the 2015 build alternative.

In forecast year 2035 for the No-Build Alternative and build alternatives, the following four State Route 99 study-area freeway segments are forecast to operate at a deficient Level of Service (D or worse) as stated in the agency performance criteria during one or both peak hours:

- State Route 99 from the California Avenue on-ramp to the Rosedale Highway off-ramp
- Northbound State Route 99 from the Buck Owens Boulevard on-ramp to the Airport Drive off-ramp

- Southbound State Route 99 from the Airport Drive on-ramp to the Rosedale Highway off-ramp
- Southbound State Route 99 from the Rosedale Highway on-ramp to the California Avenue off-ramp

In forecast year 2035, however, operations at State Route 99 segments would not degrade further from the Levels of Service forecast in the no-build 2035 conditions.

Four freeway ramps are forecast to operate at a deficient Level of Service during one or more peak hours for the year 2015 No-Build Alternative. Forecast year 2015 build alternative conditions include improvements to the northbound State Route 99 off-ramp at 24th Street and Rosedale Highway. The remaining study area freeway ramps would stay as they are now.

The southbound State Route 99 off-ramp at Rosedale Highway, southbound State Route 99 loop on-ramp at Rosedale Highway, and southbound State Route 99 direct on-ramp at Rosedale Highway are forecast to operate at deficient Levels of Service during one or both peak-hour periods for the forecast year 2015 build alternative. One ramp location, the State Route 99 northbound off-ramp at 24th Street, would improve to an acceptable Level of Service in the 2015 build alternative.

Similar to the forecast year 2015 analysis, the ramp analysis shows that four of the study area ramps are forecast to operate at deficient Levels of Service during one or both peak hours for forecast year 2035 build conditions. The project 2035 build alternative condition would improve the State Route 99 and 24th Street off-ramp relative to the 2035 no-build and would not further degrade operations at the remaining study area ramps. Deficiencies are forecast since long-range volumes exceed the capacity available for year 2035 conditions.

Queuing Analysis

A queuing analysis (enough room for lined up vehicles) was done for 14 intersections with signals for the 2015 and 2035 No-Build and build alternatives. This analysis shows that in both 2015 and 2035 too many lined up vehicles contribute to traffic congestion if no improvements are made. There would be too many lined up vehicles contributing to traffic congestion without the project. The project would reduce this queuing. The reduction in queuing along with the proposed lane additions would improve the Level of Service, which is the basic purpose of the project. A more detailed discussion is provided below.

The queuing analysis for the 2015 and 2035 No-Build Alternative concluded that inadequate storage capacity is forecast during peak hours at 13 intersections (see Figure 2-9 study intersection numbers 1–4, 20, 23, 24, 27, 28, and 31–34).

The 2015 queue analysis build alternative condition concluded that adequate storage capacity would be provided for forecast year 2015 during both peak hours except for a few locations. Compared with the 2015 queue analysis no-build condition, the build alternative condition would reduce the number of locations without adequate storage capacity by two locations. The build alternative condition analysis concluded that adequate storage capacity is provided at the Oak Street and 24th Street (State Route 178) intersection and the L Street and /24th Street intersection.

The 2035 queue analysis build alternative condition concluded that additional or different intersection lanes would experience inadequate storage capacity compared to the 2035 no-build condition storage capacity. The overall effect, however, of the build alternative would be improved operations along the corridor by reducing the number of deficient intersections and better accommodation of forecast traffic demands. Compared with the 2035 queue analysis no-build condition, the build alternative condition would reduce by two the number of locations without adequate storage capacity. The build alternative condition analysis concluded that adequate storage capacity would be provided at the F Street and 24th Street intersection, H Street and 24th Street intersection, and the L Street and 24th Street intersection.

Within the study area, F Street between 24th Street and Golden State Avenue (State Route 204) and Oak Street between Brundage Lane and 24th Street are designated as truck routes. The proposed project would allow for truck turns to and from the north at the F Street/24th Street intersection and to and from the south at the Oak Street/24th Street intersection.

Bicycle Facilities

No bicycle lanes or routes exist along 23rd Street or 24th Street in the study area; therefore, the build alternatives would not result in any permanent impacts to existing bicycle facilities.

The Metropolitan Bakersfield General Plan does not plan for any new bicycle facilities on 24th Street or State Route 58/Rosedale Highway. Within the state right-of-way, 5-foot-wide bicycle lanes (Class II) would be built on the northbound Oak Street approach at 24th Street. In addition, Caltrans requested that the project include a 4-foot-wide buffer area along westbound State Route 178 from the Kern River bridge

west toward Buck Owens Boulevard and along State Route 178 under State Route 99. The 4-foot-wide buffer area would be recognized as a bicycle area by the City, but would not be a designated as a standard bicycle lane.

The Metropolitan Bakersfield General Plan does not plan for any new bicycle facilities on 24th Street or State Route 58/Rosedale Highway; however, the 24th Street westbound approach to the Buck Owens Boulevard intersection would be built with a bike lane for through traffic. The bike lane would align with the 8-foot-wide shoulder of the westbound through lanes along 24th Street (State Route 178) under State Route 99.

Pedestrian Facilities

The project includes construction of sidewalks on the south side of 24th Street east of Oak Street, which would connect to the bus stop east of Oak Street. Planned sidewalks would also be built on both the west and east sides of Oak Street south of the Oak Street and 24th Street intersection, providing a continuous pedestrian connection to 21st Street and the nearby City park. The existing three crosswalks at Oak Street and 24th Street would be kept, as would the other pedestrian facilities in the project area. The build alternatives would not result in direct permanent impacts to pedestrian facilities in the study area.

The improvements would provide additional sidewalks that comply with the Americans with Disabilities Act. These sidewalks would be where none currently exist along Oak Street south of 24th Street and would provide sidewalks and crosswalks as part of the widening and restriping proposed along the couplet and the two-way section of 24th Street/23rd Street.

Transit Facilities

Based on coordination with Golden Empire Transit (the local transit agency), bus stops would be reduced to three locations from the existing five for improved system efficiency: (1) eastbound and westbound 24th Street near Oak Street; (2) eastbound and westbound 24th Street just west of A/Alder Street; and (3) near F Street (24th Street east of E Street and 23rd Street east of G Street). Reduction of existing bus stops is not anticipated to have a substantial effect on ridership or access to transit locations and would provide more efficient operations for the fixed bus routes in the project area. The bus stops were relocated based on the following criteria: the safety of transit users, ease of buses pulling in and out of bus stops, and overall traffic flow. The bus stops would be located near signals or a crosswalk. Bus stops at signals

would be located so that buses could travel through the intersection before stopping. The bus stops would have turnouts so that buses would not have to stop within the travel lane.

Surface Transportation Assistance Act National Network for Oversized Trucks

Within the project area, F Street between 24th Street and Golden State Avenue (State Route 204) and Oak Street between Brundage Lane and 24th Street are designated as truck routes. The existing facility along 24th Street does not currently allow for truck turns at intersections. Either build alternative would modify the intersections at Buck Owens Boulevard and Oak Street to accommodate these trucks.

Parking Supply Analysis

The three travel lanes in the project area would increase to four lanes in each direction in the 23rd Street/24th Street couplet segment (D Street to M Street). The addition of one lane in each direction would require removal of the existing on-street parking in the couplet segment, affecting 293 on-street parking spaces serving commercial uses downtown. As discussed in the Affected Environment section above, the parking analysis determined that in the existing condition, 24 vehicles were parked at 11:00 a.m., the peak parking hour in this segment.

Couplet-area parking on 23rd Street and 24th Street that is within 500 feet of the parking displacement would be shifted to the north and south side streets in the immediate vicinity. The parking analysis concluded that enough room exists on each side street to handle all on-street parking. Assuming the displaced parking demand, 45 percent of the on-street parking (side streets) would be used. Therefore, the build alternatives would not cause any deficiencies in the on-street parking supply within the project area.

Six parking locations outside of the couplet area were also analyzed in the *Traffic Analysis*:

- An off-street parking lot at the northwest corner of Buck Owens Boulevard and 24th Street (Denny's Restaurant)
- An off-street parking lot at the northeast corner of E Street and 24th Street (Pep Boys)
- An off-street parking lot at the southeast corner of M Street and 24th Street
- On-street spaces on 23rd Street between C Street and D Street
- On-street spaces on K Street north of 24th Street

- An off-street parking lot on Oak Street north of 24th Street

Building the proposed project would require changing the existing parking spaces at the Denny's Restaurant parking lot and Pep Boys parking lot, but the total number of off-street parking spaces would not change at either location. One off-street parking space would be removed from the Radiators, Trucks, and Industrial parking lot. And, 12 parking spaces would be removed from the off-street parking lot at the southeast corner of M Street and 24th Street, which provides overflow parking for businesses at the southwest corner of the M Street and 24th Street intersection. Therefore, a reduction of 12 parking spaces would not result in a parking deficiency at this location. Based on applicable City codes, adequate parking would continue to be provided for the businesses at the southwest corner of M Street and 24th Street.

The 10 to 14 on-street parking spaces removed from the south side of 23rd Street between C Street and D Street would be made up for by nearby unoccupied on-street parking within a one- to two-block radius. One on-street parking space would also be removed on the west side of K Street north of 24th Street, but surplus on-street parking is available in the immediate area. Removal of one on-street parking space would not result in an adverse impact to businesses on the west side of K Street north of 24th Street or in the immediate vicinity.

Avoidance, Minimization, and/or Mitigation Measures

See Avoidance and Minimization Measures U-1 and U-2 in Section 2.1.3, Utilities and Emergency Services, for a discussion of the Traffic Management Plan and temporary road closure coordination with emergency services providers for project construction periods. The traffic management plan would include elements such as a public awareness campaign, portable changeable message signs, flaggers, loop sensors/temporary signals, and law enforcement presence. The construction phasing would minimize impacts to traffic and adjacent communities (see Temporary Project Components/Construction in Chapter 1). No additional avoidance, minimization, and/or mitigation measures are required.

2.1.5 Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act of 1969 as amended establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings [42 U.S. Code 4331(b)(2)]. To further emphasize this point, the Federal Highway

administration in its implementation of the National Environmental Policy Act of 1969 [23 U.S. Code 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (California Public Resources Code Section 21001[b]).

Affected Environment

The information in this section comes from the 24th Street Improvement Project *Visual Impact Assessment* (April 2012).

Planning Policies and Land Use Ordinances

Planning policy documents and land use ordinances were reviewed to find visual resources in the project area. Policy documents contain guidelines and development policies to preserve and enhance the visual character and quality of an area.

City of Bakersfield Visual Policies

The Circulation Element of the Metropolitan Bakersfield General Plan cites the following goals and policies related to roadway design within the City of Bakersfield:

> **Goal 4:** Provide a street system that creates a positive image of Bakersfield and contributes to the residents' quality of life.
>
> **Policy 18:** Provide and maintain landscaping on both sides and in the median of arterial streets within incorporated areas.
>
> **Policy 19:** Provide and maintain landscaping on both sides of collector streets.

Metropolitan Bakersfield Freeway Beautification Master Plan Design Guidelines

The City of Bakersfield, Kern County, and Caltrans have adopted the Metropolitan Bakersfield Freeway Beautification Master Plan Design Guidelines (March 2003). The Beautification Master Plan identifies 5 miles of State Route 178 (24th Street) as a secondary corridor from one-quarter mile west of Morning Drive to State Route 204 This stretch of road is about 0.3 mile east of the project area and therefore does not apply to the project.

Visual Environment

No roads in the project area are state scenic highways. The visual setting of the study area is characterized by the following: 24th Street and the associated side streets; the Kern River; and commercial, residential, and institutional uses. Commercial, open space, and roadway uses are in the western portion of the study area; residential uses are in the central portion of the study area; and commercial uses are in the eastern portion of the study area. The 24th Street study area is mostly developed, and views from this corridor consist of urban development, open spaces, and the Kern River. Travelers using the eastbound travel lane of 24th Street can see partial views of mountaintops in the Sierra Nevada.

Land use types in the study area include residential, the Richard and Annette Bloch Cancer Survivors Plaza (Cancer Survivors Plaza) and Beach Park, and neighborhood commercial as well as regional commercial uses. The 24th Street bridge crosses the Kern River in the western portion of the study area, and the State Route 99 bridge crosses the Kern River at the south end of the study area.

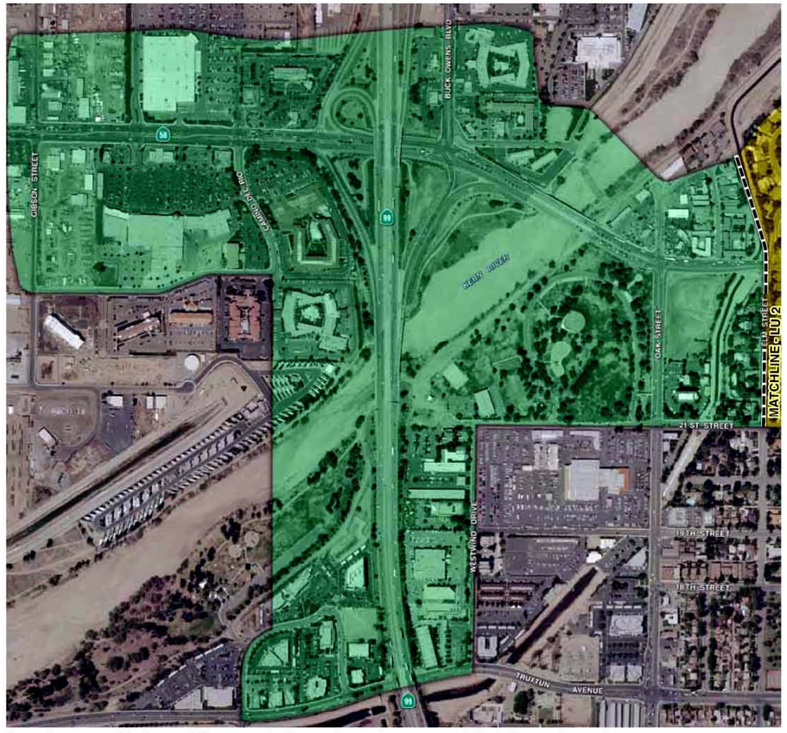
Landscape Units

The study area has been broken into three landscape units (see Figure 2-10). A landscape unit is a portion of the regional landscape that exhibits a distinct visual character. Landscape unit 1 includes key views 1 and 2. Landscape unit 2 includes key views 3, 4, and 5. Landscape unit 3 includes key views 6 and 7.

Key Views

A key view is a typical existing viewshed within the project visual study area that incorporates the best range of visual resources as seen by viewer groups. A viewshed is the surface area that is visible from a key viewpoint. The viewshed extends to all areas that have a view of and from the study area and identifies the potential views that a proposed project could affect.

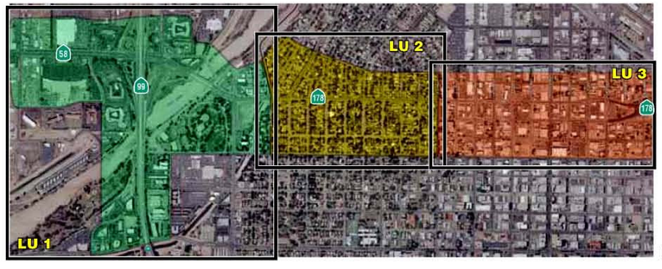
To evaluate the visual impacts of the build alternatives, specific views were selected to represent the visual study area. Because it is not feasible to analyze every view of the study area, seven key views were selected that most clearly show the expected visual impacts of the project to sensitive viewers. The key views represent the main viewer groups that would potentially be affected by the project. Figure 2-11 shows the key view locations for the project.



Landscape Unit 1: SR-99, 24th Street Interchange, and Oak Street Interchange.

Landscape Unit 2: Residential Uses

Landscape Unit 3: Commercial Uses



Index Map

Figure 2-10 Landscape Units

NOT TO SCALE

SOURCE: Visual Impact Assessment (April 2011)

EA 06-493900
EA 06-484700

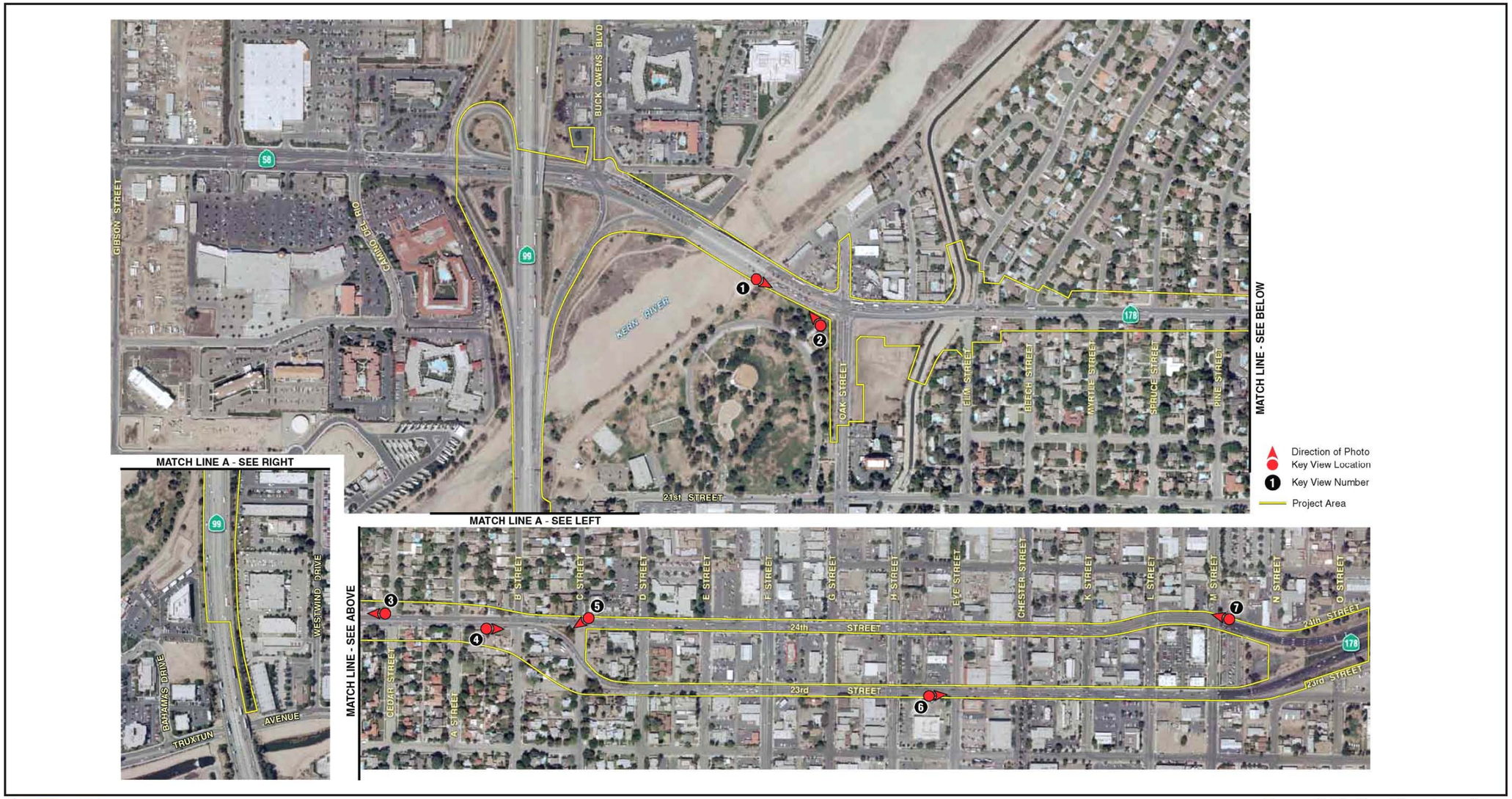


Figure 2-11 Key View Locations

NOT TO SCALE

SOURCE: Visual Impact Assessment (April 2011)

EA 06-493900
EA 06-484700

The viewer groups identified for the project include freeway travelers along State Route 99 (specifically in key views 1 and 2), community residents, commercial area employees and customers, local street users, and recreational area users.

To help evaluate potential visual impacts, computer simulations of the proposed road improvements visible from each of the seven key viewpoints were prepared. Visual simulations of both build alternatives are shown in Figures 2-12 through 2-18 (see Figure 1-5 legend for description of site plan details), along with their corresponding existing view photograph. Existing setting photographs represent the No-Build Alternative. Under the No-Build Alternative, no changes would occur to 24th Street; therefore, visual simulations are not needed.

The visual simulations are for conceptual analysis only and are not intended to provide a precise, scaled depiction of the alternatives; rather, they show a potential future post-project visual character and quality of the study area.

Key View 1

Key View 1 looks to the southeast along the eastbound travel lanes of 24th Street (see Figure 2-12) from the shoulder of eastbound 24th Street near the Kern River and Beach Park. The view development within this key view consists of roadway uses and commercial uses such as a gas station and auto dealership north of 24th Street. Visible commercial structures appear to be one story in height. Street and commercial signs are visible in the foreground and middle ground views. A landscaped median with shrubs and small trees is present on 24th Street. The existing visual quality and character of the site from this key view is moderately high.

Key View 2

Key View 2, looking northwest toward 24th Street, was taken from the Cancer Survivors Plaza within Beach Park south of 24th Street (see Figure 2-13). Mature trees in the foreground and middle ground give a contrast in form and texture. Encroaching into this key view are commercial uses such as a car wash and gas station and 24th Street in middle ground. The existing visual quality and character of the site from this key view is moderately high.

Key View 3

Key View 3 looks west along 24th Street from the north side of 24th Street to the west of Cedar Street (see Figure 2-14).

Existing Condition

Proposed Condition - Alternatives 1 and 2

Figure 2-12 Key View 1 Existing and Proposed Conditions

LEGEND

- Project Improvements
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP
- Recommended Soundwall
- Direction of Photo
- Key View Location
- Key View Number

NOT TO SCALE

SOURCE: Visual impact Assessment (April 2012)

For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area. Specific project design features are subject to change during the plans, specifications, and estimates (PS&E) phase for the project.

EA 06-493900
EA 06-484700

Existing Condition

Proposed Condition - Alternatives 1 and 2

Figure 2-13 Key View 2 Existing and Proposed Conditions

LEGEND

- Project Improvements
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP
- Recommended Soundwall
- Direction of Photo
- Key View Location
- Key View Number

NOT TO SCALE

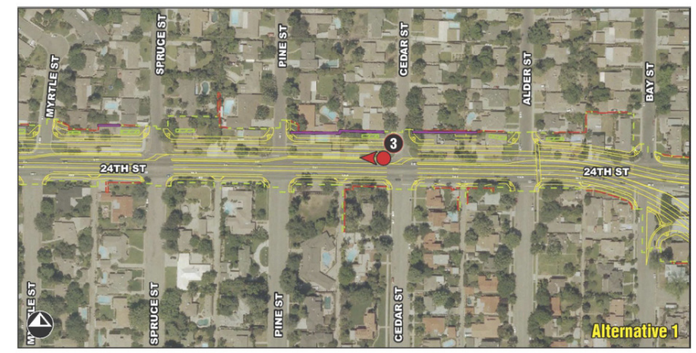
SOURCE: Visual impact Assessment (April 2012)

For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area. Specific project design features are subject to change during the plans, specifications, and estimates (PS&E) phase for the project.

EA 06-493900
EA 06-484700

Existing Condition

Proposed Condition Alternative 1



Proposed Condition Alternative 2

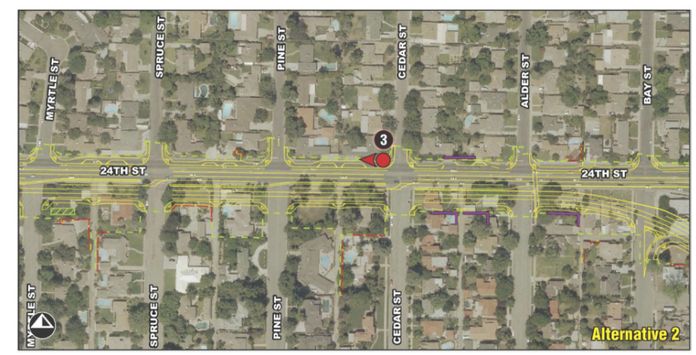


Figure 2-14 Key View 3 Existing and Proposed Conditions

LEGEND

- Project Improvements
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP
- Recommended Soundwall
- Direction of Photo
- Key View Location
- Key View Number

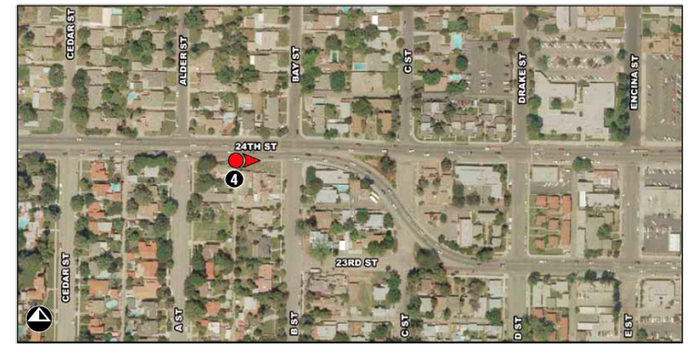
NOT TO SCALE

SOURCE: Visual impact Assessment (April 2012)

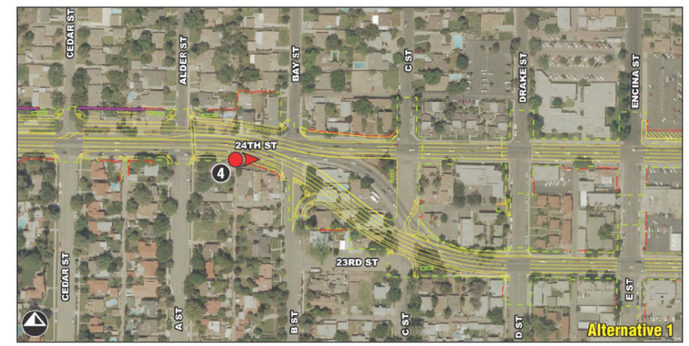
For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area. Specific project design features are subject to change during the plans, specifications, and estimates (PS&E) phase for the project.

EA 06-493900
EA 06-484700

Existing Condition



Proposed Condition Alternative 1



Proposed Condition Alternative 2

Figure 2-15 Key View 4 Existing and Proposed Conditions

For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area. Specific project design features are subject to change during the plans, specifications, and estimates (PS&E) phase for the project.

LEGEND

- Project Improvements
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP
- Recommended Soundwall
- Direction of Photo
- Key View Location
- Key View Number

NOT TO SCALE

SOURCE: Visual impact Assessment (April 2012)

EA 06-493900
EA 06-484700

Existing Condition

Proposed Condition Alternative 1

Proposed Condition Alternative 2

Figure 2-16 Key View 5 Existing and Proposed Conditions

LEGEND

- Project Improvements
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP
- Recommended Soundwall
- Direction of Photo
- Key View Location
- Key View Number

NOT TO SCALE

SOURCE: Visual impact Assessment (April 2012)

For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area. Specific project design features are subject to change during the plans, specifications, and estimates (PS&E) phase for the project.

EA 06-493900
EA 06-484700

Existing Condition

Proposed Condition - Alternatives 1 and 2

Figure 2-17 Key View 6 Existing and Proposed Conditions

LEGEND

- Project Improvements
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP
- Recommended Soundwall
- Direction of Photo
- Key View Location
- Key View Number

NOT TO SCALE

SOURCE: Visual impact Assessment (April 2012)

For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area. Specific project design features are subject to change during the plans, specifications, and estimates (PS&E) phase for the project.

EA 06-493900
EA 06-484700

Existing Condition

Proposed Condition - Alternatives 1 and 2

Figure 2-18 Key View 7 Existing and Proposed Conditions

LEGEND

- Project Improvements
- Temporary Construction Easement
- Permanent Easement
- Grading Limit
- Retaining Wall
- Small Footprint BMP
- Large Footprint BMP
- Recommended Soundwall
- Direction of Photo
- Key View Location
- Key View Number

NOT TO SCALE

SOURCE: Visual impact Assessment (April 2012)

For comparative purposes, site photographs are utilized to demonstrate the general character at different points of the project area. These simulations are subject to change and are intended to provide the reader with information on the form, size, and scale of the proposed improvements within the project area. Specific project design features are subject to change during the plans, specifications, and estimates (PS&E) phase for the project.

EA 06-493900
EA 06-484700

Residential structures, ornamental landscaping, overhead power lines, and 24th Street are visible within the foreground and middle ground of this key view. Residential structures made of concrete and stucco appear consistent in color (beige and other earth tones). Visible structures to the north and south of 24th Street appear to be one story in height. Ornamental landscaping is present throughout this view and is more abundant on the north side of 24th Street. The existing visual quality and character of the site from this key view is moderately high.

Key View 4

Key View 4 looks to the east along 24th Street from the south side of 24th Street between A (Alder) Street and B (Bay) Street (see Figure 2-15).

Mature trees and the road are dominant features in this view. Residential structures, 24th Street, and streetlights are visible in the foreground and middle ground views. Residential structures, made of wood and stucco, vary in color. Mature trees and landscaping are visible in the foreground and middle ground along 24th Street. The existing visual quality and character of the site from this key view is moderately high.

Key View 5

Key View 5 looks southeast toward the project area from the northeast corner of 24th Street and C Street near residential uses (see Figure 2-16). A landscaped median, 24th Street, and residential structures are visible in the foreground and middle ground views. Structures range from one to two stories in height and are made of wood and stucco. Mature vegetation in the median and along 24th Street softens the hardscape features of the residential structures and road. Existing landscaping throughout the view appears to integrate the residential uses to the north and south. The existing visual quality and character of the site from this key view is moderately high.

Key View 6

Key View 6 looks east toward the proposed project from the south side of 23rd Street west of Eye Street near commercial uses (see Figure 2-17). Roadway uses, an auto dealership, and ornamental landscaping are visible within the foreground of this key view. Commercial structures and signs, overhead power lines, traffic signals, and streetlights are visible in the middle ground views. Commercial structures north of 23rd Street appear to front 23rd Street, with no setback. These structures contain low overhangs providing shade for walkers. Commercial uses south of 23rd Street have larger setbacks with ornamental landscaping. Commercial structures to the south are

made of brick and stucco and are light colored. The existing visual quality and character of the site from this key view is moderate.

Key View 7

Key View 7 looks west toward the project area from the north side of 24th Street east of M Street (see Figure 2-18). Commercial, traffic signals, and streetlights are visible within the foreground and middle ground of this view. Commercial structures made of concrete and stucco vary in color and building height. Structures north of 24th Street appear to be one story in height, while those to the south appear to be two stories. Ornamental landscaping and structures are present in middle ground views. Mature trees are visible north of 24th Street. The existing visual quality and character of the site from this key view is moderately high.

Light and Glare

The study area has lighting typical of urban areas. Main sources of light and glare in the area include motor vehicle headlights, streetlights, parking lot and exterior security lighting, interior building lighting, and illuminated signs. Currently, light and glare occur through all three landscape units in the study area. Surrounding businesses use lighted signs and security lighting during evening and nighttime hours.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not result in any roadway improvements; therefore, this alternative would not alter the study area's existing visual quality or character or have any visual impact on any visual resource or viewer group.

Build Alternatives

Building either build alternative would temporarily expose sensitive users to altered views of the study area. Construction-related vehicle access and staging (storage) of construction materials would occur in disturbed or developed project right-of-way as well as in proposed temporary construction easements along the Kern River.

Construction vehicle access and staging of building materials would be visible to motorists traveling in the project area and to residents in the project vicinity. These impacts would be short term and would end at project completion. Adhering to Caltrans Standard Specifications for construction such as the use of opaque temporary construction fencing around construction staging areas would minimize visual impacts and visible dust.

The project may require nighttime construction in select portions of the study area over multiple periods of 6 to 12 months. Light and glare from nighttime construction lighting could be a nuisance to nearby residents and motorists traveling along through the area. Nighttime construction along 23rd Street and 24th Street would be limited to the hours of 10:00 p.m. to 6:00 a.m. Necessary lighting for safety and construction would be directed away from land uses outside the study area and contained and directed toward the specific area of construction.

Permanent Impacts—Key Views

No-Build Alternative

No permanent impacts would occur to visual quality or character, visual resource, or viewer groups under the No-Build Alternative. No other circulation projects are planned in the project area to affect the existing visual resources.

Build Alternatives

Alternatives 1 and 2 would result in visual impacts as a result of increased hardscape features (widened roadway, proposed retaining wall, potential soundwall/barrier features, and raised curbed median with fencing), relocation of housing, and restriping of portions of 24th Street. See Figures 2-12 through 2-18 for the proposed conditions of each key view.

Permanent Impacts to Key Views 1–7

Key View 1

Improvements under Alternatives 1 and 2 would moderately affect existing views of the study area from this key view, and sensitive viewers would have a moderate viewer response to project changes. Motorists traveling along State Route 99 would be exposed to views of the retaining wall cap (about the top 3 feet of the wall) and short duration views of the northbound auxiliary lane. Although travelers would be aware of the project, their views to Beach Park would remain the same. A recommended soundwall, about 166 long and 8 feet high, would be constructed to the north of 24th Street, between Oak Street and Olive Street, to attenuate future traffic noise with either Alternative 1 or 2. This soundwall would be partially visible in the middleground of the view (see Figure 2-12). Although building Alternative 1 or 2 would increase hardscape features by widening 24th Street, existing mature vegetation within Beach Park would not be changed. Building the proposed project would have a moderate impact on this key view.

Key View 2

Improvements under Alternatives 1 and 2 would change the existing views of the study area from this key view. Recreational users of Beach Park and the Cancer Survivors Plaza would have a high visual sensitivity to the proposed build alternative features from stationary views. The build alternatives would remove minimal groundcover and vegetation for the additional travel lane. Views to 24th Street, however, would remain similar to the existing condition. Motorists traveling along State Route 99 would be exposed to views of the retaining wall cap (about the top 3 feet of the wall) and short duration views of the northbound auxiliary lane. Alternative 1 or 2 would have a moderate impact on this key view.

Key View 3

Improvements under Alternatives 1 and 2 would alter existing views of the study area from this key view. Sensitive viewers would have a high viewer response to project changes. Both alternatives would build a bus stop location that would be visible to both pedestrians and motorists. A recommended soundwall, about 207 feet long and 12 feet high, would be constructed to the north of 24th Street between Cedar Street and Pine Street with Alternative 1 (see Figure 2-14). No soundwalls would be visible from this key view under Alternative 2. Views of the additional hardscape from this new soundwall would increase visible encroachment, decreasing the visible unity between the residential uses on the north and south sides of 24th Street. Landscape and aesthetic treatments would reduce the appearance of these features. Alternative 2 would remove properties and landscaping on the south side of 24th Street, resulting in increased scale of roadway hardscape and descreased unity of residential character. Residential neighborhoods to the north and south of 24th Street would not be unified with Alternative 1 as a result of the recommended soundwall. Therefore, both build alternatives would have a moderate impact on this key view.

Key View 4

Improvements under Alternatives 1 and 2 would result in a moderate to moderately high visual change to existing views of the study area from this key view. Both alternatives would build a bus stop location that would be visible to both pedestrians and motorists. A fence would be built around the basin in the roadway median to address safety hazards. The fence would be visible to both east- and westbound travelers on 24th Street. Landscape and aesthetic treatments would reduce the appearance of these features. Sensitive viewers would have a high viewer response to the project changes. The reduced mature vegetation decreases the unity of the key view in Alternative 1. Removal of mature vegetation and residential structures and

the widened appearance of the roadway in Alternative 2 would reduce the overall unity of this key view. Building the project would have a moderate to moderately high impact in this key view.

Key View 5

Improvements under Alternatives 1 and 2 would moderately affect existing views of the study area from this key view. Both alternatives would build a bus stop location that would be visible to both pedestrians and motorists. A fence would be built around the basin in the roadway median to address safety hazards. The fence would be visible to both east- and westbound travelers on 24th Street. Three recommended soundwalls, ranging in heights of about 6 to 8 feet, would be constructed to the south of 24th Street between B Street and Cedar Street for Alternative 2. There would be partial middleground views of these new soundwalls from this key view (see Figure 2-16). No soundwalls would be visible in this key view from Alternative 1. Landscape and aesthetic treatments would reduce the appearance of these features. Sensitive viewers would have a high viewer response to project changes. Street users and residential users would have views of additional hardscape features associated with the expanded roadway. Implementation of the Alternatives 1 and 2 would have a moderately high impact on this key view.

Key View 6

Sensitive viewers would have a moderate viewer response to project changes in this key view. Improvements under Alternatives 1 and 2 would slightly improve the existing views of the study area from this key view, as the roadway would be repaved and street parking would be removed. Project changes would generally appear similar to existing conditions; therefore, no impact would result.

Key View 7

Improvements under Alternatives 1 and 2 would minimally affect existing views of the study area from this key view. Sensitive viewers would have a moderate viewer response to project changes, as the proposed condition appears similar to the existing condition. Building the project would have a moderately low impact on this key view.

Permanent Impacts – Light and Glare

As the improvements would allow more vehicular trips, building the project would introduce additional sources of light and glare associated with vehicle headlights. No additional traffic signals or street lighting would be installed.

Residents along realigned 23rd Street and 24th Street would experience levels and sources of light and glare similar to existing conditions. The change in roadway alignment at the S-curve, however, would slightly increase light and glare from vehicle headlights for residents on the south side of 23rd Street. Commercial uses along 23rd Street and 24th Street, from D Street to Q Street, would not see more light or glare. At project completion, light and glare in the area would be similar to what they are now.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and mitigation measures would reduce potential temporary or permanent visual impacts from the project. All visual avoidance and minimization measures would be designed and implemented with concurrence from the City.

Avoidance and Minimization Measures

V-1 The project must include landscaping that is compatible with the existing landscaping of the project area. Landscaping must include specimen-sized trees (24-inch box or greater) where feasible and shrub/mass planting to soften the hardscape features. Areas of vegetation buffer must not conflict with applicable safety-related standards and regulations pertaining to roadway line-of-sight or landscape worker safety. Landscaping must include, to the extent feasible, the following measures:

- Landscaping species should be well suited for the local climate, humidity, soil types, and local wind conditions.
- Selected species should share similar water requirements.
- Appropriate plant spacing should be allowed to avoid overcrowding.
- Landscape concepts should include zoning areas of high, medium, and low water use to meet the needs for water usage and achieve efficiency.
- Mulches, gravels (or other inert materials), and drip (or other nonspray irrigation) should be implemented.
- Irrigation equipment should be to maximize maintenance worker safety.

V-2 To enhance the pedestrian experience along 24th Street, provide a sense of security, and increase the visual intactness, a vegetation buffer must, where feasible, be installed between 24th Street and sidewalks along the northern and southern sides of the roadway. Trees, where feasible, must also be included within and along 24th Street. Areas of the vegetation buffer must not conflict with applicable safety-related standards and regulations pertaining to roadway line-of-sight.

V-3 The City must review and approve the use of project lighting types, plans, and placement to minimize light and glare impacts on surrounding sensitive uses.

Mitigation Measures

V-4 To decrease the appearance of hardscape features, including soundwalls, medians, and opaque fencing materials, landscape and architectural treatments such as color, texture, and vine treatment must be applied where feasible. Aesthetic enhancement shall be similar in character to the surrounding environment.

V-5 To buffer views of the realigned roadway from residents, a vegetation buffer must be installed south of the S-curve between the proposed roadway and existing residents. Areas of the vegetation buffer must not conflict with appropriate safety-related standards and regulations pertaining to roadway line-of-sight. In consultation with the City before project approval, the vegetative buffer must be included on the landscape concept plan and plant palette.

2.1.6 Cultural Resources

Regulatory Setting

The term "cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of

Historic Places. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800).

On January 1, 2004, a Section 106 Programmatic Agreement between the Advisory Council, the Federal Highway Administration, State Historic Preservation Officer, and the Department went into effect for Department projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The Federal Highway Administration's responsibilities under the Programmatic Agreement have been assigned to the Department as part of the Surface Transportation Project Delivery Pilot Program (23 Code of Federal Regulations 327) (July 1, 2007).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. See Appendix B for specific information regarding Section 4(f).

Historical resources are considered under the California Environmental Quality Act, as well as California Public Resources Code Section 5024.1, which established the California Register of Historical Resources. California Public Resources Code Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires the Department to inventory state-owned structures in its rights-of-way. Include the following sentence as applicable. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

Affected Environment

The information in this section comes from on the Historic Property Survey Report (March 2012), Archaeological Survey Report (October 2010), Historic Resources Evaluation Report (March 2012), and Draft Section 4(f) Evaluation (in Appendix B).

Area of Potential Effects

The Area of Potential Effects (APE) was established from the engineering footprints of all build alternatives to include all potential direct and indirect impacts from proposed construction, including existing and proposed rights-of-way, temporary construction easements, and staging areas. The Area of Potential Effects includes all areas in which the project has the potential to directly or indirectly affect historic properties, if any such properties exist. The Area of Potential Effects includes all of the parcels where the built environment may be directly or indirectly affected.

Records Search

A cultural resources records search was done at the Southern San Joaquin Valley Information Center at California State University, Bakersfield. The records search did not find any prehistoric cultural resources in the project study area. Because the Area of Potential Effects is completely developed with commercial districts and residential neighborhoods with paved streets, the potential for finding surface artifacts is extremely low.

Field Surveys

Archaeological Survey

On February 11, 2009, an archaeological survey of the Area of Potential Effects was done. Most of the Area of Potential Effects is obscured by modern development and roads, with little or no native soil exposed. Where possible, an intensive-level survey was completed. Specifically, an intensive-level survey was done within the Area of Potential Effects along the Kern River and in a vacant parcel southeast of the 24th Street and Oak Street intersection. No archaeological resources were found in the areas surveyed.

Section 4.4 describes the consultation and coordination efforts with Native American groups and the State Historic Preservation Officer.

Architectural Survey

A drive-by survey was done of the entire Area of Potential Effects and surrounding area on November 28 and 29, 2007. Intensive-level surveys of the properties in the Area of Potential Effects were done April 13 through 15, 2009, and April 11 and 12, 2010. Follow-up surveys of specific properties were done in October 2011.

Within the Area of Potential Effects, the cultural resources analysis looked at buildings that were 45 years of age or older that had not been substantially altered. Properties within the Area of Potential Effects that are less than 45 years old or are

substantially altered were exempted from evaluation in accordance with the Caltrans Section 106 Programmatic Agreement, Attachment 4, Property Types 2 through 4 and 6 (Section 106).

During the surveys, 93 historic-period resources dating from 1890 to 1964 were identified and recorded within the Area of Potential Effects: one previously recorded residence and 92 other resources, including 63 single-family residences, seven multi-family properties, and 22 commercial buildings. Six historic properties were identified within the Area of Potential Effects and are considered eligible for the National Register of Historic Places (National Register) for purposes of Section 106 for this undertaking only. These include four individually eligible properties (three bungalow courts and an office building) and two historic districts, as described below.

1. **Bungalow Court at 2100 23rd Street, Bakersfield:** Caltrans as assigned by the Federal Highway Administration determined that this Minimal Traditional style bungalow court is significant at the local level of significance under Criterion C as a highly intact example of this property type in the City of Bakersfield. It retains many of the defining characteristics of the property type: detached cottages arranged around a central public space, a two-story rear unit, private entrances to each unit, and garages with alley access below the two-story units. The State Historic Preservation Officer did not provide comments, therefore, the property is assumed to be eligible for the National Register for purposes of this project only.
2. **El Encanto, 2700 D Street, Bakersfield:** Caltrans as assigned by the Federal Highway Administration determined that this Spanish Eclectic style bungalow court is significant at the local level of significance under Criterion C as a highly intact example of this property type in the City of Bakersfield. It retains many of the defining characteristics of the property type: detached cottages arranged around a central public space, a two-story rear unit, private entrances to each unit, and garages with alley access below the two-story units. The State Historic Preservation Officer did not provide comments on this determination, therefore, the property is assumed to be eligible for the National Register for purposes of this project only.
3. **Bungalow Court at 2210 D Street, Bakersfield:** Caltrans as assigned by the Federal Highway Administration determined that this Spanish Eclectic style bungalow court is significant at the local level of significance under Criterion C as a highly intact example of this property type in the City of Bakersfield. It retains many of the defining characteristics of the property type: detached

cottages arranged around a central public space, a two-story rear unit, private entrances to each unit, and garages with alley access below the two-story units. The State Historic Preservation Officer did not provide comments on this determination, therefore, the property is assumed to be eligible for the National Register for purposes of this project only.

4. **Commercial Building (Healthland) at 2323 E Street, Bakersfield:** Caltrans as assigned by the Federal Highway Administration determined that this Modern-influenced Ranch-style office building is significant at the local level of significance under Criterion B for its associations with owners/occupants Metcalf, Parsons, and Wright, a locally significant architectural firm for which this was the firm's office. The privately-owned building is on the west side of E Street in an area that includes commercial and residential uses. The State Historic Preservation Officer did not provide comments on this determination, therefore, the property is assumed to be eligible for the National Register for purposes of this project only.
5. **Historic District South of 24th Street, Bakersfield:** Caltrans, as assigned by the Federal Highway Administration, determined that this district is significant at the local level of significance under Criterion C as an area in Bakersfield that has a large concentration of highly intact residential architecture representing a range of styles and periods, such as Craftsman, Period Revival and eclectic styles, California Ranch, Modern, Contemporary and Neo-eclectic. Its period of significance is from 1905-1964. This area, with approximately 120 properties, has mostly one- and two-story single-family residences, but includes a few multiple family residences. The properties represent a kaleidoscope of residences that are aesthetically pleasing in their diversity, but compatible in scale and tone. Access to and from this area is possible via a number of local and arterial streets. The approximate boundaries for the district, for purposes of this project, are generally the Stine Canal on the west, C Street on the east, 24th Street on the north, and 22nd Street on the south, and are based on the density of highly intact properties and their predominantly east-west orientation. For purposes of this project only, under Section 106, the district is assumed to be eligible for the National Register and its boundaries are approximate. There are 36 district buildings within the Area of Potential Effects for this project including 28 contributing properties.

   Properties in the Historic District South of 24th Street within the project Area of Potential Effects that were evaluated in the Historic Resources Evaluation Report include:

1. 2323 Elm Street (APN: 003-021-01)—Contributor
2. 2301 Elm Street (APN: 003-021-02)—Contributor
3. 2330 Elm Street (APN: 003-030-13)—Contributor
4. 2320 Elm Street (APN: 003-030-14)—Contributor
5. 2310 Elm Street (APN: 003-030-10)—Contributor
6. 2300 Elm Street (APN: 003-030-09)—Contributor
7. 2331 Beech Street (APN: 003-030-01)—Contributor
8. 2317 Beech Street (APN: 003-030-03)—Contributor
9. 2307 Myrtle Street (APN: 003-040-02)—Contributor
10. 2307 Spruce Street (APN: 003-050-02)—Contributor
11. 2312 Spruce Street (APN: 003-060-13)—Contributor
12. 2308 Spruce Street (APN: 003-060-09)—Contributor
13. 2307 Pine Street (APN: 003-060-02)—Contributor
14. 2327 Cedar Street (APN: 003-070-01)—Contributor
15. 2307 Cedar Street (APN: 003-070-02)—Contributor
16. 2328 Cedar Street (APN: 003-082-20)—Contributor
17. 2320 Cedar Street (APN: 003-082-18)—Contributor
18. 2330 A Street (APN: 003-081-01)—Contributor
19. 2316 A Street (APN: 003-081-03)—Contributor
20. 2311 B Street (APN: 003-090-04)—Contributor
21. 2318 B Street (APN: 003-101-01)—Contributor
22. 2310 B Street (APN: 003-101-08)—Contributor
23. 2304 B Street (APN: 003-101-07)—Contributor
24. 2230 B Street (APN: 003-151-02)—Contributor
25. 2231 B Street (APN: 003-090-06)—Contributor
26. 2330 B Street (APN: 003-101-10)—Contributor
27. 2315 C Street (APN: 003-101-05)—Contributor
28. 2223 C Street (APN: 003-151-04)—Contributor
29. 2323 A Street (APN: 003-082-02)—Noncontributor
30. 2301 C Street (APN: 003-101-06)—Noncontributor
31. 2311 24th Street (APN: 003-090-01)—Noncontributor
32. 2315 A Street (APN: 003-082-03)—Noncontributor
33. 2300 Pine Street (APN: 003-070-08)—Noncontributor
34. 2330 Myrtle Street (APN: 003-050-13)—Noncontributor
35. 2300 Myrtle Street (APN: 003-050-11)—Noncontributor
36. 2315 Myrtle Street (APN: 003-040-13)—Noncontributor

6. **Historic District North of 24th Street, Bakersfield:** Caltrans, as assigned by the Federal Highway Administration, determined that this district is significant at the local level of significance under Criterion A for its association with the post World War II expansion of housing in Bakersfield. Its period of significance is 1948 to 1964. The original subdivision (Westchester tract [Tract No. 1387]) was Bakersfield's largest single real estate development to date (1948) and more than half of the approximately 400 homes were so-called "G.I. Homes," which had Federal Housing Administration and G.I. loan approval (Bakersfield Californian 1948). Most of the homes were variations of the California Ranch style, with the earliest and smallest homes in the northern part of the tract and the larger lots and homes adjacent to 24th Street. Access to and from this area is possible via a number of local and arterial streets. The approximate boundaries for the district, for purposes of this project, are north of 24th Street generally between Beech and Drake Streets, and the irregular boundaries are based in those of the original Westchester Tract subdivision. For purposes of this project only, under Section 106, the district is assumed to be eligible for the National Register. There are 22 district buildings within the Area of Potential Effects for this project including 16 contributing properties.

   Properties in the Historic District North of 24th Street within the project Area of Potential Effects that were evaluated in the Historic Resources Evaluation Report include:

   1. 2401 Beech Street (APN: 001-191-09)—Contributor
   2. 2404 Beech Street (APN: 001-193-05)—Contributor
   3. 2400 Beech Street (APN: 001-193-04)—Contributor
   4. 2411 Myrtle Street (APN: 001-193-01)—Contributor
   5. 2408 Myrtle Street (APN: 001-192-11)—Contributor
   6. 2413 Spruce Street (APN: 001-192-06)—Contributor
   7. 2418 Spruce Street (APN: 001-161-10)—Contributor
   8. 2401 Pine Street (APN: 001-161-07)—Contributor
   9. 2412 Pine Street (APN: 001-162-10)—Contributor
   10. 2401 Cedar Street (APN: 001-162-07)—Contributor
   11. 2412 Cedar Street (APN: 001-150-03)—Contributor
   12. 2400 Cedar Street (APN: 001-150-01)—Contributor
   13. 2409 Alder Street (APN: 001-150-23)—Contributor
   14. 2405 Alder Street (APN: 001-150-24)—Contributor
   15. 2413 Bay Street (APN: 001-140-05)—Contributor

16. 2409 Bay Street (APN: 001-140-06)—Contributor
17. 2401 Alder Street (APN: 001-150-25)—Noncontributor
18. 2404 Alder Street (APN: 001-140-08)—Noncontributor
19. 2404 Cedar Street (APN: 001-150-02)—Noncontributor
20. 2407 Pine Street (APN: 001-161-06)—Noncontributor
21. 2406 Myrtle Street (APN: 001-192-01)—Noncontributor
22. 2407 Myrtle Street (APN: 001-193-02)—Noncontributor

As a result of the survey and evaluation of properties for compliance with Section 106, the following six properties within the Area of Potential Effects are historical resources for the purposes of this project under the California Environmental Quality Act: the historic district south of 24th Street (28 contributing properties are within the Area of Potential Effects), the historic district north of 24th Street (16 contributing properties are within the Area of Potential Effects), the Bungalow Courts at 2100 23rd Street, 2210 D Street, and 2300 D Street, and the office building (Healthland) at 2323 E Street. Because the above six properties were assumed to be eligible for the National Register for purposes of the federal undertaking, without comment from the State Historic Preservation Officer, they will not automatically be listed in the California Register of Historical Resources, as is required when the State Historic Preservation Officer has explicitly concurred with the federal agency determination. However, in accordance with California Environmental Quality Act Guidelines in the California Public Resources Code Section 15064.5(a)(2), these six federal historic properties are historical resources under the California Environmental Quality Act because they were identified as significant in a survey that meets the requirements of Public Resources Code Section 5024.1(g).

Forty-five properties were determined not eligible for inclusion in the National Register. But of those 45 ineligible resources, six were determined eligible under the local ordinance as part of this survey and are historical resources for the purposes of the California Environmental Quality Act (2312 and 2000 24th Street, 2219 D Street, 2324 Chester Avenue, 2418 K Street, and 2406 L Street). Therefore, a total of 39 resources were evaluated as not significant. The other historic-period resources in the Area of Potential Effects are Property Types 2–4 and 6 under the Caltrans Section 106 Programmatic Agreement, Attachment 4 and as such are exempt from evaluation.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not include any excavation or construction in the project area. Therefore, the No-Build Alternative would result in no effect to historic properties.

Build Alternatives

Figures 2-19 and 2-20 show the potential use of land by the project from each of the historic districts north and south of 24th Street.

The Bungalow Courts are outside the disturbance limits for Alternatives 1 and 2. No land from the Bungalow Courts would be used as temporary construction easements during construction of Alternatives 1 and 2 (see Figure 2-21). Alternatives 1 and 2 would not require the use of any part of the parcel at 2323 E Street (commercial building [Healthland]) for a temporary construction easement during construction, as shown on Figure 2-21.

During construction, Alternatives 1 and 2 would each require the temporary use of land from contributing parcels in the historic districts north and south of 24th Street.

The temporary construction easements needed for Alternatives 1 and 2 are shown in Figures 2-19 and 2-20, respectively, and are summarized in Table 2.13.

Table 2.13. Permanent Uses and Temporary Occupancies at the Historic Properties

Alternative 1			Alternative 2		
Number of Full Parcel Acquisitions	**Number of Partial Parcel Acquisitions (total square feet)**	**Number of Parcels with Temporary Construction Easements (total square feet)**	**Number of Full Parcel Acquisitions**	**Number of Partial Parcel Acquisitions (total square feet)**	**Number of Parcels with Temporary Construction Easements (total square feet)**
Historic District South of 24th Street					
9	6 (6,978)	12 (6,033)	22	3 (16,986)	11 (4,746)
Historic District North of 24th Street					
12	2 (647)	14 (6,644)	1	0	5 (2,101)
Bungalow Courts[1]	0	0	0	0	0
Commercial Building (Healthland) at 2323 E Street	0	0	0	0	0
Total Effects at the historic districts South and North of 24th Street					
21	8 (7,625)	26 (12,677)	23	3 (16,986)	16 (6,847)

[1] 2100 23rd Street, 2300 D Street, and 2210 D Street.

Temporary construction easements would be necessary for construction access along the proposed right-of-way. Temporary construction easements may also be necessary at areas of driveway reconstruction within the 24th Street widening and couplet sections. The land used for temporary construction easements would be restored to its existing or better condition before its return to its original owners.

The potential proximity effects during construction of Alternatives 1 and 2 would not substantially impair the activities, features, and/or attributes of the historic districts that qualify them for listing in the National Register of Historic Places.

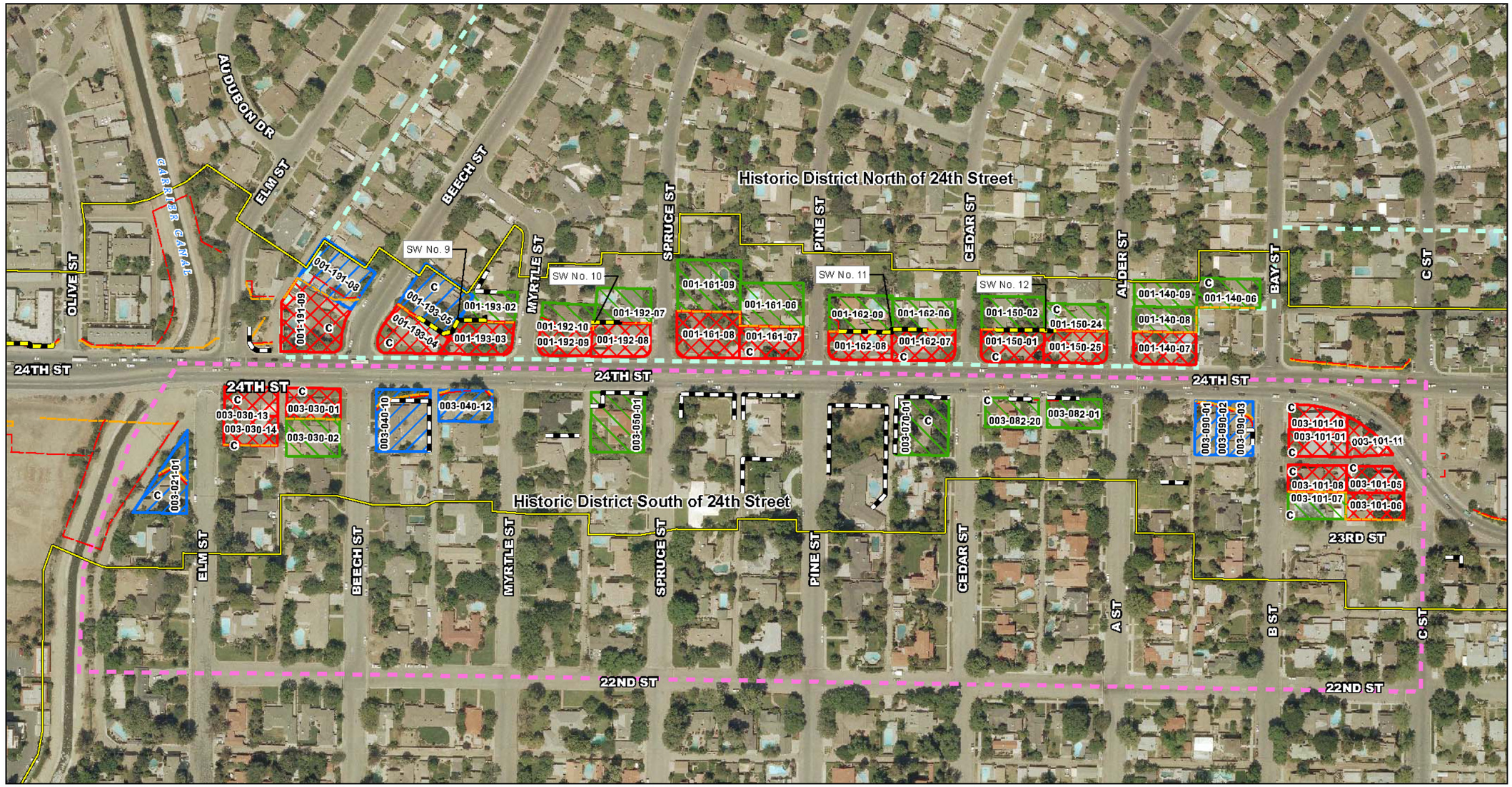


Figure 2-19 Impacts to Properties within the Historic Districts North and South of 24th Street - Alternative 1

LEGEND

- Historic District North of 24th Street
- Historic District South of 24th Street
- Area of Potential Effects (APE)
- Temporary Construction Easement
- Proposed Right-of-Way
- Potential Sound Walls
- Existing Walls

Alternative 1 - North

- Full Acquisition
- Partial Acquisition and a Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement

C = District Contributor.

0 120 240 FEET

SOURCE: City of Bakersfield (2008)

EA 06-493900
EA 06-484700

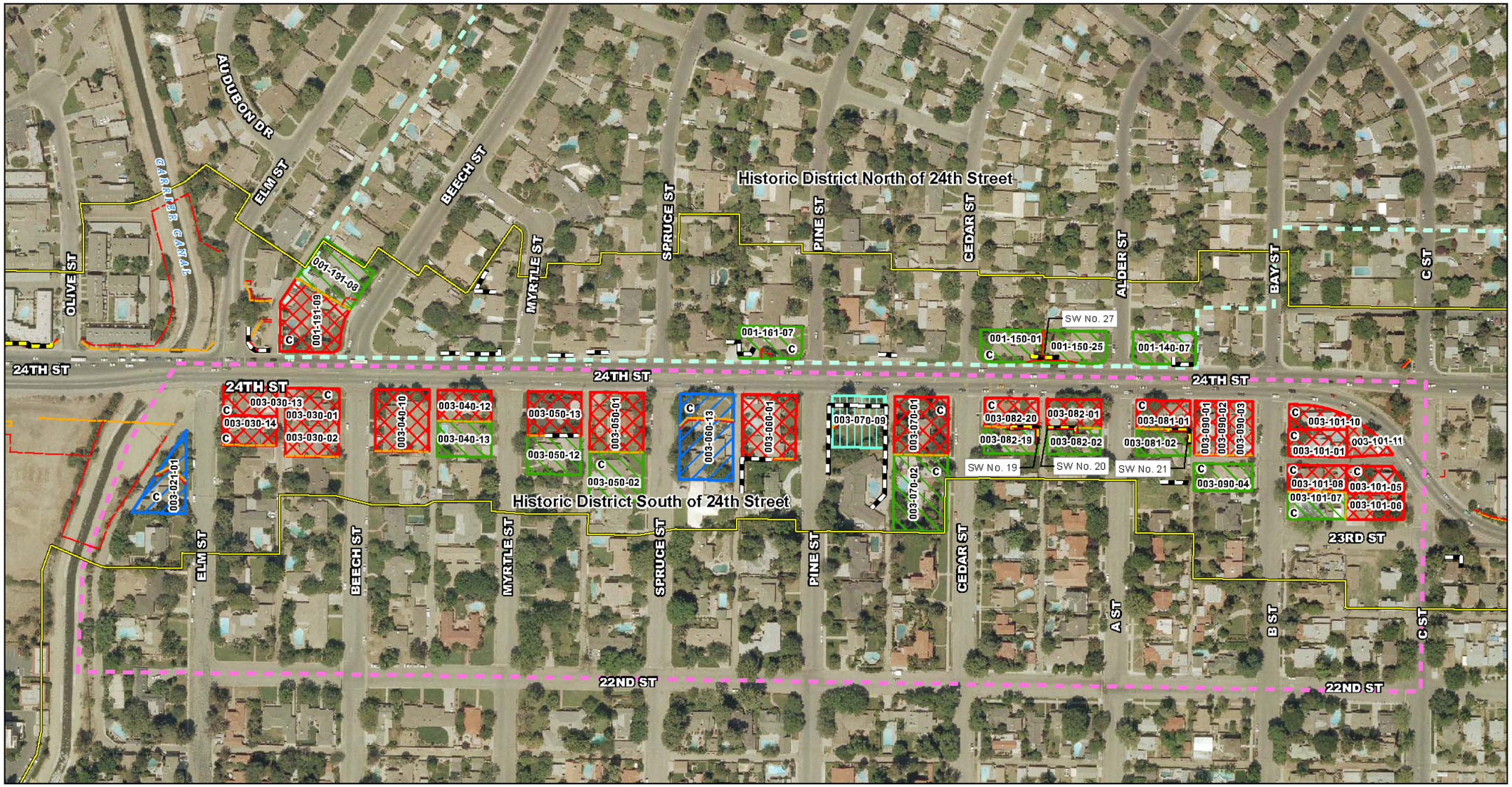


Figure 2-20 Impacts to Properties within the Historic Districts North and South of 24th Street - Alternative 2

LEGEND

- Historic District North of 24th Street
- Historic District South of 24th Street
- Area of Potential Effects (APE)
- Temporary Construction Easement
- Proposed Right-of-Way
- Potential Sound Walls
- Existing Walls

Alternative 2 - South

- Full Acquisition
- Partial Acquisition
- Partial Acquisition and a Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement

C = District Contributor.

0 120 240 FEET

SOURCE: City of Bakersfield (2008)

EA 06-493900
EA 06-484700

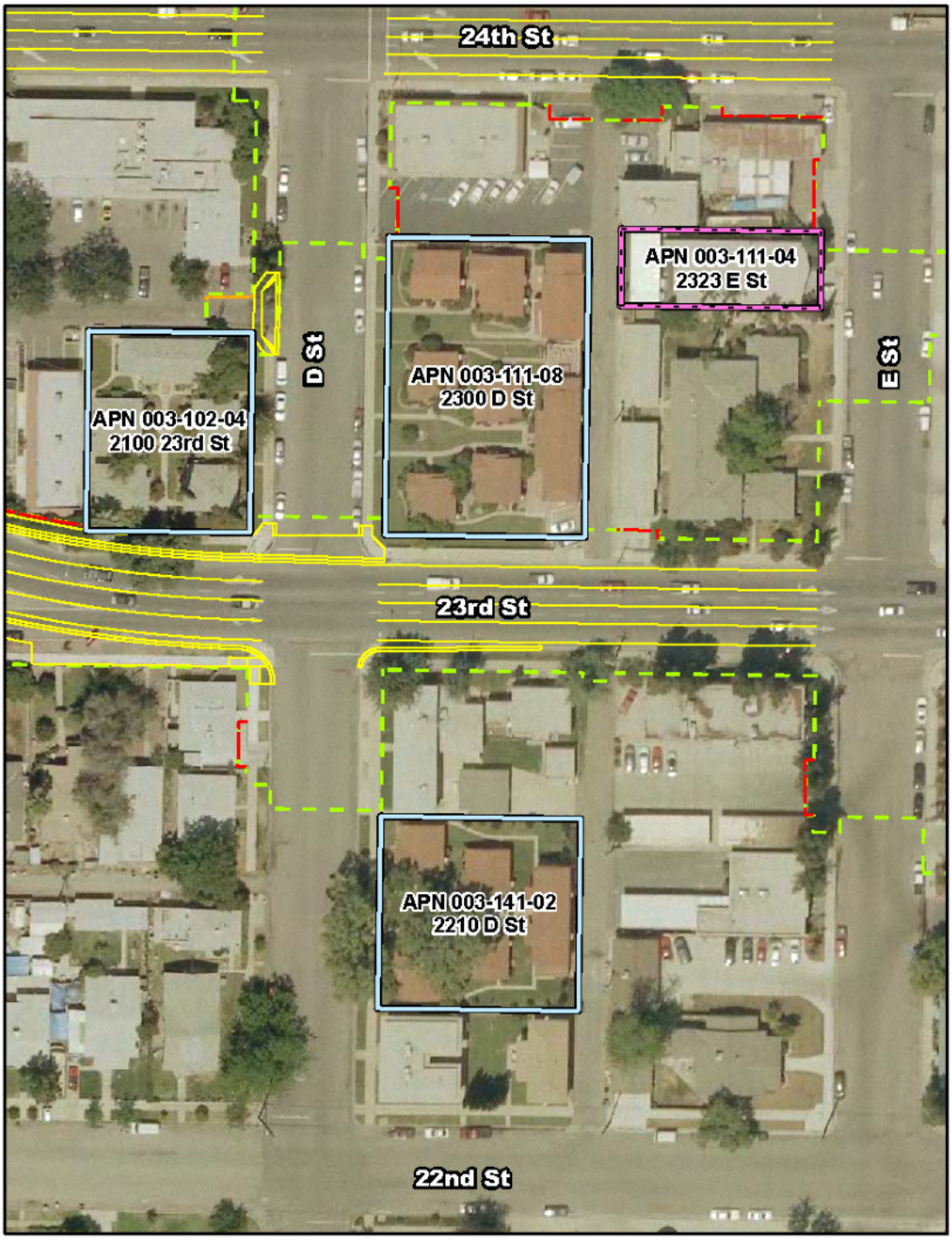


Figure 2-21 Individually Eligible Properties

LEGEND
- Bungalow Courts
- Commercial Building (Healthland)
- Project Improvements
- Grading Limit
- Temporary Construction Easement
- Permanent Easement

*Properties Individually Eligible for listing in the National Register of Historic Places.

0 50 100 FEET

SOURCE: City of Bakersfield (2008); Draft Project Report (2011)

EA 06-493900
EA 06-484700

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not include any excavation or construction in the project area. Therefore, the No-Build Alternative would result in no permanent effect to historic properties.

Build Alternatives

The Bungalow Courts at 2100 23rd Street and 2210 and 2300 D Street, are outside the permanent right-of-way limits for Alternatives 1 and 2. No land from the Bungalow Courts would be acquired for permanent use in the transportation improvements of Alternatives 1 and 2.

Alternatives 1 and 2 would not require the permanent acquisition of any part of the parcel for the commercial building (Healthland) at 2323 E Street for use in the transportation improvements.

For the historic districts north and south of 24th Street, Alternatives 1 and 2 would each result in the permanent acquisition of full and partial parcels of land in these historic districts on both the north and south sides of 24th Street (see Figures 2-19 and 2-20 and Table 2.13).

Historic District North of 24th Street

The following 16 properties within the Area of Potential Effects are contributors to the historic district north of 24th Street:

- 2401 Beech Street (APN 001-191-09)
- 2404 Beech Street (APN 001-193-05)
- 2400 Beech Street (APN 001-193-04)
- 2411 Myrtle Street (APN 001-193-01)
- 2408 Myrtle Street (APN 001-192-11)
- 2413 Spruce Street (APN 001-192-06)
- 2418 Spruce Street (APN 001-161-10)
- 2412 Pine Street (APN 001-162-10)
- 2401 Pine Street (APN 001-161-07)
- 2401 Cedar (APN 001-162-07)
- 2412 Cedar (APN 001-150-03)
- 2400 Cedar Street (APN 001-150-01)
- 2409 Alder Street (APN 001-150-23)

- 2405 Alder Street (APN 001-150-24)
- 2413 Bay Street (APN 001-140-05)
- 2409 Bay Street (APN 001-140-06)

Alternative 1 would result in 5 partial parcel acquisition of the following properties: 2404 Beech Street (contributor) and 2409 Beech Street (noncontributor). Additionally, Alternative 1 would result in the full acquisition of the following parcels considered contributors: 2400 Beech Street, 2401 Pine Street, 2401 Cedar Street, 2400 Cedar Street, and 2401 Beech Street, as well as noncontributors: 2400 Alder Street, 2401 Alder Street, 2400 Pine Street, 2400 Spruce Street, 2401 Spruce Street, 2400 Myrtle Streeet, and 2401 Myrtle Street. Alternative 2 would not result in partial acquisition of any parcels considered contributors to the historic district north of 24th Street but would result in the full parcel acquisition of 2401 Beech Street.

Historic District South of 24th Street

The following 28 properties within the Area of Potential Effects are contributors to the historic district south of 24th Street:

- 2323 Elm Street (APN 003-021-01)
- 2301 Elm Street (APN-003-021-02)
- 2330 Elm Street (APN 003-030-13)
- 2320 Elm Street (APN 003-030-14)
- 2310 Elm Street (APN 003-030-10)
- 2300 Elm Street (APN 003-030-09)
- 2331 Beech Street (APN 003-030-01)
- 2317 Beech Street (APN-003-030-03)
- 2307 Myrtle Street (APN-003-040-02)
- 2307 Spruce Street (APN 003-050-02)
- 2312 Spruce Street (APN 003-060-13)
- 2308 Spruce Street (APN-003-060-09)
- 2307 Pine Street (APN-003-060-02)
- 2327 Cedar Street (APN 003-070-01)
- 2307 Cedar Street (APN-003-070-02)
- 2328 Cedar Street (APN 003-082-20)
- 2320 Cedar Street (APN-003-082-18)
- 2330 A Street (APN-003-081-01)
- 2316 A Street (APN-003-081-03)

- 2311 B Street (APN-003-090-04)
- 2231 B Street (APN-003-090-06)
- 2330 B Street (APN-003-101-10)
- 2318 B Street (APN 003-101-01)
- 2310 B Street (APN-003-101-08)
- 2304 B Street (APN-003-101-07)
- 2230 B Street (APN 003-101-10)
- 2315 C Street (APN 003-101-05)
- 2223 C Street (APN-003-151-04)

Alternative 1 would result in partial parcel acquisition of 2323 Elm Street, a contributing parcel. Partial acquisitions would be required of noncontributing properties at 2322 Beech Street; 2345 Myrtle Street; and 2301, 2307, and 2311 24th Street. Additionally, Alternative 1 would result in the full acquisition of the following contributing parcels: 2330 and 2320 Elm Street, 2331 Beech Street, 2310, 2318 and 2330 B Street, and 2315 C Street.

Alternative 2 would result in partial parcel acquisition of 2312 Spruce Street, a noncontributor, and 2323 Elm Street, a contributing property. Additionally, Alternative 2 would result in the full acquisition of the following contributing parcels: 2330 and 2320 Elm Street, 2331 Beech Street, 2310, 2318 and 2330 B Street, 2315 C Street, 2330 A Street, 2327 and 2328 Cedar Street, and partial acquisition of contributing property 2323 Elm Street. Full acquisitions of noncontributing properties in the historic district south of 24th Street would include 2323 and 2322 Beech Street; 2345 and 2330 Myrtle Street; 2323 Spruce Street; 2323 Pine Street; 2324 A Street; 2301, 2307, and 2311 24th Street; 2201 24th Street; and 2301 C Street.

The full parcel permanent uses would result in the removal of all of the structures on the affected parcels. The permanent uses would also result in partial parcel acquisitions, which would not directly (physically) affect the structures on those parcels, but would result in permanent changes to the landscaped side yards, some of which are fenced. These full and partial acquisitions would also result in changes to the visual character and setting of the 24th Street corridor and the adjacent historic districts.

Under each build alternative, visual and noise impacts would also result from reconfiguration of streets, and the introduction of new features such as bus turnouts, a center median on 24th Street, installation of fencing around the block at the southwest

corner of 24th and C Streets, and possibly soundwalls along the 24th Street corridor. The potential soundwalls for noise attenuation (as included in Abatement Measure NOI-5 in Section 2.2.5) would be located primarily on the side and rear areas of the properties. While the soundwalls would reduce traffic noise impacts on the historic district properties, they would introduce new visual elements which, along with the other proposed project changes, could impact the visual character and historic settings of the two historic districts and other resources. The potential visual impacts from the recommended soundwalls along 24th Street in the areas of the historic districts (Figures 2-19 and 2-20) are addressed below.

Alternative 1

All soundwalls recommended for Alternative 1 would be implemented in the historic district north of 24th Street. The soundwall numbers are shown on Figures 2-24 and 2-25. Soundwall 9 would be north of 24th Street between Beech Street and Myrtle Street, with an average height of 6 feet and a length of 194 feet. This wall would be adjacent to one district contributor (APN 001-193-05) and one noncontributor (APN 001-193-03). Soundwall 10 would be north of 24th Street between Myrtle Street and Spruce Street, with an average height of 10 feet and a length of 65 feet. This wall would be adjacent to two noncontributors (APNs 001-192-10 and 001-192-07). Soundwall 11 would be located north of 24th Street between Pine Street and Cedar Street, with an average height of 12 feet and a length of 207 feet, and would also be adjacent to two noncontributors (APNs 001-162-09 and 001-162-06). Soundwall 12 would be located north of 24th Street between Cedar Street and Alder Street, with an average height of 10 feet and a length of 137 feet. This wall would be adjacent to one district contributor (APN 001-150-24) and one noncontributor (APN 001-150-02). No reasonable or feasible soundwalls would be located in the historic district south of 24th Street with Alternative 1.

The implementation of the soundwalls along the southern boundary of the historic district north of 24th Street would minimize potential noise impacts from traffic on 24th Street. However, soundwall 9 under Alternative 1 would not completely attenuate noise from truck traffic. Because of the existing high traffic volumes along 24th Street, the incremental increase in noise associated with the proposed project would not significantly impact the historic district to the north or its contributors. As a result, the contributors and the historic district north of 24th Street would not experience adverse noise impacts during the operation of the project.

As discussed earlier, implementation of the potential soundwall under Alternative 1 would introduce a new visual element to the setting of the historic district north of 24th Street and two of its contributors would be adjacent to the soundwalls. Given the potential locations of the soundwalls along the side and rear yards of the adjacent contributors, it is unlikely that they would adversely affect the contributing properties. All proposed hardscape features, including soundwalls, would be compatible with the historic character of the affected district, as specified in Mitigation Measure CR-3. Because of this, the indirect visual impacts associated with the soundwalls would not adversly affect the historic district or its contributors. In addition, because the soundwalls are minimizing noise levels from increased traffic on 24th Street, the overall indirect impacts from Alternative 1 to the potential historic district contributors and the historic district to the north would be minor.

Alternative 2

As recommended in noise abatement measure NOI-5, Alternative 2 would implement one soundwall in the historic district north of 24th Street and three soundwalls in the historic district to the south of 24th Street. The soundwall numbers are located on Figures 2-19 and 2-20. Soundwall 19 would be south of 24th Street between Cedar Street on the west and an alley on the east. It would have an average height of 6 feet and a length of 100 feet and would be adjacent to one noncontributor (APN 003-082-19). Soundwall 20 would be located south of 24th Street between an alley on the west and A Street on the east. It would have an average height of 8 feet and a length of 79 feet and would be adjacent to one noncontributor (APN 003-082-02). Soundwall 21 would be on the south side of 24th Street between A Street on the west and an alley on the east. It would have an average height of 6 feet and a length of 89 feet and would be adjacent to one noncontributor (APN 003-081-02). Soundwall 27 would be on the north side of 24th Street between Cedar and Alder Streets and would have an average height of 12 feet and a length of 65 feet. This wall would be adjacent to one district contributor (APN 001-150-01) and one noncontributor (APN 001-150-25).

The implementation of the soundwalls along the northern boundary of the district south of 24th Street will minimize potential noise impacts from traffic on 24th Street. All of the recommended soundwalls would attenuate noise from truck traffic to the affected contributor (APN 001-150-01) in the historic district. Therefore, the historic district south of 24th Street, including the affected contributing property, would not be expected to experience an adverse increase in noise levels under Alternative 2. Implementation of the soundwalls would introduce a new visual element to the historic district setting, specifically to one contributor located adjacent to the potential

soundwall. However, given the potential location of the soundwall along the side and rear yards of the adjacent contributor, it is unlikely that it would adversely affect the contributing property. In addition, all proposed hardscape features, including soundwalls, would be compatible with the historic character of the affected district, as specified in Mitigation Measure CR-3. The indirect visual impacts associated with the recommended soundwalls under Alternative 2 to the historic districts are expected to be minor. However, the overall impacts to the historic district to the south under Alternative 2, which include the combined visual effects of the project hardscape features (including potential soundwalls) and reduced landscaping, would alter the visual quality of the district, resulting in an adverse visual effect.

Under both build alternatives, the historic district south of 24th Street would be adversely affected by both physical direct impacts associated with removal of buildings, and landscaping, increased hardscape, and other physical changes, as well as changes to the visual character and setting of the district. This relatively small district is viewed as a more unique and limited resource when compared to the historic district north of 24th Street. More than 10 percent of the district could be affected by the proposed project. Therefore, it is anticipated that under the Section 106 process, both build alternatives would be expected to result in an adverse effect to the historic district south of 24th Street.

Under both build alternatives, the historic district north of 24th Street would not be adversely affected by physical changes caused by the roadway widening build alternatives or the changes to the visual character and setting of the historic district. The project would only affect a small percentage (less than 5 percent) of the properties within the district. Although the southern edge of the district would change, the distinctive pattern of development, including the curvilinear streets and overall character and setting of the district, would remain largely intact. Therefore, it is anticipated that under the Section 106 process, both alternatives would result in a finding of no adverse effect for the historic district north of 24th Street.

Protection Under the Requirements of Section 4(f)

As discussed in Appendix B, *Draft Section 4(f) Evaluation*, the requirements for protection under Section 4(f) are triggered by the effects of Alternatives 1 and 2 on the historic districts north and south of 24th Street.

Appendix B also discusses in detail four historic properties for which Alternatives 1 and 2 do not trigger protection under Section 4(f), namely, the three Bungalow Courts

at 2100 23rd Street, 2210 and 2300 D Street, and the commercial office building (Healthland) at 2323 E Street.

Archaeological Resources

No archaeological resources were identified within the Area of Potential Effects by the archival research or the field survey. However, if previously unidentified cultural materials are unearthed during construction, it is Caltrans policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey would be needed if the proposed project limits are extended beyond the present survey limits.

Avoidance, Minimization, and/or Mitigation Measures

The following standard measures would be implemented to address the potential discovery of cultural materials or human remains during construction of the proposed project.

CR-1 If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area shall be diverted until a qualified archaeologist or historian can assess the nature and significance of the find. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

CR-2 If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner shall notify the Native American Heritage Commission, which shall then notify the Most Likely Descendant. The City's Resident Engineer shall contact the City and the District 6 Environmental Branch Chief and/or Cultural Studies Staff so that they may work with the Most Likely Descendant on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 shall be followed as applicable.

The specific mitigation to address effects to the historic districts will be refined in detail in the Memorandum of Agreement prepared for the project after circulation of the Environmental Impact Report/Environmental Assessment for public review.

Preliminary mitigation to avoid or minimize the effects is described in Mitigation Measure CR-3 below.

CR-3 The conceptual mitigation measures for effects to the historic districts north and south of 24th Street would include as appropriate:

1. Detailed documentation of the historic district as a whole, and of each adversely affected contributing property at a level specified by the State Historic Preservation Officer, (similar to Historic American Building Survey Level II documentation, consisting of large format archival quality photographs, available as-built plans, and written historical data in the form of a historical report), distribution to the appropriate Regional Information Center, local public library, and other repositories to be determined.
2. Preparation of a brochure on the local history and architecture of the affected historic district(s).
3. Adding information to existing social media sites dealing with related architectural topics.
4. Incorporation of hardscape features (including soundwalls), landscape, and architectural treatments that are compatible with the historic character of the affected historic district(s), such as color, texture, and vine treatment as feasible. (See Noise, Section 2.2.5, for location and heights of proposed soundwalls. See Visual, Section 2.1.5, for integration of hardscape feature treatments.)
5. Prior to demolition of contributing properties for which an adverse effect finding is made, strategies such as working with a local agency to identify appropriate sites, or offering the properties for sale for $1 (or other reasonable amount) and paying up to the cost of demolition and removal of each contributing property would be attempted.
6. Architectural and structural elements or character-defining features would be made available for reuse in other buildings of the same age and style through an architectural salvage operation. No salvage would take place until an opportunity for the relocation described in item 5 above has taken place.
7. District contributing buildings/structures impacted by temporary construction easements would be protected by the establishment of Environmentally Sensitive Areas. After construction, the land,

hardscape (e.g., residential walkways, garden walks/walls, etc.) and vegetation would be replaced in-kind as per the Secretary of the Interior's *Standards for the Treatment for Historic Properties with Guidelines for Rehabilitation*.

See Section 2.1.5 for additional mitigation of visual impacts.

2.2 Physical Environment

2.2.1 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System permit. Known today as the Clean Water Act, Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the National Pollutant Discharge Elimination System permit scheme. Important Clean Water Act sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S. to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below.)
- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers.

The objective of the Clean Water Act is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The U.S. Army Corps of Engineers issues two types of 404 permits: Standard and General permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of U.S. Army Corps of Engineers' Standard permits. For Standard permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (U.S. Environmental Protection Agency Code of Federal Regulations 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have fewer adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per the guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge"

for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the Clean Water Act and regulates discharges to waters of the State. Waters of the State include more than just Waters of the U.S., like groundwater and surface waters not considered Waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the Clean Water Act definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable Regional Water Quality Control Board Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with Clean Water Act Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the Clean Water Act requires the establishment of Total Maximum Daily Loads, which specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, water pollution control, and water quality functions throughout the state. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollution Discharge Elimination System Program Municipal Separate Storm Sewer Systems

Section 402(p) of the Clean Water Act requires the issuance of National Pollution Discharge Elimination System permits for five categories of storm water dischargers,

including Municipal Separate Storm Sewer Systems. The U.S. Environmental Protection Agency defines a Municipal Separate Storm Sewer System 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, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. The State Water Resources Control Board has identified the Department as an owner/operator of a Municipal Separate Storm Sewer System by the State Water Resources Control Board. This permit covers all Department rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollution Discharge Elimination System Program permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's Municipal Separate Storm Sewer System Permit, under revision at the time of this update, contains three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);
2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices and other measures.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Statewide Storm Water Management Plan assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Statewide Storm Water Management Plan 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. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest Statewide Storm Water Management Plan to address storm water runoff.

Part of and appended to the Storm Water Management Plan is the Storm Water Data Report and its associated checklists. The Storm Water Data Report documents the relevant storm water design decisions made regarding project compliance with the Municipal Separate Storm Sewer System National Pollution Discharge Elimination System permit. The preliminary information in the Storm Water Data Report prepared during the Project Initiation Document phase will be reviewed, updated, confirmed, and if required, revised in the Storm Water Data Report prepared for the later phases of the project. The information contained in the Storm Water Data Report may be used to make more informed decisions regarding the selection of Best Management Practices and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

Construction General Permit

The Construction General Permit (Order No. 2009-0009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area of one acre or greater, and/or are smaller sites that are part of a larger 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 one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. 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, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan. In accordance with the Department's Standard Specifications, a Water Pollution Control Plan is necessary for projects with Disturbed Soil Area less than one acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act Section 404 permits issued by the U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, and are required before U.S. Army Corps of Engineers issues a 404 permit.

In some cases, the Regional Water Quality Control Board may have specific concerns with discharges related to a project. As a result, the Regional Water Quality Control Board may issue a set of requirements known as Waste Discharge Requirements under the State Water Code that define activities such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. Waste Discharge Requirements can be issued to address both permanent and temporary discharges of a project.

Affected Environment

Analysis of impacts of the project on water quality and storm water runoff is based on the *Location Hydraulic Study* (September 2011) and *Preliminary Roadway and Foundation Report* (December 2010).

The project is under the jurisdiction of the Central Valley Regional Water Quality Control Board (Region 5), which administers regional and local implementation of the National Pollutant Discharge Elimination System Permit program in the study area.

Surface Water

The study area is within the South Valley Floor Hydrologic Unit in the Tulare Lake Hydrologic Basin. Within this hydrologic unit, the study area is within the Kern River Watershed, which covers over 2 million acres (see Figure 2-22).

The purpose of hydrologic boundaries is to designate the area within a larger watershed that drains in a particular direction to a particular water body. Kern River is the receiving water in the study area. At the western end of the study area, 24th Street crosses over Kern River. The State Route 99 bridge crosses Kern River at the south end of the study area.

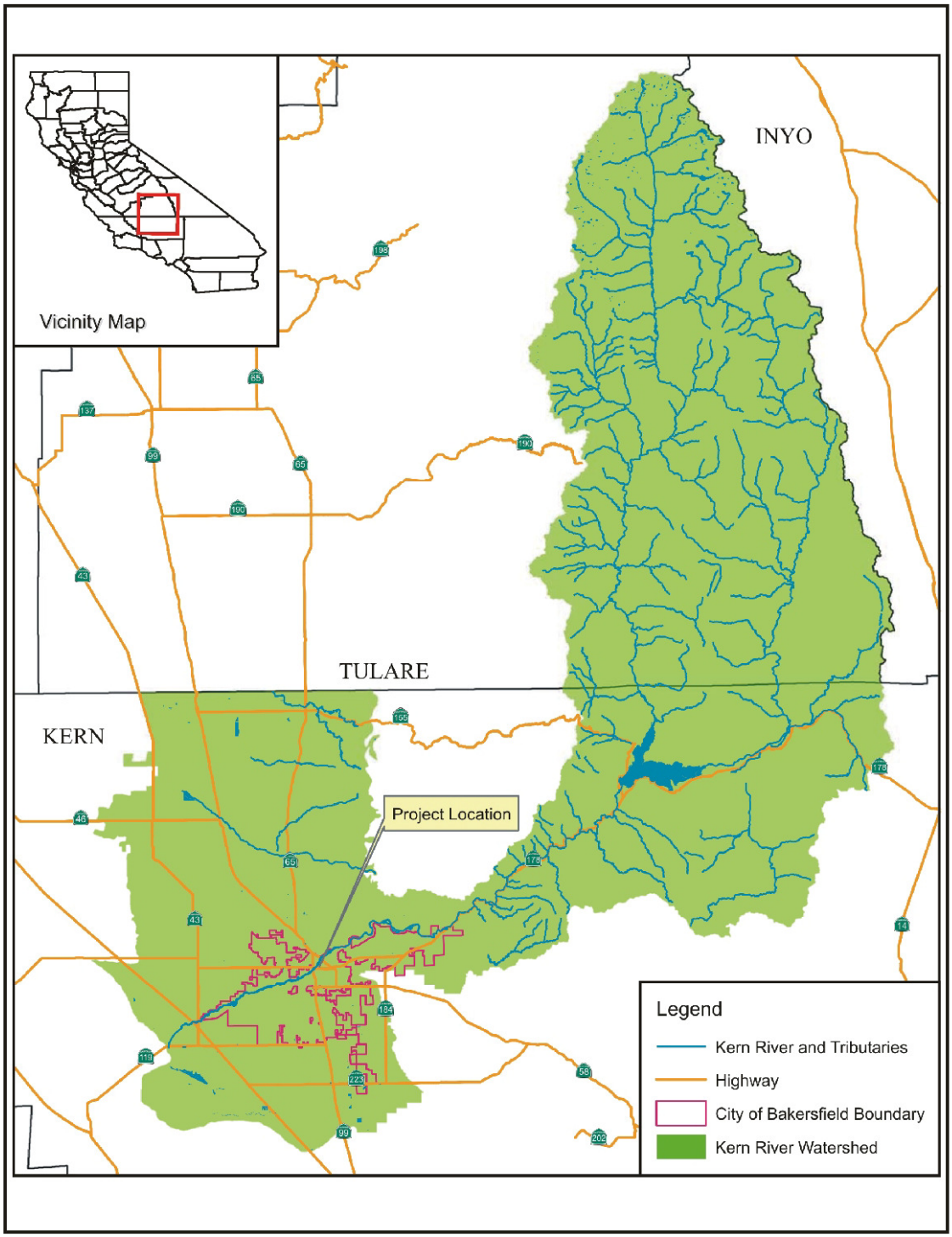


Figure 2-22 Kern River Watershed Map

N

0 6 12
MILES

SOURCE: Caltrans

EA 06-493900
EA 06-484700

The Kern River bottom stays mostly dry throughout the year. Drainage from the study area flows south and southwest of the study area toward the Kern River, which ends near the Buena Vista Lake Bed and Buena Vista Recreation Area at the foothills of the Temblor Range. The areas east of the Kern River bridge drain south into the City of Bakersfield via curb and gutter, where it is captured and routed to the mainline pipe along 22nd Street. Flows continue to be conveyed via a subsurface storm drain to Elm Street, under Carrier Canal, and into the Beach Park Detention Basin. These flows are then pumped from the basin into Carrier Canal and eventually make their way to the Kern River.

Existing drainage facilities for the project consist of a combination of a subsurface storm drain system (pipes) and overland street flow (gutters). Storm drain runoff generally flows in a north-to-south direction through the study area. The existing subsurface storm drain facilities are sized to intercept minor flows of less than a 10-year storm. Flows greater than the subsurface system capacity, mainly from areas tributary to or originating from north of the study area, are partially intercepted in curb-inlet catch basins (storm drains) along 24th Street. A portion of the overflow runoff travels west along 24th Street. Larger storms would produce additional flows that would drain over 24th Street and south toward the existing 23rd Street and the recently improved 22nd Street storm drain facilities.

Currently, all runoff generated on the 24th Street bridge deck flows directly into the Kern River via drains on the bridge surface and pipes down the bridge supports that discharge into the Kern River. The proposed project would not add impervious area to the bridge surface or change current drainage patterns that would require treatment. A series of flood control basins east and west of Oak Street provide flood protection and are tributary to the Kern River.

Under Section 303(d) of the 1972 Clean Water Act, states are required to develop a list of water quality limited segments. The waters on the 303(d) list do not meet water quality standards even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads, to improve water quality. This segment of the Kern River is not listed on the 2002 Clean Water Act 303(d) list of water quality limited segments.

The Regional Water Quality Control Board's Water Quality Control Plan for the Tulare Lake Basin designates existing, potential, and intermittent beneficial uses for all water bodies within the region, including inland surface waters. These uses are the foundation of the water quality protection measures under the Basin Plan. Potential beneficial uses of the Kern River identified in the Basin Plan include municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; hydropower generation; water contact recreation; non-contact water recreation; warm freshwater habitat; wildlife habitat; rare, threatened, or endangered species; and ground water recharge.

Groundwater

The project is within the Tulare Lake Groundwater Basin. Groundwater recharge is mostly from stream recharge and from deep percolation of applied irrigation water. On average, the basin water level has declined nearly 17 feet from 1970 through 2000.[1] The basin experiences large changes in water levels due to steep decreases and strong increases.

Groundwater was encountered at about 16 feet below existing grade in nearby borings next to the Kern River. Groundwater was not encountered in borings outside (at the southeast corner of M Street and 19th Street) the influence of the Kern River. The latest *Kern County Water Agency Water Supply Repor*t (2007) indicates that the depth to groundwater is greater than 100 feet in areas not influenced by the Kern River. It is expected that the high groundwater level could reach an elevation of 391 feet above mean sea level (near Oak Street and 24th Street).

According to the Basin Plan, the beneficial uses for the groundwater in and downstream of the study area include municipal and domestic water supply; agricultural water supply; industrial service water supply; industrial process water supply; water contact recreation; non-contact water recreation; and wildlife habitat.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not result in the construction of any roadway improvements; therefore, this alternative would not result in temporary adverse impacts related to storm water runoff and water quality.

---

[1] California Department of Water Resources, www.water.ca.gov.

Build Alternatives

Construction activities could affect the Kern River. Erosion (caused by wind and water), waste management, and vehicle operations are all potential sources of pollutants from construction of the project. The potential for accidental releases of hazardous materials such as small fuel or oil spills into surface water bodies is considered possible, and such spills could affect water quality should pollutants enter the Kern River. Excavation activities may encounter shallow or perched groundwater, which may require dewatering. Dewatering could result in temporary water quality impacts by introducing sediment-laden or -contaminated discharge to surface waters.

Construction activities to widen 24th Street would temporarily affect the existing drainage patterns by requiring the extension of Carrier Canal, which carries flows underneath 24th Street. To build the extension of Carrier Canal, a temporary diversion conduit would be built next to Carrier Canal to divert flows during construction. The temporary diversion is necessary to maintain the use of the water by downstream holders of water rights for irrigation. It is estimated that the diversion conduit would be used for three months, the time estimated to extend the 24th Street culvert. The diversion conduit would be about 350 linear feet and consist of a triple-pipe culvert.

The diversion would be built in three phases. First, the triple-pipe diversion would be built next to the canal. Next, walls of Carrier Canal near the beginning and end of the diversion channel would be removed to allow flows through the canal and in the diversion structure simultaneously, so flows within the canal would not be affected. Finally, a temporary dam would be placed just upstream and downstream of the Carrier Canal/th Street culvert, and flows would be diverted into the diversion conduit.

After the culvert is completed, the diversion conduit would be blocked and flows would be restored to the existing flow path in Carrier Canal. All water work would conform to the conditions stated in the 401 Certification for clean water diversion and dewatering.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not result in any roadway improvements; therefore, this alternative would not result in permanent adverse impacts related to storm water runoff and water quality.

Build Alternatives

The project site has about 48 acres of impervious areas (for example pavement, buildings). Both build alternatives would increase the impervious areas by about 4 acres. As a result of the increase in impervious areas, the estimated increase in surface water would be 5,400 cubic feet. The estimated increase in surface water would likely affect the Kern River; therefore, treatment control best management practices (ways to protect water quality) would be implemented as a part of the proposed project. Based on available information, it is expected there is sufficient area to treat the estimated increase in surface water generated from impervious areas with the treatment control best management practices .

Since the Kern River watershed is substantially larger (2.3 million acres) than the project site (48 acres), the project would have minimal impacts to the stormwater runoff because the peak runoff from the project area would have already passed before the peak runoff from the Kern River watershed reaches the project location.

Implementation of the project would result in a nominal increase in the peak discharge in the Kern River; therefore, changes to the water surface level of the Kern River floodway (peak flow in particular) would not be substantial.

With implementation of the proposed best management practices, the additional volume of runoff, due to increased impervious areas, would be captured and allowed to infiltrate. As a result, no substantial decrease in groundwater recharge would occur. Therefore, the project would not substantially deplete groundwater supplies or interfere with groundwater recharge.

Operation of the project has the potential to affect the water quality of the Kern River. Expected pollutants from the project include total suspended solids, nutrients, pesticides, particulate matter, dissolved metals, pathogens, litter, biochemical oxygen demand, and turbidity. Permanent treatment control best management practices would be selected based on the limitations of the project and installed to minimize the potential impact of these pollutants. These treatment control best management practices would substantially reduce pollutants from the existing roadway and from the proposed improvements and widening.

Avoidance, Minimization, and/or Mitigation Measures

The build alternatives would raise the roadway crown elevations along 24th Street, which has the potential to create a higher water surface elevation along the north side

of 24th Street. Implementing higher-capacity stormdrains and larger pipes along the north side of the project would alleviate this problem.

All project-related activities would comply with the requirements of the Clean Water Act and Caltrans National Pollution Discharge Elimination System permit. As part of Caltrans Project Delivery Storm Water Management Program described in the Storm Water Management Plan, selected Construction Site, Design Pollution Prevention, and treatment best management practices would be incorporated into the final design of the project to reduce potential water quality impacts. See Figures 1-5 through 1-11 in Chapter 1 for the proposed locations of the best management practices (indicated as small and large footprint best management practice).

The following avoidance and/or minimization measures would be used for the project to reduce potential water quality impacts:

WQ-1 The proposed project shall develop and implement a Storm Water Pollution Prevention Plan and Erosion and Sedimentation Plan. The proposed project shall implement temporary erosion and sediment control best management practices during construction and implement the requirements of the statewide General Construction permit. Temporary best management practices such as desilting basins, erosion control blankets, and other minimum construction best management practices shall be implemented consistent with the Storm Water Pollution Prevention Plan and Erosion and Sedimentation Plan. In addition, the Storm Water Pollution Prevention Plan shall contain provisions for changes to the plan such as Alternative mechanisms, if necessary, during project design and/or construction could be used to achieve the stated goals and performance standards.

WQ-2 The proposed project shall develop and implement a Standard Urban Storm Water Management Plan and Storm Water Data Report. The proposed project shall be designed to include treatment control best management practice devices such as detention devices, vegetated treatment, and other Caltrans-approved devices per the Storm Water Data Report. Treatment control best management practices shall capture and treat storm water runoff from the project and treat the anticipated targeted design constituents (pollutants) to the maximum extent practicable.

WQ-3 Construction of the extended culvert under 24th Street at Carrier Canal shall require dry conditions to permit construction in the canal. A temporary diversion conduit shall be built next to Carrier Canal to divert flows during construction of the culvert extension. The diversion conduit shall be operational for about three months. Flows shall be redirected to the extended culvert underneath 24th Street following completion of construction activities.

WQ-4 A floodplain encroachment permit shall be obtained from the Central Valley Flood Protection Board for construction activities along the Kern River bridge within 20 feet of the river banks.

2.2.2 Paleontology

Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects (e.g., Antiquities Act of 1906 [16 U.S. Code 431-433], Federal-Aid Highway Act of 1960 [23 U.S. Code 305]), and the Omnibus Public Land Management Act of 2009 [16 U.S. Code 470aaa]). Under California law, paleontological resources are protected by the California Environmental Quality Act.

Affected Environment

The information in this section is based on the *Paleontological Resources Identification and Evaluation Report* (April 2011).

Physical Geography

Paleontological resources (fossils) are defined as any trace of a past life form. While wood, bones, and shells are the most common fossils, under certain conditions soft tissues, tracks, and trails may be preserved as fossils. Fossils are most commonly found in sedimentary rock layers.

The project study area (see Figure 2-23), defined as the Area of Potential Direct Disturbance, is within the southeastern portion of California's Central Valley in the southern San Joaquin Valley, west of the southwestern foothills of the Sierra Nevada and within the San Joaquin Valley Geologic Province.

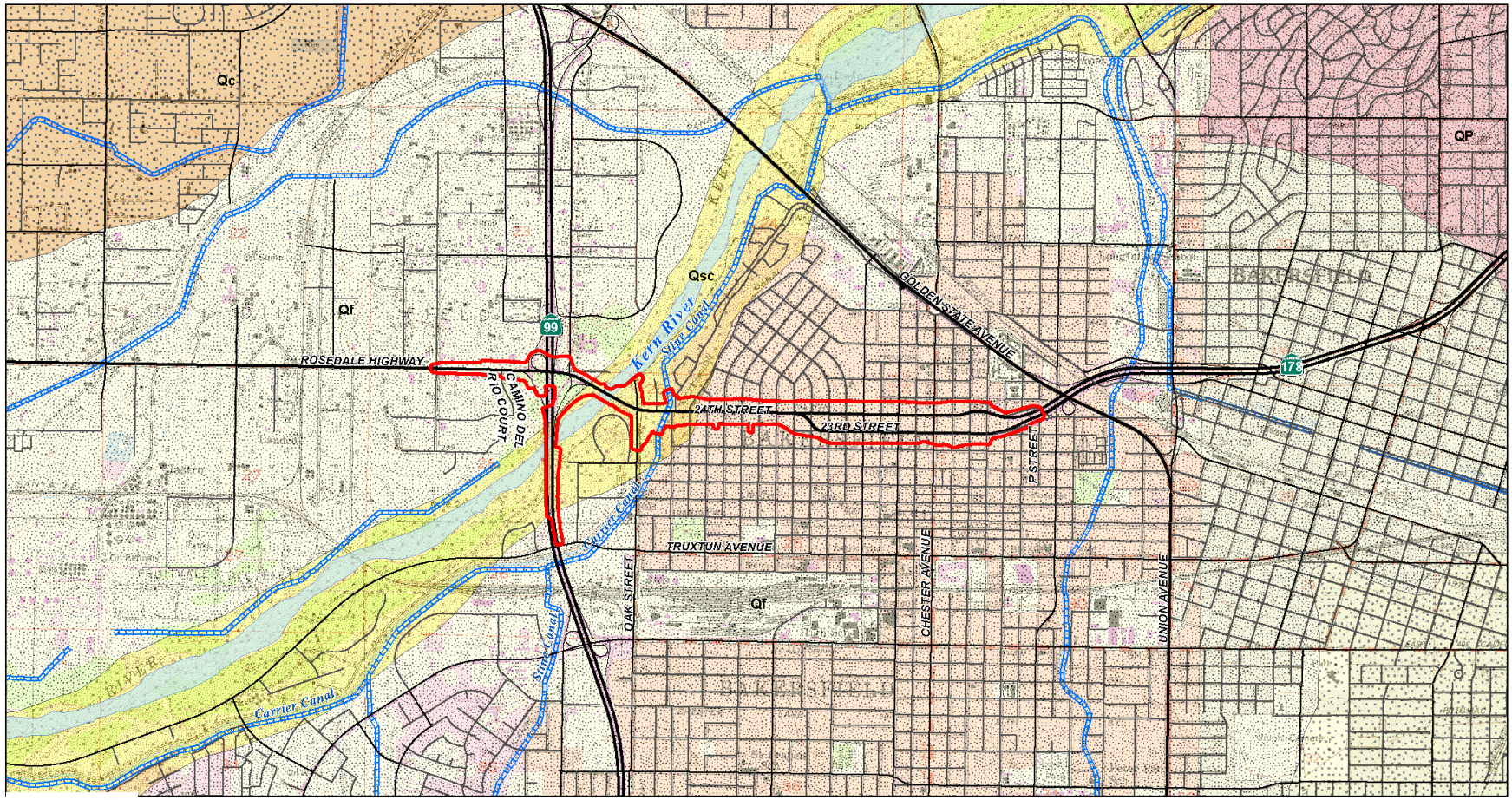


FIGURE 2-23 Geologic Map of Study Area

LEGEND

Paleontological Study Area (After BSA)

Geologic Units

QP, Plio-Pleistocene Nonmarine

Qb, Basin Deposits

Qc, Pleistocene Nonmarine

Qf, Fan Deposits

Qsc, Stream Channel Deposits

0 1,050 2,100 Feet

SOURCE: Kern County, 2007; Geologic Map of Bakersfield 1:250,000 Quad, Smith, 1964; USGS 7.5' Quads: Oildale (1968), Gosford (1973), Oil Center (1973), Lamont (1973), CA.

I:\RBF0608\Reports\EIR\fig2-23_Geology.mxd (04/20/12)

EA 06-493900
EA 06-484700

Geology

The project study area is on the southeast side of California's San Joaquin Valley, west of the southern Greenhorn Mountains (a geologic complex in the southern Sierra Nevada) in west-central Kern County.

The project is on the south side of the Kern River on a flat-topped terrace carved by the Kern River. The late Miocene to Pliocene Kern River Formation crops out on both sides of the Kern River east of the project. Nonmarine Kern River sediments come from the Sierra Nevada, which started rising and shedding sediments about 10 million years ago.

Paleontological Sensitivity

A formation or rock unit has paleontological sensitivity if it previously has produced, or shows properties favorable for, vertebrate fossils and associated or regionally uncommon invertebrate and plant fossils. All sedimentary rocks and certain volcanic and mildly metamorphosed rocks are considered to have sensitivity for paleontological resources.

Per Caltrans environmental standards, the sensitivity of a formation or unit can be designated in one of three categories: high potential, low potential, and no potential. In addition, the Society of Vertebrate Paleontology (1995) provides definitions of sensitivity, including Paleontological Sensitivity and Paleontological Potential.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not include any excavation in the study area. Therefore, the No-Build Alternative would not result in any adverse impacts related to paleontological resources.

Build Alternatives

Impacts to paleontological resources would not result from construction activities required for either of the two build alternatives because impacts to paleontological resources are considered permanent, not temporary. See Permanent Impacts below.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not include any excavation in the study area. Therefore, the No-Build Alternative would not result in any adverse impacts related to paleontological resources.

Build Alternatives

Literature Review

A paleontological resource locality search was done through the Natural History Museum of Los Angeles County, the University of California Museum of Paleontology, and California State University, Bakersfield. The potential for near-surface late Pleistocene fossils from the study area was substantiated by the locality search. In a report for residential development east of the project, the search report documented 27 species of fossils in Qoa1, a layer of late Pleistocene sediment deposited on a terrace that may also underlie the project boundaries. The layer (Qoal) is not shown on Figure 2-23 because it is not exposed at the surface.

A previous field assessment for paleontological resources for the Thomas Roads Improvement Program notes the presence of the latest Pleistocene/early Holocene fan deposits (Qf) (see Figure 2-23 for geologic codes) underlying the area of the proposed project, as well as Holocene stream channel deposits (Qsc) along the Kern River channel and outcrops of Pleistocene sediments (Qc) and Kern River Formation (QP) at a short distance from the proposed project. The previous paleontological assessment called for monitoring proposed project excavations of 5 feet or deeper. The paleontological resources locality search indicated that resource sites are known to occur in sediments in the project vicinity at shallow depths. Based on geologic mapping of the area, latest Pleistocene sediments are exposed on the surface within the project study area. These sediments are of appropriate age to contain paleontological resources.

Field Inspection

A vehicular and foot survey was done in the Area of Potential Disturbance. Exposed brown loam at intersections north and south of 23rd and 24th Streets and Rosedale Highway verified the presence of late Pleistocene/Holocene Alluvium (Qf and Qsc) within the project study area. Sediments also consisted of artificial fill, which is recognizable as lighter in color than the brown, early Holocene sandy loam. Holocene and recent alluvial deposits are not considered to contain substantive paleontological resources.

The summary of excavation parameters indicates that excavation for the project would extend in some areas below 5 feet. Excavation deeper than 5 feet may encounter Pleistocene sedimentary formations and Miocene Kern River formations that could contain significant nonrenewable paleontological resources. Excavation for retaining walls, drainage facilities and the extension of Carrier Canal is expected to reach depths greater than 5 feet within the project study area.

Based on the sensitivity of the area for paleontological resources, excavation below a depth of 5 feet in the latest Pleistocene native sediments within the project study area could result in adverse impacts on nonrenewable paleontological resources. Ground disturbing construction activities such as excavation have the potential to encounter scientifically significant paleontological resouces. This could result in the destruction of unique and valuable scientific specimens and data.

Avoidance, Minimization, and/or Mitigation Measures

The following mitigation measure meets the requirements of both Caltrans and the City of Bakersfield for reducing potential impacts to paleontological resources.

Mitigation Measure

PAL-1 Before completion of final engineering and in accordance with the guidelines in the Caltrans Standard Environmental Reference, a Paleontological Mitigation Plan shall be prepared by a qualified paleontologist for inclusion in the Plans, Specifications, and Estimate and implemented during the excavation phase of the project. The qualified Principal Paleontologist shall attend pregrading meetings and consult with grading and excavation contractors. The construction contractor's employees shall attend paleontological resource awareness training session(s) if they will be involved in earthmoving project activities. The Paleontological Mitigation Plan shall generally discuss fossil discovery, recovery, and subsequent handling. Paleontological monitoring shall be conducted by a qualified individual.

Based on field reviews and the paleontological literature available, it does not appear that full-time monitoring would be required at all of the proposed excavation sites within the project. It is anticipated that only minor monitoring and spot checks would be necessary where soil disturbance below a depth of 5 feet in native sediments would occur.

However, the actual extent of monitoring would be dictated by the design details of the selected alternative and would be determined during design by a qualified Principal Paleontologist (who holds an M.S. or Ph.D. in paleontology or geology, and is familiar with paleontological procedures and techniques). The Principal Paleontologist would review the construction plans with proposed excavation sites and the Paleontological Evaluation Report to determine which, if any, project components would involve earthmoving activities at depths sufficient to warrant development of a Paleontological Mitigation Plan, consistent with Caltrans' Standard Environmental Reference. The Principal Paleontologist would review the construction schedule in order to develop the monitoring schedule and compile accompanying costs. A nonstandard special provision to address paleontological resources would also be incorporated into the construction contract to notify the construction contractor to cooperate with the paleontological monitoring and salvage activities. Paleontological resources should also be discussed at the pre-bid meeting.

2.2.3 Hazardous Waste or Materials

Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

The main federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The Resource Conservation and Recovery Act provides for "cradle to grave" regulation of hazardous wastes. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. Other federal laws include:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act

- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Affected Environment

The analysis of impacts of the project on hazardous waste is based on the *Hazardous Waste Initial Site Assessment* (June 2011) and the *Draft Project Reports* (January 2012).

A database search for the project found four leaking underground storage tank sites within 1 mile of the study area:

- Chevron Station (in the study area at 2317 L Street)
- McKenney's Air Conditioning (430 feet east of the study area at 2323 R Street)
- Beacon 596 Facility (0.38 mile northwest of the study area at 3225 Pierce Road)
- Minit Stop Market (0.42 mile northeast of the study area at 2900 Union Avenue)

All have affected groundwater and are either undergoing remedial action or are in the post-remedial action monitoring phase.

In addition, five state-listed facilities have reported releases that have either affected or may potentially affect groundwater and may pose a potential concern during construction of the project:

- Pacific Gas and Electric Manufactured Gas Plant (0.14 mile southwest of the study area at 800 24th Street between P and Q Streets)
- San Joaquin Drum Company (0.39 mile northwest of the study area at 3930 Gilmore Avenue)
- Phillips Petroleum Company (0.40 mile north of the study area at 3120 Chester Avenue)
- Assured Transportation (0.45 mile northwest of the study area at 3228 Gibson Street)
- Kern Battery Manufacturing (0.07 mile southeast of the study area at 731 21st Street)

Hazardous release sites beyond a 1-mile radius of the study area are generally not considered a potential environmental concern due to their distance from the project and therefore are not discussed in this document. No evidence of spills, accidental releases, or illegal dumping of hazardous materials or hazardous wastes was seen during surveys of the study area on May 14, 2008 and March 11, 2009.

A Regional Wildcat Map (Panel W 4-2, May 1, 2007) was reviewed to determine the presence or absence of oil and gas wells and/or pipelines within the project limits. Two wells were found near the project: Chevron U.S.A. Inc, Kern County Lease No. 5 (about 50 feet northwest of the study area) and Chevron U.S.A. Inc., Kern County Lease Fruitvale (about 0.4 mile southwest of the study area). The California Department of Conservation determined the status of the wells was "inactive."

Several gasoline service stations, car wash services, fast-food restaurants, and automotive repair shops were seen within a quarter-mile of the study area. Based on a vehicular survey done by the City, four service stations sit in the study area: Circle K (2222 F Street), White Wash Car Wash/Jiffy Lube (2301 H Street), Firestone Complete Auto Car (2331 Chester Avenue), and Chevron (2317 L Street).

The following are additional areas analyzed as part of the Initial Site Assessment done for the project:

- **Contaminated Groundwater:** As mentioned previously, four leaking underground storage tank sites and five state-listed sites were found within 1 mile of the study area. These sites are listed in databases indicating a release of hazardous materials into the environment. As a result of these releases, area groundwater has been affected.

- **Hazardous Waste Generators and Handlers:** There are multiple industrial and automotive uses in and near the study area. Many of these locations are classified by the records search as a hazardous waste generator and/or handler. While some of these facilities are not in violation of hazardous waste regulations, hazardous wastes and materials are routinely present at these facilities.
- **Asbestos-Containing Materials in Roadway Structures:** The use of asbestos in many building products was banned by the Environmental Protection Agency by the late 1970s, but many asbestos-containing material categories not previously banned may still be in use today. Asbestos-containing materials represent a concern when they are subject to damage that results in the release of fibers. Asbestos may be found in roadway materials such as rails, bearing pads, support piers, expansion joint material in bridges, asphalt, and concrete within the study area. Based on findings of the Limited Asbestos, Lead Paint and Chromium Survey Report, asbestos-containing materials were not detected within any of the four samples collected from the 24th Street Bridge structure and concrete deck. The types of building materials would be surveyed, sampled, and assessed in accordance with 40 Code of Federal Regulations 763 (Asbestos Hazard Emergency Response Act).
- **Aerially Deposited Lead:** Lead has been known to be used as a gasoline additive. It is recognized as toxic to human health and the environment and is widely regulated in the United States. Lead is regulated as a criteria pollutant under the federal Clean Air Act, which has led to its elimination from automotive fuels. Lead is also regulated as a toxic pollutant under the federal Clean Water Act and the State Porter-Cologne Water Quality Control Act, as well as under the federal and California safe drinking water acts. Aerially deposited lead from past use of leaded vehicle fuels is a concern in unpaved areas next to roads. Based on the findings of the Aerially Deposited Lead Survey (February 2011) for the project, concentrations of lead were found in soils in the existing state right-of-way at levels that and have been characterized as state hazardous waste. Reuse of lead-containing soils onsite is permitted if the project is consistent with the special handling, treatment, or disposal of aerially desposited lead in soils during construction activities specified in the Department of Toxic Substance Control Lead Variance No. V09HQSCD006 (dated July 1, 2009).
- **Asbestos-Containing Materials, Lead-Based Paints in Residential Building Structures and Nonresidential Structures:** As stated earlier, the use of asbestos in many building products was banned by the Environmental Protection Agency by the late 1970s; however, many asbestos-containing material categories not

previously banned may still be in use today. Asbestos-containing materials represent a concern when they are subject to damage that results in the release of fibers. In addition, building structures built before 1978 are presumed to contain lead-based paint, unless proven otherwise, although structures built after 1978 may also contain lead-based paint. Therefore, during final design, a certified consultant should do asbestos-containing materials, lead-based paints, and/or polychlorinated biphenyls surveys of the building structures that would be renovated or demolished for the project.

- **Lead-Based Paints and Lead-Chromium in Yellow Paint and Tape Used for Pavement Marking:** Yellow paint used for traffic striping before 1997 exceeds the hazardous waste criteria under Title 22 California Code of Regulations and would require disposal in a Class I disposal facility authorized to accept this type of waste. The Limited Asbestos, Lead Paint and Chromium Survey Report indicated that traffic striping on the 24th Street bridge over the Kern River contained hazardous concentrations of lead-based paints and lead-chromium, and would require transport to and disposal at a Class I landfill. However, the report did not include the assessment of potential lead-based paints or lead chromium concentrations in yellow paint striping along the remaining portions of the roadway. Therefore, lead-based paint and lead-chromium testing would be required in the remaining portions of the roadway within the study area.
- **Polychlorinated Biphenyls in Pole-Mounted Transformers:** Polychlorinated biphenyls are known hazardous materials found in coolants or lubricating oils used in some electrical transformers as well as other similar equipment before 1976. Pole-mounted electrical transformers, which were seen in the study area, may contain polychlorinated biphenyls. In addition, structures built before 1976 are presumed to have polychlorinated biphenyls in light ballasts and electrical equipment. Transformers should not be considered to be an environmental concern unless they are determined to be leaking.
- **Creosote in Utility Poles.** Unless documentation from the utility company indicates that creosote was not used, all wooden utility poles that are to be removed or relocated as part of the project as well as those soils at the bases of these utility poles would be handled for treated wood waste in accordance with Caltrans Standard Special Provision 14-010 during Plans, Specifications and Estimate or before construction.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not result in construction of any of the proposed roadway improvements and therefore would not result in temporary impacts related to hazardous wastes or materials.

Build Alternatives

Construction of the project would involve the use of chemical agents, solvents, paints, and other hazardous materials associated with construction activities. The amount of these chemicals present during construction (including storage or handling) would be limited and would comply with existing government regulations.

Based on the findings of the Aerially Deposited Lead Survey, concentrations of lead were detected in the soils tested within the existing state right-of-way and have been characterized as state hazardous waste. According to the Caltrans Aerially Deposited Lead Management table, the use of this soil requires a cover of 1 foot of clean soil. Soils within the study area qualify for reuse within the Caltrans right-of-way and must be consistent with the Department of Toxic Substance Control Lead Variance (No. V09HQSCD006) dated July 1, 2009.

Should any excavated soil be removed from the project study area, the soil would be considered hazardous and therefore disposed at a landfill permitted to accept hazardous materials. Soil within the study area not previously tested would require testing and may involve special removal and disposal.

Nine sites within and next to the study area have reported impacts to soil and/or groundwater. Of the nine reported sites, only the Chevron Station at 2317 L Street would be used for a temporary construction easement during construction of the project; however, no impacts to soil and/or groundwater would occur during this temporary use.

Due to the presence of groundwater contamination in the study area and because groundwater dewatering may occur during construction of the project, any dewatering would require compliance with either the General Permit for Waste Discharge Requirements for Dewatering and Other Low-Threat Discharges for Surface Water (Order No. R5-2008-0081/National Pollutant Discharge Elimination System Permit No. CAG995001, adopted on June 12, 2008) or with an individual permit from the

Central Valley Regional Water Quality Control Board. See Section 2.2.1 for additional information.

Temporary construction easements would be placed at the four service stations within the project study area (Circle K at 2222 F Street, White Wash Car Wash/Lube at 2301 H Street, Firestone Complete Auto Car at 2331 Chester Avenue, and Chevron, 2317 L Street). No permanent right-of-way acquisitions would occur, and no excavation at these properties would be required for construction of the proposed improvements to 24th Street.

Implementation of Alternatives 1 and 2 would require 23 full parcel acquisitions (residential). All 23 parcels contain residential structures built between 1905 and 1977. Because these structures were built before 1978, they are presumed to contain asbestos-containing materials and lead-based paint unless proven otherwise. These structures would require an asbestos inspection and lead-based paint survey before demolition to determine the presence or absence of these.

Implementation of Alternative 1 would require 12 nonresidential partial parcel acquisitions. Implementation of Alternative 2 would require 11 nonresidential partial parcel acquisitions. There is a potential for asbestos-containing materials, lead-based paints, and polychlorinated biphenyls to be present within the building materials and the existing light ballasts of non-residential building structures. Therefore, should any nonresidential building structures be disturbed or demolished as part of the proposed project, an asbestos-containing material, lead-based paint and polychlorinated biphenyl survey would be done to determine the presence or absence of these materials.

The project would remove all existing traffic striping and pavement-marking materials from the far-left southbound lane and emergency lane of the 24th Street bridge and the far-right northbound lane and associated emergency lane. Eight paint chip samples of roadway paint striping from within the permitted lane closure area on the 24th Street bridge were collected and analyzed. Concentrations of lead or chromium were found in the eight yellow and white paint chip samples. The six white paint chip samples did not exceed the Total Threshold Limit Concentration for hazardous waste classification for lead or the Total Threshold Limit Concentration for chromium and/or chromium (III) compounds per California Code of Regulations, Title 22. The two yellow paint chip samples contained concentrations of total

chromium above 2,500 milligrams per kilogram and therefore are considered California hazardous waste.

Additionally, the two yellow paint chip samples contained concentrations of total lead above 1,000 milligrams per kilogram and therefore exceed the Total Threshold Limit Concentration for hazardous waste classification. Concentrations of lead and chromium detected in samples collected from the yellow paint striping on the 24th Street bridge are above the California regulatory limits, but below the federal regulatory limits for leachability Toxicity Characteristic Leaching Procedure. When removed, the yellow paint striping would be categorized as hazardous lead and chromium-containing waste and would require transport to and disposal at a Class I landfill.

Yellow paint striping in additional areas within the project study area that have not been tested would require testing and may involve special removal and disposal procedures.

Alternative 1 would remove or relocate 19 wooden utility poles within the study area (see Section 2.1.3). Alternative 2 would remove or relocate 16 wooden utility poles within the study area (see Section 2.1.3). Before removal or relocation, the wooden utility poles as well as those soils at the bases of the poles would need to be tested for creosote (unless documentation from the utility company indicates that creosote was not used). If creosote is detected in samples taken from either the utility poles or the soils beneath the utility poles, such material would be disposed of at an appropriate classified waste facility. See Section 2.1.3 for a discussion of potential impacts to additional utility transmission lines, pipelines, and facilities.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not result in construction of any of the proposed roadway improvements and therefore would not result in permanent impacts related to hazardous wastes or materials.

Build Alternatives

Impacts associated with hazardous materials or hazardous waste are limited to the construction phase of the project, and therefore no permanent impacts would result from implementation of the project. Permanent impacts (direct or indirect) related to hazardous materials are not expected as a result of operation of the build alternatives since operation of the project (traffic use of expanded 24th Street and

related interchange and intersection improvements) would not generate any hazardous waste.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would reduce potential impacts related to hazardous wastes and materials during construction of the project:

HAZ-1 Before construction, a site-specific Health and Safety Plan consistent with Caltrans requirements, including identification of key personnel, summary of risk assessment for workers, the community, and the environment, Air Monitoring Plan, and Emergency Response Plan, shall be prepared.

HAZ-2 Asbestos, lead-based paint, and polychlorinated biphenyl surveys shall be conducted by a certified consultant for any building structures that would be renovated or demolished as part of the proposed project. Surveys for asbestos, lead-based paint, and polychlorinated biphenyl surveys of building structures shall be conducted during preparation of project construction plans and when access to parcels outside the existing right-of-way is available. Estimates during the Plans, Specifications, and Estimates phase of the proposed project shall include provisions for proper removal and disposal by a licensed contractor registered with the California Occupational Safety and Health Administration for asbestos-related work, or by a licensed and certified asbestos abatement contractor.

HAZ-3 During final design, all utility pole-mounted and pad-mounted transformers in the study area shall be inspected for leaks. Leaking transformers shall be considered a potential polychlorinated biphenyl hazard unless tested and shall be handled accordingly.

HAZ-4 Removal of yellow paint striping on the 24th Street bridge over the Kern River during construction shall require transport and disposal to a Class 1 landfill. Depending on the method of removal, appropriate Standard Special Provisions shall be provided regarding handling, transport, and disposal of traffic stripe/pavement marking-generated waste.

HAZ-5 Special handling, treatment, or disposal of aerially deposited lead in soils during construction activities shall be consistent with the Department of Toxic Substance Control Lead Variance (No. V09HQSCD006) dated July 1, 2009.

HAZ-6 All wooden utility poles that are to be removed or relocated as part of the proposed project, as well as those soils at the bases of these utility poles (unless documentation from the utility company indicates that creosote was not used), shall be handled for treated wood waste in accordance with Caltrans Standard Special Provision 14-010.

HAZ-7 Before construction, the utility company shall be notified to ensure that the locations of underground transmission lines and facilities are marked. In addition, Underground Service Alert of Southern California shall be contacted at least two working days before subsurface excavation.

HAZ-8 The procedures outlined in Caltrans Unknown Hazards Procedures for Construction shall be followed during construction in the event that an unknown hazardous contamination is revealed or unknown hazardous waste/material is encountered.

HAZ-9 Any demolition or renovation of a building structure requires notification and submittal fees to the San Joaquin Valley Air Pollution Control District at least 10 days before proceeding with the demolition work. Contractors shall adhere to the requirements of San Joaquin Valley Air Pollution Control District during renovation/activities.

HAZ-10 When lead-impacted soils are identified, a Lead Compliance Plan shall be prepared by the contractor to prevent or minimize worker exposure to lead from handling material containing aerially-deposited lead (California Code of Regulations, Title 8, Section 1532.1). This plan shall also be required for work performed on painted structures. The contractor shall prepare a written, project-specific Excavation and Transportation Plan establishing procedures the contractor shall use for excavating, stockpiling, transporting, and placing (or disposing) of material containing aerially deposited lead. The plan must conform to Department of Toxic Substance Control and California Occupational Safety and Health Administration regulations. For samples where lead

levels exceed hazardous waste criteria, the excavated soil shall be either managed or disposed of as a California hazardous waste or stockpiles and resampled to confirm waste classification and potential utilization of Caltrans' hazardous waste variance agreement to recycle soil on site. The appropriate Standard Special Provision shall be included in the Plans, Specifications, and Estimate.

2.2.4 Air Quality

Regulatory Setting

The Federal Clean Air Act as amended in 1990 is the federal law that governs air quality. The California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency and the California Air Resources Board, set standards for the quantity of pollutants that can be in the air.

At the federal level, these standards are called National Ambient Air Quality Standards. National Ambient Air Quality Standards and State Ambient Air Quality Standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide, nitrogen dioxide, ozone, particulate matter (broken down for regulatory purposes into particles of 10 micrometers or smaller and particles of 2.5 micrometers and smaller), lead, and sulfur dioxide. In addition, State standards exist for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

The National Ambient Air Quality Standards and State standards are set at a level that protects public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and state air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act and the California Environmental Quality Act. In addition to this type of environmental analysis, a parallel "Conformity" requirement under the Federal Clean Air Act also applies.

Federal Clean Air Act Section 176(c) prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that are not first found to conform to State Implementation Plan for achieving

the goals of Clean Air Act requirements related to the National Ambient Air Quality Standards. "Transportation Conformity" takes place on two levels: the regional, or planning and programming, level, and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the National Ambient Air Quality Standards, and only for the specific National Ambient Air Quality Standards that are or were violated. U.S. Environmental Protection Agency regulations at 40 Code of Federal Regulations 93 govern the conformity process.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for carbon monoxide, nitrogen dioxide , ozone, particulate matter less than 10 microns in diameter and particulate matter less than 2.5 microns in diameter, and in some areas sulfur dioxide. California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except sulfur dioxide, and also has a nonattainment area for lead. However, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis.

Regional conformity is based on Regional Transportation Plans and Federal Transportation Improvement Programs that include all of the transportation projects planned for a region over a period of at least 20 years (for the Regional Transportation Plan), and 4 years (for the Federal Transportation Improvement Plan). Regional Transportation Plan and Federal Transportation Improvement Plan conformity is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the Clean Air Act and the State Implementation Plan are met.

If the conformity analysis is successful, the Metropolitan Planning Organization and the Federal Highway Administration and Federal Transit Administration, make the determinations that the Regional Transportation Plan and Federal Transportation Improvement Plan are in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan and/or Federal Transportation Improvement Plan must be modified until conformity is attained.

If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the Regional Transportation Plan

and the Federal Transportation Improvement Plan, 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 carbon monoxide and/or particulate matter (particulate matter less than 10 microns in diameter or particulate matter less than 2.5 microns in diameter). A region is "nonattainment" if one or more of the monitoring stations in the region measures violation of the relevant standard, and U.S. Environmental Protection Agency officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by U.S. Environmental Protection Agency, and are then called "maintenance" areas.

"Hot spot" analysis is essentially the same, for technical purposes, as carbon monoxide or particulate matter analysis performed for National Environmental Policy Act purposes. Conformity does include some specific procedural and documentation standards for projects that require a "hot spot" analysis. In general, projects must not cause the "hot spot"-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known carbon monoxide or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Affected Environment

The information in this section is based on the *Air Quality Assessment Report* (June 2011) prepared for the project.

Climatic Conditions

The project study area lies in Kern County, an area within the San Joaquin Valley Air Basin. The air basin is about 250 miles long and averages 35 miles wide. Because of the topography, the air basin is highly susceptible to pollutant accumulation over time, which can be exacerbated by local climatological effects, such as wind speed and temperature.

The climatological station monitoring temperatures closest to the project is at Bakersfield's Meadows Field Airport. The monthly average temperature for the last 72 years has ranged from 38.4 degrees Fahrenheit in January to 98.6 degrees Fahrenheit in July. Most of the annual rainfall in the San Joaquin Valley Air Basin occurs between November and April. Summer rainfall is minimal and generally

limited to scattered thundershowers along the coastal side of the mountains. The annual total rainfall measured at the monitoring station is 6.14 inches.

Criteria Pollutants

Criteria pollutants are defined as those pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health, and prevent degradation of the environment (impairment of visibility, damage to vegetation and property). The standards for these pollutants are shown in Table 2.14.

Data collected at permanent air quality monitoring stations are maintained by the local air districts and state air quality regulatory agencies. Data collected at permanent monitoring stations are used by the U.S. Environmental Protection Agency to identify regions as "attainment," "nonattainment," or "maintenance." The proposed project is in a state and federal attainment or attainment/unclassified area for the carbon monoxide, nitrogen dioxide, and sulfur dioxide. Therefore, conformity requirements do not apply to these pollutants. The San Joaquin Valley Air Basin is a state nonattainment area for ozone (8-hour) and particulate matter less than 2.5 microns in diameter and less than 10 microns in diameter and a severe nonattainment area for ozone (1-hour). Additionally, the San Joaquin Valley Air Basin is a federal nonattainment area for ozone and particulate matter less than 2.5 microns in diameter, and thus is subject to conformity requirements for those pollutants.

Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive populations (called "sensitive receptors") near localized sources of toxics and carbon monoxide are of particular concern. Land uses near the project considered to be sensitive receptors include single- and multi-family residences (as close as 100 feet away) and a preschool/church about 200 feet from the project.

Table 2.14. National and California Ambient Air Quality Standards and Attainment Status

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]			Attainment Status
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]	
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	No federal standard	Same as Primary Standard	Ultraviolet Photometry	Federal: No standard State: Severe Nonattainment
	8-Hour	0.07 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)			Federal: Serious Nonattainment State: Nonattainment
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	Federal: Attainment State: Nonattainment
	Annual Arithmetic Mean	20 µg/m^3		–			
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	Federal: Nonattainment State: Nonattainment
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3			
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Nondispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Nondispersive Infrared Photometry (NDIR)	Federal: Attainment/ Unclassified State: Attainment/ Unclassified
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)			
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–			
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (56 µg/m^3)	Gas Phase Chemiluminescence	53 ppb (100 µg/m^3) [8]	Same as Primary Standard	Gas Phase Chemiluminescence	Federal: Attainment/ Unclassified State: Attainment
	1-Hour	0.18 ppm (338 µg/m^3)		100 ppb (188 µg/m^3) [8]	None		
Sulfur Dioxide (SO_2)	24-Hour	0.04 ppm (105 µg/m^3)	Ultraviolet Fluorescence	–	–	Spectrophotometry (Pararosaniline Method)	Federal: Attainment/ Unclassified State: Attainment
	3-Hour	–		–	0.5 ppm (1300 µg/m^3) [9]		
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3) [9]	–		
Lead[10]	30-day average	1.5 µg/m^3	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption	Federal: Attainment/ Unclassified State: Attainment/ Unclassified
	Calendar Quarter	–		1.5 µg/m^3	Same as Primary Standard		
	Rolling 3-Month Average[10]	–		0.15 µg/m^3			
Visibility-Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards			Federal: No standard State: Attainment/ Unclassified
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography				
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence				
Vinyl Chloride[9]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography				

Source: *Air Quality Assessment Report* (June 2011).

Footnotes provided on the following page

Footnotes:

[1] California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1- and 24-hour); nitrogen dioxide; suspended particulate matter (PM_{10}, and $PM_{2.5}$), and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.

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

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

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

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

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

[8] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

[9] On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated State monitoring networks. The EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by the EPA. Note that the new standard is in units of pars per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

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

[11] National lead standard, rolling 3-month average: final rule signed October 15, 2008.

ARB = California Air Resources Board
°C = degrees Celsius
EPA = United States Environmental Protection Agency
mg/m^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
ppm = parts per million
ppb = parts per billion

Environmental Consequences

Regional Air Quality Conformity

Conformity determinations require the analysis of direct and indirect emissions associated with the project and their comparison to the no-build condition. If the total of direct and indirect emissions from the project reaches or exceeds the regionally significant thresholds, the California Environmental Quality Act Lead Agency (the City of Bakersfield) must perform a conformity determination to demonstrate the positive conformity of the federal action.

The proposed project is listed in the Kern Council of Governments 2010/2011-2013/ 2014 Federal Transportation Improvement Program Amendment No. 4, which was found to conform by the Metropolitan Transportation Planning Organization on June 2, 2011, and Federal Highway Administration and Federal Transit Administration made a regional conformity determination on May 9, 2011.[1] The project is also included in the 2011 financially constrained Regional Transportation Plan Amendment No. 1.[2] The design concept and scope of the proposed project is consistent with the project description in the 2011 Regional Transportation Plan and the 2010/2011-2013/2014 Federal Transportation Improvement Plan, and the open-to-traffic assumptions of the Kern Council of Governments regional emissions analysis.

Project-Level Conformity

The build alternatives are expected to improve traffic flow and reduce delay and congestion. The result of the air quality analysis for the project is that no exceedances of the national ambient air quality standards would occur as a result of the build alternatives. In an interagency confirmation email to Caltrans, dated July 30, 2010, the Federal Highway Administration confirmed that the project was of no air quality concern.

---

1 Federal Transportation Improvement Program Project ID: KER050110; Description: In Bakersfield: SR-178 widening (24th/23rd St) from Oak St to east of M Street; widen existing highway. KER020605; Description; In Bakersfield: 24th Street (SR 178) and Oak Street; construct intersection improvements.

2 Regional Transportation Plan Project ID: KER08RTP014; Description: 24th Street- RT178- Rt 178 (24th and 23rd St) Oak St to M Street – widen existing highway. KER08RTP012; Description: Oak St/24th Street – Rt 178 (24th St) and Oak St – construct improvements.

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not include any construction activities. Therefore, the No-Build Alternative would result in no adverse temporary construction impacts related to air quality.

Build Alternatives

Short-term air pollutant emissions associated with the project include fugitive dust from grading/site preparation and equipment exhaust. Construction of the project would not require more than five years to complete. Therefore, a detailed construction air quality analysis is not required for conformity purposes.

Construction activities produce combustion emissions from various sources, such as site grading, utility engines, onsite heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew. Exhaust and fugitive dust emissions generated during project construction would vary daily as construction activity levels change. Construction of the project would result in 5 acres or more of disturbed surface area (for non-residential development), requiring submittal of a Dust Control Plan to the San Joaquin Valley Air Pollution Control District before construction.

While detailed construction equipment exhaust calculations were not performed, it is assumed that the Rule 9510 threshold of two tons of nitrogen oxide would be exceeded by the construction of the project.

Permanent Impacts

No-Build Alternative

Under the No-Build Alternative, no improvements to the study area would be made and intersection Levels of Service and queuing (traffic backups) would not improve. Traffic improvement projects result in improved air quality due to reduced idling time and more efficient operations. Therefore, the No-Build Alternative would result in adverse impacts related to air quality.

Build Alternatives

The purpose of the project is to alleviate existing and future traffic congestion along 24th Street during peak hours. The project would not generate new vehicular traffic trips since it would not involve construction of new homes or businesses. However, it's possible that some motorists currently using other routes would be attracted to using the improved facility, resulting in increased vehicle miles traveled along 24th

Street. Therefore, the potential impact of the proposed roadway improvement project on regional vehicle emissions was calculated using traffic data for the proposed project region and emission rates from the EMFAC2007 emission model.

The vehicle miles traveled and vehicle hours traveled data, along with the EMFAC2007 emission rates, were used to calculate the reactive organic gas and nitrous oxide emissions for the 2015 (opening year) and 2035 (long-range) regional conditions. Results of the modeling are summarized in Tables 2.15 and 2.16.

Table 2.15. Build Alternatives–2015 Regional Vehicle Emissions (tons/year)

Pollutant	2015 Baseline Emissions	2015 Build Alternative Emissions	Project-Related Change	SJVAPCD Threshold
ROG	86	84	-2	10
NO_x	494	492	-2	10
CO_2	544,492	537,087	-7,405	

Source: *Air Quality Assessment Report* (June 2011).
Baseline Emissions = No Build/Without Project
CO_2 = carbon dioxide
NO_x = oxides of nitrogen
ROG = reactive organic gas
SJVAPCD = San Joaquin Valley Air Pollution Control District

Table 2.16. Build Alternatives–2035 Regional Vehicle Emissions (tons/year)

Pollutant	2035 Baseline Emissions	2035 Build Alternative Emissions	Project-Related Change	SJVAPCD Threshold
ROG	34	32	-2	10
NO_x	195	194	-1	10
CO_2	723,567	713,755	-9,812	

Source: *Air Quality Assessment Report* (June 2011).
Baseline Emissions = No Build/Without Project
CO_2 = carbon dioxide
NO_x = oxides of nitrogen
ROG = reactive organic gas
SJVAPCD = San Joaquin Valley Air Pollution Control District

As shown in Tables 2.15 and 2.16, the project would reduce the vehicle emissions within the region both for the opening year (by 2 tons per year for regional organic gases and oxides of nitrogen, and 7,405 tons per year carbon dioxide) and over the long term by 2 tons per year for regional organic gases, 1 ton per year for oxides of nitrogen, and 9,812 tons per year of carbon dioxide. Therefore, the project would improve air quality by reducing regional vehicle emissions, thus improving future air quality.

Carbon Monoxide Screening Analysis

The project is not expected to result in any concentrations exceeding the 1-hour or 8-hour carbon monoxide standards. Therefore, a detailed CALINE4 hot spot analysis for carbon monoxide was not required.

Particulate Matter Less than 2.5 Microns in Diameter/Particulate Matter Less than 10 Microns in Diameter Hot Spot Analysis

The project is within a nonattainment area for federal particulate matter less than 2.5 microns in diameter standards. Therefore, per 40 Code of Federal Regulations, Part 93, analyses are required for conformity purposes. However, the Environmental Protection Agency does not require hot spot analyses, qualitative or quantitative, for projects that are not listed in Section 93.123(b)(1) as a Project of Air Quality Concern. The project does not qualify as a Project of Air Quality Concern for the following reasons:

1) The project is an expanded highway project, but the current and projected number of diesel vehicles represents 4 percent of the total traffic, and there would not be a substantial increase in diesel vehicles.
2) The project affects intersections operating at Level of Service D, E, or F but would not have a substantial number or increase in diesel vehicles. The project would reduce delay and improve Level of Service at the intersections in the project vicinity.
3) The project does not include construction of or expansion of an existing bus or rail terminal, and,
4) The project is not in a location, area, or site category identified in the applicable particulate matter less than 2.5 microns in diameter implementation plan or implementation plan submission as a site of violation or possible violation. Additionally, the project would not affect any such location, area, or site category.

A qualitative project-level particulate matter hot spot analysis was presented to the Kern Council of Governments for review on August 25, 2009. Per Caltrans Headquarters policy, all nonexempt projects must be reviewed by the Kern Council of Governments. The Kern Council of Governments on August 2, 2010 approved the project-level particulate matter hot spot analysis and concurred that the project would not have an adverse impact on air quality, and that it meets the requirements of the California Clean Air Act and 40 Code of Federal Regulations 93.116. A copy of the Kern Council of Governments finding is included in Chapter 4.

A quantitative projet-level particulate matter hot spot analysis was prepared for the project to determine if the project would result in a local impact on particulate matter less than 2.5 microns in diameter and particulate matter less than 10 microns in diameter emission concentrations. The analysis concluded that implementation of the build alternatives would reduce the existing (2010) particulate matter less than 2.5 microns in diameter emissions by about 3 percent and the particulate matter less than 10 microns in diameter emissions by about 65 percent. Therefore, implementation of the build alternatives would result in a decrease in the future (2035) particulate matter less than 2.5 microns in diameter and particulate matter less than 10 microns in diameter emissions.

Naturally Occurring Asbestos

Chrysotile and amphibole asbestos (such as tremolite) occurs naturally in certain geologic settings in California, most commonly in association with ultramafic rocks and along associated faults. Asbestos is a known carcinogen, and inhalation of asbestos may result in the development of lung cancer or mesothelioma. The California Air Resources Board regulates the amount of asbestos in crushed serpentinite used in surfacing applications, such as gravel on unpaved roads. The California Air Resources Board has also adopted a new rule requiring dust control best management practices for activities that disturb rock and soil containing naturally occurring asbestos.

The project is in Kern County, which is among the counties listed as containing serpentine and ultramafic rock. However, according to the State Division of Mines and Geology, there is no ultramafic rock containing naturally occurring asbestos in the project study area. Therefore, there would be no impact from naturally occurring asbestos during project construction. See Section 2.2.3, Hazardous Waste or Materials, for a discussion on asbestos-containing materials in structures.

Qualitative Project-Level Mobile Source Air Toxics

In addition to the criteria pollutants for which there are national ambient air quality standards, the Environmental Protection Agency also regulates air toxics per the Clean Air Act. Most air toxics originate from human-made sources, including on-road mobile sources, nonroad mobile sources (such as airplanes), area sources (such as dry cleaners), and stationary sources (such as factories or refineries). The seven mobile source air toxics compounds are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter.

There are considerable uncertainties associated with estimating health impacts and toxicity for the various mobile source air toxics compounds. Consequently, the results of such quantitative assessments would not be useful to decision makers, who would need to weigh this information against project benefits (such as reduction of traffic congestion, accident rates, and fatalities plus improved access for emergency response) that are better suited for quantitative analyses.

Qualitative Project-Level Mobile Source Air Toxics Analysis

For each of the project alternatives, the amount of mobile source air toxics emitted would be proportional to the vehicle miles traveled, assuming that other variables such as fleet mix are the same for each alternative. The proposed project is a roadway improvement project to alleviate existing and future traffic congestion along 24th Street during peak hours. This type of project improves roadway operations by reducing traffic congestion and improving traffic operations. The proposed project would either reduce the delay and improve the Level of Service or maintain the delay and Level of Service at the existing level.

For all of the future alternatives (No-Build and Build), emissions are projected to be lower than present levels in the design year as a result of the Environmental Protection Agency's national control progams, which are projected to reduce mobile-source air toxics emissions by 72 percent between 1999 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, vehicle miles traveled growth rates, and local control measures. However, the magnitude of the Environmental Protection Agency-projected reductions is so great (even after accounting for vehicle miles traveled growth) that mobile source air toxics emissions in the study area are likely to be lower in the future than they are today.

Under the project build alternatives, it is expected that there would be similar or lower mobile source air toxics emissions in the study area relative to the No-Build Alternative due to the Level of Service improvement achieved by the project. On a regional basis, the Environmental Protection Agency's vehicle and fuel regulations, coupled with fleet turnover, would substantially reduce mobile source air toxics over time that, in almost all cases, would cause regionwide mobile source air toxics levels to be substantially lower within the study area than they are today.

Kern Council of Governments Air Quality Management Plan Consistency Analysis

An Air Quality Management Plan describes air pollution control strategies to be taken by counties or regions classified as nonattainment areas. The management plan's main purpose is to bring the area into compliance with the requirements of federal and state air quality standards. The management plan uses the assumptions and projections of local planning agencies to determine control strategies for regional compliance status. Therefore, any projects causing a significant impact on air quality would impede the progress of the management plan. For a project in the air basin to be consistent with the management plan, the pollutants emitted from the project must not exceed the San Joaquin Valley Air Pollution Control District significance threshold or cause a significant impact on air quality. If feasible avoidance, minimization, and mitigation measures can be implemented to reduce the project's impact level from significant to less than significant under the California Environmental Quality Act, the proposed project is considered to be consistent with the management plan.

Because the management plan is based on projections from local General Plans, projects that are consistent with the local General Plan are considered consistent with the management plan. The proposed build alternatives would not substantially contribute to or cause deterioration of existing air quality; therefore, mitigation measures are not required for the long-term operation of the project. Therefore, the proposed build alternatives are considered consistent with the City of Bakersfield and Kern County General Plans and the San Joaquin Valley Air Pollution Control District and Kern Council of Governments forecasts, and are therefore consistent with the management plan.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would be implemented as part of the build alternatives to reduce or minimize air pollutant emissions associated with construction activities:

Avoidance and Minimization Measures

AQ-1 San Joaquin Valley Air Pollution Control District Regulation VIII, Control Measures for Construction Emissions of Particulate Matter Less than 10 Microns in Size, shall be implemented at all construction sites. Per San Joaquin Valley Air Pollution Control District Regulation VIII, Rule 8021, a fugitive dust control plan shall be submitted to the

Air Pollution Control Officer of the San Joaquin Valley Air Pollution Control District before the start of any onsite construction activity.

AQ-2 The project contractors shall implement the following feasible measures:

Enhanced Control Measures

- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.

Additional Control Measures

- Install wheel washers for all exiting trucks, or wash all trucks and equipment leaving the site.
- Install wind breaks at the windward side(s) of construction areas.
- Suspend excavation and grading activity when winds exceed 20 miles per hour.
- Limit the area subject to excavation, grading, and other construction activity at any one time.

Heavy-Duty Equipment (scrapers, graders, trenchers, earthmovers, etc.) Measures

- Use alternative-fueled equipment or catalyst-equipped diesel construction equipment.
- Minimize idling time (such as 5 minutes maximum).
- Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).
- Curtail construction during periods of high ambient pollutant concentrations; this may include stopping construction activity during the peak hour of vehicular traffic on adjacent roadways.
- Implement activity management (such as rescheduling activities to reduce short-term impacts).

AQ-3 All trucks that are to haul excavated or graded materials onsite shall comply with California Vehicle Code Section 23114, with special

attention to Sections 23114(b)(F), (e)(2), and (e)(4) as amended, regarding the prevention of such materials from spilling onto public streets and roads.

AQ-4 The contractor shall adhere to the Caltrans Standard Specifications for Construction (Sections 10 and 18, Dust Control; and Section 39-3.06, Asphalt Concrete Plant Emissions).

AQ-5 Before applying for a final discretionary approval, the City of Bakersfield shall comply with the San Joaquin Valley Air Pollution Control District Regulation IX, Mobile and Indirect Sources, Rule 9510, Indirect Source Review, and submit an Air Impact Assessment to the San Joaquin Valley Air Pollution Control District.

Climate Change

Climate change is analyzed in Chapter 3 under the California Environmental Quality Act Evaluation. Neither the Envrionmental Protection Agency nor the Federal Highway Administration has come out with explicit guidance or methodology to do project-level greenhouse gas analysis. As stated on the Federal Highway Administration's climate change website (http://www.fhwa.dot.gov/hep///htm), climate change considerations should be integrated throughout the transportation decision making process from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision making and improve efficiency at the program level, plus inform the analysis and stewardship needs of project-level decision making.

Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the California Environmental Quality Act chapter of this environmental document and may be used to inform the National Environmental Policy Act decision. The four strategies set forth by Federal Highway Administration to lessen climate change impacts correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change. The strategies include improved transportation

system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours traveled.

2.2.5 Noise

Regulatory Setting

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the broad basis for analyzing and abating the effects of highway traffic noise. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between the National Environmental Policy Act and the California Environmental Quality Act.

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a project will have a noise impact. If a project is found to have a significant noise impact under the California Environmental Quality Act, then the act dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. See Section 3.2.2 for a discussion of Noise under the California Environmental Quality Act.

National Environmental Policy Act and 23 Code of Federal Regulations 772

For highway transportation projects with Federal Highway Administration involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria that are used to determine when a noise impact would occur. The noise abatement criteria differ depending on the type of land use under analysis. For example, the criterion for residences (67 decibels) is lower than the criterion for commercial areas (72 decibels).

Table 2.17 lists the noise abatement criteria for use in the National Environmental Policy Act and 23 Code of Federal Regulations 772 analysis. Table 2.18 shows the noise levels of typical activities.

Table 2.17. Activity Categories and Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, A-weighted Noise Level, dBA $L_{eq}(h)$	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Caltrans Traffic Noise Analysis Protocol (2006).
dBA are adjusted to approximate the way humans perceive sound.
$L_{eq}(h)$ is the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual time-varying levels over one hour.

Table 2.18. Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 300m (1000 ft)		
	100	
Gas Lawn Mower at 1 m (3 ft)		
	90	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)		Food Blender at 1 m (3 ft)
	80	Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime		
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		
		Library
Quiet Rural Nighttime	30	Bedroom at Night, Concert Hall (Background)
	20	Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans Standard Environmental Reference (2010).

In accordance with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects,* August 2006, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12-decibel or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 decibel of the criteria.

If it is determined that the project would have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5 dbA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, newly constructed development versus development pre-dating 1978.

Affected Environment

The information in this section is based on the *Noise Study Report* (April 2011) and the *Noise Abatement Decision Report* (April 2011).

Surrounding Land Use and Sensitive Receivers

Existing land uses in the project area include single- and multi-family residences, a recreational vehicle park, parks, a preschool/church, hotels, a motel, office and commercial uses, and vacant land. In addition to parks and schools, other outdoor areas where people frequently gather to sit or eat include areas such as offices and commercial uses. People can remain at these locations for a prolonged period of time (one hour or more). For commercial uses, only outdoor eating areas associated with sit-down restaurants were considered frequent human use areas because the expected use would be 1 hour or more. But outdoor eating areas associated with fast food restaurants were not considered frequent outdoor human use because the expected use would be less than 1 hour.

Existing Noise Levels

Short-Term Monitoring

The main source of noise in the project area is traffic on State Route 99, 23rd Street, and 24th Street. Short-term (15-minute) noise measurements documented existing

noise levels at 25 representative sensitive receiver locations along the project corridor. These short-term noise measurements were used to calibrate the noise model and to calculate the noise levels at all 132 modeled sensitive receivers representing frequent outdoor uses in the project study area. No receivers were modeled to represent vacant land on the southeastern corner of 24th Street and Oak Street because the land is zoned commercial and would not have frequent human use areas in the future. Short-term monitoring locations are shown in Figures 2-24 and 2-25.

Noise Model Calibration

A total of 25 separate model runs were performed using the traffic counts collected during the ambient noise monitoring. The results of these model runs were compared to the measured ambient noise levels to ensure the accuracy of the Federal Highway Administration Traffic Noise Model Version 2.5. Correction factors, known as K-factors, were applied to each of the modeled receiver locations so that the monitored and modeled noise levels were the same.

Long-Term Monitoring

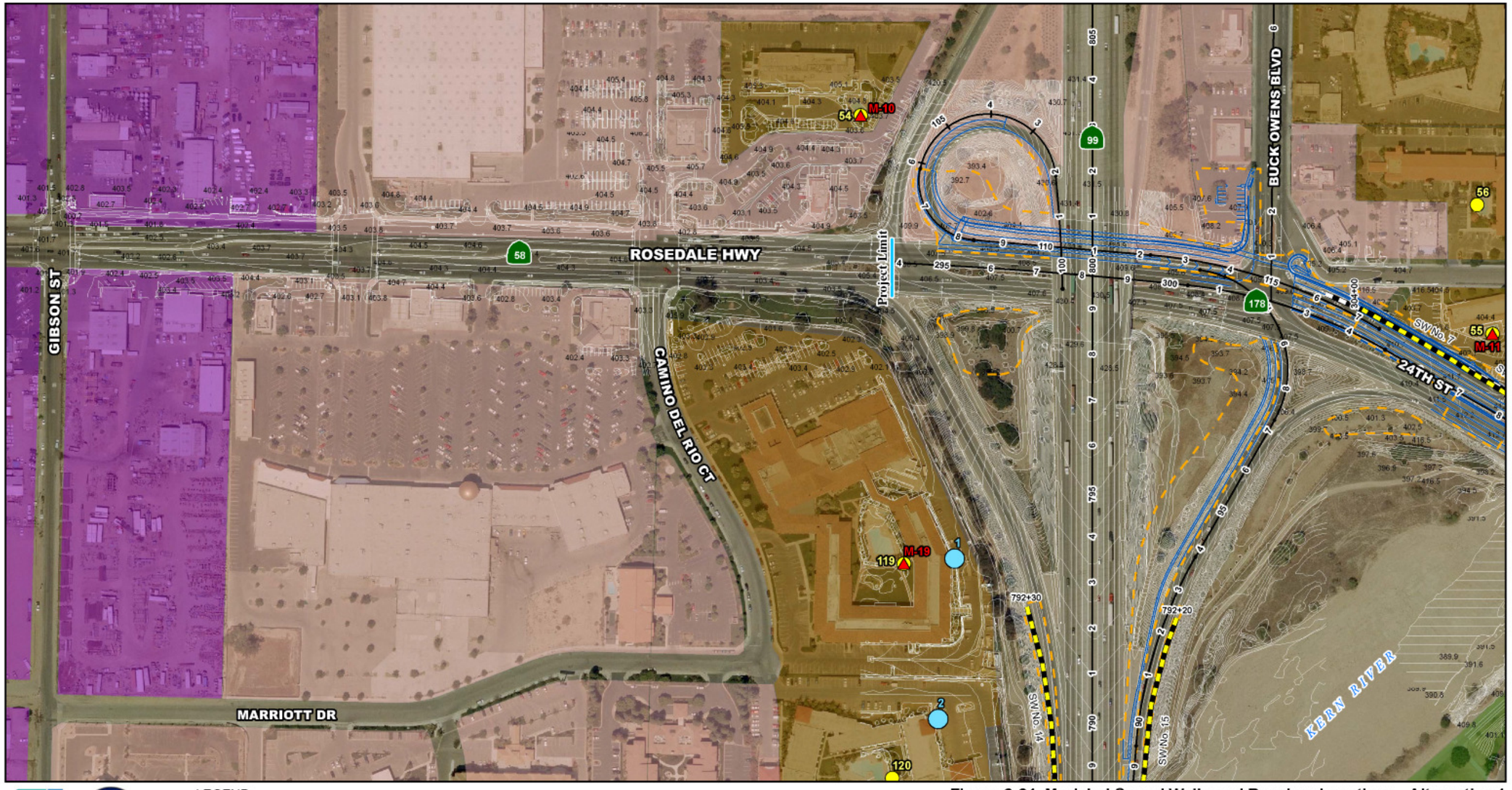
One long-term 24-hour noise level measurement was done at 2323 Elm Street in Bakersfield to document the peak traffic noise hour. The long-term noise level measurement was performed from 1:00 p.m. on Wednesday, March 11, 2009, to 1:00 p.m. on Thursday, March 12, 2009. The long-term noise monitoring location is shown in Figures 2-24 and 2-25, M-2.

Interior/Exterior Noise Level Measurements

Interior and exterior noise levels were measured simultaneously at the Doubletree Hotel, Red Lion Hotel, and Garden Christian Preschool/Church to determine exterior-to-interior noise level reduction. Hotel rooms and the classroom closest to the roadway were evaluated to ensure that the interior noise standard of 52 dBA L_{eq} noise abatement criterion was preserved.

Existing Noise Levels

Figures 2-24 and 2-25 show the locations of the modeled receivers. Of the 132 modeled receiver locations, 16 receivers currently approach or exceed Category B (67 dBA equivalent continuous noise level noise abatement criterion) under the existing peak traffic noise conditions (locations are noted in bold in Table 2.19).



LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 1 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

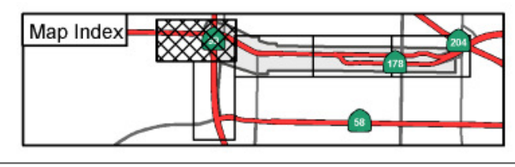
- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

0 115 230 FEET

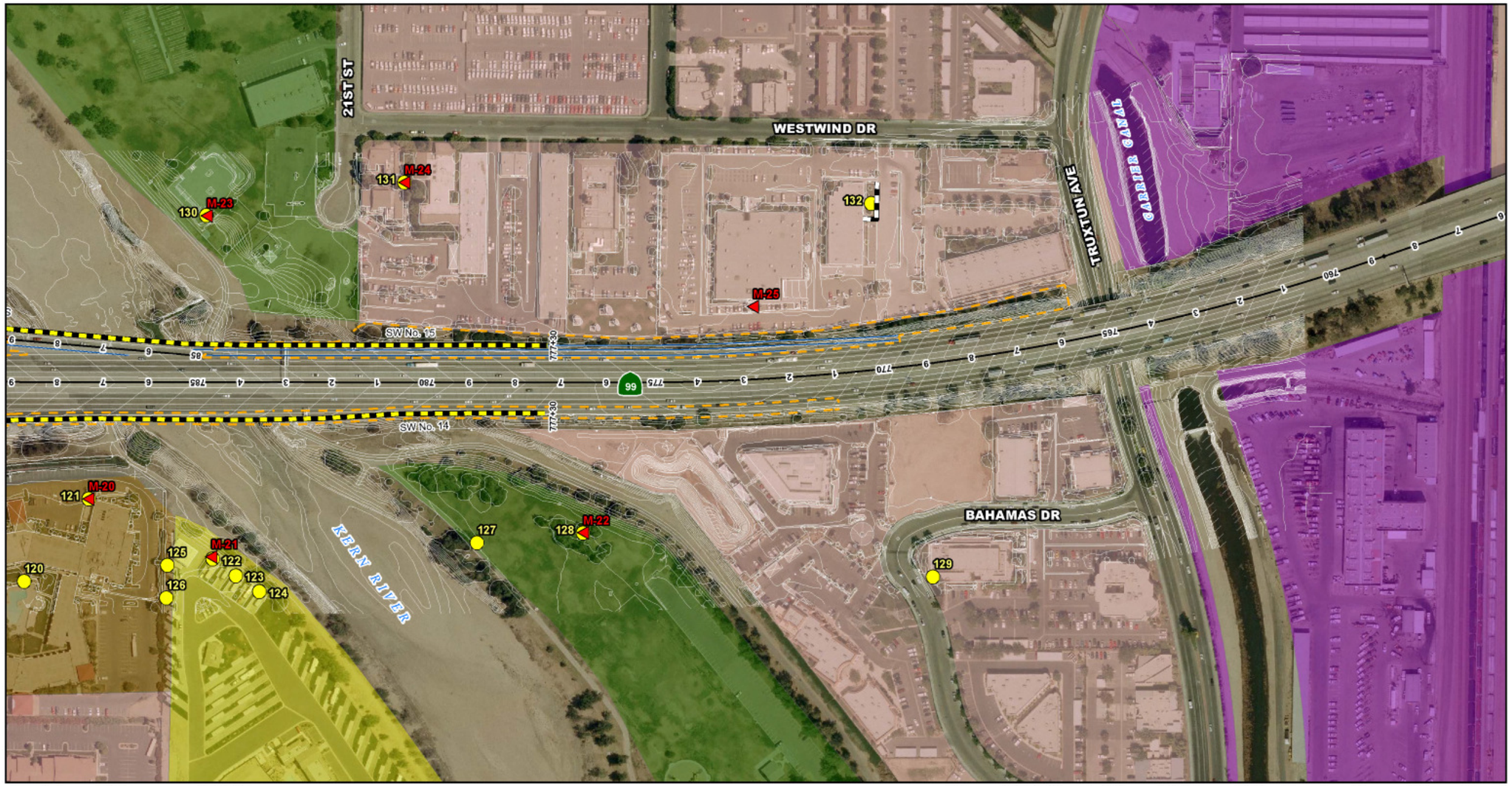
SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-24 Modeled Sound Walls and Receiver Locations - Alternative 1

Sheet 1 of 5



EA 06-493900
EA 06-484700



LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 1 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

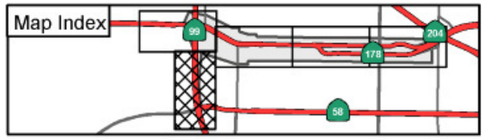
- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-24 Modeled Sound Walls and Receiver Locations - Alternative 1

Sheet 2 of 5



EA 06-493900
EA 06-484700

LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 1 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

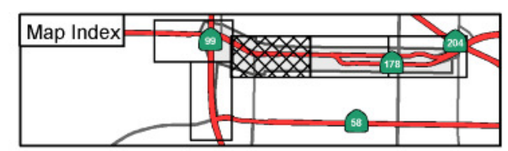
- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

0 115 230 FEET

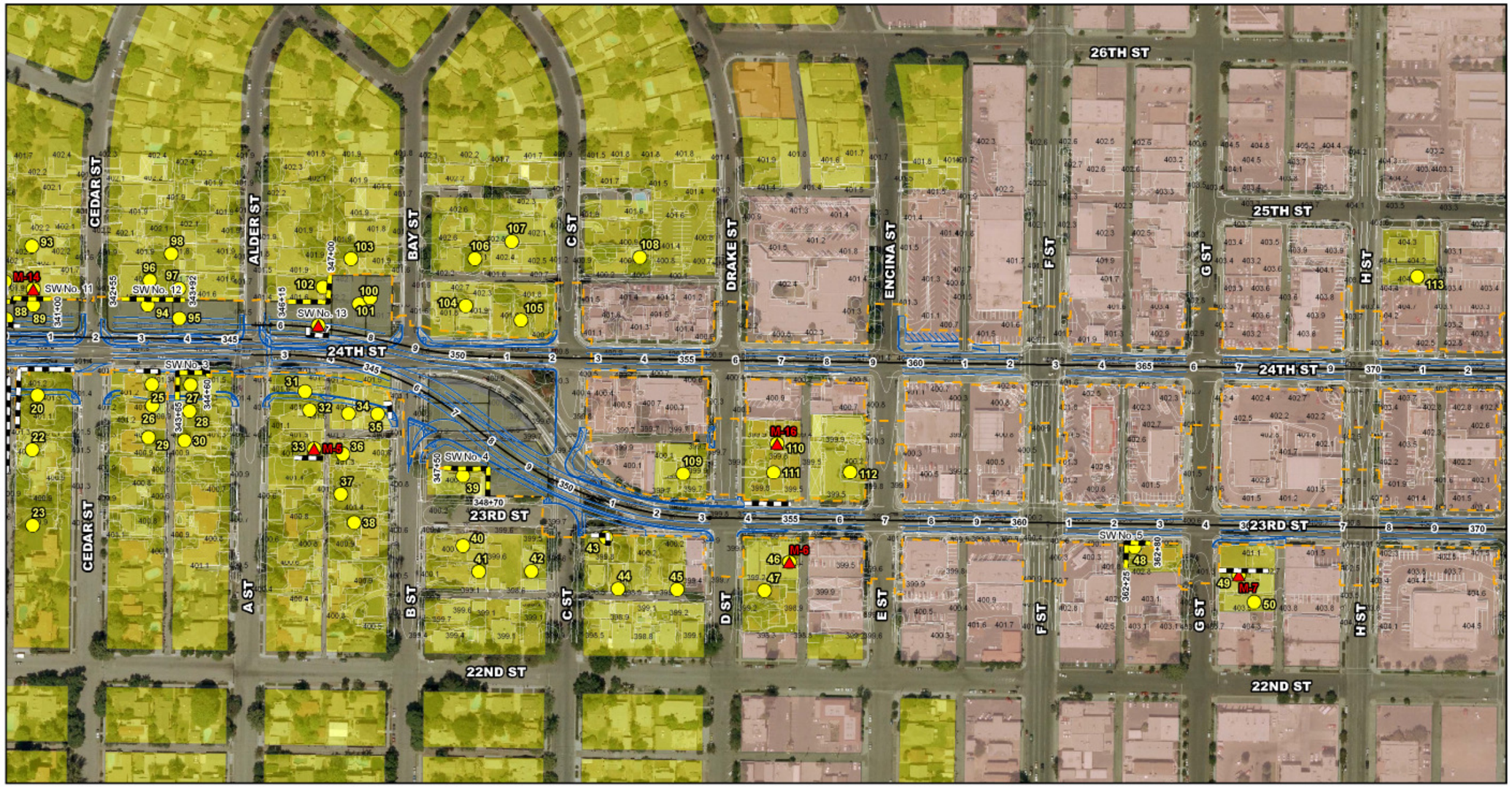
SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-24 Modeled Sound Walls and Receiver Locations - Alternative 1

Sheet 3 of 5



EA 06-493900
EA 06-484700



LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 1 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

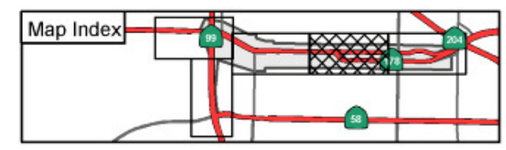
- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

0 115 230 FEET

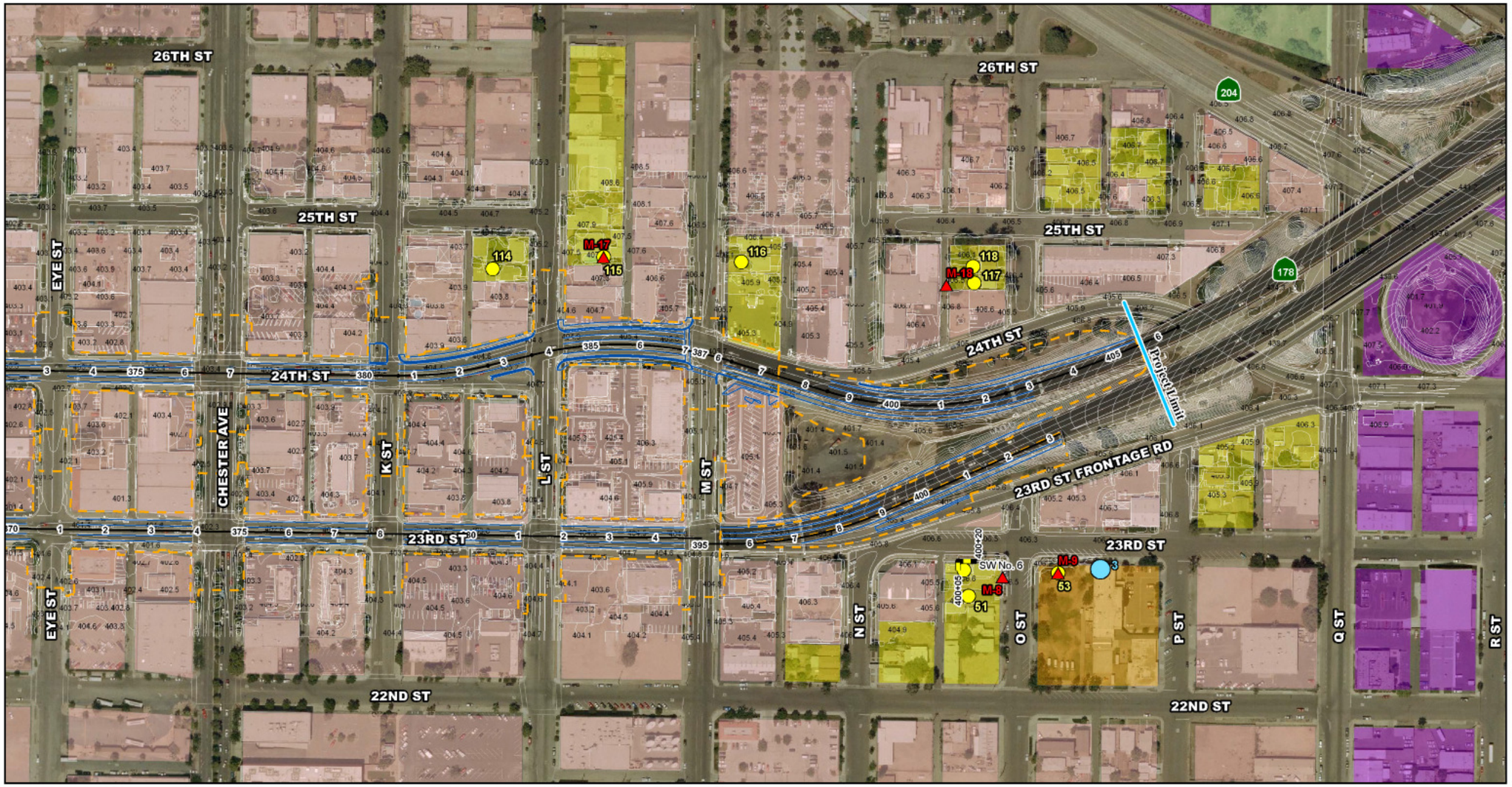
SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-24 Modeled Sound Walls and Receiver Locations - Alternative 1

Sheet 4 of 5



EA 06-493900
EA 06-484700



LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 1 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

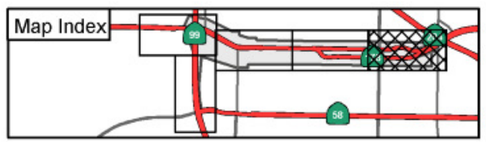
- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

0 115 230 FEET

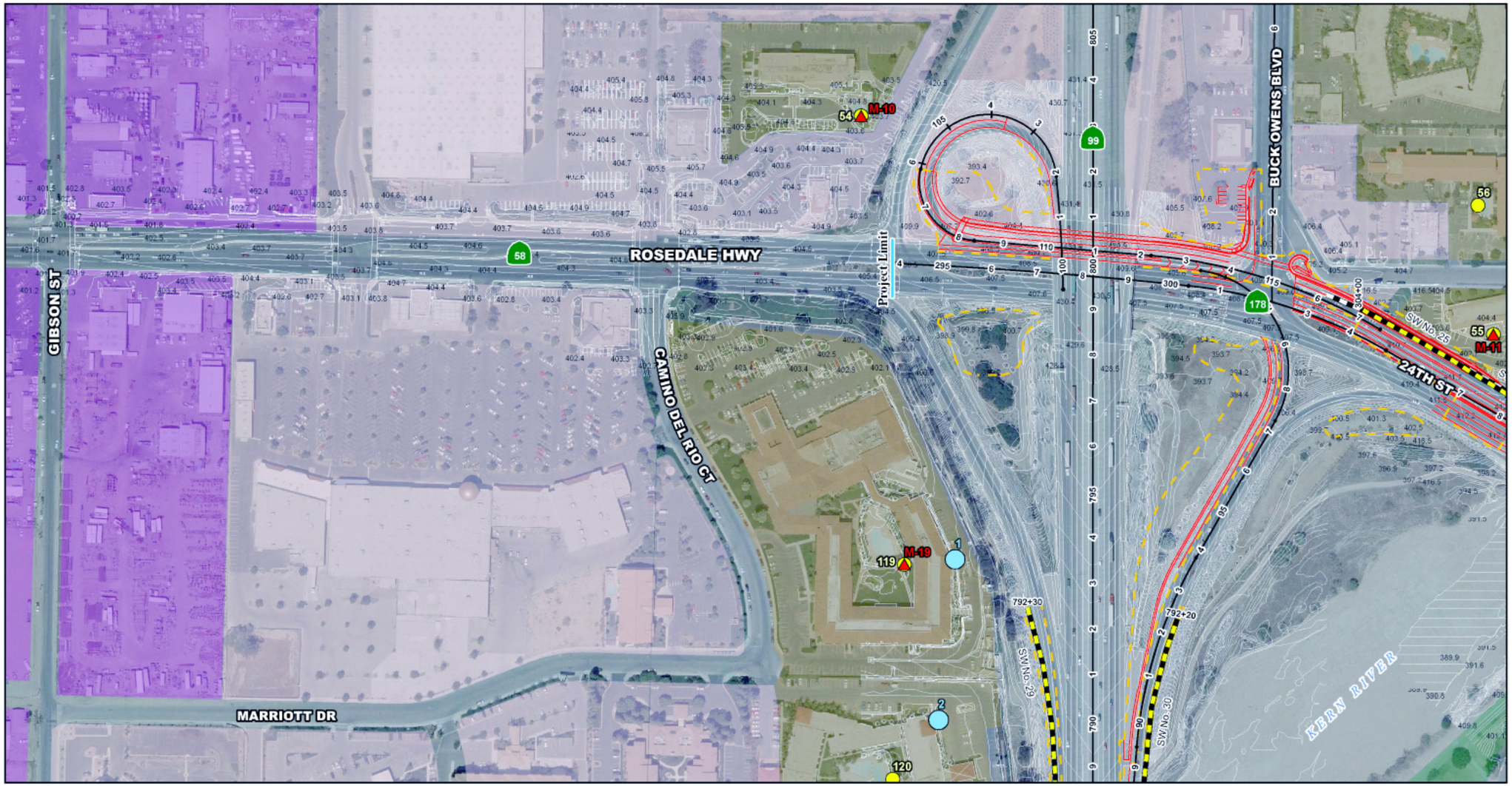
SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-24 Modeled Sound Walls and Receiver Locations - Alternative 1

Sheet 5 of 5



EA 06-493900
EA 06-484700



LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 2 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

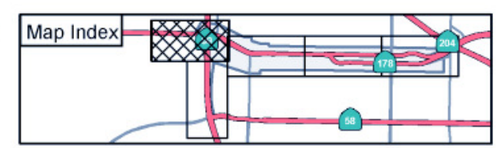
- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

0 115 230 FEET

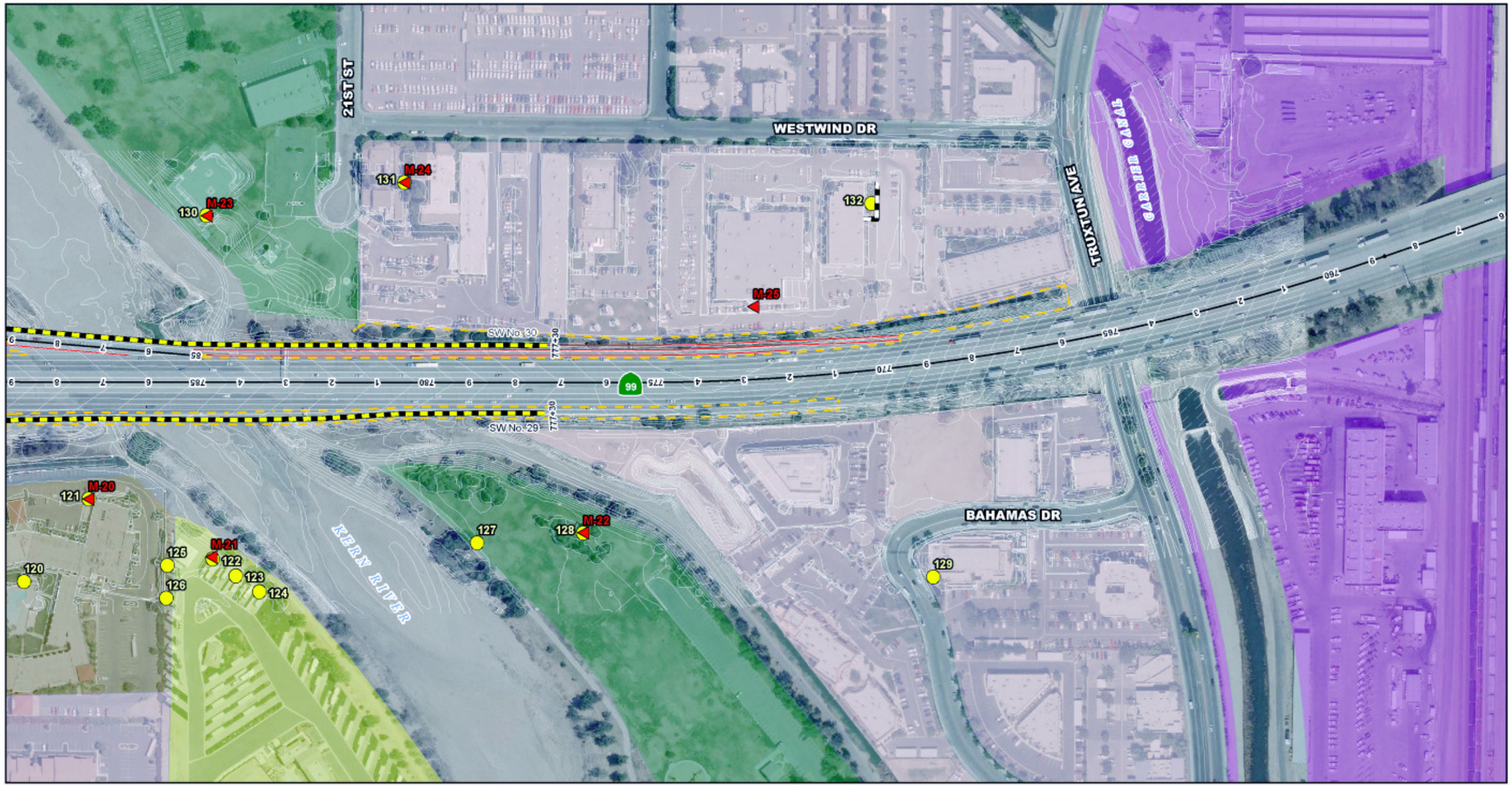
SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-25 Modeled Sound Walls and Receiver Locations - Alternative 2

Sheet 1 of 5



EA 06-493900
EA 06-484700



LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 2 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

0 115 230 FEET

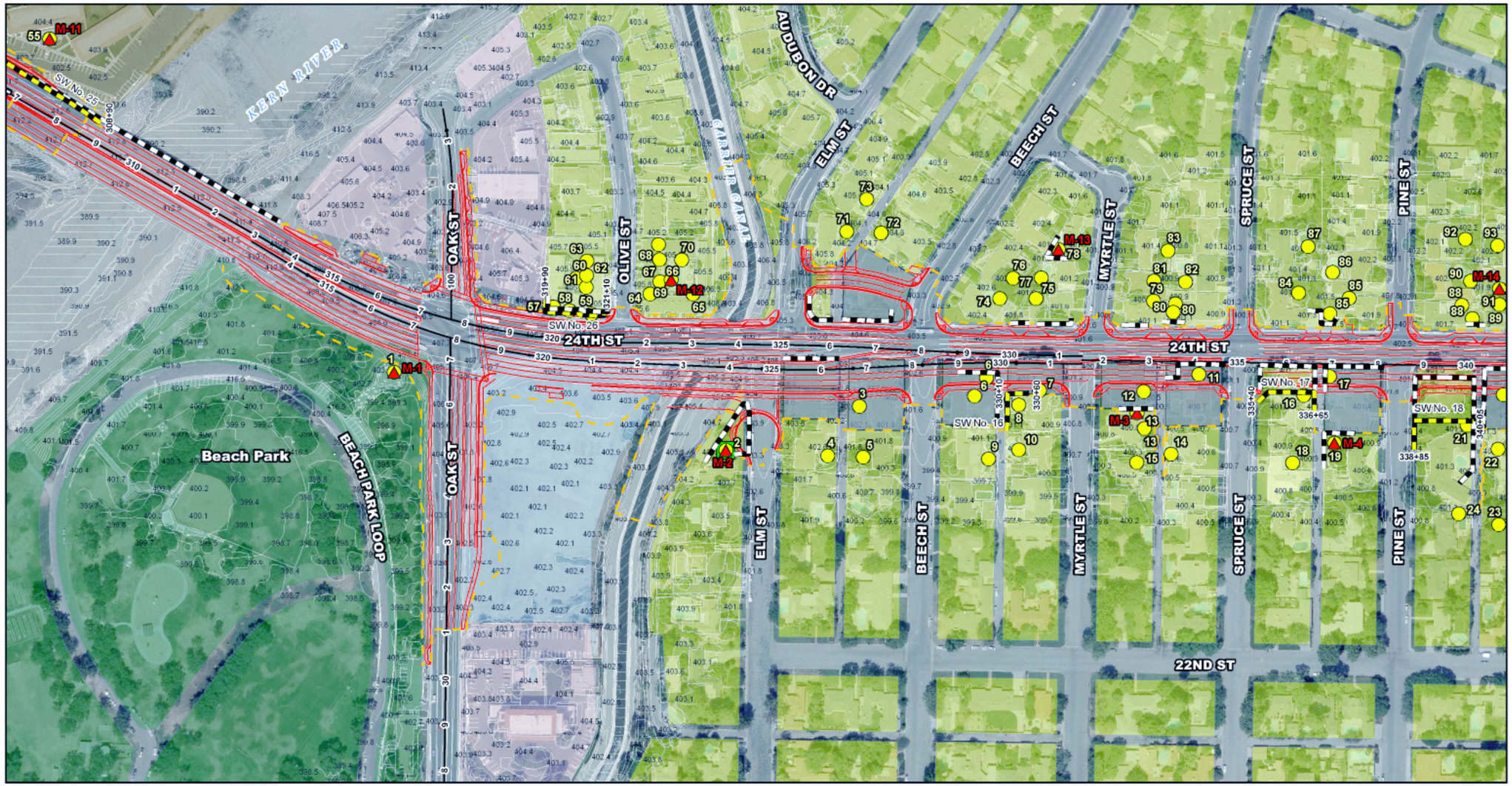
SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-25 Modeled Sound Walls and Receiver Locations - Alternative 2

Sheet 2 of 5

Map Index

EA 06-493900
EA 06-484700



LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 2 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

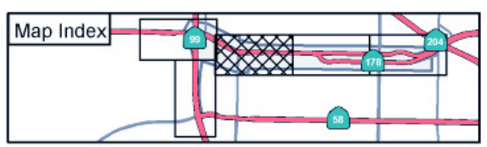
- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

0 115 230 FEET

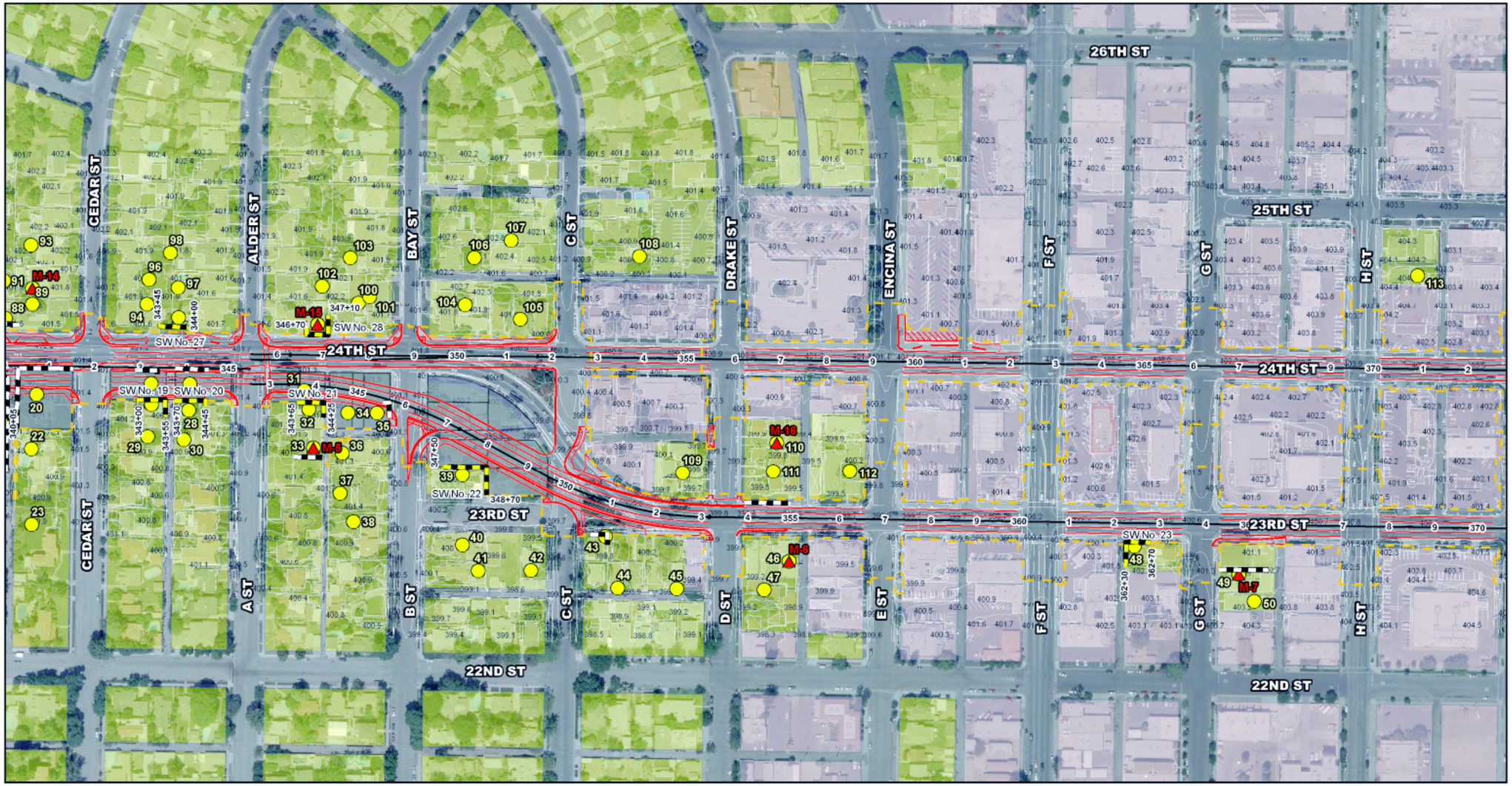
SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-25 Modeled Sound Walls and Receiver Locations - Alternative 2

Sheet 3 of 5



EA 06-493900
EA 06-484700



LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 2 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

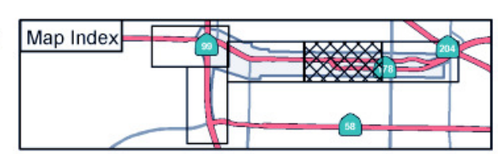
0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

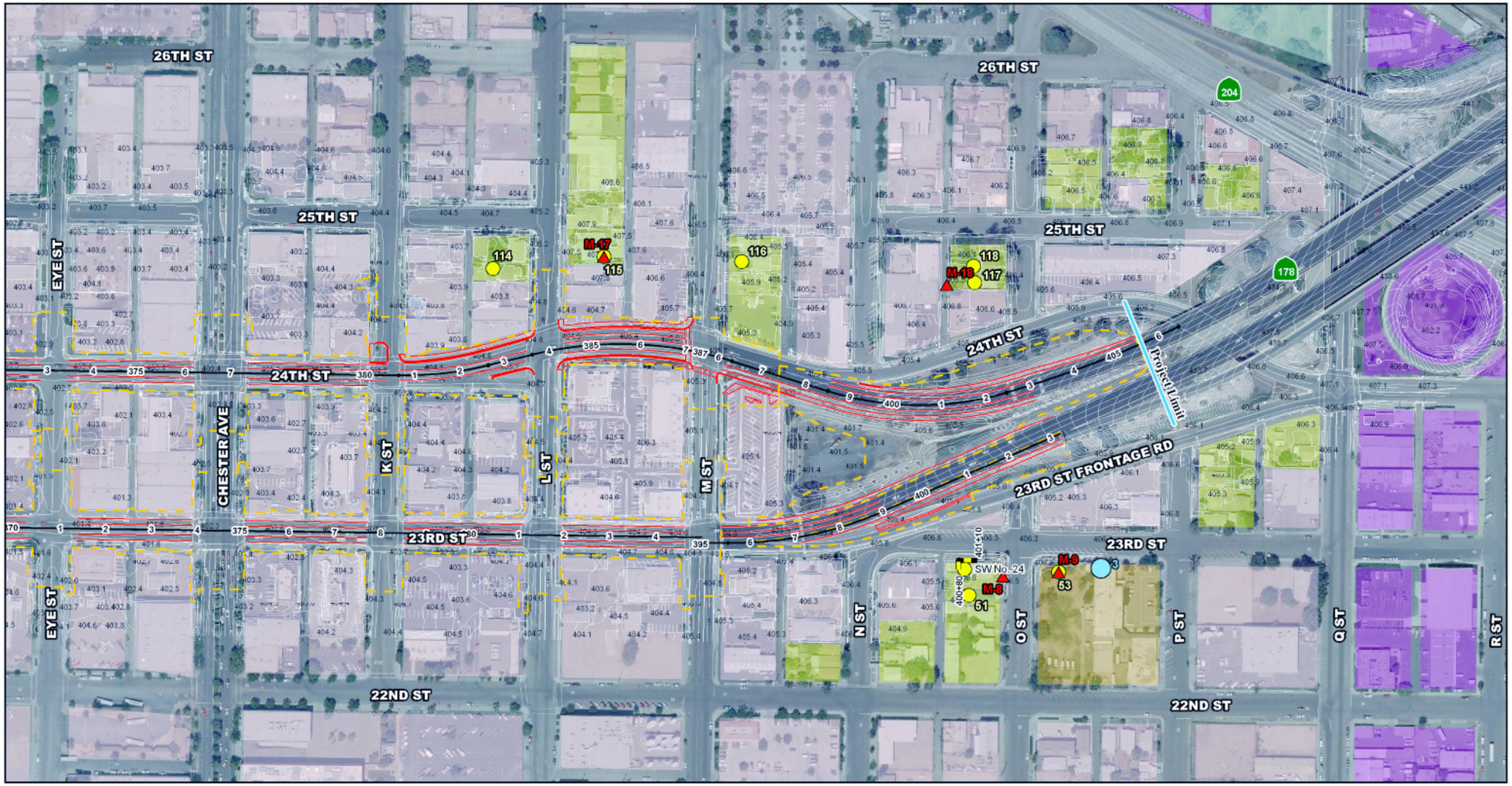
Figure 2-25 Modeled Sound Walls and Receiver Locations - Alternative 2

Sheet 4 of 5

Map Index



EA 06-493900
EA 06-484700



LEGEND

- Monitoring Locations
- Receiver Locations
- Interior/Exterior Monitoring Location
- 24-Hour Monitor
- Existing Walls
- Modeled Sound Walls
- Alternative 2 Alignment
- Proposed Right-of-Way (Based on Grading Limit Line)
- Full Property Acquisition

Existing Land Use

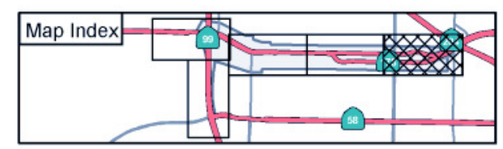
- Commercial/Office
- Church/Preschool
- Hotel/Motel
- Industrial
- Open Space
- Park
- Residential
- Vacant

0 115 230 FEET

SOURCE: Aerial: City of Bakersfield (2008); Parcels: Kern County (2007).

Figure 2-25 Modeled Sound Walls and Receiver Locations - Alternative 2

Sheet 5 of 5



EA 06-493900
EA 06-484700

Table 2.19. Noise Levels within the Project Study Area

Rec. No.	Sound Barrier No.		Modeled Existing Noise Level, dBA L_{eq}	Future 2035 No-Build, dBA L_{eq}	Alt. 1, dBA L_{eq}	Alt. 2, dBA L_{eq}	Abatement Consideration Required (Yes/No)		Predicted Noise Level with Abatement, dBA L_{eq}												Feasible and Reasonable (Yes/No)[5]	
									6'		8'		10'		12'		14'		16'			
	Alt. 1	Alt. 2					Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2
R-1/M-1			**67**[1]	**67**	**68**	**68**	Yes	Yes	NF[2]	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	No	No
R-2/M-2			62	61	64	64	No	No													No	No
R-3	1		58	58	**68**	--	Yes	No	62[3]		60		58*		57		56		55		No	No
R-4			51	53	58	60	No	No													No	No
R-5			50	53	57	58	No	No													No	No
R-6			63	63	65	--	No	No													No	No
R-7			58	58	58	--	No	No													No	No
R-8		16	58	58	59	**69**	No	Yes		63		61*		60		60		59		59	No	No
R-9		16	52	52	53	60	No	No		58		58*		58		58		58		58	No	No
R-10		16	53	54	56	62	No	No		60		60*		60		60		60		60	No	No
R-11	2		**67**	**66**	66	--	Yes	No	64		61*		60		59		58		57		No	No
R-12			64	63	63	--	No	No													No	No
R-13/M-3			54	54	55	62	No	No													No	No
R-14			55	55	56	60	No	No													No	No
R-15			52	53	54	60	No	No													No	No
R-16		17	61	61	62	**73**	No	Yes		65		62*		59		58		57		56	No	No
R-17			63	63	63	--	No	No													No	No
R-18			54	54	56	60	No	No													No	No
R-19/M-4			54	54	55	60	No	No													No	No
R-20			62	61	62	--	No	No													No	No
R-21		18	60	59	60	**68**	No	Yes		62*		60		59		58		58		58	No	No
R-22			55	55	56	62	No	No													No	No
R-23			52	53	54	56	No	No													No	No
R-24			52	53	54	56	No	No													No	No
R-25			63	62	63	--	No	No													No	No
R-26		19	62	61	61	**70**	No	Yes		63		59*		57		56		54		53	No	**Yes (6')**
R-27	3		**69**	**68**	**68**	--	Yes	No	62		59*		58		56		56		55		No	No
R-28		20	61	60	60	**70**	No	Yes		65		63*		63		63		62		62	No	**Yes (6'-8')**
R-29			52	52	53	57	No	No													No	No
R-30			54	53	55	62	No	No													No	No
R-31			59	58	58	--	No	No													No	No
R-32		21	62	60	61	**70**	No	Yes		63		60*		59		57		56		55	No	**Yes (6')**
R-33/M-5			55	54	56	61	No	No													No	No
R-34			57	56	59	--	No	No													No	No
R-35			62	61	64	--	No	No													No	No
R-36			53	53	55	60	No	No													No	No
R-37			51	51	53	56	No	No													No	No
R-38			49	50	52	55	No	No													No	No
R-39	4	22	55	54	**66**	**67**	Yes	Yes	60	61	57	59	56*	57*	55	56	53	55	53	54	No	No
R-40			52	53	58	58	No	No													No	No
R-41			47	49	51	52	No	No													No	No
R-42			49	52	55	55	No	No													No	No
R-43			57	58	63	63	No	No													No	No
R-44			44	47	48	49	No	No													No	No
R-45			47	50	50	50	No	No													No	No
R-46/M-6			56	60	61	61	No	No													No	No
R-47			54	57	57	57	No	No													No	No

Table 2.19. Noise Levels within the Project Study Area

Rec. No.	Sound Barrier No.		Modeled Existing Noise Level, dBA L_{eq}	Future 2035 No-Build, dBA L_{eq}	Alt. 1, dBA L_{eq}	Alt. 2, dBA L_{eq}	Abatement Consideration Required (Yes/No)		Predicted Noise Level with Abatement, dBA L_{eq}												Feasible and Reasonable (Yes/No)[5]	
									6'		8'		10'		12'		14'		16'			
	Alt. 1	Alt. 2					Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2
R-48	5	23	**71**	**73**	**74**	**74**	Yes	Yes	**68**	**68**	65*	65	64	64*	64	63	63	63	63	63	No	No
R-49/M-7			59	62	63	63	No	No													No	No
R-50			58	63	62	62	No	No													No	No
R-51	6	24	61	63	63	63	No	No	62	62	61*	61*	60	60	60	60	60	60	60	60	**Yes (6'-12')**	**Yes (6'-12')**
R-52/M-8	6	24	**66**	**68**	**68**	**68**	Yes	Yes	62	62	60*	60*	58	58	56	56	55	55	54	54	**Yes (6'-12')**	**Yes (6'-12')**
R-53/M-9			60	61	61	61	No	No													No	No
R-54/M-10			62	64	64	64	No	No													No	No
R-55/M-11	7	25	65	65	**66**	**66**	Yes	Yes	64	64	64	63	63	63	62	62	61	61	NP[4]	NP	No	No
R-56	7	25	62	63	64	64	No	No	64	64	64	63	64	63	64	63	63	63	NP	NP	No	No
R-57	8	26	**71**	**69**	**70**	**70**	Yes	Yes	**68**	**68**	65*	64*	62	62	61	61	59	59	58	58	**Yes (8'-16')**	**Yes (8'-16')**
R-58	8	26	**72**	**69**	**70**	**70**	Yes	Yes	**67**	**67**	64*	64*	62	62	60	60	59	59	58	58	**Yes (8'-16')**	**Yes (8'-16')**
R-59	8	26	**73**	**70**	**71**	**71**	Yes	Yes	**67**	**66**	63*	63*	61	61	59	59	58	58	57	57	Yes (8'-16')	Yes (8'-16')
R-60			57	57	58	58	No	No													No	No
R-61			57	57	58	58	No	No													No	No
R-62			56	57	58	58	No	No													No	No
R-63			56	58	59	59	No	No													No	No
R-64			57	56	57	57	No	No													No	No
R-65			58	56	60	59	No	No													No	No
R-66			62	59	61	61	No	No													No	No
R-67			59	59	61	61	No	No													No	No
R-68			57	59	61	60	No	No													No	No
R-69/M-12			61	59	61	61	No	No													No	No
R-70			59	61	63	62	No	No													No	No
R-71			56	56	61	61	No	No													No	No
R-72			55	56	60	60	No	No													No	No
R-73			52	54	58	58	No	No													No	No
R-74			61	60	--	60	No	No													No	No
R-75			63	62	--	62	No	No													No	No
R-76	9		60	59	**68**	60	Yes	No	62		60		58*		57		56		55		**Yes (6')**	No
R-77	9		60	59	68	60	Yes	No	62		59		58*		57		56		55		**Yes (6')**	No
R-78/M-13			53	53	59	54	No	No													No	No
R-79			59	58	--	59	No	No													No	No
R-80			62	62	--	62	No	No													No	No
R-81	10		54	54	64	55	No	No	64		64		64*		64		64		64		**Yes (6'-10')**	No
R-82	10		56	56	**67**	57	Yes	No	62		59		57*		57		56		55		**Yes (6'-10')**	No
R-83	10		53	54	61	55	No	No	59		59		58*		58		58		58		**Yes (6'-10')**	No
R-84			60	59	--	60	No	No													No	No
R-85			**66**	65	--	65	No	No													No	No
R-86			56	55	65	56	No	No													No	No
R-87			53	53	60	54	No	No													No	No
R-88			63	62	--	62	No	No													No	No

Table 2.19. Noise Levels within the Project Study Area

Rec. No.	Sound Barrier No.		Modeled Existing Noise Level, dBA L_{eq}	Future 2035 No-Build, dBA L_{eq}	Alt. 1, dBA L_{eq}	Alt. 2, dBA L_{eq}	Abatement Consideration Required (Yes/No)		Predicted Noise Level with Abatement, dBA L_{eq}												Feasible and Reasonable (Yes/No)[5]	
									6'		8'		10'		12'		14'		16'			
	Alt. 1	Alt. 2					Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2
R-89			58	57	--	58	No	No													No	No
R-90	11		55	54	**66**	55	Yes	No	60		59		57*		56		56		56		Yes (10'-16')	No
R-91/M-14	11		56	55	**68**	56	Yes	No	62		60		59*		57		57		56		Yes (10'-16')	No
R-92	11		52	52	59	53	No	No	56		56		55*		54		54		54		Yes (10'-16')	No
R-93	11		52	52	60	53	No	No	56		56		54*		54		54		53		Yes (10'-16')	No
R-94		27	62	61	--	61	No	No		58		57		57*		56		56		56	No	Yes (10'-16')
R-95		27	**69**	64	--	**68**	No	Yes		59		58		57*		57		56		56	No	Yes (10'-16')
R-96	12	27	60	58	**67**	59	Yes	No	61	56	59	56	57*	55*	57	55	56	55	56	55	**Yes (10'-16')**	**Yes (10'-16')**
R-97	12	27	62	60	**67**	61	Yes	No	61	57	59	56	58*	55*	57	55	56	55	56	54	**Yes (10'-16')**	**Yes (10'-16')**
R-98	12		56	56	62	57	No	No	58		57		56*		56		55		55		**Yes (10'-16')**	No
R-99/M-15		28	**69**	**68**	--	**68**	No	Yes		63		61*		60		59		58		57	No	No
R-100			60	59	--	59	No	No													No	No
R-101			59	58	--	58	No	No													No	No
R-102	13		60	54	**67**	59	Yes	No	61		58		57*		55		54		54		No	No
R-103	13		52	52	59	53	No	No	57		57		56*		56		56		56		No	No
R-104			58	56	58	57	No	No													No	No
R-105			**67**	65	**67**	**66**	Yes	Yes	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	NF	No	No
R-106			54	53	55	54	No	No													No	No
R-107			53	53	55	54	No	No													No	No
R-108			53	53	54	54	No	No													No	No
R-109			59	59	62	63	No	No													No	No
R-110/M-16			56	56	58	58	No	No													No	No
R-111			57	57	59	59	No	No													No	No
R-112			61	63	64	65	No	No													No	No
R-113			60	60	59	58	No	No													No	No
R-114			57	58	57	57	No	No													No	No
R-115/M-17			50	52	53	53	No	No													No	No
R-116			61	62	60	60	No	No													No	No
R-117/M-18			60	62	61	61	No	No													No	No
R-118			60	62	61	61	No	No													No	No
R-119/M-19			55	56	56	56	No	No													No	No
R-120			55	57	57	57	No	No													No	No
R-121/M-20	14	29	**71**	**73**	**73**	**73**	Yes	Yes	**70**	**70**	**70**	**70**	**67**	**67**	**66***	**66***	**66**	65	NP	NP	No	No
R-122/M-21	14	29	**67**	**69**	**67**	**67**	Yes	Yes	65	65	64	64	63	63	61*	61*	60	60	NP	NP	No	No
R-123	14	29	**67**	**68**	**67**	**67**	Yes	Yes	65	65	64	64	63	63	61*	61*	60	60	NP	NP	No	No
R-124	14	29	65	**67**	**67**	**66**	Yes	Yes	64	64	64	64	63	63	61*	61*	60	60	NP	NP	No	No
R-125	14	29	62	63	63	62	No	No	61	61	61	61	60	60	59*	59*	58	58	NP	NP	No	No
R-126	14	29	63	64	63	63	No	No	62	62	61	61	60	60	59*	59*	58	58	NP	NP	No	No
R-127			65	65	65	65	No	No													No	No
R-128/M-22			65	64	64	64	No	No													No	No

Table 2.19. Noise Levels within the Project Study Area

Rec. No.	Sound Barrier No.		Modeled Existing Noise Level, dBA L_{eq}	Future 2035 No-Build, dBA L_{eq}	Alt. 1, dBA L_{eq}	Alt. 2, dBA L_{eq}	Abatement Consideration Required (Yes/No)		Predicted Noise Level with Abatement, dBA L_{eq}												Feasible and Reasonable (Yes/No)[5]	
	Alt. 1	Alt. 2							6'		8'		10'		12'		14'		16'			
							Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2	Alt. 1	Alt. 2
R-129			55	56	56	56	No	No													No	No
R-130/M-23	15	30	**73**	**73**	**72**	**72**	Yes	Yes	**71**	**71**	**70**	**70**	**68**	**68**	**67***	**66***	65	**66**	65	65	No	No
R-131/M-24	15	30	61	62	62	62	No	No	60	60	59	59	58	58	56*	56*	55	55	55	55	No	No
R-132/M-25			64	65	65	65	No	No													No	No

Source: *Noise Study Report* (April 2011).
[1] Numbers in bold represent noise levels that approach or exceed the noise abatement criteria.
[2] NF = Not Feasible.
[3] Underlined noise levels have been attenuated by at least 5 dBA (i.e., feasible barrier height).
[4] NP = Not Permitted. Soundwalls within 15 feet of the nearest travel lane are not permitted to exceed 14 feet in height.
[5] Feasible and reasonable information to be provided following revisions to the Noise Abatement Decision Report
*Minimum height needed to break the line of sight between 11.5-foot truck stack and first-row receivers.
dBA L_{eq}(h) = equivalent continuous sound level per hour measured in A-weighted decibels

Environmental Consequences under the National Environmental Policy Act

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not build any of the proposed project improvements, and therefore, would not result in temporary noise or vibration impacts.

Build Alternatives

Two types of short-term noise impacts would occur during project construction. The first would be from construction crew commutes and transport of construction equipment and materials to the project area, and would incrementally raise noise levels on access roads leading to the site. Pieces of heavy equipment for grading and construction activities would be moved onsite, would remain for the duration for each construction phase, and would not add to the daily traffic volume in the project area.

A high single-event noise exposure potential at a maximum level of 87 dBA maximum instantaneous noise level from trucks passing within 50 feet of sensitive receivers would occur. However, projected construction traffic would be minimal when compared to existing traffic volumes on 24th Street and other affected streets, and the associated noise level change over a period of 1 hour or longer would not be perceptible. Therefore, short-term, construction-related worker commutes and equipment transport noise impacts would be incremental over the duration of the construction phases, but not substantial.

The second type of short-term noise impact is related to noise generated during roadway construction. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated and the noise levels along the proposed project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Typical noise levels at 50 feet from an active construction area range up to 91 dBA maximum continuous level during the noisiest construction phases. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers,

bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three or four minutes at lower power settings.

Construction of the project is expected to require the use of earthmovers, bulldozers, water trucks, and pickup trucks. Noise associated with the use of construction equipment is estimated between 79 and 89 dBA L_{max} at a distance of 50 feet from the active construction area for the grading phase.

The maximum noise level generated by each earthmover is estimated to be about 86 dBA L_{max} at 50 feet from the earthmover in operation. Each bulldozer would generate about 85 dBA L_{max} at 50 feet. The maximum noise level generated by water trucks and pickup trucks is about 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound source with equal strength increases the noise level by three dBA. Each piece of construction equipment operates as an individual point source. The worst-case composite noise level at the nearest residence during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from an active construction area.

The closest sensitive receiver locations are within 50 feet of the project construction areas. Therefore, these receiver locations may be subject to short-term noise reaching higher than 91 dBA L_{max} generated by construction activities along the project alignment.

Permanent Impacts

Potential long-term noise impacts associated with project operations would be solely from traffic noise. Traffic noise was evaluated for future scenarios (future 2035 No-Build and Alternatives 1 and 2). Using coordinates obtained from topographic maps, 132 receiver locations with outdoor active use areas associated with existing single- and multi-family residences, preschool/church, recreational vehicle park, parks, hotels, motel, and outdoor sitting areas associated with office uses were evaluated in the model (see Figures 2-24 and 2-25).

The predicted future 2035 noise levels for the two build alternatives at the representative sensitive receiver locations within the project study area were determined with existing walls and with no new modeled soundwalls using Level of Service C/D traffic volumes. Table 2.19 shows the future 2035 no-build, Alternative 1 and Alternative 2 traffic noise level results, and predicted noise level with abatement for all receiver locations and soundwalls for both Alternatives 1 and

2. The modeled future noise levels with the project were compared to the existing peak noise levels from Traffic Noise Model Version 2.5 to determine whether a substantial noise increase would occur. The modeled future noise levels for the two build alternatives were also compared to the 67 dBA equivalent continuous noise level and 72 dBA equivalent continuous noise level noise abatement criteria under Activity Categories B and C (see Table 2.17), respectively, to determine whether a traffic noise impact would occur. When traffic noise impacts occur, noise abatement measures must be considered.

No-Build Alternative

Fourteen of the 132 receivers would approach or exceed the noise abatement criteria under the future 2035 no-build conditions.

Build Alternatives

Under the two build alternatives, 25 receivers for Alternative 1 and 22 receivers for Alternative 2 would either approach or exceed the noise abatement criteria under Activity Category B (67) or experience a substantial increase in noise of 12 dBA or more over their corresponding adjusted modeled existing peak noise level. Therefore, 11 additional receivers under Alternative 1 and eight additional receivers under Alternative 2 would approach or exceed the future No-Build Alternative.

With implementation of Alternative 1, Receivers R-11, R-39, R-55, and R-90 (see Figure 2-24) would have noise levels that approach the noise abatement criteria. Under the same alternative, Receivers R-1, R-3, R-27, R-48, R-52, R-57-59, R-76, R-77, R-82, R-91, R-96, R-97, R-102, R-105, R-121-R-124, and R-130 would exceed the noise abatement criteria. Receiver R-91 would experience a substantial noise increase of 12 dBA over its corresponding adjusted modeled existing peak noise level.

With implementation of Alternative 2, Receivers R-55 and R-105 (see Figure 2-25) would have noise levels that approach the noise abatement criteria. Under the same alternative, Receivers R-1, R-8, R-16, R-21, R-26, R-28, R-32, R-39, R-48, R-52, R-57–59, R-95, R-99, R-121–124, and R-130 would exceed the noise abatement criteria. Receivers R-16 and R-39 would experience a substantial noise increase of 12 dBA or more over their corresponding adjusted modeled existing peak noise level.

Soundwalls along the right-of-way were considered for all receivers that either would approach or exceed the noise abatement criteria or experience a substantial noise increase of 12 dBA or more over their corresponding adjusted modeled existing peak

noise level. As there is access to alleyways along the south side of 24th Street, soundwalls along the right-of-way were determined to be not feasible. Therefore, soundwalls 1, 2, and 3 under Alternative 1 and soundwalls 16, 17, 18, 19, 20, and 21 under Alternative 2 were considered along the residential property line. Soundwall surveys would be done during the project Specifications, Cost and Estimate phase of the project.

Interior Noise Impacts

Potential interior noise impacts were evaluated for the Doubletree Hotel, Red Lion Hotel, and Garden Christian Preschool. Figures 2-24 and 2-25 show the location of the interior noise evaluation. As shown in Table 2.20, the existing exterior to interior attenuation for the Doubletree Hotel, Red Lion Hotel, and classroom building is 27.9 dBA, 29.1 dBA, and 17.4 dBA, respectively.

Table 2.20. Predicted Future Exterior and Interior Noise Levels

Receiver Number	Exterior to Interior Reduction[1] (decibels)	Alternative 1 (dBA equivalent continuous sound level)		Alternative 2 (dBA equivalent continuous sound level)	
		Exterior	Interior	Exterior	Interior
1	27.9	69.4	41.5	69.4	41.5
2	29.1	71.0	41.9	71.0	41.9
3	17.4 (20.0)[2]	62.9	42.9	62.9	42.9

Source: *Noise Study Report* (April 2011).

[1] The exterior-to-interior reduction was calculated based on the exterior and interior noise level measurements shown in Table 2.17.

[2] Based on the Caltrans Highway Traffic Noise Analysis and Abatement Policy and Guidance (Caltrans, June 1995), a standard 20-decibel exterior-to-interior noise level reduction was assumed for this structure because traffic noise levels were too low to properly assess the true building attenuation.

Table 2.20 also shows that the predicted exterior traffic noise levels at the Doubletree Hotel, Red Lion Hotel, and Garden Christian Preschool, represented by Receiver Numbers 1, 2, and 3 would be 69.4 dBA, 71.0 dBA, and 62.9 dBA equivalent continuous noise level, respectively, under both Alternatives 1 and 2.

Table 2.20 shows that the predicted future interior noise levels would be 41.5 dBA, 41.9 dBA, and 42.9 dBA equivalent continuous noise level, respectively, under both Alternatives 1 and 2 and would not approach or exceed the 52 dBA equivalent continuous noise level noise abatement criteria under Activity Category E (see Table 2.17). Therefore, noise abatement measures would not be required.

Preliminary Noise Abatement Analysis

Soundwall Modeling

Noise abatement measures such as sound barriers were considered to shield noise-sensitive receivers along State Route 99, 23rd Street, and 24th Street, where sensitive receivers exist and would continue to be exposed to traffic noise levels approaching or exceeding the noise abatement criteria or would experience a substantial noise increase of 12 dBA or more over their corresponding adjusted modeled existing peak noise level. All properties requiring abatement consideration are within Category B (67 dBA equivalent continuous noise level noise abatement criteria).

Soundwalls were analyzed for each of the sensitive receiver locations that would approach or exceed this criteria. Results of the soundwall modeling are provided in Table 2.19 for both Alternatives 1 and 2. Locations of the modeled soundwalls for Alternatives 1 and 2 are shown in Figures 2-24 and 2-25, respectively.

Fifteen soundwalls (numbers 1 through 15) were analyzed to shield the sensitive receiver locations that would be exposed to traffic noise levels approaching or exceeding the 67 dBA equivalent continuous noise level noise abatement criteria or that would experience a substantial increase of 12 dBA or more over their corresponding adjusted modeled existing peak noise level under Alternative 1.

The following soundwalls were analyzed under Alternative 1:

- **Soundwall 1:** A barrier about 126 feet long on the south side of 24th Street, west of Beech Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-3. Receiver R-3 is represented by one residence. The future noise level at Receiver R-3 is predicted to be 68 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $49,000, and the estimated construction cost is $63,540. Soundwall 1 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 2:** A barrier about 150 feet long on the south side of 24th Street, west of Spruce Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-11. Receiver R-11 is represented by one residence. The future noise level at Receiver R-11 is predicted to be 66 dBA equivalent continuous noise level, which would approach the 67 dBA equivalent continuous

noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, an 8-foot-high wall would be required. The total reasonable allowance is $43,000, and the estimated construction cost is $91,272. Soundwall 2 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.

- **Soundwall 3:** A barrier about 133 feet long on the south side of 24th Street, west of A Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-27. Receiver R-27 is represented by one residence. The future noise level at Receiver R-27 is predicted to be 68 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $45,000, and the estimated construction cost is $55,389. Soundwall 3 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 4:** A barrier about 159 feet long on the north side of 23rd Street, east of B Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-39. Receiver R-39 is represented by one residence. The future noise level at Receiver R-39 is predicted to be 66 dBA equivalent continuous noise level, which would approach the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $49,000, and the estimated construction cost is $79,731. Soundwall 4 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 5:** A barrier about 105 feet long on the south side of 23rd Street, between F Street and G Street, was analyzed along the residential property line adjacent to an alley and along the right-of-way line/residential property line to shield Receiver R-48. Receiver R-48 is represented by one residence. The future noise level at Receiver R-48 is predicted to be 74 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $49,000, and the estimated construction cost is $52,761. Soundwall 5 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.

- **Soundwall 6:** A barrier about 60 feet long on the south side of 23rd Street, between N Street and O Street, was analyzed along the residential fence line to shield Receiver R-52. Receiver R-52 is represented by one residence. The future noise level at Receiver R-52 is predicted to be 68 dBA equivalent continuous noise level and would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. However, an 8-foot-high wall was selected as the preliminary decision because the 8-foot-high wall would block the line-of-sight to truck exhaust stacks. The total reasonable allowance for the 8-foot-high wall is $45,000, and the estimated construction cost is $36,230. Soundwall 6 was determined to be reasonable because the estimated construction cost is within the total reasonable allowance.
- **Soundwall 7:** A barrier about 459 feet long on the north side of 24th Street, between Buck Owens Boulevard and Oak Street, was analyzed along the shoulder of the top of the retaining wall to shield Receiver R-55. Receiver R-55 is represented by an equivalent of one residence that is associated with a hotel. The future noise level at Receiver R-55 is predicted to be 66 dBA equivalent continuous noise level, which would approach the 67 dBA equivalent continuous noise level noise abatement criteria for hotel land uses. To achieve a 5 dBA reduction, a 14-foot-high wall would be required. The total reasonable allowance is $43,000, and the estimated construction cost is $330,535. Soundwall 7 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 8:** A barrier about 166 feet long on the north side of 24th Street, west of Olive Street, was analyzed within residential property and along the right-of-way line/residential property line to shield Receivers R-57 through R-59. Receivers R-57 through R-59 are represented by seven residences. The future noise levels at Receivers R-57 through R-59 are predicted to range between 70 and 71 dBA equivalent continuous noise level and would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, an 8-foot-high wall would be required. The total reasonable allowance is $329,000, and the estimated construction cost is $99,884. Soundwall 8 was determined to be reasonable because the estimated construction cost is within the total reasonable allowance.
- **Soundwall 9:** A barrier about 194 feet long on the north side of 24th Street, between Beech Street and Myrtle Street, was analyzed along the residential property line and the right-of-way line/residential boundary line to shield

Receivers R-76 and R-77. Receivers R-76 and R-77 are represented by two residences. The future noise levels at Receivers R-76 and R-77 are predicted to be 68 dBA equivalent continuous noise level and would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $98,000, and the estimated construction cost is $97,570. Soundwall 9 was determined to be reasonable because the estimated construction cost is within the total reasonable allowance.

- **Soundwall 10:** A barrier about 65 feet long on the north side of 24th Street, between Myrtle Street and Spruce Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-82. Receiver R-82 is represented by one residence. The future noise level at Receiver R-82 is predicted to be 67 dBA equivalent continuous noise level and would be at the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. However, a 10-foot-high wall was selected as the preliminary decision because the wall would block the line-of-sight to truck exhaust stacks. The total reasonable allowance for the 10-foot-high wall is $51,000, and the estimated construction cost is $45,195. Soundwall 10 was determined to be reasonable because the estimated construction cost is within the total reasonable allowance.
- **Soundwall 11:** A barrier about 207 feet long on the north side of 24th Street, between Pine Street and Cedar Street, was analyzed along the residential property line/the right-of-way line to shield Receivers R-90 and R-91. Receivers R-90 and R-91 are represented by two residences. The future noise levels at Receivers R-90 and R-91 are predicted to range between 66 and 68 dBA equivalent continuous noise level and would approach and exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 10-foot-high wall would be required. However, a 12-foot-high wall was selected as the preliminary decision because the wall would block the line-of-sight to truck exhaust stacks and benefit more residences. The total reasonable allowance for the 12-foot-high wall is $212,000, and the estimated construction cost is $163,398. Soundwall 11 was determined to be reasonable because the estimated construction cost is within the total reasonable allowance.
- **Soundwall 12:** A barrier about 137 feet long on the north side of 24th Street, between Cedar Street and Alder Street, was analyzed along the residential property line/the right-of-way line to shield Receivers R-96 and R-97. Receivers R-96 and R-97 are represented by two residences. The future noise levels at

Receivers R-96 and R-97 are predicted to be 67 dBA equivalent continuous noise level and would be at the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. However, a 10-foot-high wall was selected as the preliminary decision because the wall would block the line-of-sight to truck exhaust stacks. The total reasonable allowance for the 10-foot-high wall is $147,000, and the estimated construction cost is $95,517. Soundwall 12 was determined to be reasonable because the estimated construction cost is within the total reasonable allowance.

- **Soundwall 13:** A barrier about 144 feet long on the north side of 24th Street, between Alder Street and Bay Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-102. Receiver R-102 is represented by one residence. The future noise level at Receiver R-102 is predicted to be 67 dBA equivalent continuous noise level, which would be at the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $47,000, and the estimated construction cost is $72,216. Soundwall 13 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 14:** A barrier about 1,517 feet long on the southbound side of State Route 99 south of 24th Street was analyzed along the edge of shoulder to shield Receivers R-121 through R-124. Receivers R-121 through R-124 are represented by five residences. The future noise levels at Receivers R-121 through R-124 are predicted to range between 67 and 73 dBA equivalent continuous noise level, which would be at and exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 10-foot-high wall would be required. The total reasonable allowance is $47,000, and the estimated construction cost is $2,339,768. Soundwall 14 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 15:** A barrier about 1,502 feet long on the northbound side of State Route 99 south of 24th Street was analyzed along the edge of shoulder to shield Receiver R-130. Receiver R-130 is represented by an equivalent of two residences associated with the park. The future noise level at Receiver R-130 is predicted to be 72 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for park land uses. To achieve a 5 dBA reduction, a 12-foot-high wall would be required. The total

reasonable allowance is $135,000, and the estimated construction cost is $1,883,355. Soundwall 15 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.

Fifteen soundwalls (numbers 16 through 30) were analyzed to shield the sensitive receiver locations that would be exposed to traffic noise levels approaching or exceeding the 67 dBA equivalent continuous noise level noise abatement criteria or that would experience a substantial increase of 12 dBA or more over their corresponding adjusted modeled existing peak noise level under Alternative 2.

The following soundwalls were analyzed under Alternative 2:

- **Soundwall 16:** A barrier about 126 feet long on the south side of 24th Street, west of Myrtle Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-8. Receiver R-8 is represented by one residence. The future noise level at Receiver R-8 is predicted to be 69 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $49,000, and the estimated construction cost is $63,408. Soundwall 16 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 17:** A barrier about 172 feet long on the south side of 24th Street, east of Spruce Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-16. Receiver R-16 is represented by one residence. The future noise level at Receiver R-16 is predicted to be 73 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $53,000, and the estimated construction cost is $83,462. Soundwall 17 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 18:** A barrier about 193 feet long on the south side of 24th Street, east of Pine Street, was analyzed along the residential property line adjacent to an alley and the right-of-way line/residential property line to shield Receiver R-21. Receiver R-21 is represented by one residence. The future noise level at Receiver R-21 is predicted to be 68 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for

residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $49,000, and the estimated construction cost is $99,395. Soundwall 18 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.

- **Soundwall 19:** A barrier about 100 feet long on the south side of 24th Street, east of Cedar Street, was analyzed along the residential property line and along the right-of-way line/residential property line to shield Receiver R-26. Receiver R-26 is represented by one residence. The future noise level at Receiver R-26 is predicted to be 70 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $51,000, and the estimated construction cost is $50,324. Soundwall 19 was determined to be reasonable because the estimated construction cost was within the total reasonable allowance.
- **Soundwall 20:** A barrier about 79 feet long on the south side of 24th Street, west of A Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-28. Receiver R-28 is represented by one residence. The future noise level at Receiver R-28 is predicted to be 70 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. However, an 8-foot-high wall was selected as the preliminary decision because the wall would block the line-of-sight to truck exhaust stacks. The total reasonable allowance for the 8-foot-high wall is $51,000, and the estimated construction cost is $44,697. Soundwall 20 was determined to be reasonable because the estimated construction cost was within the total reasonable allowance.
- **Soundwall 21:** A barrier about 89 feet long on the south side of 24th Street, east of A Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-32. Receiver R-32 is represented by one residence. The future noise level at Receiver R-32 is predicted to be 70 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $51,000, and the estimated construction cost is $44,953. Soundwall 21 was determined to be reasonable because the estimated construction cost was within the total reasonable allowance.

- **Soundwall 22:** A barrier about 171 feet long on the north side of 23rd Street, east of B Street, was analyzed along the residential property line/the right-of-way line to shield Receiver R-39. Receiver R-39 is represented by one residence. The future noise level at Receiver R-39 is predicted to be 67 dBA equivalent continuous noise level, which would be at the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $51,000, and the estimated construction cost is $85,755. Soundwall 22 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 23:** A barrier about 105 feet long on the south side of 23rd Street, between F Street and G Street, was analyzed along the residential property line adjacent to an alley and along the right-of-way line/residential property line to shield Receiver R-48. Receiver R-48 is represented by one residence. The future noise level at Receiver R-48 is predicted to be 74 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $49,000, and the estimated construction cost is $52,761. Soundwall 23 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 24:** A barrier about 60 feet long on the south side of 23rd Street, between N Street and O Street, was analyzed along the residential fence line to shield Receiver R-52. Receiver R-52 is represented by one residence. The future noise level at Receiver R-52 is predicted to be 68 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. However, an 8-foot-high wall was selected as the preliminary decision because the wall would block the line-of-sight to truck exhaust stacks. The total reasonable allowance for the 8-foot-high wall is $45,000, and the estimated construction cost is $36,230. Soundwall 24 was determined to be reasonable because the estimated construction cost was within the total reasonable allowance.
- **Soundwall 25:** A barrier about 459 feet long on the north side of 24th Street, between Buck Owens Boulevard and Oak Street, was analyzed along the shoulder of the top of the retaining wall to shield Receiver R-55. Receiver R-55 is represented by an equivalent of one residence associated with a hotel. The future

noise level at Receiver R-55 is predicted to be 66 dBA equivalent continuous noise level, which would approach the 67 dBA equivalent continuous noise level noise abatement criteria for hotel land uses. To achieve a 5 dBA reduction, a 14-foot-high wall would be required. The total reasonable allowance is $43,000, and the estimated construction cost is $336,135. Soundwall 25 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.

- **Soundwall 26:** A barrier about 166 feet long on the north side of 24th Street, between Olive Street and Oak Street, was analyzed within residential property and along the right-of-way line/residential property line to shield Receivers R-57 through R-59. Receivers R-57 through R-59 are represented by seven residences. The future noise levels at Receivers R-57 through R-59 are predicted to range between 70 and 71 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. However, an 8-foot-high wall was selected as the preliminary decision because the wall would block the line-of-sight to truck exhaust stacks. The total reasonable allowance for the 8-foot-high wall is $329,000, and the estimated construction cost is $99,884. Soundwall 26 was determined to be reasonable because the estimated construction cost was within the total reasonable allowance.
- **Soundwall 27:** A barrier about 65 feet long on the north side of 24th Street, between Alder Street and Cedar Street, was analyzed within residential property to shield Receiver R-95. Receiver R-95 is represented by one residence. The future noise level at Receiver R-95 is predicted to be 68 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. However, a 12-foot-high wall was selected as the preliminary decision because the wall would block the line-of-sight to truck exhaust stacks and benefit more residences. The total reasonable allowance is $141,000, and the estimated construction cost is $52,506. Soundwall 27 was determined to be reasonable because the estimated construction cost was within the total reasonable allowance.
- **Soundwall 28:** A barrier about 103 feet long on the north side of 24th Street, between Alder Street and Bay Street, was analyzed within residential property and along the right-of-way line/residential property line to shield Receiver R-99. Receiver R-99 is represented by one residence. The future noise level at Receiver R-99 is predicted to be 68 dBA equivalent continuous noise level, which would

exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential land uses. To achieve a 5 dBA reduction, a 6-foot-high wall would be required. The total reasonable allowance is $43,000, and the estimated construction cost is $53,141. Soundwall 28 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.

- **Soundwall 29:** A barrier about 1,517 feet long on the southbound side of State Route 99, south of 24th Street, was analyzed along the edge of shoulder to shield Receivers R-121 through R-124. Receivers R-121 through R-124 are represented by five residences and one outdoor eating area. The future noise levels at Receivers R-121 through R-124 are predicted to range between 66 and 73 dBA equivalent continuous noise level, which would approach and exceed the 67 dBA equivalent continuous noise level noise abatement criteria for residential and hotel land uses. To achieve a 5 dBA reduction, a 10-foot-high wall would be required. The total reasonable allowance is $47,000, and the estimated construction cost is $2,339,768. Soundwall 29 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.
- **Soundwall 30:** A barrier about 1,502 feet long on the northbound side of State Route 99, south of 24th Street, was analyzed along the edge of shoulder to shield Receiver R-130. Receiver R-130 is represented by an equivalent of two residences associated with a park. The future noise level at Receiver R-130 is predicted to be 72 dBA equivalent continuous noise level, which would exceed the 67 dBA equivalent continuous noise level noise abatement criteria for park land uses. To achieve a 5 dBA reduction, a 12-foot-high wall would be required. The total reasonable allowance is $141,000, and the estimated construction cost is $1,883,355. Soundwall 30 was determined to be not reasonable because the estimated construction cost exceeded the total reasonable allowance.

Feasibility

Section 3 of the Caltrans *Traffic Noise Analysis Protocol* (Protocol; August 2006) states that a minimum noise reduction of 5 dBA must be achieved at the affected receivers for the noise abatement measure to be considered feasible. The feasibility criterion is not necessarily a noise abatement design goal. Greater noise reductions are encouraged if they can be reasonably achieved. The following elements may restrict feasibility: (1) topography; (2) access requirements for driveways;(3) local cross streets; (4) underground utilities; (5) other noise sources in the area; and, (6) safety considerations.

Of the 15 modeled soundwalls evaluated under Alternative 1, all 15 were capable of reducing noise levels by 5 dBA or more, as required to be considered feasible. Of the 15 modeled soundwalls evaluated under Alternative 2, all 15 were determined to be feasible.

Section 3 of the protocol states that a preliminary reasonableness determination of providing noise abatement for exteriors of residential areas in Activity Category B (which includes residential areas) begins with a $31,000 base allowance per benefited residence. The $31,000 base allowance is adjusted using the following five factors to determine the total reasonable allowance per residence: (1) absolute noise level; (2) design year increase over existing noise levels; (3) achievable noise reduction; (4) new highway construction pre-1978 residences; and (5) total reasonable allowance versus project costs. Soundwalls found to be both feasible and reasonable are shown in Table 2.19.

The design of soundwalls presented in this section is preliminary and has been done at a level appropriate for environmental review, not for the final design of the project. If parameters change substantially during the final project design, preliminary soundwall designs may be changed or eliminated from the final project. A final decision on the construction of the noise abatement would be made on completion of the project design and public input.

Avoidance, Minimization, and/or Noise Abatement Measures under the National Environmental Policy Act

The following avoidance, minimization, and abatement measures would be implemented to reduce potential construction-related noise impacts.

Avoidance and Minimization Measures

NOI-1 To minimize construction noise impacts on sensitive land uses adjacent to the project study area, construction noise is regulated by the Caltrans Standard Specifications in Section 148.02, “Noise Control,” and also by Standard Special Provision S5-310, “Noise Control.” Noise control shall conform to the provisions in Section 14-8.02 and Standard Special Provision S5-310.

NOI-2 If nighttime construction is necessary, the noise level from the contractor’s operation, between the hours of 9:00 p.m. and 6:00 a.m. shall not exceed 86 dBA at a distance of 50 feet.

NOI-3 The contractor shall use an alternative warning method instead of a sound signal unless required by safety laws.

NOI-4 The contractor shall equip all internal combustion engines with the manufacturer-recommended muffler and shall not operate any internal combustion engine on the jobsite without the appropriate muffler.

Abatement Measure

NOI-5 Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of soundwalls at the following locations under Alternatives 1 and 2.

Alternative 1:

- Soundwall 6 at Receiver R-52 with a respective length of 60 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 6 would reduce noise levels by 8 dBA and benefit one residence at a cost of $36,230.
- Soundwall 8 at Receivers R-57 through R-59 with a respective length of 166 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 8 would reduce noise levels by 5 to 8 dBA and benefit seven residences at a cost of $99,884.
- Soundwall 9 at Receivers R-76 through R-77 with a respective length of 194 feet and average height of 6 feet. Calculations based on preliminary design data indicate that Soundwall 9 would reduce noise levels by 6 dBA and benefit two residences at a cost of $97,570.
- Soundwall 10 at Receiver R-82 with a respective length of 65 feet and average height of 10 feet. Calculations based on preliminary design data indicate that Soundwall 10 would reduce noise levels by 10 dBA and benefit one residence at a cost of $45,195.
- Soundwall 11 at Receivers R-90 through R-91 with a respective length of 207 feet and average height of 12 feet. Calculations based on preliminary design data indicate that Soundwall 11 would reduce noise levels by 5 to 11 dBA and benefit four residences at a cost of $163,398.

- Soundwall 12 at Receivers R-96 through R-97 with a respective length of 137 feet and average height of 10 feet. Calculations based on preliminary design data indicate that Soundwall 12 would reduce noise levels by 6 to 10 dBA and benefit three residences at a cost of $95,517.

Alternative 2:

- Soundwall 19 at Receiver R-26 with a respective length of 100 feet and average height of 6 feet. Calculations based on preliminary design data indicate that Soundwall 19 would reduce noise levels by 7 dBA and benefit one residence at a cost of $50,324.
- Soundwall 20 at Receiver R-28 with a respective length of 79 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 20 would reduce noise levels by 7 dBA and benefit one residence at a cost of $44,697.
- Soundwall 21 at Receiver R-32 with a respective length of 89 feet and average height of 6 feet. Calculations based on preliminary design data indicate that Soundwall 21 would reduce noise levels by 7 dBA and benefit one residence at a cost of $44,953.
- Soundwall 24 at Receiver R-52 with a respective length of 60 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 24 would reduce noise levels by 8 dBA and benefit one residence at a cost of $36,230.
- Soundwall 26 at Receivers R-57 through R-59 with a respective length of 166 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 26 would reduce noise levels by 6 to 8 dBA and benefit seven residences at a cost of $99,884.
- Soundwall 27 at Receiver R-95 with a respective length of 65 feet and average height of 12 feet. Calculations based on preliminary design data indicate that Soundwall 27 would reduce noise levels by 5 to 11 dBA and benefit three residences at a cost of $52,506.

If during final design conditions have substantially changed, noise abatement may not be necessary. The final decision of the noise abatement will be made upon completion of the project design and the public involvement processes.

The physical characteristics of the noise abatement described may be subject to change or refinement by the project development team and/or the City of Bakersfield. During final design, if conditions have substantially changed, noise abatement may not be necessary. The final decision on noise abatement would be made on completion of the project design and the public involvement processes.

2.2.6 Energy

Regulatory Setting

The California Environmental Quality Act Guidelines, Appendix F, Energy Conservation, state that Environmental Impact Reports are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

The National Environmental Policy Act (42 U.S. Code Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

Affected Environment

Information and analysis in this section come from the *Traffic Analysis* (July 2010).

Energy consumption associated with vehicular movement is almost entirely confined to the consumption of fossil fuel (gasoline and diesel). Transportation-related activities account for about half of all the petroleum products consumed in California (Department of Energy, Petroleum Profile, 2009). The consumption of nonrenewable resources remains high even though state and federal policies, such as the California Low-Emission Vehicle Program and the Federal Energy Policy Act of 1992, are increasing the use of alternative-fuel and low-emission vehicles.

Currently, a nominal amount of electricity is consumed in the project study area to power existing streetlights and traffic signals.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not result in the construction of any of the proposed roadway improvements and therefore would not result in temporary energy-related consumption impacts.

Build Alternatives

Construction of the project would entail one-time energy expenditure to manufacture building materials, prepare the roadway surface, and build the roadway widening and intersection/interchange improvements. The one-time energy expenditure would be balanced by the improved system functionality of the corridor and improved traffic flow operations over the design life of the project.

The project may require nighttime construction activities that would require the use of temporary construction lighting. The use of temporary construction lighting would result in a nominal increase in electricity consumption, but would be limited to the construction phases of the project.

Nonrenewable resources such as fossil fuels would be used during construction of the project; however, the project-related consumption would not cause a substantial depletion in the supplies of this resource and therefore is not considered adverse.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not make any of the proposed roadway improvements and therefore would not result in permanent energy-related impacts. However, it would not result in potential energy savings that could be achieved by relieving congestion and other transportation efficiencies.

Build Alternatives

Implementation of the project would alleviate existing traffic congestion, improve local circulation, and help reduce congestion-related pollutant emissions in the corridor. When balancing energy used during operation against energy saved by relieving congestion and other transportation efficiencies, the build alternatives would not have substantial energy impacts.

Fossil fuels would be used by motorists following construction of the project, although vehicular traffic is not expected to increase beyond forecast year volumes as a result of project implementation. The project-related consumption of fossil fuels would not cause a substantial depletion in the supplies of this resource and is not considered adverse.

For traffic signals or street lighting, light-emitting diode bulbs cost $60–$70 apiece, but last five to six years compared to the one-year average lifespan of the incandescent bulbs previously used. The light-emitting diode bulbs themselves

consume 10 percent of the electricity of traditional lights, which would also help reduce the project carbon dioxide emissions. The project would not install additional traffic signals or street lighting; therefore, electricity consumption associated with operation of the project would not be greater than existing demand.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following avoidance and minimization measures would minimize potential impacts related to energy consumption:

E-1 The proposed project shall incorporate the use of energy-efficient lighting such as light-emitting diode traffic signals to the extent feasible.

E-2 Before starting grading activities, the City shall ensure that construction documents require the contractor to select the construction equipment used on site based on low-emissions factors and high energy efficiency. Before starting grading activities, the City shall verify that the grading plans include a statement that the construction contractor shall ensure that all construction equipment is tuned and maintained in accordance with manufacturer specifications.

E-3 Before issuing a Notice to Proceed, the City shall verify that construction contracts and/or grading plans include a statement that the construction contractor shall support and encourage ride-sharing and transit incentives for the construction crew.

E-4 To the extent feasible and to the satisfaction of the City, the following measures shall be incorporated into the design and construction of the proposed project:

- Reuse and recycle construction waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Provide adequate recycling containers in public areas.

Also see Avoidance and Minimization Measure AQ-2 for measures to reduce construction equipment idling time, which reduces fuel consumption and therefore greenhouse gas emissions.

2.3 Biological Environment

2.3.1 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Threatened and Endangered Species, Section 2.3.4. Wetlands and other waters are discussed in Section 2.3.2.

The project would be mitigated through the Metropolitan Bakersfield Habitat Conservation Plan.

Affected Environment

The information in this section is based on the *Natural Environment Study* (April 2011).

Biological Study Area

The Biological Study Area was determined by incorporating electronic data provided by the design engineer into a geographic information system layout, which included areas of potential direct effects. The Biological Study Area (see Figure 2-26) extends beyond the areas of potential direct effects where necessary to identify sensitive biological resources within and immediately next to the project study area.

Vegetation Communities

Habitats are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of sensitive plants or animals occurring onsite. The main plant/habitat community in the Biological Study Area can be described as developed, interspersed with patches of barren ground and ornamental vegetation. These types of communities are not considered special plant communities under federal, state, or local laws, but project biologists identified two plant communities considered important by state and/or local agencies.

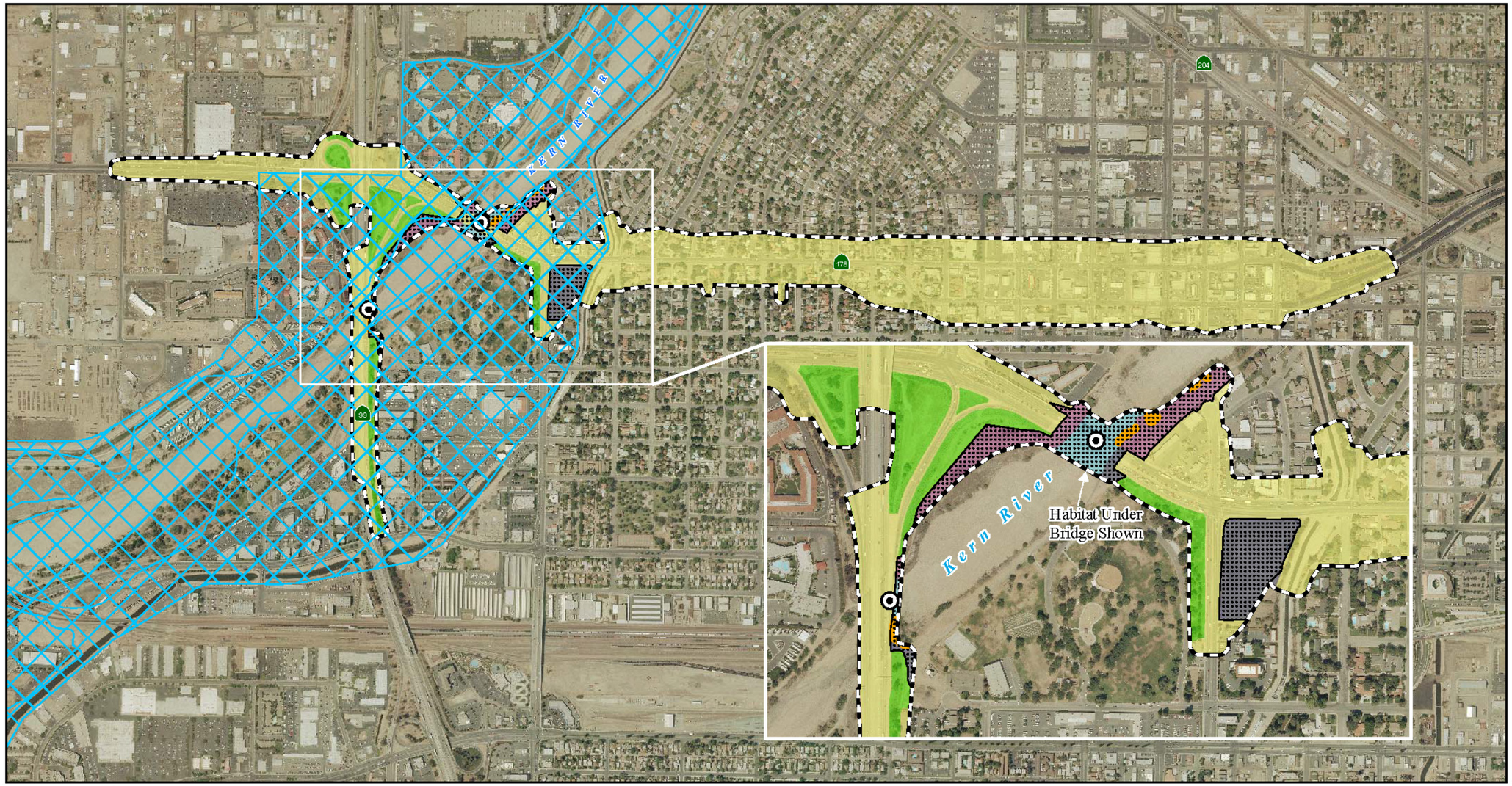


Figure 2-26 Existing Biological Resources

LEGEND

- Biological Study Area
- Potential Wildlife Linkage as Defined by Kern River Plan Element
- Suitable San Joaquin Kit Fox Habitat
- Bat Sign Observed Under Bridge

Vegetation Community

- Barren Ground
- Developed
- Ornamental / Urban
- Ruderal
- Unvegetated Streambed
- Sycamore / Willow Woodland

0 500 1000
FEET

SOURCE: Aerial: City of Bakersfield (2008); River Plan Element: Kern County (2008)

EA 06-493900
EA 06-484700

The Biological Study Area supports unvegetated streambed habitat and islands of sycamore/willow woodland habitat on the banks of the Kern River that serve as a wildlife movement corridor. These sensitive habitat types are in the Kern River channel. Riparian habitats are considered high-quality habitats because they provide protective cover, water and food for a variety of species. Some animals, including large mammals, require access to water and use bands of riparian vegetation as wildlife corridors. A few islands of sycamore/willow woodland habitat are interspersed throughout the riverbed and along riverbanks. This habitat type is dominated by willow species (*Salix* sp.) and western sycamore (*Platanus racemosa*).

Unvegetated streambed habitat occurs within the Kern River, under the 24th Street and State Route 99 bridges, in the western and southern sections of the Biological Study Area. The Kern River streambed is a dry, sandy-bottomed channel consisting of alluvial soils, sand, and few rocks. Most of the streambed is devoid of vegetation; however, a few patches of nonnative/grasses exist within this habitat.

Figure 2-26 shows these sensitive habitats and the other four types of habitats found in the Biological Study Area. Table 2.21 shows the acreage of each type of habitat in the Biological Study Area.

Table 2.21. Vegetation Communities Occurring in the Biological Study Area

Habitat Types	Total Acreage
Barren Ground	4.02
Developed	161.10
Ornamental/Urban	13.46
Ruderal/Disturbed	4.10
Unvegetated Streambed	1.81
Sycamore/Willow Woodland	0.33
Total	**184.83**

Source: Natural Environment Study (April 2011).

Wildlife Corridors

Many wildlife species use the Kern River floodplain and its dry riverbed as a link between the Tule Elk Preserve, southwest of metropolitan Bakersfield; the existing Sand Ridge Preserve to the southeast; the proposed specialty preserves to the northeast, and the Valley Floor Habitat Conservation Plan corridor north of metropolitan Bakersfield. The Kern River channel is the only unobstructed/passage between these large areas of natural lands used by wildlife.

The Kern River has received local and regional recognition by the Endangered Species Recovery Program of San Joaquin Valley, the Valley Floor Habitat Conservation Plan, the Kern River Plan Element, and the Metropolitan Bakersfield Habitat Conservation Plan as a potential wildlife linkage/corridor. Given the ecological significance of the Kern River, any activity that may impede wildlife movement has the potential to cause substantial adverse impacts. If wildlife movement is impeded or affected, populations or numerous species could be indirectly affected.

Human-made features like canals and culverts can also be used by smaller mammals, amphibians, and reptiles for linkage. Carrier Canal crosses the Biological Study Area between the Oak Street/24th Street intersection and Olive Street; however, due to fencing and its high water level, it is only passable to aquatic animal species.

Environmental Consequences

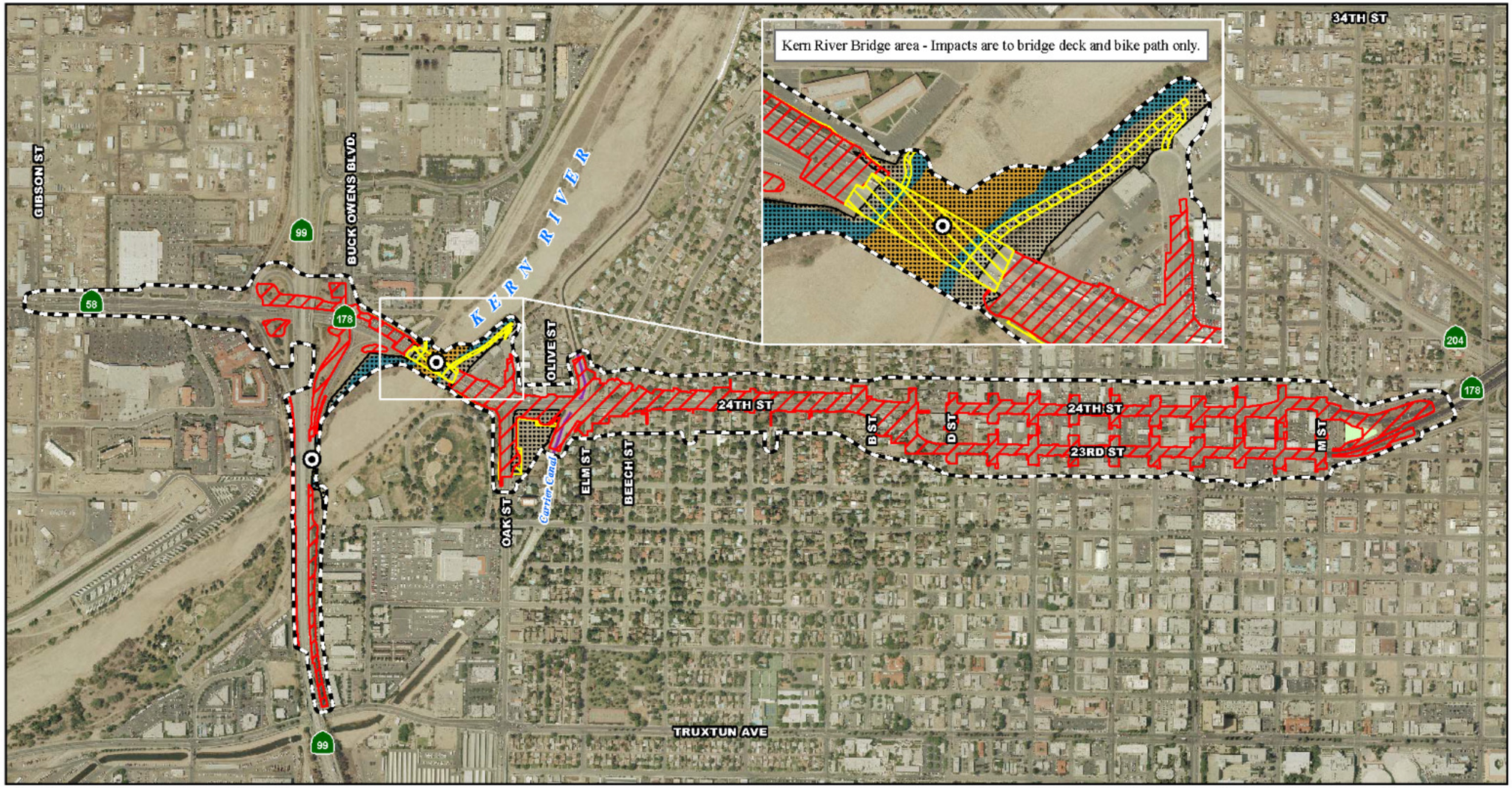
Table 2.22 lists vegetation types in the Biological Study Area and indicates the amount of each habitat/community that would be affected by the project's build alternatives.

Table 2.22. Project Impacts to Vegetation Communities

Vegetation Type	Alternative 1		Alternative 2	
	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Barren Ground	1.18	0.47	1.18	0.47
Developed	52.25	0.33	53.33	0.33
Ornamental/Urban	5.00	0.11	5.00	0.11
Ruderal/Disturbed	0.12	0.57	0.12	0.57
Unvegetated Streambed	0.00	0.00	0.00	0.00
Sycamore/Willow Woodland	0.00	0.00	0.00	0.00
Total	**58.55**	**1.48**	**59.63**	**1.48**

Source: Natural Environment Study (April 2011).

Figures 2-27 and 2-28 show where Alternatives 1 and 2, respectively, would affect biological resources. Wetlands and waters of the United States are also considered sensitive both by federal and state agencies, but are discussed in detail in Section 2.3.2.



LEGEND

Biological Study Area

Project Impacts

Permanent

Temporary

Biological Resources

Bat Sign Observed Under Bridge

Suitable San Joaquin Kit Fox Habitat

Potential USACE Only Jurisdiction Areas

Potential CDFG Only Jurisdiction Areas

Potential USACE and CDFG Jurisdiction Areas

Detention Basin

0 450 900 FEET

SOURCE: Aerial: City of Bakersfield (2008)

Figure 2-27 Project Impacts to Biological Resources for Alternative 1

EA 06-493900
EA 06-484700

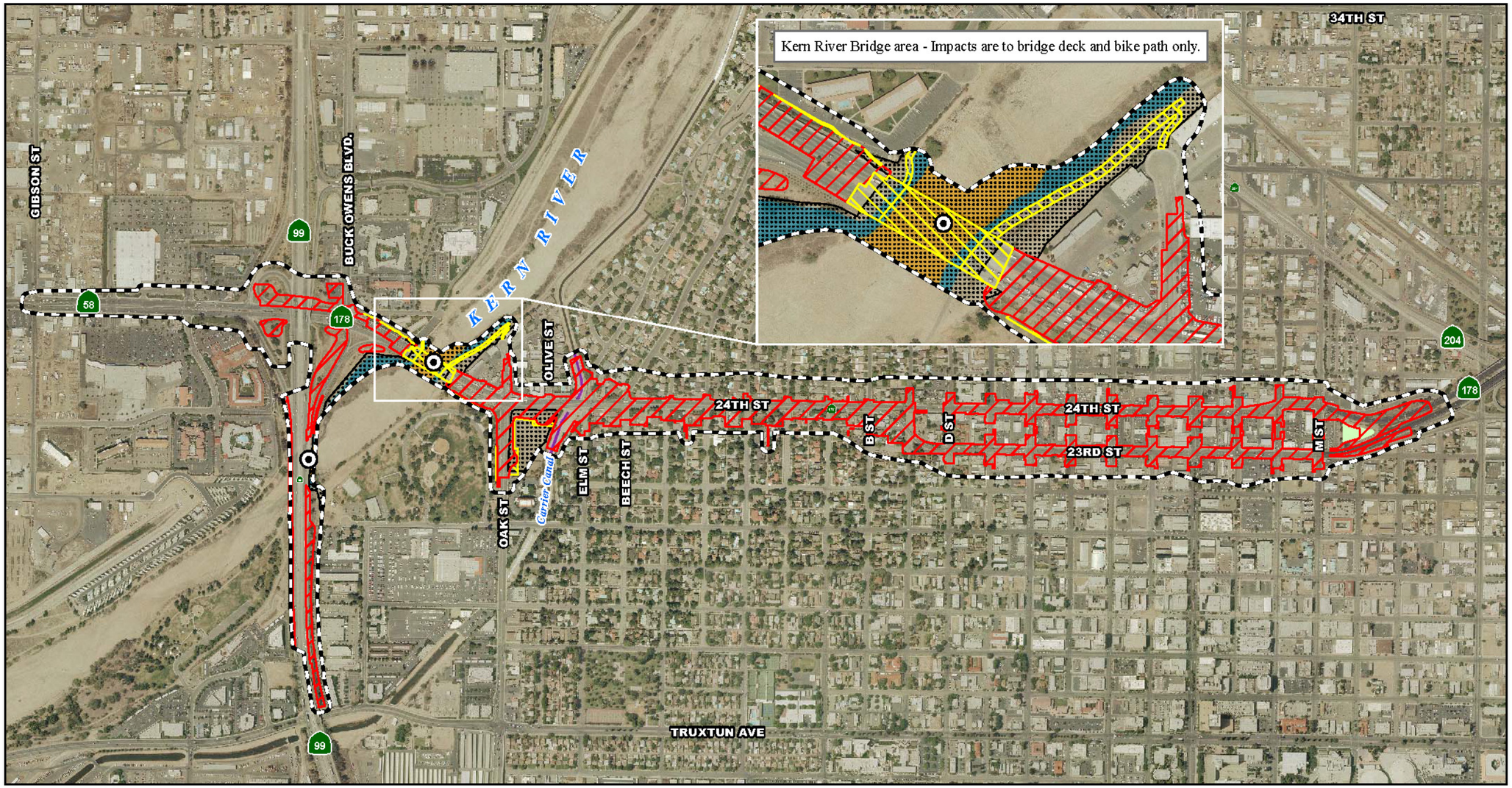


Figure 2-28 Project Impacts to Biological Resources for Alternative 2

EA 06-493900
EA 06-484700

Temporary Impacts

An area subject to "temporary" disturbance is any area that is disturbed during project construction but that after project completion would not be subject to further disturbance and has the potential to be revegetated.

No-Build Alternative

The No-Build Alternative would not build any of the proposed project improvements and, therefore, would not result in adverse temporary impacts to natural communities in the study area.

Build Alternatives

Unvegetated Streambed

Alternatives 1 and 2 would require a temporary construction easement to allow for access to the underside of the Kern River bridge near Beach Park. Construction vehicles would reach the underside of the Kern River bridge by means of the existing Kern River Parkway Bike Trail on the east side of the Kern River within a 30-foot Temporary Construction Easement.

No construction-related activities would occur within or from the unvegetated streambed; therefore, implementation of Alternatives 1 and 2 would not result in direct temporary impacts to the unvegetated streambed habitat.

Construction activities for Alternatives 1 and 2 would result in indirect temporary impacts such as dust, noise, and lighting from construction work. Dust resulting from construction could affect the streambed in the immediate vicinity, but is not expected to be detrimental enough to result in long-term adverse impacts to this habitat. In addition, construction work would be limited to the daytime hours to prevent light from spilling onto the riverbed. These impacts, that could affect wildlife using the corridor, would be temporary and would stop at project completion (see full discussion under Wildlife Corridor/Movement below).

Sycamore/Willow Woodland

Alternatives 1 and 2 would not result in direct temporary impacts to sycamore/ woodland habitat due to implementation of the avoidance and minimization measures (provided later in this section). Temporary construction easements occurring on the Kern River Parkway Bike Trail could result in indirect temporary impacts to sycamore/willow woodland habitat such as dust, noise, and spills from construction vehicles. These impacts could temporarily degrade the sycamore/willow woodland habitat; however, due to their nature, they would stop at project completion.

Wildlife Corridor/Movement

Within the Biological Study Area, wildlife movement is mostly restricted to the Kern River corridor. The 24th Street and State Route 99 bridges over the Kern River provide an excellent opportunity for wildlife movement along the Kern River. No construction would occur from the Kern River bed. All construction would be done from the bridge deck and bicycle trail for the purpose of the 24th Street bridge median reconstruction activities; therefore, no temporary direct impacts are expected to wildlife movement.

Portions of Carrier Canal north of the Biological Study Area can serve as a potential wildlife corridor; but, wildlife movement in the portions of Carrier Canal within the study area is currently hindered by the relatively high water level in Carrier Canal as well as fencing along the canal, both of which limit this portion of the canal from being used as a wildlife link. Implementation of the project would not result in impacts to this wildlife link.

Furthermore, construction work would result in temporary indirect impacts such as dust, noise, and construction crew commutes. These activities may further temporarily discourage some animal species from using the riverbed as a linkage. All impacts in the Kern River bed and Carrier Canal extension would be short term and minor and would stop at project completion.

Implementation of the avoidance and minimization measures would reduce the potential temporary direct and indirect impacts to wildlife movement.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not build any of the project improvements and, therefore, would not result in adverse permanent impacts to natural communities in the study area.

Build Alternatives

Unvegetated Streambed

Alternatives 1 and 2 would not result in permanent direct impacts to unvegetated streambed habitat.

Sycamore/Willow Woodland

With implementation of the Avoidance and Minimization Measures NC-2 and NC-3, Alternatives 1 and 2 would not result in direct permanent impacts to sycamore/illow woodland habitat.

Wildlife Corridor/Movement

Alternatives 1 and 2 would not result in direct permanent impacts to the Kern River and so would not result in long-term direct impacts to wildlife movement in the Kern River. Wildlife movement in portions of Carrier Canal within the study area is currently hindered by the relatively high water level in Carrier Canal and fencing along the canal, both of which prohibit animal access; therefore, implementation of Alternatives 1 and 2 would not result in direct permanent impacts to wildlife movement within Carrier Canal.

Avoidance, Minimization, and/or Mitigation Measures

The following measures would be incorporated to avoid, minimize, and/or mitigate adverse impacts of the build alternatives to natural communities. In addition, minimization measures noted in Section 2.3.4 related to the protection of San Joaquin kit foxes would apply.

Avoidance and Minimization Measures

NC-1 A biological monitor shall be onsite during construction activities within the Kern River riverbed on an as-needed basis to assist the contractor in complying with the project minimization measures and to provide guidance in avoiding and/or minimizing impacts to biological resources.

NC-2 A biologist shall monitor construction within the vicinity of sycamore/woodland areas within the Kern River riverbed, as needed, for the duration of the project to flush any wildlife species present before construction and to ensure that vegetation removal, best management practices, environmentally sensitive area avoidance, and all other avoidance and minimization measures are properly observed and implemented.

NC-3 Highly visible barriers (such as orange construction fencing) shall be installed around the sycamore/willow woodland habitat adjacent to the proposed project footprint to designate this environmentally sensitive area to be preserved. No grading or fill activity of any type shall be

permitted within this environmentally sensitive area. In addition, no construction activities, materials, or equipment shall be allowed within the environmentally sensitive area. All construction equipment should be operated in such a manner as to prevent accidental damage to this environmentally sensitive area. No structure of any kind, or incidental storage of equipment or supplies, shall be allowed within this protected zone. Silt fence barriers shall be installed at the environmentally sensitive area boundaries to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.

NC-4 Any native vegetation removal or tree (native or exotic) trimming activities shall occur outside of the nesting bird season (February 15–August 31). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist shall conduct a preconstruction survey to identify the locations of nests.

NC-5 All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities shall occur in developed or designated nonsensitive habitat areas outside of the Kern River bed. The designated upland areas shall be in such a manner as to prevent any spill runoff from entering waters of the United States.

NC-6 A weed abatement program shall be developed to minimize the importation of nonnative plant material during and after construction. Eradication strategies shall be employed should an invasion occur.

NC-7 During the night, the wildlife corridor shall be kept clear of all equipment that could potentially serve as barriers to wildlife passage. All equipment storage shall occur in designated areas outside of the Kern River.

NC-8 Before grading and/or construction activity involving the disturbance of any native vegetation, the City shall install fencing, flagging, lathe and rope, or other devices to delineate the maximum disturbance limits acceptable to and under the supervision of a qualified biologist.

NC-9 Equipment maintenance, lighting, and staging shall be in designated areas and directed away from the wildlife corridor, and it shall be

limited in duration. Construction work shall not be conducted at night adjacent to the wildlife corridor to the extent feasible. However, if work must be done at night, noise and lighting shall be directed away from the wildlife corridor. All nighttime work adjacent to the wildlife corridor shall be coordinated with the City and a qualified biologist.

Mitigation Measure

NC-10 Following project construction, all disturbed habitat adjacent to the Kern River shall be restored with native vegetation to the best extent feasible.

See Avoidance and Minimization Measures WQ-1 and WQ-2 in Section 2.2.1, and IS-1 and IS-2 in Section 2.3.5, for a discussion of the required Storm Water Pollution Prevention Plan and invasive species avoidance measures.

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 U.S. Code 1344) is the primary law regulating wetlands and surface waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States (U.S.), including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (with oversight by the U.S. Environmental Protection Agency.

The U.S. Army Corps of Engineers issues two types of 404 permits: Standard and General permits. Nationwide permits, a type of General permit, are issued to

authorize a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of U.S. Army Corps of Engineers' Standard permits. For Standard permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with U.S. Environmental Protection Agency Section 404(b)(1) Guidelines (U.S. Environmental Protection Agency) 40 Code of Federal Regulations Part 230), and whether permit approval is in the public interest. The 404 (b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game, the State Water Resources Control Board and the Regional Water Quality Control Boards. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. California Department of Fish and Game jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be

included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Game.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The Regional Water Quality Control Board also issues water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the Clean Water Act. See the Water Quality section for additional details.

Affected Environment

The information in this section is based on the *Jurisdictional Delineation Report* (September 2010) and the *Natural Environment Study* (April 2011).

No wetlands were found in the Biological Study Area. A detention basin lies in the eastern end of the project study area, but is believed not to be subject to jurisdiction.

Fieldwork for the jurisdictional delineation was done by qualified biologists on August 19, 2008. Follow-up field visits were done on April 3, September 9, and November 18, 2009, and January 21, 2010. Based on fieldwork, it was determined that there are jurisdictional features (non-wetland waters) in the Biological Study Area that are subject to the jurisdiction of the U.S. Army Corps of Engineers, California Department of Fish and Game, and Regional Water Quality Control Board.

U.S. Army Corps of Engineers Jurisdiction

Nexus to Navigable Waters

Two drainages—the Kern River and Carrier Canal— fall within the Biological Study Area where potential U.S. Army Corps of Engineers jurisdiction occurs. Both are within the western portion of the project study area. The Kern River has been designated a traditional navigable water by the U.S. Army Corps of Engineers. The Kern River is predominantly an unvegetated, sandy-bottom channel that is dry most of the year, and ultimately empties into Buena Vista Lake southwest of the project study area. The length of the river within the Biological Study Area is 860 feet. Carrier Canal is an open trapezoidal concrete channel that runs parallel to the Kern River and receives diversion waters from the Kern River north of the Biological Study Area. Carrier Canal bisects 24th Street just east of the Kern River and Beach Park. In addition, Carrier Canal conveys storm water and nuisance flows southwest into the Kern River Canal. Flows then proceed north back into the Kern River.

Potential Waters of the United States

Because the Kern River has been designated a traditional navigable water by the U.S. Army Corps of Engineers, it is considered jurisdictional by the U.S. Army Corps of Engineers, and no further significant nexus finding would be required. Carrier Canal is a relatively permanent water containing flows at least three months out of the year, and no further significant nexus finding would be required. The total amount of U.S. Army Corps of Engineers Waters of the United States in the Biological Study Area is 2.32 acres. See Figures 2-27 and 2-28.

California Department of Fish and Game Jurisdiction

Typically, all of the areas satisfying the U.S. Army Corps of Engineers jurisdictional criteria for waters of the United States are also often subject to California Department of Fish and Game jurisdiction pursuant to Section 1602 of the California Fish and Game Code. In addition, streambed banks and adjacent riparian vegetation areas extending beyond the limits of U.S. Army Corps of Engineers jurisdiction are considered subject to California Department of Fish and Game jurisdiction. Because riparian vegetation within the Kern River does not extend beyond the river banks, streambed banks were used to determine the limits of California Department of Fish and Game jurisdiction. Carrier Canal was determined to be nonjurisdictional by the California Department of Fish and Game pursuant to Section 1602 of the California Fish and Game Code because it is a human-made channel.[1] Therefore, the total amount of California Department of Fish and Game jurisdiction in the Biological Study Area is 4.22 acres.

Regional Water Quality Control Board Jurisdiction

Since there is no public guidance on determining Regional Water Quality Control Board jurisdictional areas, jurisdiction was determined based on the federal definition of wetlands (three parameters) and/or ordinary high water mark. The total amount of Regional Water Quality Control Board jurisdiction within the Biological Study Area is 2.32 acres.

---

[1] Laura Peterson-Diaz, California Department of Fish and Game, email dated July 9, 2009.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not build any of the proposed improvements and, therefore, would not result in adverse temporary impacts to wetlands or other jurisdictional waters in the Biological Study Area.

Build Alternatives

Alternatives 1 and 2 would require a series of temporary construction easements to allow for access to the underside of the Kern River bridge. Construction vehicles would reach the underside of the Kern River bridge via the existing Kern River Parkway Bike Trail on the east side of the Kern River within a 30-foot temporary construction easement. Construction would be done from vehicles and equipment on the bridge deck and from the Kern River Parkway Bike Trail. Construction vehicles would be used to remove the bridge joint from above the bike trail so that no scaffolding would be required on or between the bike trail and bridge abutment.

The temporary construction easement that is on the Kern River Parkway Bike Trail and just outside of the Kern River is not likely subject to U.S. Army Corps of Engineers jurisdiction. No temporary impacts to U.S. Army Corps of Engineers jurisdictional areas (Kern River or Carrier Canal) are expected from implementation of Alternatives 1 and 2 (see Table 2.23).

Table 2.23. Project Impacts to U.S. Army Corps of Engineers Jurisdictional Areas

Alternative	Jurisdictional Waters (acres)		
	Permanent (Carrier Canal)	Temporary	Total Impacts
Alternative 1	0.42	0.00	0.42
Alternative 2	0.42	0.00	0.42

Source: Natural Environment Study (April 2011).

Temporary impacts from implementation of Alternatives 1 and 2 to California Department of Fish and Game potential jurisdictional areas are summarized in Table 2.24. The temporary construction easement just outside of the Kern River may be subject to California Department of Fish and Game jurisdiction.

Table 2.24. Project Impacts to California Department of Fish and Game Jurisdictional Areas

Alternative	Jurisdictional Waters (acres)		
	Permanent	Temporary (Kern River Bridge)	Total Impacts
Alternative 1	0.00	0.075	0.075
Alternative 2	0.00	0.075	0.075

Source: Natural Environment Study (April 2011).

If the temporary construction easement is determined to be within California Department of Fish and Game jurisdiction, Alternatives 1 and 2 would result in 0.075 acre of temporary impacts to California Department of Fish and Game potential jurisdictional areas.

Permanent Impacts

Alternative 1 and 2 would result in 0.42 acre of permanent impacts to U.S. Army Corps of Engineers jurisdictional waters in Carrier Canal (see Table 2.23).

No permanent impacts to California Department of Fish and Game potential jurisdictional areas would occur from implementation of Alternatives 1 and 2 (see Table 2.24).

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would reduce impacts to potential jurisdictional waters within the study area.

W-1 Before construction at Carrier Canal, a permit shall be obtained through the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act, if necessary.

W-2 Before construction on the 24th Street Bridge over the Kern River, an agreement shall be obtained from the California Department of Fish and Game pursuant to Section 1602 of the Fish and Game Code.

W-3 Before construction, a permit shall be obtained from the Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act. Coordination with the Regional Water Quality Control Board shall be required to obtain a Water Quality Certification.

See Avoidance and Minimization Measure WQ-4 in Section 2.2.1 for a discussion of the required encroachment permit for construction work next to the Kern River.

2.3.3 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service and the California Department of Fish and Game are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.4 below. All other special-status animal species are discussed here, including California Department of Fish and Game fully protected species and species of special concern, and United States Fish and Wildlife Service or National Oceanic and Atmospheric Administration National Marine Fisheries Service candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600–1603 of the Fish and Game Code
- Sections 4150 and 4152 of the Fish and Game Code

Affected Environment

The information in this section is based on the Natural Environment Study (April 2011) and the Thomas Roads Improvement Program San Joaquin Kit Fox Effects Analysis, Mitigation Strategy, and Implementation Plan (March 2010).

The Biological Study Area supports potentially suitable habitat for a limited number of special-status animal species. After a thorough literature review, it was determined that 44 special-status wildlife species have the potential to occur within or near the Biological Study Area. Twenty-one of these special-status wildlife species are

federally and/or state-listed endangered, threatened, or candidate species that are discussed in Section 2.3.4, Threatened and Endangered Species.

"California Special Animals" is a general term that refers to all of the taxa the California Natural Diversity Database is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special-status species" (California Department of Fish and Game, Biogeographic Data Branch, California Natural Diversity Database, Special Animals, 898 Taxa, January 2011). Four of the 44 special-status animal species that could occur within the vicinity of the project and that have suitable habitat in the Biological Study Area are considered California Special Animals:

- Moestan blister beetle (*Lytta moesta*)
- Morrison's blister beetle (*Lytta morrisonii*)
- Cooper's hawk (*Accipiter cooperii*)
- Yuma myotis (*Myotis yumanensis*)

Four other special-status animal species of the 44 that could occur within the vicinity of the project and that have suitable habitat in the Biological Study Area are California Species of Special Concern, including:

- Burrowing owl (*Athene cunicularia*)
- Merlin (*Falco columbarius [wintering]*)
- Western mastiff bat (*Eumops perotis californicus*)
- Pallid bat (*Antrazous pallidus*)

The San Joaquin kit fox (*Vulpes macrotis mutica*)—federally listed as endangered, state listed as threatened—is also among the 44 potential special-status animals with suitable habitat in the Biological Study Area. The San Joaquin kit fox is the only species that is federally and/or state-listed. The San Joaquin kit fox is discussed in detail in Section 2.3.4, Threatened and Endangered Species.

Burrowing Owl

The burrowing owl is not a federally or state-listed species, but it is a California Species of Concern. This species is protected under the Migratory Bird Treaty Act (16 U.S. Code 703–711) and under Sections 3503 and 3800 of the California Fish and Game Code. Sections 2503, 3503.5, and 2800 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests, or their eggs.

However, the burrowing owl is not a covered species under the Metropolitan Bakersfield Habitat Conservation Plan.

Burrowing owls and signs of burrowing owls (burrows, scat, tracks, or feathers) were not found in the Biological Study Area during field surveys in 2007, 2008, 2009, and 2010. Marginally suitable habitat for burrowing owl exists in the Biological Study Area, including on the Kern River banks and in the detention basin in the southeast quadrant of the Oak Street/24th Street intersection outside of the urban areas. Even though burrowing owl activity was not detected during the general surveys, burrowing owls may use the project study area in the future.

Special-Status Grassland and Open Habitat Animal Species

In addition to the burrowing owl, special-status grassland and open habitat animal species may occur in the Biological Study Area, including Cooper's hawk, merlin, Moestan blister beetle, and Morrison's blister beetle.

None of these species were found in the Biological Study Area during biological surveys in 2007, 2008, 2009, and 2010, but it is possible for some of these species to move into the project study area before construction starts. While the predominant habitat onsite is disturbed, developed, and ornamental vegetation, small areas of suitable habitat for these species exist in the Biological Study Area. During the spring season, nesting birds and raptors can use trees, such as those in Beach Park. In addition, other animals can use the parcel in the detention basin and the Kern River channel as a link to other habitat types and forage areas.

Special-Status Bridge- and Crevice-Dwelling Animal Species

Special-status bridge- and crevice-dwelling animal species (bats) that could occur in the Biological Study Area include Yuma myotis, pallid bat, hoary bat, western red bat, and western mastiff bat. These species are a combination of California Species of Concern and Special Animals.

None of these special-status species of bats were found in the Biological Study Area during field surveys in 2008, 2009, and 2010. Focused bat surveys were done on April 26, 2010, of the 24th Street bridge and State Route 99 bridge, both over the Kern River. During the surveys, bats and bat sign (guano, urine staining, and/or vocalizations) were noted at crevices in both bridge structures, confirming the presence of day-roosting bats at both bridge locations. At least 100 bats were seen exiting from the 24th Street bridge. Acoustic analysis indicates that these day-roosting bats were Mexican free-tailed bat (*Tadarida brasilensis*) and Yuma myotis. Although

the Mexican free-tailed bat is not a special-status species, bat colonies frequently consist of several species of bats, including special-status species.

At the State Route 99 bridge, about 40 bats were seen exiting from the westernmost hinge, and about 100 bats exited from the easternmost hinge. Acoustic analysis indicated that the bats detected exiting from the bridge crevice during the emergence portion of the survey were Mexican free-tailed bats and Yuma myotis. No bats were seen night roosting in either the crevices used for day roosting or in the portions of the structures that contained box girders; however, a conclusive determination on night roosting behavior cannot be made from a single evening survey.

Based on the amount of guano found and the presence of colony-forming species detected roosting within the bridges, it is likely the 24th Street bridge and State Route 99 bridge contain large maternity colonies consisting of mothers and flightless young during the summer months. Mexican free-tailed bats in particular often form large maternity colonies. Bat maternity colonies are crucial to reproduction, and due to slow reproductive rates and high juvenile/subadult death are very susceptible to changes in environmental conditions.

The 24th Street bridge over the Kern River is also used by colonies of nesting swallows and other birds that occupy abandoned swallow nests and crevices. Most nesting birds are protected by the Migratory Bird Treaty Act.

Special-Status Sycamore/Willow Woodland Habitat Animal Species

The special-status species that may also occur within sycamore/willow woodland habitat include the following:

- Moestan blister beetle (*Lytta moesta*)
- Morrison's blister beetle (*Lytta morrisonii*)
- Cooper's hawk (*Accipiter cooperii*)
- Merlin (*Falco columbarius*)
- Nuttall's woodpecker (*Picoides nuttallii*)
- Yuma myotis (*Myotis yumanensis*)
- Western mastiff bat (*Eumops perotis californicus*)
- Pallid bat (*Antrozous pallidus*)

During the general biological surveys in 2007, 2008, 2009, and 2010, only one special-status sycamore/willow woodland animal species—Nuttall's woodpecker (*Picoides nuttallii*)—was found in the Biological Study Area. It is possible for other

species to move onto the site in the sycamore/willow woodland habitat and use the trees (for foraging) before construction.

A few small, isolated patches of riverine/riparian vegetation occur in the Biological Study Area within the Kern River channel. Because of the small sizes of these areas, it is unlikely that they would provide sufficient tree cover for nesting, though they would be suitable for foraging.

Environmental Consequences

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not build any of the proposed project improvements and, therefore, would not result in adverse temporary impacts to special-status animal species in the study area.

Build Alternatives

Burrowing Owl

The available habitat for burrowing owls in the Biological Study Area is marginal, and owls or their signs were not observed during the field surveys. Therefore, the probability of burrowing owls to occur on site is low. However, Alternatives 1 and 2 may result in indirect and temporary impacts to the burrowing owl during construction activities within the Kern River. The Kern River banks could serve as suitable burrowing owl habitat and could be used by burrowing owl in the future. Increased traffic levels, elevated noise levels, and generation of dust during construction may also temporarily affect burrowing owls if they move into the Biological Study Area before construction starts. Even through burrowing owls have occasionally been found using disturbed areas during construction, project-related construction activities, and resulting elevated noise levels could deter burrowing owls from moving into the Biological Study Area. However, construction activities would be temporary and would stop at completion of project construction.

Special-Status Grassland and Open Habitat Animal Species

Alternatives 1 and 2 are not expected to directly affect any of the special-status species, including Cooper's hawk, merlin, Moestan blister beetle, and Morrison's blister beetle. However, the project could indirectly and temporarily affect these species through the increase of noise and dust, and the temporary use of the vacant lot with detention basins for a construction staging area.

Special-Status Bridge- and Crevice-Dwelling Animal Species

Temporary impacts of Alternatives 1 and 2 to special-status bridge- and crevice-dwelling animal species would include indirect disturbance (such as noise, vibration, dust, night lighting, and human encroachment) from construction on the State Route 99 bridge and direct impacts to the 24th Street/Street bridge by exposing the joint crevice. Construction activities on the 24th Street bridge could temporarily impede access to roosting sites (existing and future) in the crevices of bridges. Because of this, the project is expected to temporarily affect bat and bird colonies by displacing them from the bridge structure to other areas. This could disrupt the animals' foraging patterns and locations and increase their exposure to predation.

It is expected that impacts to the bridge- and crevice-dwelling animal species would be minimized (from permanent to temporary) through implementation of avoidance and minimization measures such as exclusionary devices and alternative roosting habitat. To prevent direct harm to roosting bats present during construction, exclusionary devices placed at each bridge before construction would exclude bats from directly affected work areas. At construction completion, the exclusion devices would be removed to allow the bats to once again access the roost.

Due to the size of the bat colonies present in the bridges and the high potential for presence of large maternity colonies, project-related impacts would be considered adverse without mitigation. It may not be possible for all of the bats to find replacement roosting habitat during construction in the vicinity of the project. Therefore, the project may result in temporary impacts to bats even with implementation of the avoidance and minimization measures.

Special-Status Sycamore/Willow Woodland Habitat Animal Species

The 24th Street bridge construction activities under Alternatives 1 and 2 would result in temporary indirect impacts to sycamore/willow woodland species. These temporary impacts may include noise and dust during construction.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not build any of the proposed project improvements and, therefore, would not result in adverse permanent impacts to special-status animal species in the study area.

Build Alternatives

Burrowing Owl

Because available habitat in the Biological Study Area is marginal and the burrowing owl or its sign was not found during the surveys, the probability of the burrowing owl occurring onsite is low. Implementation of Alternative 1 or 2 would include acquisition and use of lands that could potentially serve as suitable habitat for the burrowing owl in the future. Because the burrowing owl seems to adapt well even to areas with human settlements, implementation of Alternatives 1 and 2 are not expected to result in a substantial loss of potential habitat for this species.

Special-Status Grassland and Open Habitat Animal Species

Alternatives 1 and 2 are not expected to directly affect the Cooper's hawk, merlin, Moestan blister beetle, or Morrison's blister beetle; however, both alternatives would remove ornamental trees that could provide future nesting habitat to migratory and other birds. Ornamental trees that could provide nesting habitat to migratory and other birds exist within the neighborhoods surrounding the proposed project; therefore, impacts contributing to potential habitat fragmentation and habitat loss resulting from implementation of Alternatives 1 and 2 would not be substantial.

Special-Status Bridge- and Crevice-Dwelling Animal Species

If the existing crevices on the 24th Street bridge that provide roosting habitat for bats are kept following construction, the project is not expected to substantially affect bats' long-term use of the structures; however, if they are not kept, impacts to bats would be considered permanent. If these structural features providing existing roosting habitat cannot be permanently kept after construction, the installation of alternative roosting habitat may reduce the impacts of Alternatives 1 and 2 on bats' long-term use of the structures.

Where feasible, on-structure replacement habitat is more ecologically effective than off-structure replacement habitat. Alternative roosting habitat at the State Route 99 bridge would also suffice due to its proximity and direct line of sight to the project. And, in some cases, bridge structure changes may increase future potential roosting habitat. For example, leaving newly created expansion joint crevices unrubberized so that they are available to bats for day roosting could benefit bat species after construction is done.

Special-Status Sycamore/Willow Woodland Habitat Animal Species

Because of the implementation of the avoidance and minimization measures and use of environmentally sensitive area fencing during construction, Alternatives 1 and 2 would not result in the removal of sycamore/willow woodland habitat. Therefore, the build alternatives would not result in direct or indirect permanent impacts to sycamore/willow woodland animal species.

Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following avoidance, minimization, and mitigation measures would reduce potential impacts to animal species.

Burrowing Owl

Avoidance and Minimization Measure

AS-1 A preconstruction survey shall be conducted at the Kern River banks and the detention basin in the southeast quadrant of the Oak Street/24th Street intersection before starting construction activities to determine the presence of burrowing owl on site.

Also see Avoidance and Minimization Measure NC-4 in Section 2.3.1 for nesting bird avoidance.

Mitigation Measures

AS-2 Should burrowing owl burrows be found, no disturbance shall occur within 160 feet of occupied burrows during the nonbreeding season or within 250 feet during the breeding season.

AS-3 If any of the preconstruction surveys determine that burrowing owls are present, one or more of the following mitigation measures shall be required: (1) avoidance of active nests and the surrounding buffer area during construction activities; (2) passive relocation of individual burrowing owl; (3) active relocation of individual burrowing owls; and (4) preservation of onsite habitat with long-term conservation value for the burrowing owl. The specifics of the required measures shall be coordinated between the City, Caltrans biologist, and the resource agencies.

Special-Status Grassland and Open Habitat Animal Species

Avoidance and Minimization Measure

See Avoidance and Minimization Measure NC-4 in Section 2.3.1 for nesting bird avoidance.

Special-Status Bridge- and Crevice-Dwelling Animal Species

Avoidance and Minimization Measures

AS-4 A qualified bat biologist shall survey the project study area in June, before construction, to assess the potential for maternity roosting, since maternity roosts are generally formed in late spring.

AS-5 To avoid direct mortality to bats roosting in areas subject to impacts from construction activities between December 1 and October 31, any structure with potential bat habitat affected by the construction shall have temporary bat exclusion devices installed under the supervision of a qualified bat biologist before construction activities begin. Exclusion shall be conducted during the fall (September or October) to avoid trapping flightless young inside during the summer months or hibernating individuals during the winter. Such exclusion efforts shall be continued to keep the structures free of bats until the completion of construction. Replacement roosting habitat may also be needed to minimize effects to excluded bats. All bat exclusion techniques shall be coordinated among the City, Caltrans, a qualified bat biologist, and the resource agencies.

AS-6 A qualified bat biologist shall perform an inspection of exclusionary devices before construction to determine success. Coordination between the City, Caltrans, and the resource agencies shall be conducted by a qualified bat biologist should any alterations need to be made.

AS-7 All construction work on the 24th Street Bridge over the Kern River shall be limited to the daytime hours to the maximum extent feasible. If nighttime construction is necessary for work conducted on the bridge, impacts shall be minimized by directing lighting and noise away from night roosting areas as much as possible.

AS-8 To prevent project impacts to bridge- and crevice-dwelling birds (e.g., swallows), all work on existing bridges with potential bird habitat that

would be affected by construction shall include removal of all bird nests before construction under the guidance and observation of a qualified biologist before February 1 of that year, before the bird nesting season. Removal of nests that are under construction must be repeated as frequently as necessary to prevent nest completion or until nest exclusionary devices (such as netting or a similar mechanism that keeps birds from building nests) are installed. Nest removal and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts must be continued to keep the structures free of swallows until September 1 or the completion of construction (whichever comes first). All nest exclusion techniques shall be coordinated among the City, Caltrans, a qualified biologist, and the resource agencies.

Mitigation Measure

AS-9 If bats are determined present, before construction activities begin, alternative roosting habitat shall be installed at an onsite location approved by a qualified bat biologist or at a nearby location such as the State Route 99 bridge to provide additional roosting habitat during construction. Forms of alternative roosting habitat may include construction of bat houses, add-on panels, or sections of low-density concrete slabs installed on the undersides of the State Route 99 bridge. Designs for alternative roosting habitat attached to the bridge shall be made by an engineer in consultation with a qualified bat biologist to ensure that the habitat is both structurally sound and ecologically feasible for use by bats.

To the extent feasible, newly created expansion joint crevices shall be left unrubberized so that they are available to bats for day roosting after construction is complete.

Special-Status Sycamore/Willow Woodland Habitat Animal Species

No additional avoidance and minimization measures are proposed beyond those noted in this section.

2.3.4 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species.

The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats.

The California Department of Fish and Game is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by the California Department of Fish and Game. For species listed under both the Federal Endangered Species Act and the California Endangered Species Act requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Game may also authorize impacts to California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Affected Environment

The information in this section is based on the *Natural Environment Study* (April 2011).

Plant Species

Per a literature review, eight federally and/or state-listed endangered, threatened, or candidate plant species have been documented to occur in the vicinity of the Biological Study Area:

- Bakersfield smallscale (*Atriplex tularensis*) – state listed as endangered
- California jewel flower (*Caulanthus californicus*) – federally and state-listed as endangered
- Kern mallow (*Eremalche kernensis*) – federally listed as endangered
- Striped adobe-lily (*Fritillaria striata*) – state-listed as threatened
- San Joaquin wooly-threads (*Monolopia congdonii*) – federally listed as endangered
- Bakersfield cactus (*Opuntia basilaris* var. *treleasei*) – federally and state-listed as endangered
- San Joaquin adobe sunburst (*Pseudobahia perisonii*) – federally and state-listed as endangered
- Keck's checker mallow (*Sidalcea keckii*) – federally listed as endangered

Based on field surveys on April 26, 2007 and April 13, 2010, habitat is not present in the Biological Study Area for any of these federally or state-listed plant species except the Kern mallow and San Joaquin wooly-threads. None of the federally or state-listed plant species were found during botanical surveys for the project. However, marginally suitable habitat exists for Kern mallow and San Joaquin wooly-threads. These plant species could occur in the Biological Study Area in and around

the Kern River. Kern mallow is an herbaceous annual plant that occurs in chenopod scrub and grassland areas with dry, open sandy and clayey soils. The plant is federally listed as endangered and is a California Native Plant Society List 1B species. Kern mallow does not have listing status with the State of California, but it is included in the Recovery Plan for Upland Species of San Joaquin Valley, Metropolitan Bakersfield Habitat Conservation Plan and Valley Floor Habitat Conservation Plan.

San Joaquin woolly-threads is an annual herb that occurs in chenopod scrub and valley and foothill grassland areas. Soils are alkaline or loamy plains and sandy soils. The plant is federally listed as endangered and is a California Native Plant Society List 1B species. While not state listed, the plant species is covered under the Metropolitan Bakersfield Habitat Conservation Plan and Valley Floor Habitat Conservation Plan.

Animal Species

As listed in Table 2.25, 21 federal and/or state-listed endangered, threatened, or candidate wildlife species that occur in the vicinity of the Biological Study Area were identified through a literature review.

Table 2.25. Federally and/or State-Listed Species

Common Name	Scientific Name	Listing Status
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT
Conservancy fairy shrimp	*Branchinecta conservation*	FE
Longhorn fairy shrimp	*Branchinecta longiantenna*	FE
Kern primrose sphinx moth	*Euproserpinus euterpe*	FT
California tiger salamander	*Ambystoma californiense*	FT, SE
California red-legged frog	*Rana aurora draytonii*	FT
Mountain yellow-legged frog	*Rana muscosa*	FE
Delta smelt	*Hypomesus transpacificus*	FT, ST
Blunt-nosed leopard lizard	*Gambelia sila*	FE, SE
Giant garter snake	*Thamnophis gigas*	FT, ST
Western snowy plover	*Charadrius alexandrinus nivosus*	FT
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC, SE
California condor	*Gymnogyps californianus*	FE, SE
Southwestern willow flycatcher	*Empidonax traillii extimus*	FE, SE
Least Bell's vireo	*Vireo bellii pusillus*	FE, SE
San Joaquin antelope squirrel	*Ammospermophilus nelsoni*	ST
Giant kangaroo rat	*Dipodomys ingens*	FE, SE
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	FE, SE
Buena Vista lake shrew	*Sorex ornatus relictus*	FE
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, ST

FE= federally listed as endangered
FT= federally listed as threatened
SE= State listed as endangered
ST= State-listed threatened
FC= federally listed as candidate

Based on field surveys on August 27 and 28, 2008; April 3, 2009; and January 21, 2010, habitat is not present in the Biological Study Area for all but one of the federally or state-listed wildlife species. Low quality habitat exists for San Joaquin kit fox (in the Kern River corridor and Beach Park); therefore, a full discussion of this species is provided.

San Joaquin Kit Fox

The San Joaquin kit fox is federally listed as endangered, state-listed as threatened, designated as an umbrella species in the Recovery Plan for Upland Species of San Joaquin Valley, and designated as a covered species in the Metropolitan Bakersfield Habitat Conservation Plan and Valley Floor Habitat Conservation Plan. It is the smallest of the four fox species found in North America and mainly occurs in chenopod scrub, alkali sink, subshrub scrub, oak woodland, and agricultural fields. It prefers well-drained, loose-textured, sandy loam or sandy clay loam soils for denning. In Bakersfield, San Joaquin kit foxes are highly adaptable to human conditions and are known to use disturbed areas such as high-intensity oil fields for denning, foraging, and travel corridors as well as using human-made structures like culverts, canals, railroad corridors, roads, and powerline rights-of-way.

Surveys were done in 2008 for the area encompassing all of the Thomas Roads Improvement Program projects, including the proposed project. The project-specific San Joaquin kit fox study area partially coincides with the Biological Study Area. Near the 24th Street/Oak Street intersection, the San Joaquin kit fox survey covered a larger area to the south, including the 21st Street/Oak Street intersection and all of Beach Park. Near the reverse S-curve, where 24th Street splits into two one-way streets (23rd and 24th Streets), the project-specific San Joaquin kit fox survey area encompassed the 23rd Street and 24th Street couplet between just east of B Street and C Street.

Although the survey indicated a low level of use by San Joaquin kit foxes within the 24th Street Biological Study Area, San Joaquin kit foxes can potentially use any of the habitats in the San Joaquin kit fox project-specific study area. San Joaquin kit foxes adapted to urban conditions in Bakersfield could potentially use any of the habitats in the Biological Study Area, but some land uses have higher San Joaquin kit fox potential than others. Specifically, the survey identified that undeveloped areas in Bakersfield have high habitat value because they allow for San Joaquin kit fox movement, foraging, and denning.

Areas with the presumed highest potential for San Joaquin kit fox denning and movement in the proposed project's Biological Study Area include Beach Park, the Kern River Corridor and adjacent paths, and the low-density commercial areas. However, because the San Joaquin kit fox population in Bakersfield exhibits some degree of flexibility in its habitat requirements, San Joaquin kit foxes may use the edges of these residential communities for foraging and movement.

Although San Joaquin kit foxes may use the urban and developed areas in the Biological Study Area, the habitat value of these areas is low. It is more likely that San Joaquin kit foxes would use higher quality habitat nearby. Higher-quality suitable San Joaquin kit fox habitats were defined not only on the basis of vegetation ground cover, but also with respect to the likelihood of San Joaquin kit fox movement, foraging, and denning. In general, barren ground may support similar vegetation ground cover to ruderal/disturbed habitat if unmaintained and barren ground has a similar likelihood of San Joaquin kit fox using it; therefore, portions of barren ground (vacant parcels that abut Carrier Canal) were included in this analysis.

Based on these assumptions, for the purposes of this analysis, portions of the ruderal/disturbed habitat, barren ground, and unvegetated streambeds are considered suitable San Joaquin kit fox habitat. There are 9.8 acres of habitat within the Biological Study Area presumed to represent the best suitable habitat for urban-adapted San Joaquin kit foxes. High-density residential developments exhibit low potential for San Joaquin kit fox denning because these areas have a higher density of humans and are routinely disturbed. Table 2.26 shows the areas in the Biological Study Area presumed to represent the best suitable habitat for urban-adapted San Joaquin kit foxes.

Table 2.26. San Joaquin Kit Fox Suitable Habitat in the Biological Study Area

Vegetation Type	Acreage
Ruderal/Disturbed (including Barren Ground)	7.99
Unvegetated Streambed	1.81
Total	**9.80**

Carrier Canal was identified as a potential movement corridor in the San Joaquin kit fox study, but movement occurs outside of the canal in the Biological Study Area because the canal is fenced and maintains high water levels throughout the year.

Surveys for San Joaquin kit fox dens and sign found one potential den, three presumed active dens, and one incidence of San Joaquin kit fox scat at Beach Park, and two incidences of San Joaquin kit fox scat on the western banks of the Kern River. Although survey results indicated that San Joaquin kit fox denning occurs in Beach Park, San Joaquin kit fox denning and movement are likely intermittent throughout the Biological Study Area due to the routine disturbances. San Joaquin kit foxes may use Beach Park for occasional denning, but more than likely they move through the area along the edges of the Kern River corridor to more suitable habitat north or south of the Biological Study Area.

Environmental Consequences

The impacts of the project on the San Joaquin kit fox are described as direct and indirect impacts. Direct impacts are expected to be caused by the project at the time of construction. Indirect impacts are those caused by the project after the roadway improvements are operational. Although indirect impacts are unintended, they are still reasonably certain to occur. Direct impacts are further differentiated by permanent and temporary impacts.

Caltrans has begun formal Section 7 consultation under the Federal Endangered Species Act with the U.S. Fish and Wildlife Service for the proposed project (March 2, 2012). Caltrans sent the Biological Assessment and requested a Section 7 Biological Opinion from the U.S. Fish and Wildlife Service. The Biological Opinion will provide determination of the potential environmental effects to the San Joaquin kit fox and any required avoidance, minimization, and mitigation measures.

Temporary Impacts

No-Build Alternative

The No-Build Alternative would not build any of the proposed project improvements and, therefore, would not result in adverse temporary impacts to threatened and endangered species (specifically the San Joaquin kit fox) in the study area.

Build Alternatives

Threatened and Endangered Species – San Joaquin Kit Fox

Direct temporary impacts include short-term disturbance to ruderal/disturbed (including barren ground) habitat that would result from grading, staging, and implementation of the temporary construction easements. These habitats would be restored to pre-project conditions following construction.

Alternative 1 would result in temporary impacts to about 1.07 acres of suitable ruderal/disturbed (including barren ground) habitat. Alternative 2 would result in temporary impacts to about 1.04 acres of ruderal/disturbed (including barren ground) habitat, which represents both suitable foraging and denning habitat for the San Joaquin kit fox.

San Joaquin kit foxes could also be directly affected by ground-disturbing activities, could incidentally be struck by construction equipment, or become entrapped in dens during ground-disturbing activities. This risk would be lessened with the implementation of avoidance and minimization measures and stop when project construction ends.

San Joaquin kit fox movement could also be impeded by temporary construction fencing used to delineate the construction footprint and environmentally sensitive areas. San Joaquin kit foxes could be disturbed by noise and light pollution during construction activities; however, in Bakersfield, they seem relatively undisturbed by noise lights from traffic and human activity. These impacts would be temporary and would stop at construction completion.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not build any of the proposed project improvements and, therefore, would not result in adverse permanent impacts to threatened and endangered species in the study area.

Build Alternatives

Plant Species

The project is expected to result in no effect to the Kern mallow and San Joaquin woolly-threads because these species were not found in the Biological Study Area during the surveys. Therefore, the project would not result in direct or indirect effects to these species.

San Joaquin Kit Fox

Permanent impacts include those that occur at the time of construction and remain following project completion and those that occur when the area is permanently converted from one cover/habitat type to another (Figures 2-27 and 2-28). Alternatives 1 and 2 would potentially result in direct and indirect impacts to San Joaquin kit foxes. Direct impacts would include loss of suitable habitat (south of 24th Street between Oak Street and Carrier Canal), den destruction, and the increased risk

of injury and death from vehicles. The project may affect the San Joaquin kit fox due to the presence of suitable denning and foraging habitat in and next to the Biological Study Area.

Alternatives 1 and 2 would result in the direct permanent loss of about 1.21 acres of ruderal/disturbed (including barren ground) habitat, which represents both suitable foraging and denning habitat for the San Joaquin kit fox. The project would result in the direct permanent loss of suitable foraging and denning habitat for the San Joaquin kit fox, therefore the project would also result in increased habitat fragmentation for this species.

Of the dens found in the Biological Study Area during 2008 surveys, none were within the 24th Street Alternatives 1 or 2 footprint, and therefore, no existing dens could be directly permanently eliminated during project construction. However, a San Joaquin kit fox could move into the Biological Study Area before construction and grading, and other construction activities could destroy San Joaquin kit fox dens and result in San Joaquin kit fox disturbance. Destruction of the den would be considered a permanent impact, but the risk of destruction is limited to the construction phase of the project.

Following project completion, indirect impacts may occur, including an unintentional increase in San Joaquin kit fox vehicular strike in the project area due to the expanded Oak Street intersection and widened 24th Street. This would present a greater overall surface area of road to be crossed by a San Joaquin kit fox, with the capacity to carry more vehicles traveling at higher speeds. In addition, road design elements included in the project description such as soundwalls and retaining walls could obstruct San Joaquin kit foxes from safely passing over the roadway and contribute indirectly to an unintentional increase in the potential for vehicle strike. Although vehicles pose a threat to San Joaquin kit foxes, vehicular strikes do not appear to be limiting the San Joaquin kit fox population size in Bakersfield. Because San Joaquin kit fox are adept at crossing four- to six-lane roads in Bakersfield, the potential magnitude for the project to result in an unintentional increase in vehicular vehicle strikes cannot be reliably predicted. In addition, the Kern River corridor crosses the Biological Study Area beneath the grade of 24th Street; therefore, there is a high likelihood that San Joaquin kit foxes would prefer to use that natural movement corridor.

Both build alternatives, in combination with cumulative Thomas Roads Improvement Program projects within the study area, would lead to habitat loss (1.21 acres of San

Joaquin kit fox habitat), increased habitat fragmentation as a result of habitat loss, and increased risk of San Joaquin kit fox deaths caused by vehicle collisions.

Avoidance, Minimization, and Mitigation Measures

San Joaquin Kit Fox

Implementation of the following proposed avoidance, minimization, and mitigation measures would reduce potential impacts to the San Joaquin kit fox.

Avoidance and Minimization Measures

These proposed avoidance and minimization measures would be implemented before and during construction activities:

TE-1 Construction activities shall adhere to the standard construction and operational requirements as described in the United States Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to and During Ground Disturbance (USFWS 1999).

TE-2 Approximately 60 days before road construction, a U.S. Fish and Wildlife Service and California Department of Fish and Game-approved biologist shall conduct a survey for San Joaquin kit fox dens within 200 feet of the construction footprint, including utility relocations. A letter report and map of known and potential San Joaquin kit fox dens shall be submitted to the U.S. Fish and Wildlife Service and California Department of Fish and Game.

Preactivity clearance surveys for San Joaquin kit fox shall be repeated about 2 weeks before construction or after any delays in construction of over 2 weeks. Any new San Joaquin kit fox dens identified since completing the 60-day survey shall be reported to the U.S. Fish and Wildlife Service and California Department of Fish and Game in a letter report and map. If no new San Joaquin kit fox dens are identified, an internal record shall be maintained that includes the survey date, designated biologist conducting the survey, and general survey findings. The records shall be submitted to the U.S. Fish and Wildlife Service and California Department of Fish and Game upon request.

TE-3 If dens or potential dens are detected within the project footprint during 60-day and/or 2-week pre-activity clearance surveys, agency permission shall be requested to monitor and excavate dens that would be affected by the project. The biologist shall monitor potential dens for 3 consecutive nights and submit monitoring results in a letter report to the U.S. Fish and Wildlife Service and California Department of Fish and Game. The biologist shall oversee the excavation of dens following approval by the U.S. Fish and Wildlife Service and California Department of Fish and Game. Dens found within 200 feet of project construction but not affected by construction activities shall be monitored and buffered from construction by an exclusion zone. The biologist shall place flagged stakes in a 50-foot radius buffer around any potential or atypical den and 100 feet from a known den; the U.S. Fish and Wildlife Service shall be contacted if a natal den is found. The biologist shall submit results of den excavation and exclusion in a letter report to the U.S. Fish and Wildlife Service and California Department of Fish and Game.

TE-4 The biologist shall conduct an environmental awareness training for all construction crews before ground-disturbing activities. The purpose of this training is to inform construction crew members of permit terms and conditions and the potential for San Joaquin kit fox to occur at a site and be affected by construction activities. The training shall be repeated to all new crew members and annually to all crew members working in San Joaquin kit fox habitat. Following the training, crew members shall sign an attendance sheet stating that they attended the training and understand the protection measures and construction restrictions. Training materials and records of attendees shall be submitted to the U.S. Fish and Wildlife Service and California Department of Fish and Game.

TE-5 The biologist shall monitor road construction activities once daily. The biologist shall verify that construction complies with permit terms and conditions and construction and operation requirements described in *United States Fish and Wildlife Service Standardized Recommendations for the Protection of the San Joaquin Kit Fox Prior to Ground Disturbance* (USFWS 1999). The biologist shall maintain a log of daily monitoring notes that can be summarized and transmitted

to the U.S. Fish and Wildlife Service and California Department of Fish and Game at their request.

Mitigation Measures

The following project design changes and fee program participation are expected, when implemented together, to reduce the potential for adverse effects on the San Joaquin kit fox. Final project design changes intended to reduce potential adverse effects on San Joaquin kit fox sha1l be approved by the U.S. Fish and Wildlife Service and California Department of Fish and Game during the final design phase.

TE-6 Permeable fencing shall be installed along the proposed right-of-way of 24th Street in all locations where new fencing is required. One or a combination of the following three design options may be adopted to provide San Joaquin kit fox with movement opportunities: elevating the bottom of the fence 5 inches above ground to allow unobstructed movement by San Joaquin kit foxes under the fence; installing ground-level 8-×-8-inch-wide gaps no more than 100 feet apart for the length of the fence, which would allow San Joaquin kit fox movement at regular intervals along the right-of-way; and installing fencing with a minimum mesh size of 3.5 × 7 inches, but preferably 5 × 12 inches, which would allow unlimited movement by San Joaquin kit fox through the fence.

Locations that are currently fenced shall remain fenced or shall have new fencing installed in relatively the same location and shall not have permeable design.

TE-7 Curbed medians and median barriers may be used as part of project design. If curbed medians are required for public safety, the height of curbed medians shall be no greater than 10 inches. Ten-inch curbed medians shall remain unvegetated to prevent obstructing the visual field of San Joaquin kit foxes near the roadway. Curbed medians less than 10 inches in height and requiring landscaping shall be planted with low-level vegetation (i.e., less than 6 inches) or be frequently mowed to prevent overgrowth.

If taller median barriers are required in a later planning stage for public safety, Caltrans-designed modified median barrier type 60/S shall be used. Caltrans type 60/S design has been approved by the U.S. Fish

and Wildlife Service (Biological Opinion No. 81420-2009-F-0752; U.S. Fish and Wildlife Service 2009) and includes 9-inch-radius openings (9-inch-high x 18-inch-wide half-circle openings) spaced every 150 feet to allow passage by San Joaquin kit fox.

TE-8 Project landscaping shall be designed to allow unobstructed visibility to San Joaquin kit fox and to provide opportunities for movement across the roadway. Curbed median less than 10 inches in height and roadside landscaping shall be planted in one of three alternative strategies: selecting plants that do not exceed 6 inches tall at maturity, maintaining vegetation height so that it does not exceed 6 inches, and/creating gaps no less than 4 feet wide every 12 feet in areas landscaped with trees and shrubs.

TE-9 The toe of road fill, walls, fencing, and any other permanent physical obstruction shall be designed no less than 20 feet from the centerline of the bike trail on the Kern River corridor and shall have a minimum vertical clearance of 10 feet to maximize horizontal and vertical passable space for continued San Joaquin kit fox movement.

TE-10 Permanent and temporary loss of San Joaquin kit fox habitat shall be mitigated by participating in the *Metropolitan Bakersfield Habitat Conservation Plan* fee payment program. The permanent loss of 1.21 acres of ruderal/and barren ground habitats for both build alternatives and the temporary disturbance of 1.07 acres under Alternative 1 and 1.04 acres under Alternative 2 of ruderal/disturbed and barren ground habitats shall be mitigated by participating in the Metropolitan Bakersfield Habitat Conservation Plan at agency-approved ratios. Sufficient funding would be paid to allow the Metropolitan Bakersfield Habitat Conservation Plan Trust Group to purchase at least 4.77 acres of suitable San Joaquin kit fox habitat (see table below).

Kit Fox Suitable Habitat Compensatory Mitigation Ratios, Anticipated Acreage of Impact, and Mitigation Acreage

Habitat Type Affected	Proposed Compensatory Mitigation Ratios		Alt 1	Alt 2	Alt 1	Alt 2	Alt 1	Alt 2
	Permanent Impacts	Temporary Impacts[1]	Permanent Impacts (Acreage)		Temporary Impacts (Acreage)		Acreage to Mitigate With Metropolitan Bakersfield Habitat Conservation Plan	
Ruderal[1]	Acquisition of habitat at 3:1 ratio	1.1:1 + restoration	1.21	1.21	1.07	1.04	4.77	4.74
Total Acreage to Mitigate with Metropolitan Bakersfield Habitat Conservation Plan							**4.77**	**4.74**

Source: U.S. Fish and Wildlife Service 2008

[1] This includes portions of the potentially suitable San Joaquin kit fox habitat: ruderal/disturbed and barren ground. To replace habitat values temporarily lost, the City and Caltrans shall restore all vegetated areas disturbed by road construction.

TE-11 Before construction, the limits of permanent and temporary impacts would be verified and mapped by habitat type within those limits. The map would be submitted for approval by the U.S. Fish and Wildlife Service before submittal to the City of Bakersfield Planning Department for fee payment.

Upon completion of project construction, all areas subject to temporary ground disturbance, including storage and staging areas, temporary roads, and pipeline corridors, shall be recontoured if necessary and revegetated to promote restoration of the area to preproject conditions. Appropriate methods and plant species used to revegetate such areas shall be determined on a site-specific basis in consultation with the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and revegetation experts.

2.3.5 Invasive Species

Regulatory Setting

On February 3, 1999, President Bill Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the State’s invasive species list,

currently maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

Affected Environment

The information in this section is based on the *Natural Environment Study* (April 2011).

Exotic plant species exist within the nonnative plant communities throughout the Biological Study Area, within patches of native plant communities, and in areas that have been disturbed by human use. Exotic species are typically more numerous next to roads and developed areas and frequently border ornamental landscape. In the past, these areas likely supported grassland, valley sink scrub, saltbush scrub, sycamore/willow woodland, and freshwater marsh habitats. Consequently, scattered plant species associated with these plant communities are often found in these areas. The predominant habitat within the study area is classified as developed, which is typical in urbanized areas.

Ten exotic plants in the California Invasive Plant Council California Invasive Plant Inventory were found during field surveys for the project. Invasive species that have severe ecological impacts are given a high rating, whereas species with moderate ecological impacts are assigned a moderate rating and species with modest impacts are given a limited rating. Of the exotic plant species in the Biological Study Area, none has an overall high rating, three have a moderate rating, two have a limited rating, and five have no evaluation listed yet.

The following species with a moderate rating were found in the Biological Study Area: black mustard (*Brassica nigra*), foxtail barley (*Hordeum murinum*), and rattail fescue (*Vulpia myuros*). Species with a moderate rating that were not found during the surveys may be present in the Biological Study Area.

Environmental Consequences

Temporary Impacts

Impacts from invasive species are considered permanent because the introduction of invasive species into previously undisturbed areas would result in permanent impacts to the native habitat. Therefore, impacts related to invasive species are described below under Permanent Impacts.

Permanent Impacts

No-Build Alternative

The No-Build Alternative would not build any of the proposed project improvements; and, therefore would not result in additional adverse permanent impacts from invasive species in the study area.

Build Alternatives

Construction of Alternative 1 or 2 has the potential to spread invasive species through the entering and exiting of construction equipment contaminated by invasive species, including invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species that results in seed being spread along the roadway. With implementation of Avoidance and Minimization Measures NC-1 (biological monitor) and NC-3 (visible barriers) prescribed in Section 2.3.1, Natural Communities, and the measures provided below, potential permanent impacts related to invasive species would not be adverse.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would reduce potential impacts related to invasive species resulting from implementation of the project.

IS-1 In compliance with the Executive Order on Invasive Species (Executive Order 13112) and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control measures included in the proposed project shall not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions shall be taken if invasive species are found in or adjacent to the construction areas. These would include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

IS-2 To prevent the further spread of invasive plant species, a noxious weed special provision would be included on project construction plan specifications and adhered to during construction. In addition, any areas revegetated following disturbance would be seeded with a weed-free/plant mixture following construction.

2.4 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act Guidelines Section 15130 describes when a cumulative impact analysis is needed and what elements are necessary for a discussion of cumulative impacts. The definition of cumulative impacts can be found in Section 15355 of the California Environmental Quality Act Guidelines. A definition of cumulative impacts, under the National Environmental Policy Act, can be found in 40 Code of Federal Regulations, Section 1508.7 of the Council of Environmental Quality Regulations.

Methodology

The cumulative impacts analysis for the project was developed by following the eight-step process set forth in the Caltrans Standard Environmental Reference and the Federal Highway Administration *Interim Guidance: Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the National Environmental Policy Process* (2003). The eight-step process entails the following:

- Identify resources to be analyzed.
- Define the study area for each resource.
- Describe the current health and historical context for each resource.
- Identify direct and indirect impacts of the proposed project.

- Identify other reasonably foreseeable actions that affect each resource.
- Assess potential cumulative impacts.
- Report results.
- Assess the need for mitigation.

As specified in Caltrans/Federal Highway Administration guidance, if the proposed project would not result in a substantial direct or indirect impact to a resource, it would not contribute to a cumulative impact on that resource. This cumulative impact analysis includes resources that are substantially affected by the proposed project and resources that are currently in poor or declining health, or that would be at risk even if project impacts would not be substantial.

Affected Environment

The cumulative study area has been established for this project and has two components. The first component includes all of the Thomas Roads Improvement Projects throughout the City of Bakersfield and the second component includes development projects in the immediate vicinity of the proposed project. The City of Bakersfield has been experiencing rapid development, and the study area is essentially built-out.

Cumulative Projects

The reasonably foreseeable actions used in this cumulative analysis were based on information provided by the *Thomas Roads Improvement Program Growth Inducement Analysis* (January 2009).

There are 12 Thomas Roads Improvement Program projects in the project study area vicinity. These projects are described in Table 2.27. Construction of the 12 projects would span 10 years, starting in 2007 and ending in 2017. The Centennial Corridor Project would be the last project to be built. It is slated to start in May 2014, with an anticipated completion date of May 2017.

In addition to the Thomas Roads Improvement Program projects, there are pending development proposals in the project's cumulative study area. Examples of reasonably foreseeable actions by the City of Bakersfield include: future development for which a General Plan or Specific Plan has been adopted that designates future land uses; projects for which the applicable jurisdiction has received an application for site development; or infrastructure improvement projects planned by the local jurisdiction or other public agency. The reasonably foreseeable development actions are listed in Table 2.28.

Table 2.27. Cumulative Thomas Roads Improvement Program Projects within the Study Area

Projects	Project Description
North Beltway Project	**North Beltway Project.** The North Beltway (7th Standard Road Expansion) Project would widen about 9 miles of 7th Standard Road from State Route 43 to State Route 99. This project would expand 7th Standard Road to the ultimate configuration, providing six lanes from State Route 43 to State Route 99. **Status:** Construction complete, open to traffic.
Centennial Corridor Projects – Centennial Corridor/State Route 58 and Hageman Road Flyover	**Centennial Corridor/State Route 58.** The Centennial Corridor/State Route 58 Project would connect State Route 58 to Interstate 5 via the Westside Parkway. The purpose of this project is to reduce congestion; improve the flow of goods movement into and out of the region; provide benefits to the regional and national economy; and support the continued economic growth of the southern San Joaquin Valley. **Status:** Environmental phase. **Hageman Road Flyover.** The Hageman Road Flyover Project proposes to build a flyover structure connecting Hageman Road west of State Route 99 to Golden State Avenue and State Route 204 on the east side of State Route 99. The purpose of and need for the proposed Hageman Road Flyover Project is to improve east-west connectivity to downtown Bakersfield. **Status:** Environmental phase.
State Route 178 Project – State Route 178 at Morning Drive Interchange, State Route 178 Highway Widening, and State Route 178 at Fairfax Road Interchange	The State Route 178 Project includes three separate projects: **State Route 178 at Morning Drive Interchange.** The project includes building a new interchange near the existing State Route 178/Morning Drive intersection, converting an existing two-lane road with passing lanes to a four-lane freeway, and realigning Morning Drive. The purpose of and need for this project is to meet the future traffic demands and improve traffic operations. **Status:** Environmental phase. **State Route 178 Highway Widening.** This project proposes to widen State Route 178 in northeast Bakersfield from 1.13 miles east of Morning Drive to Rancheria Road in Kern County. The about 3.5-mile-long, two-lane highway would be widened to a four-lane highway by adding one lane in each direction. The widened highway would include a 14-foot-wide raised median, 5-foot-wide left shoulder, and 9-foot-wide right shoulder with curb and gutter. The right shoulder would be built 1 foot wider than the standard 8-foot-wide shoulder and to full depth to accommodate the ultimate conversion of this facility to a six-lane freeway. This project would also include a new interchange at Vineland Avenue just east of the proposed Morning Drive Interchange Project. The project would bring economic benefits to the area, including reduced traffic congestion, reduced traffic delay, and improved mobility.

Table 2.27. Cumulative Thomas Roads Improvement Program Projects within the Study Area

Projects	Project Description
	Status: Environmental phase. **State Route 178 at Fairfax Road Interchange.** This project is a new single-loop interchange at State Route 178/Fairfax Road and would widen existing State Route 178 from two to four lanes in each direction eastward for 1.5 miles. This project is in an urban/area of northeast Bakersfield. Due to increased population growth and continued residential and commercial development in this area of Bakersfield, the level of congestion is expected to increase. **Status:** Construction complete, open to traffic.
Rosedale Highway and State Route 178 Project – Rosedale Highway Widening Project, the Oak Street at 24th Street Interchange Project (proposed project), the 24th Street Widening Project (proposed project), and the Westside Parkway Project	**Rosedale and State Route 178.** Two separate projects are proposed. They include the Rosedale Highway Widening Project and the Westside Parkway Project. The Oak Street at 24th Street Interchange Project and the 24th Street Widening Project, which are described and analyzed in this document, are also part of the Rosedale and State Route 178 Project. **Status:** Environmental phase. **Rosedale Highway Widening Project.** The Rosedale Highway Widening Project proposes to widen a 12-mile-long segment of State Route 58 (Rosedale Highway) between State Route 99 and State Route 43 by adding two more lanes. This would create a six-lane highway between State Route 99 and Allen Road and a four-lane highway between Allen Road and State Route 43. The project also includes the Landco Grade Separation Project over an existing Burlington Northern Santa Fe rail spur. The purpose of the project is to provide traffic congestion relief, improve traffic operations, and improve safety. **Status:** Environmental phase. **Westside Parkway Project.** The City of Bakersfield is building a new east-west 12-mile-long freeway that begins at the Stockdale Highway/Heath Road intersection and extends eastward parallel to the Cross Valley Canal and Kern River, crossing the Kern River near the existing Burlington Northern Santa Fe Railroad Bridge, and ending at Truxtun Avenue east of State Route 99. **Status:** Under construction.

Source: *Thomas Roads Improvement Program Growth Inducement Analysis* (January 23, 2009).

Table 2.28. Cumulative City of Bakersfield Projects within the Study Area

Site Plan Review #	Project Location	Project Title	Project Description	Project Type
SPR-08-0500	2301 F Street	Arco Mini-Mart	Construction of a 3,000-square-foot gas station with convenience market and eight pump islands.	Commercial
SPR-08-1650	2129 G Street	Office Building	Construction of a 975-square-foot general office addition.	Office
SPR-09-0586	2111 F Street	Not available	Construction of a 38-bed, 7,411-square-foot residential care facility on a 12,200-square-foot parcel; related to: MOD 08-330- reduction in parking from 32 to 25 spaces.	Commercial
SPR-08-0297	900 22nd Street	Church	Construction of a 970-seat church sanctuary and classrooms, including three new off-site parking lots.	Community Service
SPR-09-0670	2115 N Street	Comm. Garage	Construction of a 3,920-square-foot automobile detail shop.	Commercial
SPR-09-0653	2116 P Street or 821 22nd Street	Not available	Moving eight 960-square-foot modular office buildings onto a vacant site in a Community Center-zoned district.	Office
SPR-09-0558	2521 O Street	Not available	Construction of a 1,760-square-foot general office building; related to MOD 09-0557- permit for a 0-foot side yard along 26th Street.	Office
SPR-10-0011	2531 M Street	Not available	Construction of a 4,080-square-foot office building.	Office
SPR-07-2371	1918 L Street or 1223 24th Street	Ming Café	Construction of an 875-square-foot addition to an existing 2,732-square-foot restaurant in the central business-zoned district.	Commercial Restaurant Expansion
N/A	Fresno to Bakersfield section of the project	California High-Speed Train Project	Construction of an about 114-mile portion of a larger high-speed train system that would connect to sections traveling west to San Francisco, south to Los Angeles and later, north to Sacramento.	Transportation

Environmental Consequences

Threatened and Endangered Species

The cumulative study area for threatened and endangered species is the City of Bakersfield and the immediate vicinity of the project due to the migratory nature of the San Joaquin kit fox. The San Joaquin kit fox is the only threatened and endangered species that could occur in the project area. See Section 2.3.4 for a description of this species.

Both build alternatives, in combination with area development projects and Thomas Roads Improvement Program projects, would lead to habitat loss, increased habitat fragmentation, and increased risk of death caused by vehicle collisions. Nine infill development projects are proposed in the vicinity of the project. Due to the small scale and nature of the projects, they are not expected to incrementally increase habitat fragmentation and species death.

The Thomas Roads Improvement Program expects that improvements to infrastructure would result in conversion of potential San Joaquin kit fox habitat to roadway structures. This would cause habitat loss and habitat fragmentation that can lead to loss of connectivity between potential denning and foraging areas. Reduced habitat connectivity associated with the buildout of the Thomas Roads Improvement Program roadways and infrastructure could force San Joaquin kit foxes to use different areas for movement that could result in greater exposure to potential predators. Specifically, areas that potentially serve as suitable habitat would be degraded by the new and expanded roadways and associated infrastructure to the extent that they would no longer function as suitable habitat. Conversion of suitable habitat to developed/human-made habitat would further expose San Joaquin kit foxes to predators and contaminants (e.g., urban trash and surface water contaminants, oil, and grease).

The Thomas Roads Improvement Program projects would improve the overall roadway system in Bakersfield by increasing the width of the roads, traffic speeds, and throughput. Consequently, the potential for San Joaquin kit fox injury or death due to vehicle collision would be greater.

In addition, the Thomas Roads Improvement Program projects could result in incremental/increased exposure of San Joaquin kit foxes to human disturbance. Kit foxes in Bakersfield are well adapted to the urban development, but the increase in the width of the roads and construction of new roads would make it more difficult for

them to pass safely from one area to another. Therefore a cumulatively considerable impact to the San Joaquin kit fox exists. (See Avoidance, Minimization, and/or Mitigation Measures, below, to see how this cumulative impact would be mitigated).

Resources Not Substantially Affected by Cumulative Impacts

The following issue areas/resources would not contribute to cumulatively considerable impacts:

- **Growth:** The build alternatives would serve existing traffic and traffic generated by future growth already accounted for in adopted local and regional land use and transportation plans and the Kern Council of Governments Regional Traffic Model. The project area is entirely built out, and there is no room left for development. Also, 24th Street is an existing transportation facility, and its improvement is consistent with the approved regional, local, and transportation plans, such as the Thomas Roads Improvement Program. The project would not result in growth-related impacts; therefore, the build alternatives would not cumulatively induce growth or remove obstacles to growth in the area.
- **Farmlands/Timberlands:** There are no farmlands or timberlands near the project area; therefore, neither resource would be individually or cumulatively affected by the proposed roadway improvements.
- **Geology/Soils/Seismic/Topography:** Implementation of Caltrans Seismic Design Criteria would reduce potential impacts to project infrastructure caused by seismic events. The project would neither result in permanent impacts to geology, soils, or topography, nor contribute substantially to any cumulative condition.
- **Hydrology and Floodplain:** No construction would occur within the floodplain or from the Kern River bed. No permanent impacts to the floodplain would result from implementation of the project. No impacts to natural or beneficial floodplain values are anticipated as a result of the project. The project would not result in a cumulatively considerable contribution to the study area watershed or drainage basins.
- **Plant Species:** There is a low probability of the Kern mallow (*Eremalche kernensis*) and San Joaquin woolly-threads (*Monolopia congdonii*) occurring in the Biological Study Area, and it is unlikely that the build alternatives would result in direct or indirect impacts to these species. Therefore, the project would not result in a permanent impact to a listed plant species.
- **Land Use and Planning:** The proposed project is consistent with the regional mobility goals of Kern Council of Governments, Caltrans, and the City of Bakersfield. The build alternatives are consistent with applicable City of

Bakersfield General Plan goals and policies to improve transportation corridors, provide adequate infrastructure, maintain efficient traffic operations on City of Bakersfield streets, and work with Kern Council of Governments and Caltrans to improve the corridor. They are also consistent with the 2011 Federal Transportation Improvement Program and the 2011 Regional Transportation Improvement Program. Therefore, the land use changes associated with the build alternatives are consistent with the approved land use and transportation plans. Physical effects of both the proposed build alternatives would cause temporary impacts during construction to study area circulation, access and infrastructure; however, these impacts would be short-term and minimized to the degree feasible with implementation of traffic management control measures.

The build alternatives would also require both permanent and temporary impacts to residential and non-residential properties. See Community Impacts in the section below, Resources Evaluated for Potential Cumulative Impacts.

- **Utilities/Emergency Services:** Utilities and emergency services would be affected only temporarily during the construction phases of the project. Avoidance and Minimization Measures in Section 2.1.3 would require coordination with utility owners and emergency service providers before construction and implementation of a Transportation Management Plan for construction periods. The project would not result in permanent impacts to utilities or emergency services.
- **Traffic and Transportation/Pedestrian and Bicycle Facilities:** The project provides beneficial impacts to traffic and transportation/pedestrian and bicycle facilities within the study area and therefore does not contribute to adverse cumulative impacts.
- **Cultural Resources:** No archaeological resources were found in the APE. Three bungalow courts were found in the APE and appear to be eligible for listing in the National Register at the local level. Forty-four resources appear eligible for listing in the National Register as contributors to the historic districts north and south of 24th Street, which are two National Register of Historic Places-eligible historic districts for the purposes of this undertaking only. The project would result in potential impacts to the eligible historic districts and several individual resources that are contributors to these historic districts. Implementation of Mitigation Measure CR-3 would reduce potential project-related impacts to cultural resources.

The project would not contribute to cumulative effects on cultural resources in the cumulative study area because the are no other similar cultural resources affected by the Thomas Roads Improvement Program projects or projects listed in Table 2.28. The two historic districts north and south of 24th Street and the four individually eligible properties are unique to the 24th Street project study area.

- **Water Quality and Storm Water Runoff:** Implementation of Permanent Treatment Control best management practices and Design Pollution Prevention best management practices for the project would reduce any potentially adverse impacts to water quality or storm water runoff during construction and in the long-term project operation. Therefore, the project would not contribute substantially to cumulative water quality impacts.
- **Paleontology:** Implementation of a Paleontological Mitigation Plan would reduce potential impacts to paleontological resources should they be encountered during construction excavation activities; therefore, the project would not substantially contribute to the cumulative condition. Once completed and operational, the project would not result in a permanent impact to paleontological resources.
- **Hazardous Waste or Materials:** Implementation of standard conditions and avoidance and minimization measures would reduce potential temporary impacts associated with hazardous waste or material during construction activities. Therefore, the project would not contribute substantially to cumulative impacts. Permanent impacts (direct or indirect) related to hazardous materials are not expected as a result of implementation of the build alternatives since the operation of the project would not generate any hazardous waste.
- **Energy:** Energy impacts for the project would be limited to the construction phases of the project. The project would be subject to all applicable regulatory requirements, which would also include reduction of greenhouse gas emissions of the project. With implementation of the avoidance and minimization measures provided in Section 2.2.6 and application of regulatory requirements, the project would not conflict with or impede implementation of reduction goals identified in Assembly Bill 32, the Governor's Executive Order S-3-05; therefore, the project's contribution to cumulative energy impacts and greenhouse gas emissions would not be substantial.
- **Natural Communities:** The project would not result in direct permanent impacts to natural communities. Implementation of avoidance, minimization, and mitigation measures would reduce potential impacts to natural communities during construction, including streambed habitat, sycamore/willow woodland

habitat, and wildlife movement corridor disruption. The project would not contribute substantially to any cumulative impacts to natural communities.

- **Wetlands and Other Waters:** No wetlands were found in the project area. Implementation of avoidance, minimization, and mitigation measures would reduce potential impacts to other waters. The project would result in 0.42 acre of permanent impacts to U.S. Army Corps of Engineers jurisdictional waters within Carrier Canal. Implementation of avoidance and minimization measures would reduce potential impacts to jurisdictional waters. The project would not result in permanent impacts to wetlands and is not expected to result in cumulatively considerable impacts in the cumulative study area.
- **Special-Status Grassland and Open Habitat:** The area within the cumulative study area is essentially developed, with little room left for new development. Although open areas within the Biological Study Area consist mostly of nonnative vegetation, subsequent development would replace these areas with impervious areas. However, the project's contribution to cumulative impacts on open habitat/grassland is very minor due to the developed nature of the surrounding area. Therefore, the project's contribution to cumulative effects on natural communities in combination with the other projects near the project would not be substantial.
- **Invasive Species:** Implementation of avoidance, minimization, and mitigation measures would reduce potential impacts resulting from invasive species during construction. The project would not result in a permanent impact as a result of invasive species.
- **Community Impacts:** Community impacts associated with the reasonably foreseeable actions include road detours, temporary or permanent displacements of residents and workers, and physical changes to the local community. Each ongoing and future project would be required to analyze or determine the following: community impacts related to growth, community cohesion, and character; physical impacts; land use consistency; and project-specific avoidance, minimization, or mitigation measures. Adherence to land use and community requirements, including zoning ordinances, land use ordinances, traffic management plans, public outreach and notification plans, and relocation assistance would be required for each of the reasonably foreseeable projects as applicable. This leaves community cohesion as the central issue to be addressed (see Section 2.1.2.1). In addition, the communities north and south of 24th Street are seperated by a major road that would become wider. Because this kind of community cohesion impact is local in nature, it would not result in a

cumulatively considerable impact. The other projects in this cumulative study area have their own set of location specific community cohesion issues. Therefore, project-related community impacts are not considered cumulatively considerable.

- **Visual/Aesthetics:** Build alternative design aspects such as landscape palettes would be consistent with the nature of the study area. With implementation of avoidance, minimization, and mitigation measures (see Section 2.1.5, Measures V-1 through V-5), the project's contribution to cumulative visual/aesthetic impacts would not be substantial.

The project would not include additional permanent lighting and therefore would not contribute to cumulative light or glare impacts in the project area. Therefore, the project-related visual/aesthetics impacts would not be considered cumulatively considerable.

- **Air Quality:** With respect to emissions at the project level that may contribute to exceeding state and federal standards, a screening analysis was performed for carbon dioxide, particulate matter less than 2.5 microns in diameter and matter less than 10 microns in diameter. The results of the analysis indicated that localized levels would not violate air quality standards and, therefore, do not present an adverse cumulative contribution. At the project level a formal finding was made by the Federal Highway Administration, the Environmental Protection Agency, San Joaquin Valley Unified Air Pollution Control District, and Caltrans that **this project is not** a project of air quality concern. A similar finding for regional air quality was made by the Federal Highway Administration following consultation with the Environmental Protection Agency and the Kern County Council of Governments in the air quality conformity finding. Therefore, the contribution to emissions in the air basin would not be cumulatively considerable.
- **Noise:** The cumulative study area for noise is the immediate vicinity of the project. Noise is localized and decreases rapidly with distance. Existing land uses in the project area include single- and multi-family residential, recreational vehicle park, parks, preschool/church, hotels, motel, office, commercial uses, and vacant land. Most sensitive receptor locations in the project vicinity consist of residential land use. Of the 132 modeled receiver locations, noise levels at 16 receivers currently approach or exceed the noise abatement criteria established by the Federal Highway Administration. Interior noise levels measured at three locations were below the applicable criteria.

See Section 2.2.5 for information on construction and operational noise impacts for Alternatives 1 and 2. The noise analysis is based on the traffic data provided in the Traffic Impact Analysis for the proposed project. The traffic analysis considered all future projects predicted in the project vicinity through 2035 because the Kern Council of Governments' transportation model includes future land uses from the City and County general plans. Therefore, the project impacts include the reasonably foreseeable projects through 2035.

Like the project, future transportation projects would be required to analyze soundwalls to protect sensitive receptors to see if they are reasonable and feasible under Federal Highway Administration protocol and/or local noise regulations. Measures to reduce interior noise levels would be required if these levels approach or exceed the abatement criteria. Future development projects would be required to comply with local ordinances with respect to noise abatement. Noise attenuation measures could include equipment enclosures, insulation, or muffling devices. Furthermore, pending and future cumulative transportation projects would be separated geographically from the project; therefore, they would not contribute cumulatively to noise impacts.

- **Animal Species:** Due to the migratory nature of animals, the cumulative study area for animal species is the City of Bakersfield and the immediate vicinity of the project. The burrowing owl, special-status grassland and open habitat animal species, special-status bridge- and crevice-dwelling animal species, and special-status sycamore/woodland habitat animal species could potentially be affected by the project and other cumulative projects.

For Alternatives 1 and 2, temporary impacts to sensitive animal species (not threatened or endangered) would be the following:

- Increased traffic levels, elevated noise levels, dust, night lighting, and human encroachment during construction
- Impeded access to roost sites in the crevices of the 24th Street bridge over the Kern River
- Disruption of animals, foraging patterns and locations
- Increased exposure to predation

For Alternatives 1 and 2, permanent impacts to sensitive animal species would be the following:

- Minor impacts contributing to potential habitat fragmentation and habitat loss
- Removal of ornamental trees that could provide future nesting habitat
- Degradation of foraging habitat

Burrowing Owl

The probability of the burrowing owl to occur in the project area is low. The Thomas Roads Improvement Program projects would result in minor habitat loss and minor fragmentation of potential burrowing owl habitat in metropolitan Bakersfield. Burrowing owls seem to adapt well even to areas within human settlements, so the contribution to cumulative loss of potential burrowing owl habitat resulting from implementation of Alternative 1 or 2 is not expected to be cumulatively considerable.

Special-Status Bridge and Crevice-Dwelling Animal Species

The permanent change to the 24th Street bridge over the Kern River could increase potential future roosting habitat for bat species by leaving newly created expansion joints unrubberized. If so, Alternatives 1 and 2 may incrementally benefit bridge- and crevice-dwelling species in the long term.

Avoidance, Minimization, and/or Mitigation Measures

The cumulative impact to the San Joaquin kit fox would be mitigated with the measures described in the Draft Thomas Roads Improvement Program San Joaquin Kit Fox Effects Analysis Mitigation Strategy, and Implementation Plan:

C-1 The plan includes a sump habitat element, which would provide long-term habitat conservation for the urban San Joaquin kit fox population in the metro-Bakersfield area by focusing on sumps (i.e., stormwater drainage basins) as known and functional habitat for the species. The City, in coordination with Caltrans, proposes to use the Sump Habitat Program to compensate for cumulative effects to the San Joaquin kit fox affected by this and five future Thomas Roads Improvement Program projects.

Conservation goals of this program include measures addressing the installation of artificial dens in selected sumps; enhancement of San Joaquin kit fox habitat by controlling vegetation in and around dens; the increase in San Joaquin kit fox accessibility to sumps through fence/gate openings (with proposed dimensions of 6 x 6 inches to exclude predators like coyotes and medium- to large-sized dogs); and

reduction in the potential for impacts to the San Joaquin kit fox associated with regular maintenance activities and predator access.

The City provided a letter of commitment to the U.S. Fish and Wildlife Service, dated August 10, 2010, fully supporting and providing assurance of the implementation and management of the Sump Habitat Program and its conservation efforts. The current Sump Habitat Program conceptual framework includes:

- Selection of sumps that maintain San Joaquin kit fox accessibility and/or habitat (those of high/medium conservation priority based on the relative potential for minimizing both project-level and program-level effects)
- Installation and maintenance of San Joaquin kit fox enhancement features (fences/gate gaps, artificial dens, conservation zones, signs, and enhancement maintenance and repair)
- Management of sump vegetation compatible with San Joaquin kit fox presence and/or use (performance of routine maintenance outside the San Joaquin kit fox natal season and the use of hand tools in conservation zones and new active dens)
- Biological monitoring and reporting of results (pre-maintenance surveys, den monitoring and supervised den excavation, environmental awareness training, maintenance monitoring, annual enhancement inspection, annual San Joaquin kit fox sump use monitoring, and annual reporting)
- Provision of long-term conservation assurances (individual conservation easements for each sump, a perpetual non-wasting endowment for management, maintenance, and monitoring costs associated with ongoing implementation, and an agency-approved long-term Management Plan. The proposed easement and endowment holders must be U.S. Fish and Wildlife-approved third-party organizations).

Chapter 3 California Environmental Quality Act Evaluation

3.1 Determining Significance under the California Environmental Quality Act

The project is subject to federal as well as local and state environmental review requirements because the City of Bakersfield proposes the use of federal funds and/or the project requires a federal approval action. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act and the National Environmental Policy Act. The City of Bakersfield is the project proponent and the lead agency under the California Environmental Quality Act. The Federal Highway Administration's responsibility for environmental review, consultation, and any other action required in accordance with the National Environmental Policy Act and other applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S. Code 327.

One of the main differences between the National Environmental Policy Act and California Environmental Policy Act is the way significance is determined. Under the National Environmental Policy Act, significance is used to determine whether an Environmental Impact Statement or some lower level of documentation will be required. The National Environmental Policy Act requires that an Environmental Impact Statement be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment."

The determination of significance is based on context and intensity. Some impacts determined to be significant under the California Environmental Quality Act may not be of sufficient magnitude to be determined significant under the National Environmental Policy Act. Under the National Environmental Policy Act, once a decision is made on the need for an Environmental Impact Statement, it is the magnitude of the impact that is evaluated, and no judgment of its individual significance is deemed important for the text. The National Environmental Policy Act does not require that a determination of significant impacts be stated in the environmental documents.

The California Environmental Quality Act, on the other hand, does require the City of Bakersfield to identify each "significant effect on the environment" resulting from the

project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report must be prepared. Each significant effect on the environment must be disclosed in the Environmental Impact Report and mitigated if feasible. In addition, the California Environmental Quality Act Guidelines list a number of mandatory findings of significance, which also require the preparation of an Environmental Impact Report. There are no types of actions under the National Environmental Policy Act that parallel the findings of mandatory significance under the California Environmental Quality Act. This chapter discusses the effects of this project and California Environmental Quality Act significance.

3.2 Discussion of Significant Impacts

Significance of the potential impacts of the build alternatives under the California Environmental Quality Act was assessed based on the California Environmental Quality Act Checklist provided in Appendix A and the analyses of project impacts as discussed in detail in Chapter 2, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures. The impacts of the project build alternatives are summarized in the following sections, based on the level of significance of the project impacts under the California Environmental Quality Act. This section focuses on analysis of the two build alternatives. For a comparative discussion of the impacts of the No-Build Alternative, see Chapter 2.

3.2.1 Less than Significant Effects of the Proposed Project

The following project impacts have been determined to be less than significant with implementation of standard conditions and/or avoidance, minimization, or mitigation measures. See the associated sections in Chapter 2 for more information.

- Land Use (see Section 2.1.1)
- Population and Housing (see Section 2.1.2)
- Community Impacts (see Section 2.1.2)
- Environmental Justice (see Section 2.1.2.3 in Community Impacts)
- Air Quality (see Section 2.2.4)
- Biological Resources – Wetlands and Other Waters and Invasive Species (see Sections 2.3.2 and 2.3.5)
- Water Quality and Storm Water Runoff (see Section 2.2.1)
- Utility and Emergency Services (see Section 2.1.3)

- Parks and Recreation (see Section 2.1.1.2 in Land Use)
- Traffic and Transportation/Pedestrian and Bicycle Facilities (see Section 2.1.4)
- Hazards and Hazardous Materials (see Section 2.2.3)
- Energy (see Section 2.2.6)

3.2.2 Significant Environmental Effects of the Proposed Project

The following project impacts have been determined to be potentially significant without implementation of standard conditions and/or avoidance, minimization, or mitigation measures. See the associated sections in Chapter 2 for additional information.

- Relocations (see Section 2.1.2.2 in Community Impacts)
- Visual/Aesthetics (see Section 2.1.5)
- Cultural Resources (see Section 2.1.6)
- Paleontological Resources (see Section 2.2.2)
- Noise (see Section 2.2.5)
- Biological Resources – Natural Communities of Special Concern, Special-Status Animal Species, and Threatened and Endangered Species (see Sections 2.3.1, 2.3.3, and 2.3.4)
- Cumulative impacts to property loss (Relocations), visual and aesthetic resources, historic resources, noise, and wildlife (special-status species)

Noise under the California Environmental Quality Act

When determining whether a noise impact is significant under the California Environmental Quality Act, comparison is made between the existing baseline noise level and the build alternatives (Alternatives 1 and 2). The California Environmental Quality Act noise analysis is completely independent of the National Environmental Policy Act 23 Code of Federal Regulations 772 analysis discussed in Chapter 2, Section 2.2.5, which is centered largely on noise abatement criteria. Under the California Environmental Quality Act, the assessment entails looking at the setting of the noise impact and then determining how large or perceptible any noise increase would be in the given area compared to established noise level thresholds. Key considerations include the uniqueness of the setting, the sensitive nature of the noise receivers, the magnitude of the noise increase, the number of residences affected, and the absolute noise level.

Implementation of the project would result in potential short-term noise impacts during construction of the project under Alternatives 1 and 2. Construction of the

project would comply with local jurisdiction noise restrictions, as well as the Caltrans Standard Specifications Section 14-8.02 and Caltrans Standard Provisions S5-310, as outlined in Avoidance and Minimization Measures NOI-1 and NOI-2. In addition, Avoidance and Minimization Measures NOI-3 and NOI-4 would further minimize potential construction noise impacts. Therefore, potential short-term construction noise impacts would be less than significant, and no mitigation measures are required.

A permanent increase in ambient noise level would occur as a result of the long-term use of the project under Alternatives 1 and 2. A traffic noise impact would occur under the California Environmental Quality Act when the future noise level with the project results in a substantial increase in noise level from existing baseline noise levels.

As shown in Section 2.19 of this document, Receiver R-91 (Soundwall 11) under Alternative 1 and Receivers R-16 (Soundwall 17) and R-39 (Soundwall 22) under Alternative 2 would have a substantial increase in noise due to the widening of 24th Street to either the north or south and removing existing residential structures along the first row of homes. The increase in noise levels at these receivers is considered perceptible to a human ear in an outdoor environment. Noise levels at these receiver locations must be reduced to either the future no-build noise levels or the City's exterior noise standard of 65 dBA community noise equivalent level or below to avoid significant impacts under the California Environmental Quality Act.

To avoid significant noise impacts under the California Environmental Quality Act, the City has committed to building property walls up to a height of 6 feet as project design features. The future build (Alternatives 1 and 2) noise levels, the change in noise level from existing baseline, and the noise level attenuation from soundwall heights ranging from 6 to 16 feet at 2-foot increments are shown in Table 2.19. Since the noise levels in this table are shown in equivalent continuous sound level per hour and the City's noise standards are expressed in community noise equivalent levels, 3 dBA is added to the equivalent continuous sound level per hour to convert noise levels to community noise equivalent levels based on the 24-hour noise level measurement done for this project.

Based on the conversion from equivalent continuous sound level per hour to community noise equivalent levels, and on Table 2.19, the implementation of Abatement Measure NOI-5 and Measures N-1, N-2, and N-3 would reduce noise

levels to the City's exterior noise standard of 65 dBA community noise equivalent level or below.

For Receiver R-39 under Alternative 2, the implementation of the project design features would reduce noise levels to the City's exterior noise standard of 65 dBA community noise equivalent level or below. Therefore, long-term traffic noise impacts would be less than significant at Receiver R-91 under Alternative 1 and Receiver R-39 under Alternative 2. However, the implementation of the project design features would not reduce noise levels to the City's exterior noise standard of 65 dBA community noise equivalent level or below for Receiver R-16 under Alternative 2.

Table 2.19 and the conversion from equivalent continuous sound level per hour to community noise equivalent levels shows that a minimum soundwall height of 8 feet would be be required to reduce noise levels to the City's noise standard of 65 dBA community noise equivalent level or below. This soundwall is represented by Soundwall No. 17 whose location is shown in Figure 2-25 in Section 2.2.5. Therefore, a mitigation measure in the form of a soundwall at Location R-16 with a minimum height of 8 feet is required to reduce noise impacts under the California Environmental Quality Act to less than significant. While a wall at Receiver Location R-16 is not considered reasonable under the National Environmental Policy Act analysis, it is required under the California Environmental Quality Act to reduce project-related impacts, so the City would fund the wall.

3.2.3 Unavoidable Significant Environmental Effects

Section 15126.2(b) of the California Environmental Quality Act Guidelines requires that an Environmental Impact Report discuss significant impacts. When such impacts cannot be reduced to a less than significant level, the Environmental Impact Report must describe their implications and the reasons why the project is being proposed in spite of the impacts.

As discussed above under Section 3.2.2, all of the potential impacts identified for the project can be mitigated to below a level of significance. Therefore, the project would not result in any unavoidable significant environmental impacts.

3.2.4 Significant Irreversible Environmental Changes

Section 15126.2(c) of the California Environmental Quality Act Guidelines requires that an Environmental Impact Report discuss significant irreversible environmental changes that would be caused by construction of the project. Irreversible changes

include the use of nonrenewable resources during construction and operation of the project to such a degree that the use of the resource thereafter becomes unlikely. An irreversible environmental change can result from a direct or indirect impact that generally commits future generations to similar uses. Irretrievable commitments of resources need to be evaluated to ensure that consumption is justified.

Construction of the project would entail a one-time energy expenditure, including the consumption of limited nonrenewable resources and slowly renewable resources such as natural gas, electricity, fossil fuels, and water to manufacture building materials, prepare the roadway surface, and widen the roadway and build intersection/ interchange improvements. Consumption of limited nonrenewable and slowly renewable resources is limited to the duration of construction and, therefore, is not considered to be a significant irreversible impact associated with the project. Implementation of the project would alleviate existing traffic congestion, improve local circulation, and beneficially effect (help reduce) congestion-related pollutant emissions within the corridor. The one-time energy expenditure during construction would be balanced by the improved system functionality of the corridor and improved traffic flow operations and air quality over the design life of the project.

The project roadway improvements would permanently increase the impervious areas in the project study area by about 14 acres. The project would also require the acquisition of 0.8 acre of Beach Park. Implementation of the roadway improvements would adversely affect these areas but, due to the small area affected (in relation to the existing paved roadway infrastructure), impacts would not be significant.

Alternative 1 would require 23 full acquisitions (residential single-family) and 29 partial acquisitions (14 residential, 12 nonresidential, and three vacant). Alternative 2 would require 23 full acquisitions (residential single-family) and 21 partial acquisitions (seven residential, 11 nonresidential, and three vacant). Acquisition of these parcels would result in direct irreversible impacts. Based on the current availability of residential units in the City, a sufficient residential market exists for potential project-related relocations; therefore, impacts would not be significant.

3.3 Mitigation Measures for Significant Impacts under the California Environmental Quality Act

The project would result in potentially significant impacts for land use, visual/aesthetics, noise, paleontological resources, natural communities, animal species, and threatened and endangered species. Implementation of the mitigation

measures noted in Chapter 2, listed in Appendix G, Table G.2, and listed below, would reduce potentially significant impacts to less than significant levels.

Alternative 1

N-1 The contractor shall implement mitigation in the form of a soundwall at Receiver Location R-16 at a minimum height of 8 feet.

N-2 The contractor shall implement mitigation in the form of a soundwall at Receiver Location R-16 at a minimum height of 8 feet.

Alternative 2

N-3 The contractor shall implement mitigation in the form of a soundwall at Receiver Location R-39 at a minimum height of 6 feet.

3.4 Climate Change under the California Environmental Quality Act

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gases, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988, has led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are mainly concerned with the emissions of greenhouse gases related to human activity that include carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 – tetrafluoroethane), and HFC-152a (difluoroethane).

Typically, two terms are used when discussing the impacts of climate change. "Greenhouse Gas Mitigation" is a term for reducing greenhouse gas emissions in order to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts due to climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)[1].

---

[1] http://climatechange.transportation.org/ghg_mitigation/.

Transportation sources (passenger cars, light-duty trucks, other trucks, buses, and motorcycles) in the State of California make up the largest source (second to electricity generation) of greenhouse gas emitting sources. Conversely, the main source of greenhouse gas emissions in the United States is electricity generation followed by transportation. The dominant greenhouse gas emitted is carbon dioxide, mostly from fossil fuel combustion.

There are four main strategies for reducing greenhouse gas emissions from transportation sources: (1) improve system and operation efficiencies, (2) reduce growth of vehicle miles traveled, (3) transition to lower greenhouse gas fuels, and (4) improve vehicle technologies. To be most effective, all four should be pursued collectively. The following regulatory setting section outlines state and federal efforts to comprehensively reduce greenhouse gas emissions from transportation sources.

3.4.1 Regulatory Setting

State

With the passage of several pieces of legislation including state senate and assembly bills and executive orders, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change at the state level.

Assembly Bill 1493, Pavley. Vehicular Emissions: Greenhouse Gases (Assembly Bill 1493), 2002: This bill requires the California Air Resources Board to develop and implement regulations to reduce automobile and light-truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the U.S. Environmental Protection Agency Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own greenhouse gas emission standards for motor vehicles beginning with model year 2009. California agencies will be working with federal agencies to conduct joint rulemaking to reduce greenhouse gas emissions for passenger cars model years 2017-2025.

Executive Order S-3-05 (signed on June 1, 2005, by then-Governor Arnold Schwarzenegger): The goal of this executive order is to reduce California's greenhouse gas 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.

Assembly Bill 32, the Global Warming Solutions Act of 2006: Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that the California Air Resources Board create a plan that 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 Assembly Bill 32, including the recommendations made by the state's Climate Action Team.

Executive Order S-01-07: Then-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.

Senate Bill 97 (Chapter 185, 2007): This bill required the Governor's Office of Planning and Research to develop recommended amendments to the State of California Environmental Quality Act Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

California Environmental Quality Act Guidelines (Section 15064.4): As recommended by Senate Bill 97, Section 15064.4 was added to the California Environmental Quality Act Guidelines to provide guidance for determining the significance of impacts from greenhouse gas emissions. The Guidelines require the lead agency, which for this project would be the City of Bakersfield, to "make a good-faith effort, based on the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." The lead agency has discretion to determine the appropriate methodology.

Federal

Although climate change and greenhouse gas reduction are a concern at the federal level, currently no regulation or legislation has been enacted specifically addressing greenhouse gas emissions reductions and climate change at the project level. Neither the U.S. Environmental Protection Agency nor the Federal Highway Administration has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on the Federal Highway Administration's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will

inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies set forth by the Federal Highway Administration to lessen climate change impacts do correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and Executive Order 13514- *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the interagency Climate Change Adaptation Task Force, which is engaged in developing a U.S. strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. Environmental Protection Agency has the authority to regulate greenhouse gases. The court held that the U.S. Environmental Protection Agency Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. Environmental Protection Agency Administrator signed two distinct findings on greenhouse gases under Section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator found 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 found 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 that threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. Environmental Protection Agency's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009[2]. On May 7, 2010, the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

The U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced greenhouse gas emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever greenhouse gas regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle greenhouse gas regulations. These steps were outlined by President Barack Obama in a memorandum on May 21, 2010.[3]

The final combined U.S. Environmental Protection Agency and National Highway Traffic Safety Administration standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On January 24, 2011, the U.S. Environmental Protection Agency along with the U.S. Department of Transportation and the State of California announced a single timeframe for proposing fuel economy and greenhouse gas standards for model year

---

[2] http://www.epa.gov/climatechange/endangerment.html
[3] http://epa.gov/otaq/climate/regulations.htm

2017-2025 cars and light trucks. Proposing the new standards in the same timeframe (September 1, 2011) signals continued collaboration that could lead to an extension of the current National Clean Car Program.

3.4.2 Project Analysis

An individual project does not generate enough greenhouse gas 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 greenhouse gases.[4] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act Guidelines Sections 15064(h)(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. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult if not impossible task.

The Assembly Bill 32 Scoping Plan contains the main strategies California will use to reduce greenhouse gases. As part of its supporting documentation for the Draft Scoping Plan, the California Air Resources Board released the greenhouse gas inventory for California (Forecast last updated: 28 October 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the greenhouse gas inventory for 2006, 2007, and 2008.

The City of Bakersfield, as the California Environmental Quality Act lead agency, has followed the process developed by Caltrans for assessing impacts associated with greenhouse gas emissions. Caltrans and its parent agency, the Bussiness, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human made greenhouse gas emissions are from transportation,

---

[4] This approach is supported by the Association of Environmental Professionals: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The California Environmental Quality Act Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level National Environmental Policy Act Analysis, July 13, 2009).

Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006 (see Climate Action Program at Caltrans, December 2006).[5]

Project- and regional-specific information presented in this section is based on the *Air Quality Study Report* (June 2011). See Figure 3-1 for the California Air Resources Board's forecast of greenhouse gas emissions in California.

One of the main strategies in Caltrans' Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 3-2). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, greenhouse emissions, particularly carbon dioxide, may be reduced.

Many studies show that an increase in traffic volume is related to higher overall carbon dioxide emissions. Traffic volumes are expected to increase under future conditions; however, operation of the project would alleviate existing and future traffic congestion along 24th Street during peak hours and reduce the number of vehicle hours traveled within the project study area. Therefore, carbon dioxide emissions would be reduced.

According to the 2011 Final Regional Transportation Plan, the Kern Council of Governments has invested significant resources adding signals in place of four-way stops, synchronizing signals, monitoring traffic, and providing a metropolitan traffic operations center. Significant reductions in vehicle emissions resulting from unnecessary idling and acceleration have been realized. According to state and federal Clean Air Acts, the worst non-attainment areas must ensure that "all feasible measures" be implemented to reduce harmful air emissions. A goal of the 2011 Final Regional Transportation Plan focuses on carrying out these requirements to achieve required standards for healthy air.

---

[5] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

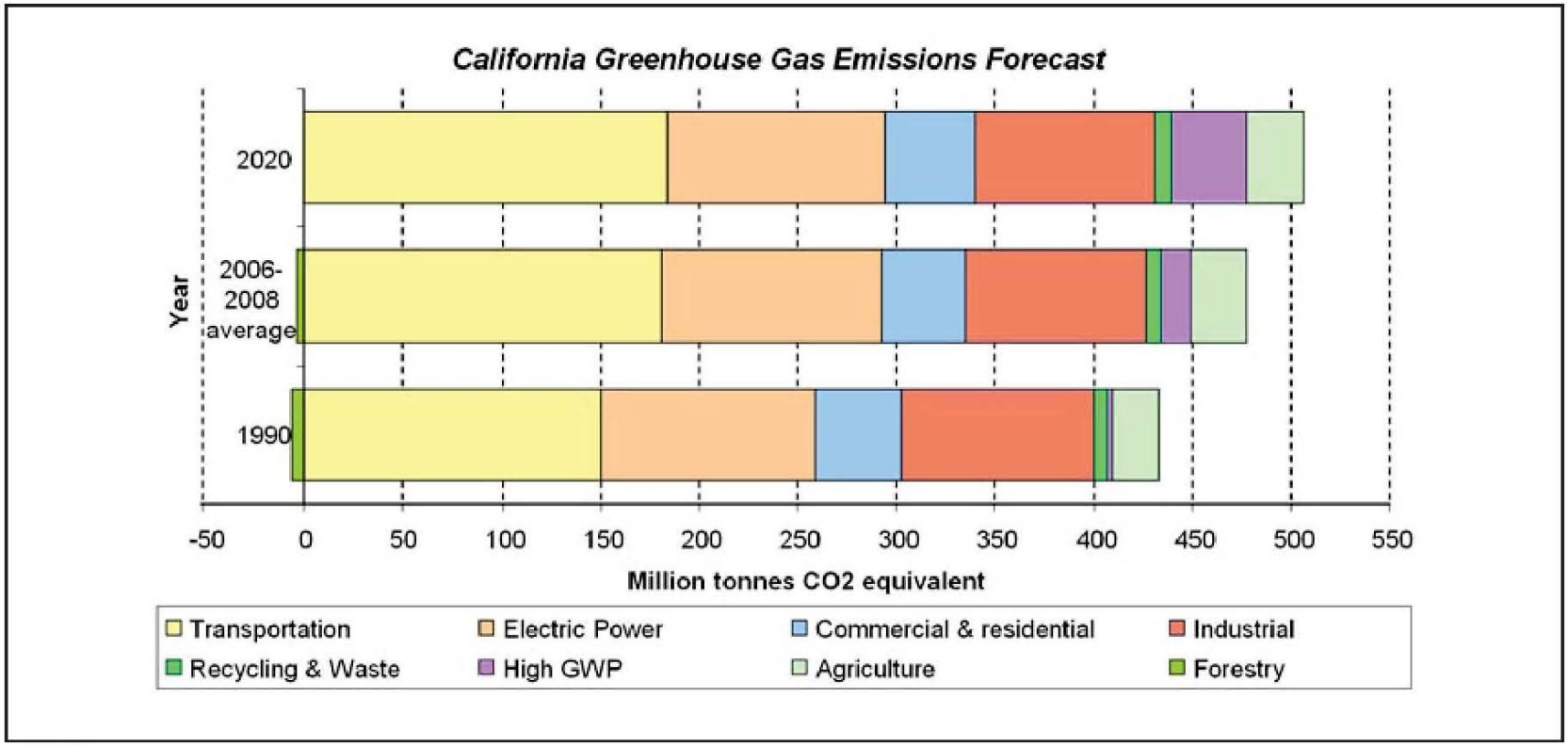


Figure 3-1 California Greenhouse Gas Inventory Forecast

Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

EA 06-493900
EA 06-484700

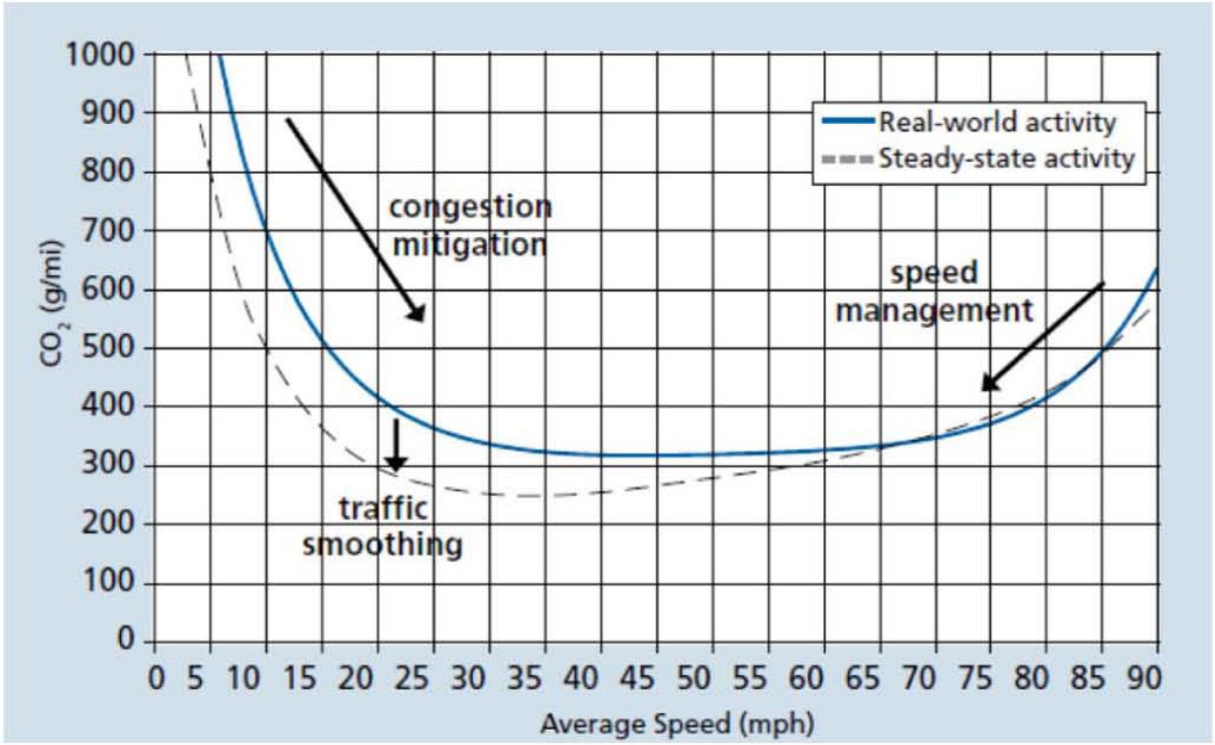


Figure 3-2 Possible Effect of Traffic Operation Strategies in Reducing On-Road Carbon Dioxide Emission

Source: Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsoms (TR News 268 May-June 2010) <http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf

EA 06-493900
EA 06-484700

The Kern Council of Governments existing transportation control measures have focused on traffic flow improvements to attain its goals. Since 1990, the region's congestion, measured by vehicle miles traveled, has increased at a rate 25 percent faster than the population. However, during the 1990s, the average annual growth in vehicle miles traveled slowed from the 1980s, decreasing from 750,000 vehicle miles traveled per year to 500,000 vehicle miles traveled per year.

In its 2007 Ozone Plan, the San Joaquin Valley Air Pollution Control District proposed the adoption of an Employer-Based Trip Reduction rule that would further decrease vehicle miles traveled within the basin by:

- Requiring businesses with at least 100 employees to establish rideshare programs
- Scheduling rule development and implementation as follows: adoption by the fourth quarter 2009, and compliance/reductions to begin by 2010
- Implementing trip reduction programs following the U.S. Environmental Protection Agency guidelines for improving air quality (also known as the State Implementation Plan)
- Exploring the applicability of state laws governing parking payout programs and strengthening enforcement of those laws within the valley

The San Joaquin Valley Air Pollution Control District adopted Rule 9410, Employer-Based Trip Reduction, on December 17, 2009.

Implementation of the plans and programs stated above are designed to decrease vehicle miles traveled, reduce congestion at intersections, and improve traffic flow throughout the region. With these improvements, carbon dioxide emissions are expected to decrease from the vehicles using the roadway.

As discussed in Section 1.3.5, Alternatives Considered but Eliminated from Further Discussion, several alternatives were considered but not carried forward due to excessive cost, geometric issues, environmental issues, excessive community impacts, traffic operations safety concerns, and/or the improvement was no longer considered necessary. The eliminated alternatives included transportation system management and transportation demand management alternatives. Although the transportation systems management alternatives alone could not satisfy the purpose and need for the proposed project, all of the strategies of these alternatives were incorporated in all four segments of the build alternatives of the proposed project.

Quantitative Analysis

A quantitative analysis estimating carbon dioxide emissions for existing, no-build, and build conditions was performed using Caltrans' CT-EMFAC. The vehicle miles traveled and vehicle hours traveled data, along with the EMFAC emission rates, were used to calculate carbon dioxide emissions for the 2015 (opening year) and 2035 (long-range) regional conditions. The results are shown in Table 3.1.

Table 3.1. Carbon Dioxide Emissions (tons per year)

Year	Pollutant	No-Build (tons/year)	Build Alternative Emissions (tons/year)	Project-Related Increase (tons/year)
2008	Carbon dioxide	492,199	492,251	52
2015	Carbon dioxide	544,492	537,087	-7,405
2035	Carbon dioxide	723,567	713,755	-9,812

Source: *Air Quality Study Report* (June 2011)

The purpose of the project is to alleviate existing and future traffic congestion along 24th Street during peak hours. Therefore, the project would reduce the number of vehicle hours traveled within the project study area. Although the project may result in a net increase in vehicle miles traveled, the carbon dioxide emissions would be reduced due to the reduction in vehicle hours traveled and the improved traffic flow.

The estimated emissions shown in Table 3.1 are calculated for only a comparison between alternatives. The numbers are not necessarily an accurate reflection of what the true carbon dioxide emissions will be because carbon dioxide emissions are dependent on other factors that are not part of the model, such as the fuel mix (EMFAC model emission rates are only for direct engine-out carbon dioxide emissions not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components), rate of acceleration, and the aerodynamics and efficiency of the vehicles.

3.4.3 Limitations and Uncertainties with Modeling

EMFAC

Although the Emission Factor Model can calculate carbon dioxide emissions from mobile sources, the model does have limitations when it comes to accurately reflecting carbon dioxide emissions. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008), studies have revealed that brief but rapid accelerations can contribute

significantly to a vehicle's carbon monoxide and hydrocarbon emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idle) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work by Environmental Protection Agency and the California Air Resources Board is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling.

In addition, EMFAC does not include speed corrections for most vehicle classes for carbon dioxide – for most vehicle classes emission factors are held constant which means that EMFAC is not sensitive to the decreased emissions associated with improved traffic flows for most vehicle classes. Therefore, unless a project involves a large number of heavy-duty vehicles, the difference in modeled carbon dioxide emissions due to speed change will be slight.

California Air Resources Board is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the California Air Resources Board has made this decision. Their website only states:

REVISION: Both the EMFAC and OFFROAD Models develop carbon dioxide and methane emission estimates; however, they are not currently used as the basis for [California Air Resources Board's] official [greenhouse gas] inventory which is based on fuel usage information. http://www.arb.ca.gov/cc/inventory/inventory.htm. . However, Air Resources Board is working towards reconciling the emission estimates from the fuel usage approach and the models.

Other Variables

With the current science, project-level analysis of greenhouse gas emissions is limited. Although a greenhouse gas analysis is included for this project, there are numerous key greenhouse gas variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected carbon dioxide emissions.

First, vehicle fuel economy is increasing. The Environmental Protection Agency's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2008 (http://www.epa.gov/oms/fetrends.htm)," which provides data on the fuel economy and technology characteristics of new light-duty vehicles including

cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy has improved each year beginning in 2005, and is now the highest since 1993. Most of the increase since 2004 is due to higher fuel economy for light trucks, following a long-term trend of slightly declining overall fuel economy that peaked in 1987. These vehicles also have a slightly lower market share, peaking at 52 percent in 2004 with projections at 48 percent in 2008.

Table 3.2 shows the alternatives for vehicle fuel economy increases studied by the National Highway Traffic Safety Administration in its Final Environmental Impact Statement for New Corporate Average Fuel Economy Standards (October 2008).

Table 3.2. Model Year 2015 Required Miles Per Gallon (mpg) by Alternative

Vehicle	No Action	25% Below Optimized	Optimized (Preferred)	25% Above Optimized	50% Above Optimized	Total Costs Equal Total Benefits	Technology Exhaustion
Cars	27.5	33.9	35.7	37.5	39.5	43.3	52.6
Trucks	23.5	27.5	28.6	29.8	30.9	33.1	34.7

Second, near-zero carbon vehicles will come into the market during the design life of this project. According to a March 2008 report released by University of California, Davis (UC Davis), Institute of Transportation Studies entitled *Why Hydrogen and Fuel Cells are Needed to Support California Climate Policy*:

"Large advancements have occurred in fuel cell vehicle and hydrogen infrastructure technology over the past 15 years. Fuel cell technology has progressed substantially resulting in power density, efficiency, range, cost, and durability all improving each year. In another sign of progress, automotive developers are now demonstrating over 100 fuel cell vehicles in California – several in the hands of the general public – with configurations designed to be attractive to buyers. Cold-weather operation and vehicle range challenges are close to being solved, although vehicle cost and durability improvements are required before a commercial vehicle can be successful without incentives. The pace of development is on track to approach pre-commercialization within the next decade."

"A number of the U.S. Department of Energy 2010 milestones for fuel cell vehicles development and commercialization are expected to be met by 2010. Accounting for a five to six year production development cycle, the scenarios developed by the U.S. Department of Energy suggest that 10,000s of vehicles per year from 2015 to 2017

would be possible in a federal demonstration program, assuming large cost share grants by the government and industry are available to reduce the cost of production vehicles."

Third and as previously stated, California has recently adopted a low-carbon transportation fuel standard in 2009 to reduce the carbon intensity of transportation fuels by 10 percent by 2020. The regulation became effective on January 12, 2010 (codified in title 17, Califonria Code of Regulations, Sections 95480-95490). Beginning January 1, 2011, transportation fuel producers and importers must meet specified average carbon intensity requirements for fuel in each calendar year.

Fourth, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, "Effects of Gasoline Prices on Driving Behavior and Vehicle Market" (http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf), the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists have adjusted to higher gas prices by making fewer trips and driving more slowly; 2) the market share of sports utility vehicles is declining; and 3) the average prices for larger, less-fuel-efficient models have declined over the past five years as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel efficient vehicles.

Limitations and Uncertainties with Impact Assessment

Taken from p. 3-70 of the National Highway Traffic Safety Administration Final Environmental Impact Statement for New Corporate Average Fuel Economy Standards (October 2008), Figure 3-3 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis. The report states: "Cascade of uncertainties typical in impact assessments showing the "uncertainty explosion" as these ranges are multiplied to encompass a comprehensive range of future consequences, including physical, economic, social, and political impacts and policy responses."

Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change.

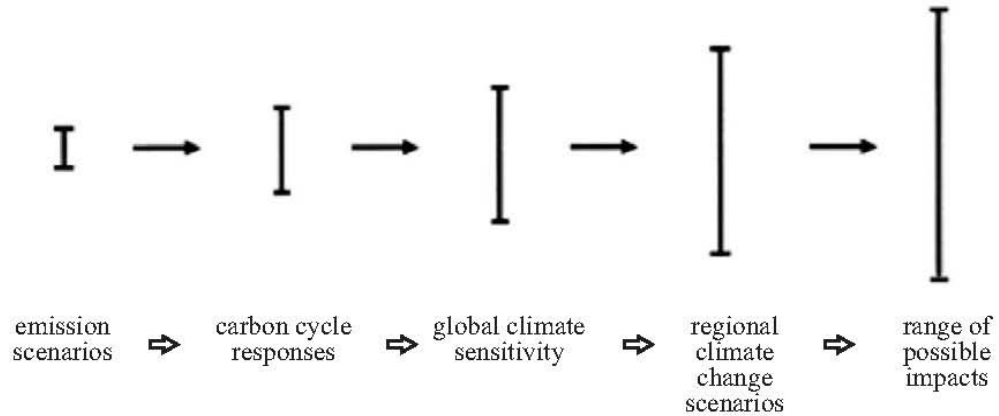


Figure 3-3 Cascade of Uncertainties

SOURCE: National Highway Traffic Safety Administration Final EIS for New CAFE Standards (October 2008)

EA 06-493900
EA 06-484700

Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in carbon dioxide emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of carbon dioxide equivalent. This uncertainty only increases when viewed globally.

The Intergovernmental Panel on Climate Change has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation Intergovernmental Panel on Climate Change scenarios project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons carbon dioxide from 2000 to 2030, which represents an increase of between 25 and 90 percent.

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing "new" greenhouse gas emissions. It is difficult to assess the extent to which any project level increase in carbon dioxide emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

The complexities and uncertainties associated with project-level impact analysis are further borne out in the recently released Final Environmental Impact Statement completed by the National Highway Traffic Safety Administration Corporate Average Fuel Economy standards, October 2008. As the text quoted below shows, even when dealing with greenhouse gas emission scenarios on a national scale for the entire passenger car and light-truck fleet, the numerical differences among alternatives is very small and well within the error sensitivity of the model.

"In analyzing across the Corporate Average Fuel Economy 30 alternatives, the mean change in the global mean surface temperature, as a ratio of the increase in warming between the B1 (low) to A1B (medium) scenarios, ranges from 0.5 percent to 1.1 percent. The resulting change in sea level rise (compared to the No Action Alternative) ranges, across the alternatives, from 0.04 centimeter to 0.07 centimeter.

In summary, the impacts of the model year 2011-2015 Corporate Average Fuel Economy alternatives on global mean surface temperature, sea level rise, and precipitation are relatively small in the context of the expected changes associated with the emission trajectories. This is due primarily to the global and multi-sectoral nature of the climate problem. Emissions of carbon dioxide, the primary gas driving the climate effects, from the United States automobile and light truck fleet represented about 2.5 percent of total global emissions of all greenhouse gases in the year 2000 (EPA, 2008; CAIT, 2008). While a significant source, this is a still small percentage of global emissions, and the relative contribution of carbon dioxide emissions from the United States light vehicle fleet is expected to decline in the future, due primarily to rapid growth of emissions from developing economies (which are due in part to growth in global transportation sector emissions)."

3.4.4 Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

3.4.5 California Environmental Quality Act Conclusion

While construction will slightly increase greenhouse gas emissions during construction, it is expected the project would not increase any operational greenhouse gas emissions. Based on the project resulting in less congestion and improved operations, the City of Bakersfield (City) expects that greenhouse gas emissions would not increase in the future build conditions when compared to the future no-build conditions.

In addition, as discussed above, there are also limitations with EMFAC and with assessing what a given carbon dioxide emissions increase means for climate change.

Therefore, it is the City's determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, the City is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

3.4.6 Greenhouse Gas Reduction Strategies

Assembly Bill 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as the California Air Resources Board works to implement the Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Many of the strategies Caltrans is using to help meet the targets in Assembly Bill 32 come from the California Strategic Growth Plan, which is updated each year. Former Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $100.7 billion in transportation funding during the next decade. The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas 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 are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain carbon dioxide reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 3-4, The Mobility Pyramid.

The City of Bakersfield 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 also works 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 ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team.

Figure 3-4 Mobility Pyramid

SOURCE: Caltrans Standard Environmental Reference

EA 06-493900
EA 06-484700

It is important to note, however, that control of the fuel economy standards is held by the U.S. Environmental Protection Agency and the California Air Resources Board. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California, Davis.

Table 3.3 summarizes the Caltrans and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures will also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

- Use of Reclaimed Water—Currently 30 percent of the electricity used in California is used for the treatment and delivery of water. Use of reclaimed water helps conserve this energy, which reduces greenhouse gas emissions from electricity production.
- Landscaping—Landscaping reduces surface warming and through photosynthesis decreases carbon dioxide.
- Portland Cement—Use of lighter color surfaces such as Portland cement helps to reduce the albedo effect (measure of how much light a surface reflects) and cool the surface; in addition, Caltrans has been a leader in the effort to add fly ash to Portland cement mixes. Adding fly ash reduces the greenhouse gas emissions associated with cement production— it also can make the pavement stronger.
- Lighting—Use of energy efficient lighting, such as LED traffic signals.
- Idling restrictions—Placing idling restrictions for trucks and equipment at construction sites reduces fuel usage.

Adaptation Strategies

"Adaptation strategies" refers 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.

Table 3.3. Climate Change/Carbon Dioxide Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated Carbon Dioxide Savings (million miles traveled)	
		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 and 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 and Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State Integrated Transportation System; Congestion Management Plan	0.007	2.17
Mainstream Energy and Greenhouse Gases into Plans and Projects	Office of Policy Analysis and Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational and Information Program	Office of Policy Analysis and Research	Interdepartmental, California Environmental Protection Agency, California Air Resources Board, California Energy Commission		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening and Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 percent limestone cement mix 25 percent fly ash cement mix > 50 percent fly ash/slag mix	1.2 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	California Environmental Protection Agency; California Air Resources Board; Business Transportation and Housing Agency; Metropolitan Planning Organizations		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					**2.66**	**18.67**

Source: Caltrans Standard Environmental Reference

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.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-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.

The California Resources Agency (now the California Natural Resources Agency), through the interagency Climate Action Team, was directed to coordinate with local, regional, state, and federal public and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts, and then outline solutions that can be implemented within and across state agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, the California Natural Resources Agency was directed to request the National Academy of Science to prepare a *Sea Level Rise Assessment Report* by December 2010 (now scheduled to be released in 2012) to advise how California should plan for future sea level rise. The report is to include the following:

- Relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates
- Range of uncertainty in selected sea level rise projections
- Synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities, and beaches), natural areas, and coastal and marine ecosystems
- Discussion of future research needs regarding sea level rise for California

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 rise affecting safety, maintenance, and operational improvements of the system and the 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 build 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 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 from 2008 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 on 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 Notice of Preparation for the project was distributed on April 11, 2008.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being made as part of then-Governor Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on *Sea Level Rise Assessment,* due for release by December 2010.

On August 3, 2009, the California Natural Resources Agency in cooperation and partnership with multiple state agencies released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best-known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of discussion draft, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture.

The discussion draft focuses on sectors that include: public health; biodiversity and habitat; ocean and coastal resources; water management; agriculture; forestry; and transportation and energy infrastructure. The strategy is in direct response to then-Governor Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the California Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings. A revised version of the report was posted on the California Natural Resource Agency website on December 2, 2009 at: http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be warranted to protect the transportation system from sea level rise.

Chapter 4 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and consultation with interested parties.

This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

4.1 Scoping Process

4.1.1 Notice of Preparation

The Notice of Preparation for the project under the California Environmental Quality Act was posted at the County Clerk's Office on April 18, 2008. The notice was posted by the California State Clearinghouse for a 30-day review period, which began on April 11, 2008 and ended on May 12, 2008.

In addition, two newspaper notices were published for the project. A newspaper notice was published in English in *The Bakersfield Californian* newspaper on April 9, 2008 and April 23, 2008. A newspaper notice was published in Spanish in *El Popular* newspaper on April 11, 2008 and April 25, 2008. The State Clearinghouse distributed the Notice of Preparation on April 11, 2008.

Distribution lists for the project scoping materials, including the Notice of Preparation, included federal, tribal, state, regional, county, and local agencies/officials; groups, businesses, and organizations; and property owners within a minimum of about 650 feet of the project segment of 24th Street/State Route 178.

The City of Bakersfield (City), in cooperation with Caltrans, distributed Notice of Scoping/of Studies letters on April 28, 2008 to a number of elected and City officials as well as various agencies, groups, organizations, and other interested parties. The purpose of the letters was to provide information on the project, to request input from the interested parties on issues and topics to be addressed in the environmental document, and to provide notification of the scoping meeting for the project.

4.1.2 Notice of Intent

The Federal Highway Administration arranged for the publication of the Notice of Intent (to prepare an Environmental Impact Statement) for the project on April 23, 2008, under the National Environmental Policy Act. The Federal Highway Administration, on behalf of Caltrans, rescinded the Notice of Intent for the project on November 10, 2010, which was published in the Federal Register Volume 75, Number 271.

4.1.3 Scoping Meetings

The City and Caltrans hosted one public scoping meeting for the project at the Kern County Superintendent of Schools Office, 1300 17th Street, Bakersfield, California, on April 30, 2008, from 4:30 p.m. to 7:30 p.m. The meeting was held for the general public and agencies.

The scoping meeting was done in an open-house format, using two separate rooms on the first floor of the Kern County Superintendent of Schools Office building. One room had project aerial maps and display boards that showed the proposed alternatives. The project displays were used as visual aids by the City, Caltrans, and consultant staff at the meeting. The second room had environmental process display boards, a court reporter, and tables used for meeting participants to write and submit comment cards. City, Caltrans, and consulting staff were there to answer questions.

The court reporter documented the discussion and recorded oral comments at the meeting. Comments received covered various topics: the potential for increased traffic along 24th Street and adjacent residential streets, potential traffic congestion on adjacent residential streets during construction, potential noise during construction, and potential residential and business relocations. All of the comments received were reviewed and addressed in the technical studies prepared for the project.

See Chapter 2 for a discussion of the above issue areas.

4.2 Consultation and Coordination with Cooperating/ Participating Agencies

4.2.1 Cooperating/Participating Agencies

The National Environmental Policy Act of 1969 as amended requires that the federal lead agency ask other federal agencies if they want to be cooperating agencies on the environmental document for a project.

In addition, Section 6002 of Safe, Accountable, Flexible, Efficient Transportation Equity Act—A Legacy for Users requires that federal and nonfederal agencies that may have an interest in the project be asked whether they want to be participating agencies in the environmental review process for the project. A participating agency has certain opportunities and obligations to comment/provide input at specific times. One of the provisions in Section 6002 stipulates that once issues are raised and resolved, they cannot be raised again later in the review process.

A federal agency can elect to be both a cooperating and a participating agency. Only federal agencies can be cooperating agencies.

Caltrans has sent a cooperating agency request letter to four federal agencies on May 16, 2008 (see Chapter 6), inviting them to be cooperating and/or participating agencies for the environmental document for the project. The Environmental Protection Agency accepted the invitation to become a participating agency and declined the invitation to become a cooperating agency. The National Marine Fisheries Service declined the invitation to become a participating or cooperating agency. The U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service did not respond to the invitations.

Caltrans sent a participating agency letter on August 4, 2008 to all agencies that may have an interest in the project (see Chapter 6). Additionally, Caltrans sent a second participating and cooperating agency request letter to six federal agencies.

4.3 Consultation and Coordination with Resource Agencies

The City and Caltrans prepared the *Thomas Roads Improvement Program San Joaquin Kit Fox Life History, Effects Analysis, and Conceptual Mitigation Strategy*. The City and Caltrans then prepared a second chapter to the report. These two chapters were combined into the *Thomas Roads Improvement Program San Joaquin Kit Fox Effects Analysis, Mitigation Strategy, and Implementation Plan (Kit Fox Study).* Chapters 1 and 2 of this report have been approved by the resource agencies; however, Chapter 3 (Mitigation Strategies) is still in progress.

During preparation of the Kit Fox Study, consultant biologists and the City frequently consulted with the U.S. Fish and Wildlife Service and California Department of Fish and Game. Consultant biologists, the City, and Caltrans coordinated with the U.S. Fish and Wildlife Service and California Department of Fish and Game on the approach for San Joaquin kit fox field surveys, potential project-specific and

program-level effects of the Thomas Roads Improvement Program, and mitigation options for project-specific impacts.

Caltrans intend to initiate Section 7 consultation under the Federal Endangered Species Act with the U.S. Fish and Wildlife Service, and 2080.1 Consistency Determination with California Department of Fish and Game for the six Thomas Roads Improvement Program Projects evaluated in the Kit Fox Survey, of which the proposed project was included. The following is a summary of the consultation done to date with the U.S. Fish and Wildlife Service and the California Department of Fish and Game for the combined Thomas Roads Improvement Program projects:

- **November 20, 2007:** The City and Caltrans authorized the development of a San Joaquin kit fox conceptual strategy to determine the potential effects on San Joaquin kit fox from implementation of the Thomas Roads Improvement Program projects and to evaluate mitigation options for such effects. The U.S. Fish and Wildlife Service and California Department of Fish and Game concurred with the need for a strategy.
- **June 3, 2008:** The U.S. Fish and Wildlife Service and California Department of Fish and Game concurred on methods proposed to develop the San Joaquin kit fox conceptual strategy. The U.S. Fish and Wildlife Service, California Department of Fish and Game, Caltrans, consultants, and the City agreed to meet throughout the development of the conceptual strategy.
- **July 8, 2008:** The California Department of Fish and Game, Caltrans, consultants, the City, Steve Pruett of Paul Pruett and Associates, and Dr. Brian Cypher toured various Thomas Roads Improvement Program projects in Bakersfield.
- **August 26, 2008:** Consultants presented the preliminary results of the San Joaquin kit fox surveys. The U.S. Fish and Wildlife Service identified habitat connectivity and the maintenance of corridors connecting San Joaquin kit fox populations as a major issue facing the San Joaquin kit fox in Bakersfield. Potential compensatory mitigation options were discussed, including culverts, refugia, and artificial San Joaquin kit fox dens.
- **September 10, 2009:** The U.S. Fish and Wildlife Service and the California Department of Fish and Game approved Chapters 1 and 2 of the Draft *Thomas Roads Improvement Program San Joaquin Kit Fox Life History, Effects Analysis, and Conceptual Mitigation Strategy* that describes program-level impacts and conceptual program-level mitigation. The U.S. Fish and Wildlife Service and the California Department of Fish and Game concurred that Caltrans should begin to develop a mitigation implementation plan of the conceptual approach.

- **October 7, 2009:** Thomas Roads Improvement Program received a letter (81420-2008-TA-0368-29) from Peter Cross, Deputy Assistant Field Supervisor with the U.S. Fish and Wildlife Service, approving Chapters 1 and 2 of the Draft *Thomas Roads Improvement Program San Joaquin Kit Fox Life History, Effects Analysis, and Conceptual Mitigation Strategy.*
- **March 11, 2010:** The U.S. Fish and Wildlife Service and the California Department of Fish and Game approved Chapters 1 and 2 of the Draft *Thomas Roads Improvement Program San Joaquin Kit Fox Effects Analysis, Mitigation Strategy, and Implementation Plan.* The California Department of Fish and Game recommends that Caltrans seek a 2080.1 Consistency Determination for projects requiring a State Incidental Take Permit. The U.S. Fish and Wildlife Service and the California Department of Fish and Game approved the Sump Habitat Program and requested that the City, in coordination with Caltrans, establish a long-term conservation assurances for the 19 sumps through conservation easements, endowment, and long-term management plan.
- **May 5, 2010:** AECOM held an informal teleconference with the U.S. Fish and Wildlife Service to discuss the environmentally sensitive area compliance approach and schedule before the May 11, 2010 meeting that Sue Jones and Jen Schofield did not attend. For compensatory mitigation, the U.S. Fish and Wildlife Service requested that the City submit a letter of commitment with each Biological Assessment for the Sump Habitat Program.
- **May 11, 2010:** Caltrans will submit project Biological Assessments prior to the Final Environmental Document to the U.S. Fish and Wildlife Service and the California Department of Fish and Game for concurrent review to expedite the California Endangered Species Act consultation process. The Sump Habitat Program would be discussed in the Biological Assessments, but the requirements (easement application, management plan, and endowment) would not need to be met before construction of a road project. The California Department of Fish and Game is willing to hold the conservation easement for the sumps, and the City and Caltrans will identify an agency-approved endowment holder. The City and Caltrans consider identifying an alternative cumulative mitigation strategy in the event that the Sump Habitat Program is fiscally infeasible.
- **July 14, 2010:** The California Department of Fish and Game requested that standard California Endangered Species Act requirements be included in the terms and conditions section of the Biological Opinion for State Route 178/Morning Drive Interchange Project so that the Biological Opinion complies with the California Endangered Species Act.

- **August 18, 2010:** The U.S. Fish and Wildlife Service and the California Department of Fish and Game agreed that the letter from the Metropolitan Bakersfield Habitat Conservation Plan Trust Group to the City (dated August 3, 2010) approving eligible Thomas Roads Improvement Program projects to participate in the fee payment program was valid for projects that are ready to build before Metropolitan Bakersfield Habitat Conservation Plan expiration in 2014. The Service asked that the City clarify that fees can be paid at higher than 1:1 ratios, as required by the U.S. Fish and Wildlife Service. The City suggests that long-term conservation assurances for the Sump Habitat Program (mitigation for cumulative effects) include the National Fish and Wildlife Foundation as an endowment holder, the California Department of Fish and Game as a conservation easement holder, and the City as project manager. This arrangement would require review and approval by the California Department of Fish and Game and U.S. Fish and Wildlife Service as the Sump Habitat Program continues to be finalized. The California Department of Fish and Game recommends that the Sump Habitat Program prioritize high and medium conservation priority sumps that are owned in fee by the City.
- **September 30, 2010:** The U.S. Fish and Wildlife Service, AECOM, Parsons/Thomas Roads Improvement Program, and Caltrans discussed the Metropolitan Bakersfield Habitat Conservation Plan compensation fees for the six Thomas Roads Improvement Program projects via conference call. The Metropolitan Bakersfield Habitat Conservation Plan Trust Group issued a blanket concurrence to Caltrans and the City to use the Metropolitan Bakersfield Habitat Conservation Plan for all six projects. The Service suggested that a memorandum of understanding with all parties involved could be implemented for paying fees in advance of the 2014 Metropolitan Bakersfield Habitat Conservation Plan expiration.
- **October 22, 2010:** The U.S. Fish and Wildlife Service, Caltrans, and the City met regarding the need for a memorandum of understanding/agreement regarding Metropolitan Bakersfield Habitat Conservation Plan compensation. It was determined that it would be preferable to have an agreement between the City, Caltrans, and the Metropolitan Bakersfield Habitat Conservation Plan Trust Group, not including the Service. Project would still need to be assessed on an individual basis with the understanding that acreages/impacts might change once Bas were assessed by the Service and the California Department of Fish and Game.

- **November 9, 2010:** Caltrans submitted the Biological Assessment for State Route 178/Morning Drive Interchange to the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service and the California Department of Fish and Game approved the standard avoidance and minimization measures that would be described for the San Joaquin kit fox in the Biological Assessment. The U.S. Fish and Wildlife Service and the California Department of Fish and Game agreed that mitigation for cumulative effects (Sump Habitat Program) could be described generally in the Biological Assessment to maintain flexibility while the program evolves. A chapter describing the cumulative mitigation framework would later be finalized (Chapter 3 in the *Thomas Roads Improvement Program San Joaquin Kit Fox Effects Analysis, Mitigation Strategy, and Implementation Plan*) and would be submitted as a separate, supporting document with the Biological Assessment.
- **November 19, 2010:** The U.S. Fish and Wildlife Service received a letter from Caltrans requesting initiation of formal consultation for State Route 178/Morning Drive Interchange. A Biological Assessment for the project was included in the initiation package.
- **June 22, 2011:** A meeting was held with the U.S. Fish and Wildlife Service, AECOM, Parsons/Thomas Roads Improvement Program, the City, and Caltrans. Updates were discussed regarding the status of the Thomas Roads Improvement Program projects, the Sump Habitat Program, conservation easements and endowments, future work products, and possible additional funding support for the projects.
- **August 19, 2011:** The Biological Opinion for the State Route 178/Morning Drive Interchange was received from the U.S. Fish and Wildlife Service.

Other Project-Related Consultation and Coordination

A public safety meeting was held on May 14, 2008. It was attended by Tyler Hartley and Howard Wines of the Bakersfield Fire Department, Ron Fraze and Gary Moore of the Bakersfield Police Department, Caltrans staff, City of Bakersfield staff, Parsons, RBF, and LSA staff. Potential impacts of the build alternative designs on public services, specifically fire and police, were discussed.

Terry Goewert of Caltrans sent an email on July 7, 2010 requesting U.S. Environmental Policy Agency and Federal Highway Administration concurrence for the proposed project that the project is not a project of air quality concern. In an email from Karina O'Connor of the Environmental Protection Agency on July 29, 2010, the Environmental Protection Agency concurred that the proposed project is not a project

of air quality concern. In an email from Joseph Vaughn of the Federal Highway Administration on July 30, 2010, the Federal Highway Administration concurred that the proposed project is not a project of air quality concern.

The California Department of Fish and Game was consulted to determine jurisdiction over Carrier Canal within the study area. In an email from Laura Peterson-Diaz of the California Department of Fish and Game, dated July 9, 2009, Carrier Canal was determined not to be jurisdictional by California Department of Fish and Game pursuant to Section 1602 of the California Fish and Game Code because Carrier Canal is a human-made channel.

4.4 Cultural Resources Consultation and Coordination

The Native American Heritage Commission Sacred Lands File search was completed on May 2, 2008. The Sacred Lands File search failed to indicate the presence of Native American cultural resources in the project vicinity. The commission, however, recommended that selected Native American groups and individuals be contacted. Fifteen individuals representing 17 Native American groups were contacted via certified mail and e-mail. Several letters were received indicating areas within the study area sensitive for cultural resources.

On November 8, 2010, Caltrans initiated consultation with the State Historic Preservation Officer in regard to the 24th Street Improvement Project. Caltrans submitted the Historic Property Survey Report and its attachment, the Historical Resources Evaluation Report, to the State Historic Preservation Officer to seek State Historic Preservation Officer concurrence with National Register of Historic Places determinations of eligibility for historic properties made by Caltrans. On August 10, 2011, the State Historic Preservation Officer concurred with the ineligibility of a number of properties within the APE and requested additional information. A series of correspondence took place that addressed requests for additional information from the State Historic Preservation Officer and involved additional input from both Caltrans and the City of Bakersfield regarding the determination of eligible properties within the project limits (letters provided in Appendix D).

On January 30, 2012, Caltrans submitted to the State Historic Preservation Officer a request for concurrence on eligibility for five individually eligible properties and two historic districts. But on January 31, 2012, Caltrans sent the State Historic Preservation Officer an email message withdrawing this request because Caltrans determined that the prior request for concurrence on the same five properties had

exceeded the 30-day review period and notified the State Historic Preservation Officer that Caltrans is moving forward with the assumption of eligibility of the five individually eligible properties and two historic districts for purposes of this project only.

The Caltrans Division of Environmental Analysis Cultural Studies Office, in its role as the Federal Highway Administration, determined that one individual property at 2327 Cedar Street was not individually eligible for the National Register because there was not enough information to justify that it met National Register eligibility criteria. In response, the status of the property at 2327 Cedar Street was changed from individually eligible for the National Register to not individually eligible (it remains a contributor to the historic district south of 24th Street). With the historic status change for 2327 Cedar Street, the total number of historic properties within the APE decreased from a total of seven to six, which includes two districts and four individually eligible properties.

Chapter 5 List of Preparers

This document was prepared by Caltrans Central Region Environmental Division staff in cooperation with the City of Bakersfield and its consultant, LSA Associates, Inc. The following staff prepared this Environmental Impact Report/Environmental Assessment and supporting technical studies.

Caltrans

Todd Barosso, Environmental Planner. B.S., Wildlife Biology, California State University, Humboldt; 10 years of biology (wetlands) experience. Contribution: Oversight review Natural Environment Study.

Louis L. Birdwell, Associate Right of Way Agent. Bachelor of Business Administration, Texas Tech University; 25 years of right-of-way experience at Caltrans; 5 years of experience as a Land and Environmental Agent at Shell Oil Company; 6 years of experience with the U.S. Department of Agriculture, Agriculture Stabilization and Conservation Service. Contribution: Oversight review Draft Relocation Impact Statement.

Abdulrahim Chafi, Transportation Engineer. Ph.D., Environmental Engineering, California Coast University, Santa Ana; B.S., M.S., Chemistry and M.S., Civil/Environmental Engineering, California State University, Fresno; 15 years of environmental technical studies experience. Contribution: Oversight review Air, Noise Study Report.

Rajeev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 19 years of environmental technical studies experience. Contribution: Oversight review Water Quality Report.

Srikanth Gopalkrishnarao M.S., P.E., (M.S., Environmental engineering and Water Resource, South Dakota State University, South Dakota); 12 years of experience (hydrology and hydraulics). Contribution: Oversight review of Floodplain, Hydrology and Hydraulics.

Susan Greenwood, Associate Environmental Planner. B.S., Environmental Health Science, California State University, Fresno; 20 years of environmental

health, hazardous waste, and hazardous material management experience. Contribution: Oversight review Initial Site Assessment.

Kirsten Helton, Senior Environmental Planner. B.A., Economics, California State University, Fresno; 19 years of environmental planning experience. Contribution: Oversight review Draft Environmental Impact Report/Assessment.

Zachary Parker, Senior Environmental Planner. B.S., Environmental Biology, California State University, Humboldt; 12 years of wildlife biology and environmental planning experience. Contribution: Oversight review Natural Environment Study.

Andrew Pochwatka, Transportation Engineer. B.S., Civil Engineering, California State University, Sacramento. Contribution: Storm water oversight review.

Ken J. Romero, Senior Transportation Engineer. B.S., Civil Engineering, California State University, Fresno; 7 years of environmental technical studies experience. Contribution: Oversight review of the Noise Study Reports, Air Quality Reports and Water Quality Reports.

Jane Sellers, Research Writer. B.A., Journalism, California State University, Fresno; more than 25 years of writing and editing experience, 11 years at Caltrans. Contribution: Environmental document editor (for Caltrans document standards).

Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; 21 years of hazardous waste and water quality experience; 5 years of paleontology/geology experience. Contribution: Oversight review Paleontological Resources Identification and Evaluation Report.

John Thomas, Associate Environmental Planner. B.A., Geography, California State University, Fresno; 11 years of environmental planning experience. Contribution: Oversight review Draft Environmental Impact Report/Environmental Assessment.

Juan Torres, Associate Environmental Planner. B.A., Environmental Studies, University of the Pacific; 12 years of environmental planning experience. Contribution: Oversight review Draft Environmental Impact Report/Assessment.

John Whitehouse, Associate Environmental Planner. M.A., Archaeology and Heritage, University of Leicester; 17 years of experience in architectural history; 25 years of experience in California archaeology. Contribution: Oversight review Historic Property Survey Report.

LSA Associates, Inc.

Michael Amling, Principal, LSA. Urban and Regional Planning; 21 years of experience. Contribution: Preparation of environmental document.

Jennette Bosseler, Editor, LSA. English/Professional Writing; 9 years of experience. Contribution: Environmental document editor.

Ronald Brugger, Senior Air Quality Specialist, LSA. Mechanical Engineering; 20 years of experience. Contribution: Preparation of Air Quality Assessment Report.

Tony Chung, Principal/Air Quality Services, LSA. Mechanical Engineering; 20 years of experience. Contribution: Preparation of Noise Study Report.

Debra Cooper, Graphics Specialist, LSA. Graphics; 10 years of experience. Contribution: Preparation of Jurisdictional Delineation Report.

Curt Duke, Principal/Archaeologist, LSA. Anthropology; 16 years of experience. Contribution: Preparation of Cultural Resource Analysis and Archaeology Survey Report.

Richard Erickson, Associate/Biologist, LSA. Biology; 28 years of experience. Contribution: Preparation of Natural Environment Study.

Tom Flahive, Geographic Information Systems Specialist, LSA. Biology; 5 years of experience. Contribution: Preparation of environmental document.

Laurel Frakes, Environmental Planner, LSA. Natural Resources Management, 4 years of experience. Contribution: Preparation of environmental document.

Margaret Gooding, Geographic Information Systems Specialist, LSA. Geographical Sciences; 11 years of experience. Contribution: Preparation of environmental document.

Jim Harrison, Principal/Biologist, LSA. Biological Studies; 20 years of experience. Contribution: Conducted Botanical Survey (2007).

Elizabeth Hohertz, Senior Biologist, LSA. Applied Ecology; 8 years of experience. Contribution: Preparation of Natural Environment Study.

Art Homrighausen, Principal/Biologist, LSA. Environmental Studies/Biology; 22 years of experience. Contribution: Preparation of Natural Environment Study.

Christine Huard-Spencer, Senior Environmental Planner, LSA. Geography; 34 years of experience. Contribution: Preparation of Section 4(f) Evaluation.

Lori Keller, Environmental Planner, LSA. Geography; 5 years of experience. Contribution: Preparation of Community Impact Analysis.

Angie Kung, Environmental Planner, LSA. Biology/Anthropology; 8 years of experience. Contribution: Preparation of Initial Site Assessment.

Frederick Lange, Senior Cultural Resources Manager, LSA. Anthropology; 43 years of experience. Contribution: Preparation of Archaeology Survey Report.

Keith Lay, Associate/Air Quality Specialist, LSA. Civil Engineering; 8 years of experience. Contribution: Preparation of Air Quality Assessment.

Danette LeBron, Word Processor, LSA. Desktop Publishing; 24 years of experience. Contribution: Environmental document word processor.

Carmen Lo, Assistant Environmental Planner, LSA. Environmental Analysis and Design; 5 years of experience. Contribution: Preparation of Initial Site Assessment.

Agnieszka Napiatek, Environmental Planner, LSA. Environmental Studies/; 4 years of experience. Contribution: Preparation of Natural Environment Study, Community Impact Assessment, and Draft Relocation Impact Statement.

Jill O'Connor, Principal, LSA. Natural Resources Management; 25 years of experience. Contribution: Preparation of environmental document.

Pamela Reading, Senior Planner, LSA. Environmental Studies; 18 years of experience. Contribution: Preparation of environmental document.

Robert Reynolds, Senior Paleontologist, LSA. Paleontology; 43 years of experience. Contribution: Preparation of Cultural Resource Analysis and Paleontological Resources Report.

Angela Roundy, Senior Biologist, LSA. Biology; 5 years of experience. Contribution: Preparation of Natural Environment Study.

Crystahl Taylor, Senior Environmental Planner, LSA. Natural Resources Management; 10 years of experience. Contribution: Preparation of environmental document.

Casey Tibbet, Archeologist/Historian, LSA. History/Historic Preservation; 7 years of experience. Contribution: Cultural Resource Analysis.

Lisa Williams, Associate/Water Quality Specialist, LSA. Environmental Studies, 8 years of experience. Contribution: Preparation of Location Hydraulic Study.

RBF Consulting

Kristen Bogue, Environmental Analyst, RBF. Environmental Analysis and Design; 5 years of experience. Contribution: Preparation of Visual Impact Analysis.

Kelly Chiene, Environmental Analyst, RBF. City and Regional Planning; 2 years experience. Contribution: Preparation of Visual Impact Analysis.

Steve Giffen, Project Manager/Associate, RBF. Civil Engineering; 30 years of experience. Contribution: Preparation of Location Hydraulic Study.

Anthony Hernandez, Associate Transportation Planner, RBF. Civil Engineering; 11 years of experience. Contribution: Preparation of Traffic Analysis.

David Jacobus, Geographic Information Systems Analyst, RBF. Geography; 7 years of experience. Contribution: Preparation of Visual Impact Analysis.

Nora Jans, Environmental Specialist, RBF. Environmental Studies; 9 years of experience. Contribution: Preparation of Location Hydraulic Study.

Cathy Johnson, Senior Associate/Landscape Architect, RBF. Ornamental Horticulture; 18 years of experience. Contribution: Preparation of Visual Impact Analysis.

Richard Johnston, Photosimulation Specialist, RBF. Visual Impact Analysis; 30 years of experience. Contribution: Preparation of Visual Impact Analysis.

Deepak Kaushik, Design Engineer, RBF. Civil Engineering; 7 years of experience. Contribution: Preparation of Traffic Analysis.

Laura Larsen, Project Manager/Civil Engineer, RBF. Environmental Engineering; 10 years of experience. Contribution: Preparation of Location Hydraulic Study.

Paul Martin, Senior Associate, RBF. Civil Engineering; 11 years of experience. Contribution: Preparation of Traffic Analysis.

Tom Ryan, Senior Associate, RBF. Civil Engineering; 12 years of experience. Contribution: Preparation of Location Hydraulic Study.

John Shetland, Landscape Planner, RBF. City and Regional Planning; 14 years of experience. Contribution: Preparation of Visual Impact Analysis.

Eddie Torres, Associate/Environmental Manager, RBF. Mechanical Engineering/Analysis and Design; 9 years of experience. Contribution: Preparation of Visual Impact Analysis.

Melanie Vosberg, Associate, RBF. Civil Engineering; 16 years of experience. Contribution: Preparation of Location Hydraulic Study.

Jeff Weckstein, Transportation Planner, RBF. Urban and Regional Planning; 5 years of experience. Contribution: Preparation of Traffic Analysis.

Kleinfelder

Nathan L. Dahlen, Project Engineer, Kleinfelder. Civil Engineering; 7 years of experience. Contribution: Preparation of Geotechnical Report.

David Pearson, Principal Professional/Geotechnical Engineer, Kleinfelder. Engineering and Applied Science; 40 years of experience. Contribution: Preparation of Geotechnical Report.

Neva Popenoe, Staff Professional, Kleinfelder. Civil Engineering; 5 years of experience. Contribution: Preparation of Geotechnical Report.

Thomas Roads Improvement Project Office (including consultants that provide program management services)

David D. Clark, Environmental Manager, TRIP. B.S. Science biology/chemistry and Master of Arts Biology; 30 years of experience. Contribution: Project Environmental Mangement, reviewed and assisted with the preparation of the Environmental Impact Report/Enviornmental Assessment and corresponding technical studies.

Heather Ellison, Senior Environmental Planner, TRIP. B.S. Science, Evironmental and Natural Resources; 10 years experience. Contribution: Review and preparation of Environmental Impact Report/Enviornmental Assessment and corresponding technical studies.

Mark Firger, PE, Project Engineer, Parsons. B.S. Civil Engineering; 8 years experience. Contribution: Preparation of Project Report.

Areg Gharabegian, PE, Principal Project Manager, Parsons. M.S. Science and B.S. of Science in Mechanical Engineering; 31 years experience. Oversight and quality control of technical studies.

Anne Kochaon, QEP, Parsons. M.S. Environmental Engineering; 26 years experience. Contribution: Peer reviewer and quality assurance/quality control for enviornmental documents.

Gary Petersen, Principal Project Manager, Parsons. B.S. Engineering, Master of Planning; 38 years experience. Contribution: Quality Control/Assurance for enviornmental documents.

Gilberto Ruiz, Senior Project Manager, Parsons. M.A., Urban and Regional Planning; 20 years of experience. Contribution: Oversight review of the environmental document.

Chapter 6 Distribution List

Federal Agencies

Jan Knight, Deputy Field Supervisor
USFWS
Sacramento Fish and Wildlife Office
2800 Cottage Way W-2605
Sacramento, CA 95825

Tom Plenys, Environmental Review Office
United States Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105-3901

United States Department of Agriculture
1400 Independence Ave., SW
Washington, D.C. 20250

Colonel William J. Leady, District Engineer
United States Army Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

National Park Service, Pacific West Region
Christine S. Lehnertz, Regional Director
One Jackson Center
1111 Jackson Street, Suite 700
Oakland, CA 94607

Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240

State Agencies

Dr. Jeffrey R. Single, Regional Manager
California Dept. of Fish & Game
1234 East Shaw Avenue
Fresno, CA 93710

Cy Oggins, Division Chief Environmental Planning
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825

James Ramos, Chairman
Native American Heritage Commission
915 Capitol Mall, Rm. 288
Sacramento, CA 95814

Director
California Department of Parks and Recreation
1416 9th Street
Sacramento, CA 95814

California Air Resources Board
1001 "I" Street
P.O. Box 2815
Sacramento, CA 95812

California Natural Resources Agency
John Laird, Secretary
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

California Emergency Management Agency
Mark Johnson, Planning Branch Chief
3650 Schriever Ave.
Mather, CA 95655-4203

California State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

California Highway Patrol
P.O. Box 942898
Sacramento, CA 94298-0001

Director
California Department of Conservation
801 "K" Street
Sacramento, CA 95814

Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Office of Historic Preservation
1725 23rd Street, #100
Sacramento, CA 95816

Department of Water Resources
1416 9th Street
Sacramento, CA 95814

Regional Agencies

Central Valley Regional Water Quality Control Board-Region
1685 "E" Street
Fresno, CA 93706

San Joaquin Valley Air Pollution Control District
Southern Region
34946 Flyover Court
Bakersfield, CA 93308

County Agencies

Charles Lackey, Director
County of Kern Floodplain Management
2700 M Street, Suite 500
Bakersfield, CA 93301

David L. Jones, Air Pollution Control Officer
Eastern Kern County Air Pollution Control District
2700 "M" Street, Suite 302
Bakersfield, CA 93301

Robert Ball, Planning Division Director
Kern County Council of Governments
1401 19th Street, Suite 300
Bakersfield, CA 93301

Lorelei H. Oviatt, AICP, Director
County of Kern, Planning Department
2700 "M" Street., Suite 100
Bakersfield, CA 93301

Robert Lerude, Director
Kern County Parks and Recreation
2820 M Street
Bakersfield, CA 93301

Kern County Fire Department
Nick Dunn, Fire Chief
5642 Victor Street
Bakersfield, CA 93308

Donny Youngblood, Sheriff
Kern County Sheriff's Department
1350 Norris Road
Bakersfield, CA 93308

Craig M. Pope,
Roads Commissioner
Kern County Roads Department
2700 M Street, Suite 400
Bakersfield, CA 93301

David Trimble, General Manager
Kern Regional Transit
2700 M Street, Suite 400
Bakersfield, CA 93301

Local Agencies

Raul M. Rojas, Director
City of Bakersfield Public Works Department
1501 Truxtun Avenue
Bakersfield, CA 93301

Douglas R. Greener, Fire Chief
Bakersfield Fire Department
2101 H Street
Bakersfield, CA301

Jim Eggert, Planning Director
City of Bakersfield Planning Division
1715 Chester Avenue
Bakersfield, CA 93301

Historic Preservation Commission City of Bakersfield, Economic & Community Dev.
Attn: Donna Barnes
1600 Truxtun Avenue Suite 300
Bakersfield, CA 93301

Greg Williamson, Chief of Police
Bakersfield Police Department
1601 Truxtun Ave.
Bakersfield, CA 93301

Dianne Hoover, Director
City of Bakersfield, Dept. of Parks and Recreation
1600 Truxtun Avenue (3rd floor)
Bakersfield, CA 93301

Art Chianello, Water Resources Manager
City of Bakersfield Water Resources Department
1000 Buena Vista Road
Bakersfield, CA 93311

Roberta Gafford, City Clerk
City of Bakersfield
1600 Truxtun Avenue
Bakersfield, CA 93301

State Elected Officials

Michael J. Rubio
State Senate 16th District
1800 30th St., Ste 350
Bakersfield, CA 93301

Jean Fuller
State Senate 18th District
5701 Truxtun Ave., Ste 105
Bakersfield, CA 93309

Kevin McCarthy
House of Representatives 22nd District
4100 Empire Dr., Ste 150
Bakersfield, CA 93309

David Valadao
State Assembly 30th District
1489 W. Lacey Boulevard, Ste 103
Handord, CA 93230

Shannon L. Grove
State Assembly 32nd District
4900 California Ave., Ste 100-B
Bakersfield, CA 93309

Jim Costa
House of Representatives 20th District
2700 M St, Ste 225
Bakersfield, CA 93301

Office of U.S. Senator
Dianne Feinstein
2500 Tulare Street, Suite 4290
Fresno, CA 93721

Office of U.S. Senator
Barbara Boxer
2500 Tulare Street, Suite 5290
Fresno, CA 93721

County Elected Officials

Karen Goh, Dist. 5
Kern County Board of Supervisors
1115 Truxtun Ave., 5th Floor
Bakersfield, CA 93301

Mike Maggard, Dist. 3
Kern County Board of Supervisors
1115 Truxtun Ave., 5th Floor
Bakersfield, CA 93301

Local Elected Officials

Mayor Harvey L. Hall
Bakersfield City Council
BakersfieldCity Hall
1600 Truxtun Ave.
Bakersfield, CA 93301

Sue Benham, Councilmember, Ward 2
Bakersfield City Council
Bakersfield City Hall
1600 Truxtun Ave.
Bakersfield, CA 93301

Ken Weir, Councilperson, Ward 3
Bakersfield City Council
Bakersfield City Hall
1600 Truxtun Ave.
Bakersfield, CA 93301

Interested Groups, Organizations, and Individuals

Jay Tamsi, Chairperson
Kern County Hispanic Chamber of Commerce
231 H Street
Bakersfield, CA 93304

Ali Morris, President/CEO
Kern County Black Chamber of Commerce
1222 California Ave
Bakersfield, CA 93304

Richard Chapman, Chairman/CEO
Kern Economic Development Corporation
2700 M Street, Suite 200
Bakersfield, CA 93301

Ken Hooper, President
Kern County Historical Society
PO Box 141
Bakersfield, CA 93302

Debbie Moreno, President/CEO
Greater Bakersfield Chamber of Commerce
1725 Eye Street
Bakersfield, CA 93301

Hall Ambulance
1001 21st Street
Bakersfield, CA 93301

Liberty Ambulance
1409 Washington
Bakersfield, CA 93305

Karen King, CEO
Golden Empire Transit District
1830 Golden State Ave
Bakersfield, CA 93301

Chumash Council of Bakersfield
Ariann Chow-Garcia, Chair
1317 S. Chester Ave.
Bakersfield, CA 93304

Michael D. Lingo,
Superintendent
Bakersfield City School District
1300 Baker Street
Bakersfield, CA 93305

Dr. Don Carter, Superintendent
Kern High School District
5801 Sundale Ave.
Bakersfield, CA 93309

Christine Lizardi Frazier, Superintendent
Kern County Superintendent of Schools 1300
17th Street – CITY CENTRE
Bakersfield, CA 93301-4533

Delia Dominguez
Kitanemuk and Yowlumne Tejon Indians
P.O. Box 10766
Bakersfield, CA 93389

Donna Begay, Chairperson
Tubatulabals of Kern Valley
P.O. Box 226
Lake Isabella, CA 93240

David Laughing Horse Robinson, Chairman
Kawaiisu Tribe
P.O. Box 20849
Kernville, CA 93390

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville, CA 93258

Kudzubitcwanap Palap Tribe
The Honorable Robert Gomez
Chairman
2619 Driller Ave.
Bakersfield, CA 93306

Ruben Barrios, Chairman
Santa Rosa Rancheria
P.O. Box 8
Lemoore, CA 93245

Monache Inter-Tribal Association
Ronald Wermuth
P.O. Box 168
Kernville, CA 93238

Kathy Montes-Morgan, Chairperson
Tejon Indian Tribe
2234 4th Street
Wasco, CA 93280

Michahai Wukasachi Band of Eshom Valley
Kenneth Woodrow
1179 Rock Haven Ct.
Salinas, CA. 93906

Robert Robinson, Co-Chairman
Kern Valley Indian Councils
P.O. 401
Weldon, CA 93283

Carol A Pulido
15011 Lockwood Valley Rd.
Frazier Park, CA 93225

Tubatulabals of Kern Valley
John B. Elliott
Vice-Chairperson
PO Box 226
Lake Isabella, CA 93240

Kern County Library
701 Truxtun Avenue
Bakersfield, CA 93301

Appendix A California Environmental Quality Act Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Environmental Impact Report/ Assessment.

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
AESTHETICS - Would the project:				
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?		X		
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?			X	
AGRICULTURE RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. 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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X
AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?			X	

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
d) Expose sensitive receptors to substantial pollutant concentration?			X	
e) Create objectionable odors affecting a substantial number of people?				X
BIOLOGICAL RESOURCES - Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
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?				X
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?		X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X
CULTURAL RESOURCES - Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Archaeological resources are considered "historical resources" and are covered under (a).			
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
d) Disturb any human remains, including those interred outside of formal cemeteries?			X	

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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:				
i) 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.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
c) Be on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.				X
e) Have soils incapable of adequately supporting the use of septic tanks or Alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
GREENHOUSE GAS EMISSIONS - Would the project:				
a). Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				X
b). Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X
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?		X		

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be 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?				X
e) For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
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?				X
HYDROLOGY AND WATER QUALITY - Would the project:				
a) Violate any water quality standards or waste discharge requirements?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?			X	
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 on or offsite?			X	
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 on or offsite?			X	

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			X	
f) Otherwise substantially degrade water quality?			X	
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?				X
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?				X
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?				X
j) Result in inundation by a seiche, tsunami, or mudflow?				X
LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
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?				X
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?				X
NOISE - Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?		X		

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
e) For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X
POPULATION AND HOUSING - Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			X	
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			X	
PUBLIC SERVICES -				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?			X	
Police protection?			X	
Schools?			X	
Parks?		X		
Other public facilities?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
RECREATION -				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				X
TRANSPORTATION/TRAFFIC - Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X
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?				X
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?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?			X	
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?				X
UTILITY AND SERVICE SYSTEMS - Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
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?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in 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?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X
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?		X		
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)?			X	
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?		X		

Appendix B Section 4(f) Evaluation

Appendix B

Draft Section 4(f) Evaluation

24th Street Improvement Project

EA 06-493900 Caltrans ID: 0600000495
06-KER-58-51.7/51.8
06-KER-178-0.0/0.4
06-KER-99-24.9/25.7
EA 06-484700 Caltrans ID: 0600000485
06-KER-178-0.4/1.9
Project ID: NCIIPLN 5109 (111), NCIIPLN 5109 (110)
BAKERSFIELD, KERN COUNTY, CALIFORNIA

Prepared by the State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project are being, or have been, carried out by the California Department of Transportation under its assumption of responsibility pursuant to 23 United States Code 327.

May 2012

Table of Contents

1.0 INTRODUCTION AND OVERVIEW OF SECTION 4(F) PROCESS 425
1.1 Introduction 425
1.2 Regulatory Setting 425
1.3 Section 4(f) Use 429
2.0 DESCRIPTION OF THE PROPOSED PROJECT 429
2.1 Purpose and Need for the Proposed Project 429
2.2 Alternatives 430
2.2.1 No-Build Alternative 430
2.2.2 Build Alternatives 430
2.3 Construction Activities 433
3.0 DESCRIPTION OF SECTION 4(F) PROPERTIES 433
3.1 Identification of Section 4(f) Properties 433
3.2 Historic Districts 434
3.2.1 Historic District South of 24th Street 434
3.2.2 Historic District North of 24th Street 434
4.0 IMPACTS ON SECTION 4(F) PROPERTIES BY ALTERNATIVE 437
4.1 No-Build Alternative 437
4.2 Build Alternatives 1 and 2 437
4.2.1 Historic Districts 438
5.0 AVOIDANCE ALTERNATIVES 450
5.1 Overview of Avoidance Alternatives 450
5.2 Analysis of Avoidance Alternatives 451
5.3 Summary of Avoidance Alternatives 455
5.3.1 Category 1 Avoidance Alternatives (24th Street/State Route 99 Interchange) 455
5.3.2 Category 2 Avoidance Alternative (Airport Drive/State Route 99 Interchange) 459
5.3.3 Category 3 Avoidance Alternatives (California Avenue/State Route 99 Interchange) 459
5.3.4 Category 4 (The No-Build Alternative) 461
6.0 MEASURES TO MINIMIZE HARM TO THE SECTION 4(F) PROPERTIES 461
7.0 COORDINATION 463
8.0 LEAST HARM ANALYSIS 465
9.0 RESOURCES EVALUATED RELATIVE TO THE REQUIREMENTS OF SECTION 4(F) 467
9.1 Bungalow Courts 468
9.1.1 Overview of the Bungalow Courts 468
9.2 Commercial Building (Healthland) at 2323 E Street 471

List of Figures

Figure 1. Project Location..... 427
Figure 2. Historic Districts North and South of 24th Street..... 435
Figure 3. Impacts to Properties within the Historic Districts North and South of 24th Street – Alternative 1..... 439
Figure 4. Impacts to Properties within the Historic Districts North and South of 24th Street – Alternative 2..... 441
Figure 5. Study Area Potential Section 4(f) Properties..... 453
Figure 6. Category 1 Avoidance Alternative 457
Figure 7. Bungalow Courts 469
Figure 8. Project Limits at the Bungalow Courts..... 473
Figure 9. Project Limits for the Commercial Building (Healthland) at 2323 E Street 477

List of Tables

Table A. Summary of Permanent Uses and Temporary Occupancies at the Historic Districts by Alternative 438
Table B. Summary of Least Harm Information 466

List of Acronyms and Abbreviations

APE	Area of Potential Effects
City	City of Bakersfield
County	Kern County
DEIR/EA	Draft Environmental Impact Report/ Environmental Assessment
EIR/EA	Environmental Impact Report/ Environmental Assessment
National Register	National Register of Historic Places
SHPO	State Historic Preservation Officer

Section 4(f) Evaluation

1.0 Introduction and Overview of Section 4(f) Process

1.1 Introduction

This report evaluates the effects of constructing and operating arterial widening and intersection/improvements on State Route 58 west of the Kern River, and on State Route 178 east of the Kern River in the City of Bakersfield (City), Kern County (County), California (refer to Figure 1). This stretch of road is collectively referred to as 24th Street. The proposed project is divided into four segments (see Figure 1). In addition to the No-Build Alternative, two build alternatives are proposed; they differ only in Segment 3.

Alternatives 1 and 2 would result in the permanent acquisition of full and partial parcels in two historic districts, assumed to be eligible for listing in the National Register of Historic Places (National Register) for this project only: one historic district north of 24th Street and one historic district south of 24th Street. The full acquisitions would result in the removal of the existing structures on certain parcels. The construction of Alternatives 1 and 2 would also require temporary construction easements in both historic districts. No temporary construction easements would be necessary at the individually eligible properties including the Bungalow Courts (23rd and D Streets) and the commercial building (Healthland) at 2323 E Street. Refer to Section 2.0 below and Chapter 1.0 of the Draft Environmental Impact Report/Environmental Assessment for a more detailed description of the proposed project alternatives.

1.2 Regulatory Setting

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that: "the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as

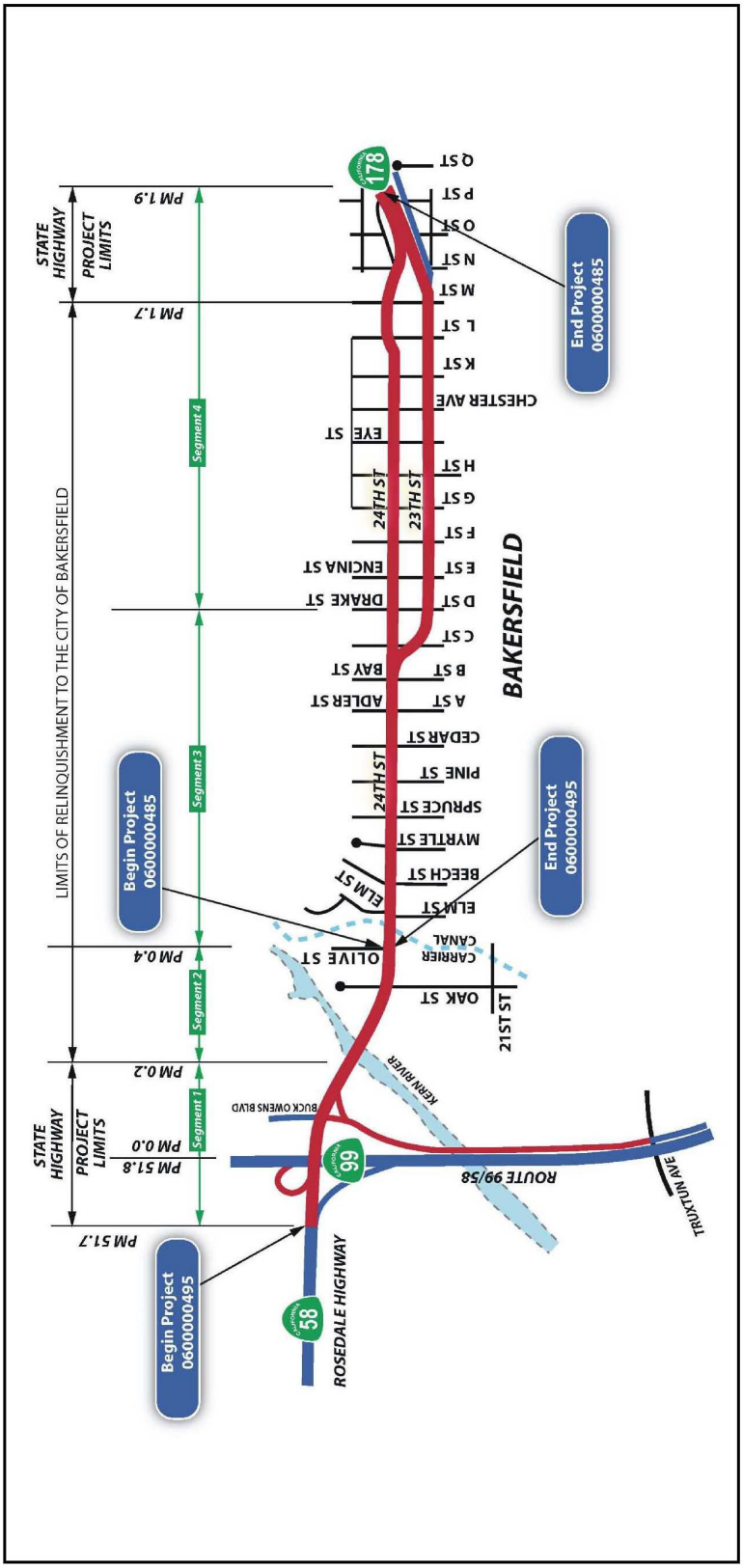


Figure 1 Project Location

Not to Scale

SOURCE: Caltrans (2011)

EA 06-493900
EA 06-484700

determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). Coordination with the Department of Agriculture and Department of Housing and Urban Development is not required for the proposed project because there would be no impacts to National Forest System lands or federal funding from the Department of Housing and Urban Development. If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

1.3 Section 4(f) Use

As defined in 23 Code of Federal Regulations Section 774.17, use of a protected Section 4(f) property occurs when any of the following conditions is met:

- Land is permanently incorporated into a transportation facility through partial or full acquisition (i.e., direct use).
- There is a temporary occupancy of land that is adverse in terms of the preservationist purposes of Section 4(f) (i.e., temporary use).
- There is no permanent incorporation of land, but the proximity of a transportation facility results in impacts so severe that the protected activities, features, and/or attributes that qualify a resource for protection under Section 4(f) are substantially impaired (i.e., constructive use).

2.0 Description of the Proposed Project

2.1 Purpose and Need for the Proposed Project

The proposed reconfiguration of the Oak Street/24th Street intersection and widening of 24th Street would improve the functionality of the corridor as well as facilitate local and regional traffic flow and operations. The purpose of the proposed improvements is to provide efficient and effective transportation operations along 24th Street and at the Oak Street/24th Street intersection, to accommodate existing and forecast traffic

volumes, and to achieve acceptable traffic levels of service within the corridor. The proposed improvements would alleviate existing traffic congestion and would result in improvement in local circulation. See Section 1.2 in Chapter 1 for additional information about Purpose and Need.

2.2 Alternatives

The following provides a summary of the proposed project components. Chapter 1 provides additional detailed information.

2.2.1 No-Build Alternative

No improvements would be made to the existing Oak Street/24th Street intersection and 24th Street under this alternative other than routine road maintenance such as roadway cleaning, pothole repair, landscape maintenance, irrigation repair, inspections, etc. The No-Build Alternative would not address any of the elements of the project's purpose and need.

2.2.2 Build Alternatives

Two studied build alternatives, Alternative 1 (Widen to the North) and Alternative 2 (Widen to the South), are analyzed in this report along with the No-Build Alternative.

The project is divided into four segments: the State Route 99/State Route 58/24th Street interchange improvements (from the southbound State Route 99 off-ramp intersection to the west end of the Kern River bridge) and northbound State Route 99 auxiliary lane, the 24th Street/Oak Street intersection and 24th Street widening (from the west end of the Kern River bridge to Olive Street), the 24th Street widening (from Olive Street to D Street) and the 23rd Street/24th Street couplet (from D Street to 0.2 mile east of M Street). See Chapter 1 for a detailed description of the project build alternatives.

The four project segments and the project components for both Alternatives 1 and 2 are described below.

Segment 1 – State Route 99/State Route 58/24th Street Interchange Improvements and Northbound State Route 99 Auxiliary Lane

The proposed improvements in this project segment would widen westbound 24th Street to accommodate an additional lane and improvements at the State Route 99 southbound ramps. Improvements to Segment 1 would include the following features:

- Improvements to the westbound Rosedale Highway (State Route 58) to southbound State Route 99 loop on-ramp from one lane to two lanes within existing pavement width.
- A 1,300-foot-long auxiliary lane (an extra lane to help traffic smoothly enter and exit the freeway) would be added to State Route 99 prior to the State Route 99 northbound off-ramp at 24th Street (State Route 178).
- Improvements to the westbound 24th Street (State Route 178) approach to Buck Owens Boulevard from three through lanes and one right-turn lane to four through lanes and one shared through/right-turn lane.

Segment 2 – 24th Street/Oak Street Intersection

The existing 24th Street bridge over the Kern River, located between Oak Street and Buck Owens Boulevard, would require construction within the limits of the bridge. Improvments to the 24th Street/Oak Street Intersection would include the following features:

- The westbound section would consist of a sidewalk, a right shoulder, four lanes, and a left shoulder.
- The resulting eastbound section would consist of a shoulder, four lanes, and a left shoulder.
- The northbound Oak Street approach would be improved to include two left-turn lanes, one shared left-turn/lane, and two right-turn lanes.
- The southbound Oak Street approach would be restriped to include one left-turn lane and one shared through/right-turn lane.
- The eastbound 24th Street approach to Oak Street would include one left-turn lane, four through lanes, and one right-turn lane.
- The westbound 24th Street approach to Oak Street would be improved to include to two left-turn lanes, three through lanes, and one shared through/turn lane.
- Bus turnouts would be constructed on 24th Street on both the westbound and eastbound sides of the street near the intersection at Oak Street.
- A proposed soundwall would be located on the north side of 24th Street, west of Olive Street for about 166 feet and average height of 8 feet for Alternative 1 (soundwall 8) or Alternative 2 (soundwall 26) (see Figures 3 and 4).

Segment 3 – 24th Street Widening (Olive Street to D Street) Reverse Curve (S-curve)

The widening of this segment of 24th Street includes a reverse curve (the street curves in one direction and then the other) that begins along 24th Street near Alder Street (A

Street) and ends along 23rd Street near D Street. The reverse curve would include the following features:

- Closure of D Street (north leg) at 23rd Street intersection due to sight distance (distance drivers can see ahead) limitations.
- A lane addition on 23rd Street at B Street.
- Opening of the southbound approach of C Street onto 23rd Street to allow left-in, left-out access and to assist with circulation to and from existing buildings.
- In order to atenuate (reduce) traffic noise levels under the build alternatives, the following soundwalls are recommended:

Alternative 1:

- Soundwall 9: 194 feet long, average height of 6 feet on the north side of 24th Street, between Beech Street and Myrtle Street
- Soundwall 10: 65 feet long, average height of 10 feet on the north side of 24th Street, between Myrtle Street and Spruce Street
- Soundwall 11: 207 feet, average height of 12 feet on the north side of 24th Street, between Pine Street and Cedar Street
- Soundwall 12: 137 feet, average height of 10 feet on the north side of 24th Street, between Cedar Street and Alder Street

Alternative 2:

- Soundwall 19: 100 feet long, average height of 6 feet on the south side of 24th Street, east of Pine Street
- Soundwall 20: 79 feet long, average height of 8 feet on the south side of 24th Street, west of A Street
- Soundwall 21: 89 feet, average height of 6 feet on the south side of 24th Street, east of A Street
- Soundwall 27 is about 65 feet and average height of 12 feet on the south side of 24th Street, between Alder Street and Cedar Street

Please refer to Figures 3 and 4 for soundwall locations.

Both alternatives include raised medians along 24th Street and two bus turnouts between Cedar Street and Alder Street (A Street).

On the north side of 24th Street, a two-way frontage road connecting Elm Street to Beech Street would provide additional access to Elm Street.

Carrier Canal would be extended on the north and south sides of 24th Street to accommodate the widening of 24th Street. The reconstruction would result in the partial acquisition of the Carrier Canal properties on the north and south. Alternative 2 would require the south side culvert extension and transition only.

Segment 4 – 23rd Street/24th Street Couplet (from D Street to 0.2 mile east of M Street)

Under Alternatives 1 and 2, improvements would be made to the 23rd Street/24th Street couplet (a pair of one-way streets), including removing existing on-street parking along both sides of 23rd and 24th Streets, roadway rehabilitation, and restriping to allow an additional travel lane in each direction.

2.3 Construction Activities

Construction would be phased: the Oak Street intersection would be constructed in Phase 1, the improvements to the State Route 99 interchange would be constructed in Phase 2, the 24th Street widening and improvements to the 23rd Street/24th Street couplet would be completed in Phase 3, and the State Route 99 auxiliary lane would be completed in Phase 4. The number of existing through lanes would be maintained by restriping the existing lanes and by shifting traffic within the corridor to maintain the existing capacity, except at the couplet, where the number of lanes would be reduced from three to two lanes in each direction. Detours would be provided where feasible. During the reconstruction of intersections in the couplet, north-south movements would be restricted. Therefore, intersection closures would be spaced to minimize traffic disruptions. Long-term closures of 24th Street, 23rd Street, and the State Route 99 ramps are not anticipated.

3.0 Description of Section 4(f) Properties

3.1 Identification of Section 4(f) Properties

As discussed in Section 1.2, Regulatory Setting, properties subject to the provisions of the requirements of Section 4(f) are publicly owned parks and recreation areas, wildlife and waterfowl refuges of national, state, or local significance, and historic sites of national, state, or local significance.

Two National Register-eligible historic districts, one north of 24th Street and one south of 24th Street, were identified as partially within the project Area of Potential Effects (APE) (*Historic Property Survey Report*, March 2012). Those historic districts are described in the following sections.

3.2 Historic Districts

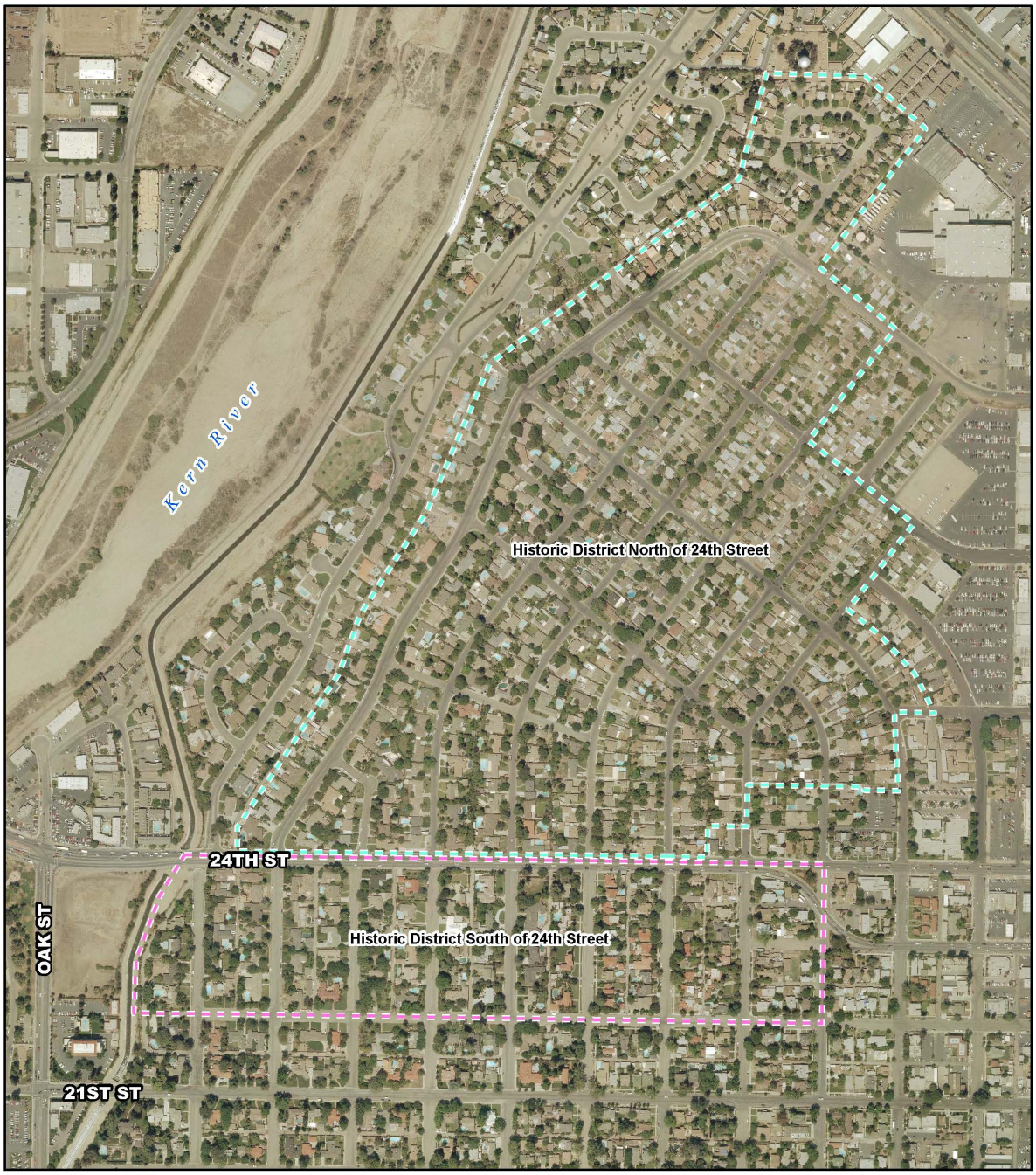
Segment 3 of Alternatives 1 and 2 would permanently use land from, and would also require temporary construction easements in, these historic districts. The Historic Property Survey Report determined that these historic districts are eligible for listing on the National Register. As a result, the historic districts were identified as properties subject to provisions under the requirements of Section 4(f). Properties evaluated and assumed eligible for the National Register as contributors to either of the two historic districts is done for the purposes of this project only. Figure 2 shows these historic districts.

3.2.1 Historic District South of 24th Street

Historic District South of 24th Street, Bakersfield: Caltrans, as assigned by the Federal Highway Administration, determined that this district is significant at the local level of significance under Criterion C as an area in Bakersfield that has a large concentration of highly intact residential architecture representing a range of styles and periods, such as Craftsman, Period Revival and eclectic styles, California Ranch, Modern, Contemporary and Neo-eclectic. Its period of significance is from 1905-1964. This area, with approximately 120 properties, has mostly one- and two-story single-family residences, but includes a few multiple family residences. The properties represent a kaleidoscope of residences that are aesthetically pleasing in their diversity, but compatible in scale and tone. Access to and from this area is possible via a number of local and arterial streets. The approximate boundaries for the district, for purposes of this project, are generally the Stine Canal on the west, C Street on the east, 24th Street on the north, and 22nd Street on the south, and are based on the density of highly intact properties and their predominantly east-west orientation. For purposes of this project only, under Section 106 of the National Historic Preservation Act (Section 106), the district is assumed to be eligible for the National Register and its boundaries are approximate. There are 36 district buildings within the APE for this project including 28 contributing properties.

3.2.2 Historic District North of 24th Street

Historic District North of 24th Street, Bakersfield: Caltrans, as assigned by the Federal Highway Administration, determined that this district is significant at the local level of significance under Criterion A for its association with the post-World War II expansion of housing in Bakersfield. Its period of significance is 1948 to 1964. The original subdivision (Westchester tract [Tract No. 1387]) was Bakersfield's largest single real estate development to date (1948) and more than half of the approximately 400 homes were so-called "G.I. Homes," which had Federal Housing Administration



LEGEND

Historic District North of 24th Street

Historic District South of 24th Street

FIGURE 2

24th Street Improvement Project

Historic Districts North and South of 24th Street

EA 06-493900
EA 06-484700

0 300 600
FEET

SOURCE: City of Bakersfield (2008)

and G.I. loan approval (Bakersfield Californian 1948). Most of the homes were variations of the California Ranch style, with the earliest and smallest homes in the northern part of the tract and the larger lots and homes adjacent to 24th Street. Access to and from this area is possible via a number of local and arterial streets. The approximate boundaries for the district, for purposes of this project, are north of 24th Street generally between Beech and Drake Streets, and the irregular boundaries are based on those of the original Westchester Tract subdivision. For purposes of this project only, under Section 106, the district is assumed to be eligible for the National Register. There are 22 district buildings within the APE for this project including 16 contributing properties.

4.0 Impacts on Section 4(f) Properties by Alternative

This section describes how the 24th Street Improvement Project Build Alternatives would use land from two National Register eligible historic districts. The use of land from these historic properties triggers the requirements for protection under Section 4(f). An assessment was made as to whether any permanent use or temporary occupancy of land from those Section 4(f) properties would result in direct effects that would substantially impair the activities, features, and/or attributes that qualify those properties for protection under the requirements of Section 4(f).

The following sections describe the permanent uses and temporary occupancy of land from the two historic districts by the No-Build Alternative and Alternatives 1 and 2.

In addition to the permanent and temporary use of the properties within the historic districts, the proposed project's effects on the Section 4(f) properties related to facilities, functions and activities affected, accessibility, visual changes, noise, vegetation, wildlife, air quality, and water quality are addressed below for each project alternative.

4.1 No-Build Alternative

The No-Build Alternative would not provide any of the improvements proposed in Alternatives 1 and 2 and, therefore, would not result in the permanent use or temporary occupancy of land from any Section 4(f) properties. Therefore, the No-Build Alternative is not discussed in this section.

4.2 Build Alternatives 1 and 2

The two eligible historic districts were also evaluated to determine whether indirect impacts of Alternatives 1 and 2 would result in a constructive use of those properties.

That analysis did not identify any proximity impacts resulting from the Build Alternatives that would be so severe that the activities, features and/or attributes that qualify these properties for protection under Section 4(f) would be substantially impaired. The proximity impacts of Alternatives 1 and 2 in the vicinity of these properties would not meaningfully reduce or remove the values of these properties in terms of their Section 4(f) significance. Therefore, the Build Alternatives were determined to not result in constructive use of any properties protected under Section 4(f).

4.2.1 Historic Districts

Permanent Uses and Temporary Occupancies

As shown in Figures 3 and 4, Alternatives 1 and 2 would each result in the permanent use of land from these historic districts and the temporary occupancy of land in these historic districts for temporary construction easements during construction (Refer to Figures 3 and 4). Table A summarizes the anticipated temporary construction easements, partial acquisitions, and full acquisitions under Alternatives 1 and 2, for each historic district.

Table A. Summary of Permanent Uses and Temporary Occupancies at the Historic Districts by Alternative

Alternative 1			Alternative 2		
Number of Full Parcel Acquisitions	**Number of Partial Parcel Acquisitions (total sf)**	**Number of Parcels with Temporary Construction Easements (total sf)**	**Number of Full Parcel Acquisitions**	**Number of Partial Parcel Acquisitions (total sf)**	**Number of Parcels with Temporary Construction Easements (total sf)**
Historic District South of 24th Street					
Parcels: 9	Parcels: 6 sf: 6,978	Parcels: 12 sf: 6,033	22	Parcels: 3 sf: 16,986	Parcels: 11 sf: 4,746
Historic District North of 24th Street					
Parcels: 12	Parcels: 2 sf: 647	Parcels: 14 sf: 6,644	1	Parcels: 0 sf: 0	Parcels: 5 sf: 2,101
Total Effects					
Parcels: 21	Parcels: 8 sf: 7,625	Parcels: 26 sf: 12,677	23	Parcels: 3 sf: 16,986	Parcels: 16 sf: 6,847

Notes: All full and partial acquisitions are permanent uses of property from the two historic districts.
Temporary Construction Easements are areas that would be temporarily occupied during construction but this does not constitute a use under Section 4(f).

[1] 2100 23rd Street, 2300 D Street, 2210 D Street.

sf = square feet

Alternatives 1 and 2 would both result in the temporary occupancy of land from the historic districts for temporary construction easements during construction. Generally, the temporary construction easements would be necessary to facilitate grading and

LEGEND

- Historic District North of 24th Street
- Historic District South of 24th Street
- Area of Potential Effects (APE)
- Temporary Construction Easement
- Proposed Right-of-Way
- Potential Sound Walls
- Existing Walls

Alternative 1 - North

- Full Acquisition
- Partial Acquisition and a Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement

C = District Contributor.

0 100 200 FEET

SOURCE: City of Bakersfield (2008)

FIGURE 3

24th Street Improvement Project

Impacts to Properties within the Historic Districts North and South of 24th Street

Alternative 1

EA 06-493900
EA 06-484700

LEGEND

- Historic District North of 24th Street
- Historic District South of 24th Street
- Area of Potential Effects (APE)
- Temporary Construction Easement
- Proposed Right-of-Way
- Potential Sound Walls
- Existing Walls

Alternative 2 - South

- Full Acquisition
- Partial Acquisition
- Partial Acquisition and a Temporary Construction Easement
- No Acquisition and a Temporary Construction Easement

C = District Contributor.

0 100 200 FEET

SOURCE: City of Bakersfield (2008)

FIGURE 4

24th Street Improvement Project

Impacts to Properties within the Historic Districts North and South of 24th Street
Alternative 2

EA 06-493900
EA 06-484700

construction activities related to construction of the proposed soundwalls, sidewalks, alleys, driveways, and cul-de-sacs. The temporary construction easements would be located next to the property lines (north, south, east, or west sides) of the affected parcels. Impacts associated with the temporary construction easements would not be permanent because the parcels would be restored to conditions appropriate to the historic district contributor, per the *Secretary of the Interior's Standards for the Treatment for Historic Properties with Guidelines for Rehabilitation*. The temporary occupancy of this land for temporary construction easements would not impair the activities, features, and/or attributes that qualify the two historic districts for protection under Section 4(f) during the construction of Alternatives 1 and 2 and would therefore not constitute a "use" under Section 4(f) as it would meet the criteria set forth under 23 Code of Federal Regulations 771.135 (p)(7) which specifies, in summary, that (1) the duration of the occupancy would be temporary and not extend past the construction phases of the project; (2) the scope of the work is minor, i.e., both the nature and the magnitude of the changes to the 4(f) property are minimal; (3) there would be no anticipated permanent adverse physical impacts, nor would there be interference with the activities or purpose of the resource/property on a temporary or permanent basis; (4) the land being used would be fully restored to a condition that is at least as good as that which existed prior to the project; and (5) there must be documented agreement of the appropriate federal, state, or local officials having jurisdiction over the resource regarding these conditions.

Temporary construction easements would be required on several of the contributor properties in the historic district north of 24th Street under Alternative 1. The temporary work on the properties would include access onto the property and protection of existing privacy walls, fences, and trees and other landscaping while potential soundwalls or other project improvements are being constructed on adjacent properties. Some tree branch and root trimming or removal may be necessary for plant materials that are encroaching onto the adjacent property affected by the roadway construction work.

Alternative 1 – Widen to the North

As shown in Figure 3, Alternative 1 would result in the permanent use of full and partial parcels on both the north and south sides of 24th Street, affecting both historic districts. These permanent uses would result in the removal of all the structures on the parcels that are full parcel acquisitions. The permanent uses would also result in partial parcel acquisitions, which would result in the permanent use of land from the affected parcels but would not remove the structures on those parcels.

In the historic district south of 24th Street, TCEs would also be necessary on several properties for access onto the property and to maintain and protect existing walls, fences, and trees and other landscaping. In addition, the grade of one residential driveway would be adjusted to match the project sidewalk. The temporary construction work on the contributing properties would not constitute a "use" under Section 4(f) as it would meet the criteria set forth under 23 Code of Federal Regulations 771.135 (p)(7) as discussed above.

Of the about 400 properties within the historic district north of 24th Street, there are 12 full parcel acquisitions (5 contributing and 7 noncontributing properties) and 2 partial parcel acquisitions with temporary easements (1 contributing and 1 noncontributing property). A total of 6 contributing properties and 8 noncontributing properties in this district would be used under Section 4(f), or about 4 percent of the total properties in the district. The six contributing properties would represent about 2 percent of the 300 contributors of the district.

Of the about 120 properties within the historic district south of 24th Street, there are 9 full parcel acquisitions (7 contributing and 2 noncontributing) and 6 partial parcel acquisitions with temporary construction easements (1 contributing and 5 noncontributing). A total of 8 contributing and 7 noncontributing properties in this district would be used under Section 4(f) or about 13 percent of the total properties in the district. The 8 contributing properties would represent about 8 percent of the 106 contributors of the district.

Therefore, Alternative 1, widening 24th Street to the north, would result in permanent use of 14 properties (6 contributing) within the historic district north of 24th Street (12 full property acquisitions and 2 partial property acquisitions). Alternative 1 would result in permanent use of 15 properties (8 contributing) within the historic district south of 24th Street (9 full and 6 partial property acquisitions). Although the quantity of property uses is about the same in both historic districts under Alternative 1, the impact to the historic district south of 24th Street would be considerably greater due to the southern district's smaller size and the fact that it has fewer properties representative of the district's period characteristics.

Alternative 2 – Widen to the South

Figure 4 shows that Alternative 2 would also result in the permanent use of full and partial parcels, with the majority of the affected parcels on the south side of 24th Street, affecting both historic districts. These permanent uses would result in the

removal of all the structures on the parcels that are full parcel acquisitions. The permanent uses would also result in partial parcel acquisitions, which would result in the permanent use of land from the affected parcels but would not remove the structures on those parcels. As with Alternative 1, TCEs would be required for Alternative 2 on several properties considered contributors to the historic district north of 24th Street. The temporary work on the properties would include access and maintenance/protection of existing privacy walls, fences, trees, and other landscaping while adjacent sidewalks and a potential soundwalls are constructed. In addition, the grade of the residential driveways would be adjusted to match the proposed sidewalk. Tree branches and roots may be trimmed or removed on plant materials that encroach onto adjacent properties affected by roadway construction work. The temporary construction work on the contributing properties would not constitute a "use" under Section 4(f), pursuant to the criteria as discussed above.

Of the about 400 properties within the historic district north of 24th Street, there is 1 full parcel acquisition (1 contributing property). One contributing property in this district would be used under Section 4(f). The contributing property would represent about 0.3 percent of the 300 contributors of the district.

Of the about 120 properties within the historic district south of 24th Street, there are 22 full parcel acquisitions (10 contributing and 12 noncontributing properties) and 3 partial parcel acquisitions (2 contributing and 1 noncontributing property), 2 of which also have temporary construction easements. A total of 12 contributing and 13 noncontributing properties in this district would be used under Section 4(f) or about 21 percent of the total district. The 12 contributing properties would represent about 11 percent of the 106 contributors of the district.

Therefore, Alternative 2, widening 24th Street to the south, would result in permanent use of 1 contributing property (full acquisition) in the historic district north of 24th Street, whereas substantially greater use would result in the historic district to the south of 24th Street, with 25 permanent property uses (22 full acquisitions and 3 partial acquisitions, including 12 contributors). Therefore, Alternative 2 would result in substantially greater permanent use under Section 4f than Alternative 1.

Accessibility

Implementation of Alternative 1 would require full and partial acquisitions of properties from the historic district north of 24th Street. Implementation of Alternative 2 would require full and partial acquisitions of properties from the historic district

south of 24th Street. Although implementation of either Build Alternative would result in property acquisitions, access to the historic districts would be maintained via 24th Street and associated cross streets. Therefore, with implementation of Alternative 1 or 2, long-term access to the historic districts would be maintained.

Visual

As discussed in the *Visual Impact Assessment* (April 2012) and Section 2.1.5 of the DEIR/EA, Landscape Unit 2 was identified as representative of the residential uses in the area. The views of the historic district north of 24th Street and the historic district south of 24th Street are views of the existing residential uses, the mature landscaping, and overhead transmission lines. The existing visual resources in Landscape Unit 2 include the distant Sierra Nevada, approximately 20 miles east of the project site. The average visual quality in the landscape unit is moderately high.

The views of and from the historic districts do not contribute to the functions, values and attributes that qualify the properties within these districts for protection under Section 4(f). Build Alternatives 1 and 2 will include full and partial acquisitions of properties in the two historic districts, and as a result, there would be some changes in view of and from the districts. However, the changes in these views will not be substantial because most residents already have views of the roads and urban features and would continue to have those kinds of views with the build alternatives.

Implementation of the recommended soundwalls on the north side of 24th Street under Alternative 1 would introduce a new visual element to the setting of the historic district north of 24th Street, specifically to two contributors located adjacent to the soundwalls. A soundwall would be located north of 24th Street between Beech Street and Myrtle Street, with an average height of 6 feet and a length of 194 feet. This wall would be adjacent to one district contributor (APN 001-193-05) and one noncontributor (APN 001-193-03). A soundwall would be located north of 24th Street between Myrtle Street and Spruce Street, with an average height of 10 feet and a length of 65 feet. This wall would be adjacent to two noncontributors (APNs 001-192-10 and 001-192-07). A soundwall would be located north of 24th Street between Pine Street and Cedar Street, with an average height of 12 feet and a length of 207 feet, and would also be adjacent to two noncontributors (APNs 001-162-09 and 001-162-06). A soundwall would be located north of 24th Street between Cedar Street and Alder Street, with an average height of 10 feet and a length of 137 feet. This wall would be adjacent to one district contributor (APN 001-150-24) and one noncontributor (APN 001-150-02).

Given the proposed locations of the recommended soundwalls along the side and rear yards of the adjacent contributors, it is unlikely that they would fundamentally affect the contributing properties to the point that their significance or the significance of the northern historic district would be diminished. In addition, there are existing walls and fences along some of the properties along 24th Street. As prescribed in the measures to minimize harm to the Section 4(f) properties (see Section 6.0), proposed hardscape features, including soundwalls, would be compatible with the historic character of the historic district north of 24th Street. Because of this, the visual impacts from the soundwalls to the contributors would not be considered adverse.

Soundwalls recommended under Alternative 2 would also be considered a new visual element of the historic district south of 24th Street. A soundwall would be located south of 24th Street between Cedar Street on the west and an alley on the east. It would have an average height of 6 feet and a length of 100 feet and would be adjacent to one noncontributor (APN 003-082-19). A soundwall would be located south of 24th Street between an alley on the west and A Street on the east. It would have an average height of 8 feet and a length of 79 feet and would be adjacent to one noncontributor (APN 003-082-02). A soundwall would be located on the south side of 24th Street between A Street on the west and an alley on the east. It would have an average height of 6 feet and a length of 89 feet and would be adjacent to one noncontributor (APN 003-081-02). The soundwalls would be located on the side and rear yards of the affected properties in the district south of 24th Street, and the properties are noncontributors to the district. Therefore, it is not expected that the visual effect of the recommended soundwalls for Alternative 2 would fundamentally diminish the significance of the historic district.

A soundwall would be located on the north side of 24th Street between Cedar and Alder Streets and would have an average height of 12 feet and a length of 65 feet. This wall would be adjacent to one district contributor (APN 001-150-01) and one noncontributor (APN 001-150-25). Given the proposed location of the soundwall along the side and rear yards of the adjacent contributor, it is unlikely that it would fundamentally affect the contributing property to the point that its significance or the significance of the district north of 24th Street would be diminished. Because of this, the visual impact from the soundwall to the contributor would not be considered adverse.

During construction, the residents in the two historic districts would be exposed to views of construction vehicles, construction-related vehicle access, staging of

construction materials, grading and road and sidewalk construction, temporary safety barriers and temporary lighting. Therefore, these short term visual impacts would not change or adversely affect the functions, values or attributes that qualify these historic districts for protection under Section 4(f).

Noise

The *Noise Study Report* (April 2011) and Section 2.2.5 of the DEIR/EA determined that long-term noise impacts associated with project operations would stem solely from traffic. Existing noise levels along 24th Street adjacent to the two historic districts range from 47 to 69 dBA. Under Build Alternatives 1 and 2, future (2035) noise levels are estimated to range up to 15 dBA higher than the existing levels. However, when compared with the future No-Build Alternative noise levels, most receptors in the two historic districts would experience only minor increases in noise levels with either Alternative 1 or Alternative 2.

Alternative 1

Based on the *Noise Abatement Decision Report* results, the predicted percentage of truck traffic on 24th Street would be 4 percent (2 percent medium trucks/2 percent heavy trucks), which is very low (compared with State Route 99, which is about 15 percent). Six soundwalls are recommended under Alternative 1 to attenuate noise from future traffic, including trucks. Under Alternative 1, all potential soundwalls, with the exception of Soundwall 9 (between Beech Street and Myrtle Street), would attenuate future noise levels associated with traffic. Soundwall 9 is located adjacent to one contributor to the historic district north of 24th Street; although incremental increases in noise associated with trucks would be distinctly perceptible, the wall would provide a noise level reduction of 5 dBA or more, as required to be feasible. With the implementation of the 8-foot-high wall for Soundwall 9, truck noise on 24th Street within the historic district would be minimal and would not adversely affect the historic district to the north or its contributors.

Of the four recommended soundwalls under Alternative 2, two would attenuate future traffic (including trucks) noise levels. Soundwall 27, which is located adjacent to a contributor to the historic district south of 24th Street, would fully attenuate future traffic, including truck noise levels. The two other soundwalls, 19 (between Cedar Street and alley) and 21 (between A Street and alley), would not completely attenuate future traffic noise levels including truck traffic. These soundwalls are located adjacent to noncontributors to the historic district south of 24th Street. However, because of the existing high traffic volumes along 24th Street, the incremental

increase in noise would not adversely affect the historic district to the south or its contributors.

The noise levels from construction activities would be short-term and intermittent, and would, therefore, not be perceptible to most residents in these historic districts. Project noise levels from temporary construction activities and from long term traffic use along 24th Street for either build alternative would not substantially impair the activities, features, and/or attributes that qualify the two historic districts for protection under Section 4(f).

Vegetation and Wildlife

The properties within the two historic districts north and south of 24th Street are generally landscaped with introduced (nonnative) plant materials that are expected to provide very low to no value and function for wildlife (refer to Section 2.3.1 of the DEIR/EA). Build Alternatives 1 and 2 would result in the removal of existing vegetation on properties that would require full acquisitions. There may also be vegetation removed from properties with partial acquisitions. Any vegetation removed from properties for temporary construction easements would be replaced in-kind at the completion of construction. The vegetation on the properties within the historic districts is not a primary feature of the districts; therefore, removal of that vegetation would not substantially impair the activities, features and/or attributes that qualify the historic districts for protection under Section 4(f).

Air Quality

The *Air Quality Assessment Report* (June 2011) and Section 2.2.4 of the DEIR/EA concluded that in the long term, Build Alternatives 1 and 2 would not contribute substantially to, or cause deterioration of, air quality in the immediate project area or in the region. In addition, during project construction activities, measures would be implemented to reduce exhaust and fugitive dust emissions generated by construction equipment, such as best available control measures and standard construction measures, as required by Caltrans and the San Joaquin Valley Air Pollution Control District. Therefore, the short-term and long-term air quality impacts associated with Build Alternatives 1 and 2 would not substantially impair the activities, features and/or attributes that qualify the historic districts for protection under Section 4(f).

Water Quality

The project limits are in the Kern River Watershed, and drainage from the project site and the surrounding area currently flows south through a series of basins and

ultimately discharges to the Kern River. Build Alternatives 1 and 2 would not adversely impact water quality in the Kern River or in the urban drainages within the streetscapes of the historic districts north and south of 24th Street. Refer to Section 2.2.1 of the DEIR/EA for further discussion of the proposed project's effects on water quality and storm water runoff.

5.0 Avoidance Alternatives

5.1 Overview of Avoidance Alternatives

Alternatives 1 and 2 would result in the full and partial acquisitions of individual parcels in the two historic districts. As a result, consideration of feasible and prudent alternatives that would avoid the permanent use of land from these Section 4(f) properties is required.

This analysis of avoidance alternatives used the feasible and prudent standards of Section 4(f). This assessment is based on the definition of "feasible and prudent avoidance alternative" in Section 774.17 of 23 Code of Federal Regulations. The regulations state that an avoidance alternative is feasible and prudent if it "does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property." An alternative is not feasible "if it cannot be built as a matter of sound engineering judgement."

The regulations do not provide a single clear definition of "prudence." Instead, they list a series of findings that can support a conclusion that an alternative is imprudent. This approach allows a wide range of factors to support a finding of imprudence. The definition of "feasible and prudent avoidance alternative" in 23 Code of Federal Regulations Section 774.17 provides the following direction for determining whether an alternative is prudent:

An alternative is not prudent if:

i. It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
ii. It results in unacceptable safety or operational problems;
iii. After reasonable mitigation, it still causes:
    a) Severe social, economic, or environmental impacts;
    b) Severe isruption to established communities;
    c) Severe disproportionate impacts to minority or low income populations; or

d) Severe impacts to other federally protected resources;

iv. It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;

v. It causes other unique problems or unusual factors; or

vi. It involves multiple factors listed above, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

It should be noted that the preliminary engineering for Alternatives 1 and 2 included minimizing the use of land from Section 4(f) properties by narrowing the width of the project limits in the vicinity of those properties. Nonetheless, Alternatives 1 and 2 would result in the use of land from two historic districts.

5.2 Analysis of Avoidance Alternatives

In order to develop avoidance alternatives that would have the best chance of meeting the purpose and need of the project while avoiding Section 4(f) resources, the following criteria were considered:

- The avoidance alternatives must connect with the State Route 178 freeway to satisfy the logical termini requirement for the east end of the project (see Section 1.2.2).
- The avoidance alternatives must cross the Kern River and connect with a State Route 99 freeway interchange to satisfy the logical termini requirement at the west end of the project (see Section 1.2.2). Due to interchange spacing limitations, it would not be feasible to construct a new interchange with State Route 99; therefore, the west end terminus would be limited to one of three existing river crossings: the crossing at 24th Street, State Route 204 to the north, or State Route 99 via the California Avenue interchange to the south (See Figure 5).
- The cost ($10.18 million) of constructing a new bridge (600 feet long, 120 feet wide) across the Kern River is prohibitive.
- Section 4(f) properties in the avoidance alternative study area that directly limit the alignments of avoidance alternatives include: Kern River Parkway Bike Trail, Beach Park, the historic districts north and south of 24th Street, other eligible properties, and State Route 204 itself, which is eligible for the National Register of Historic Places (See Figure 5).

The cost of congestion (traffic delay) in dollars is used as the measure of how well each avoidance alternative would meet the fundamental project purpose. As a point of

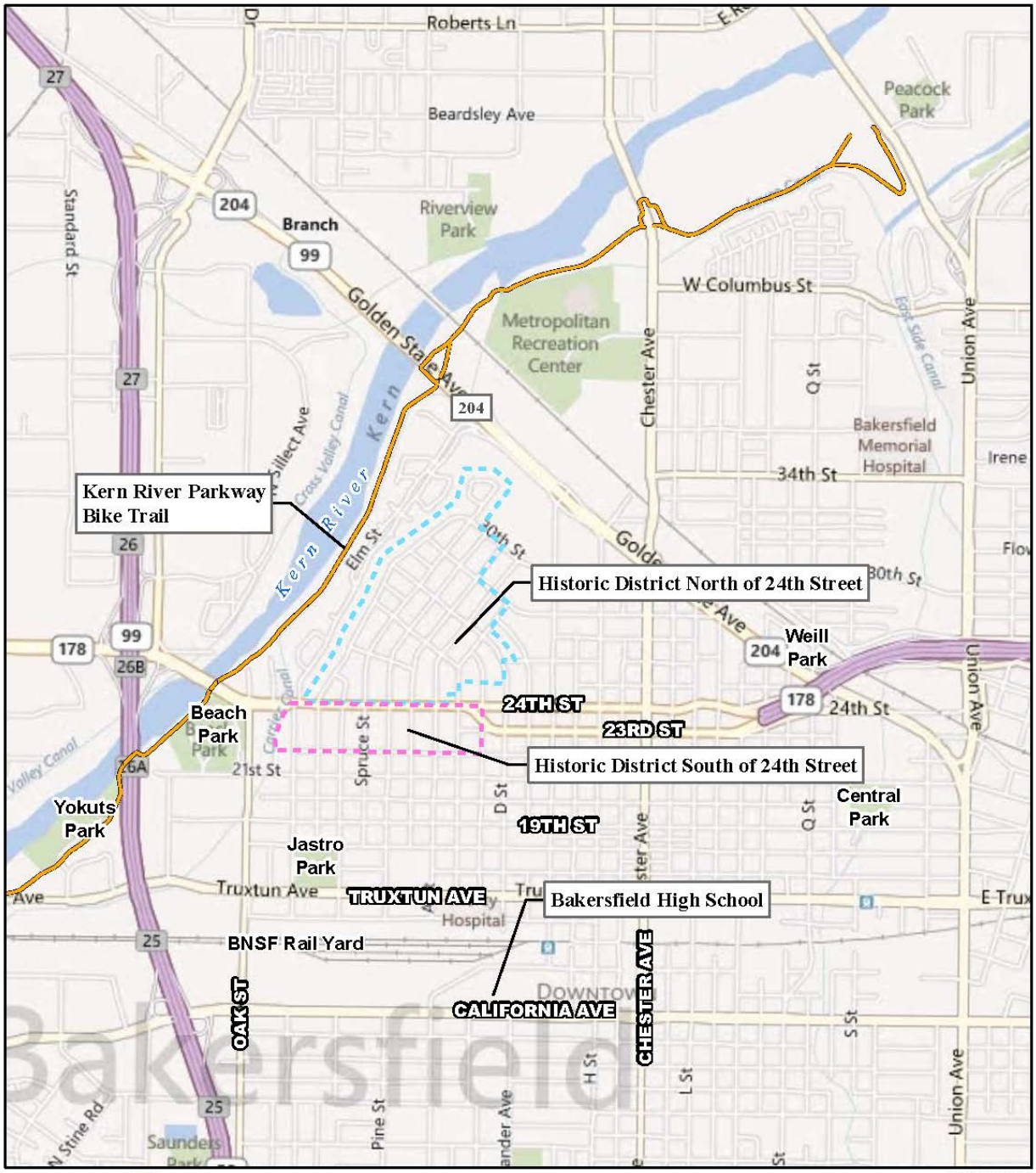


FIGURE 5

Caltrans

0 1000 2000 FEET

SOURCE: Bing Maps (2011)

24th Street Improvement Project

Study Area Potential Section 4(f) Properties

EA 06-493900
EA 06-484700

comparison, the proposed project would eliminate $43.6 million of delay costs through 2035, the planning horizon for the project (based upon the analysis using the Surface Transportation Efficiency Analysis Model, which converts the cost of congestion to dollars).

5.3 Summary of Avoidance Alternatives

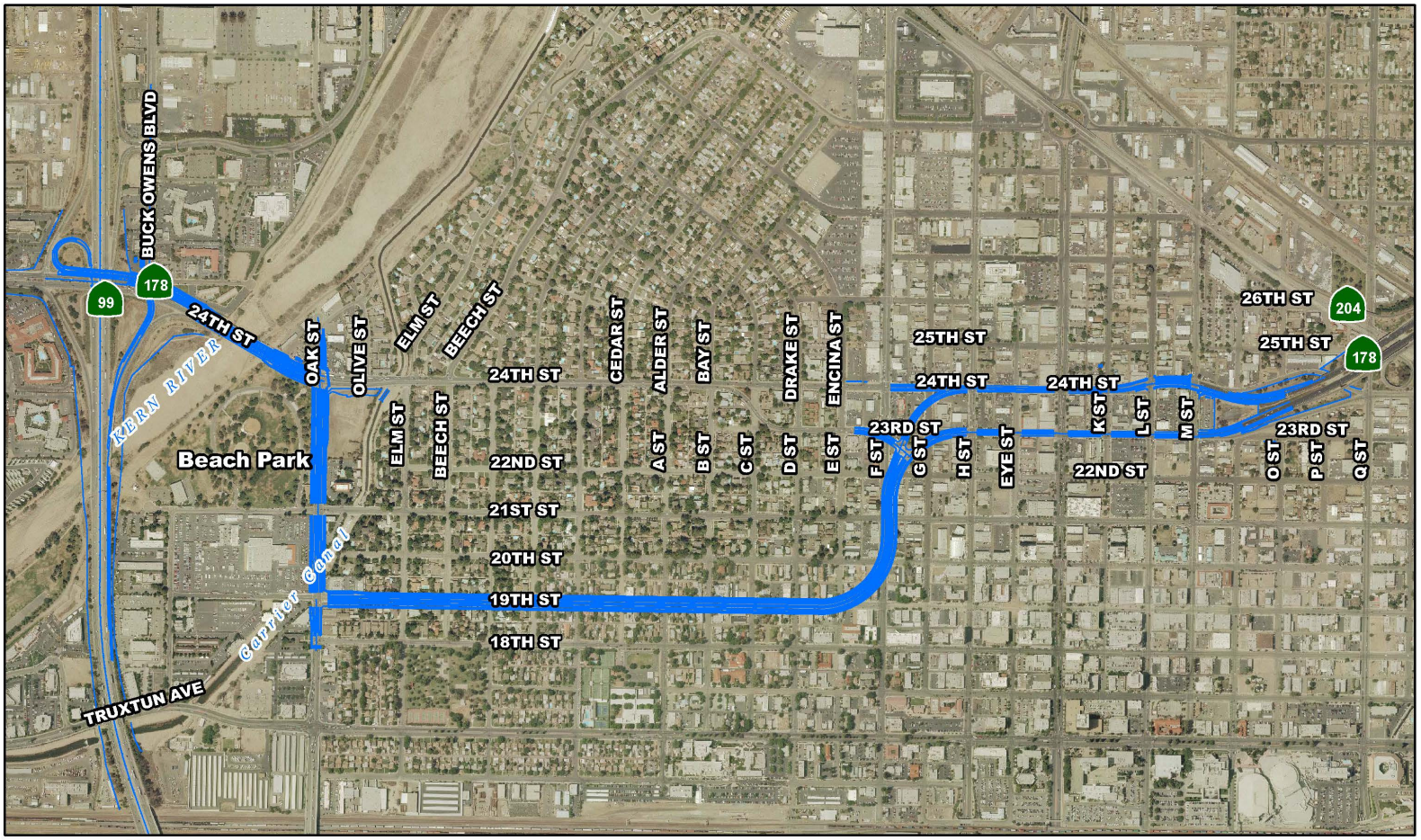
Avoidance alternatives can be divided into three categories of alternatives and the No Build:

1. Alternatives that swing back to 24th Street to use the 24th Street Kern River Bridge and the interchange of State Route 99 at 24th Street
2. An alternative that uses State Route 204 to cross the river and reach State Route 99
3. An alternative that uses the State Route 99 interchange at California Avenue
4. No Build Alternative

5.3.1 Category 1 Avoidance Alternatives (24th Street/State Route 99 Interchange)

Avoidance alternatives that swing north or south of 24th Street east of the historic districts and that tie back into 24th Street west of the historic districts were best represented by an alternative that would use 19th Street as the parallel route (see Figure 6). Although feasible from an engineering perspective this alternative is not prudent because:

- Introducing a major arterial into a cohesive residential community would cause severe neighborhood impacts that could not be mitigated. An alignment along 19th Street, which was studied as part of the avoidance alternatives process, would remove 41 homes and 40 businesses. It would disrupt existing neighborhood street patterns (such as street closures, cul de sacs, rerouting streets) and introduce a new major physical barrier separating parts of the neighborhood. The existing 24th Street arterial and a new19th Street arterial would surround and isolate a portion of the existing community.
- The higher traffic volumes along the new arterial would cause substantial noise impacts in a formerly quiet neighborhood.
- The estimated cost of this alternative, about $94 million ($57 million for construction and $37 million for right of way acquisition), would be prohibitive, nearly three times the cost of the proposed project alternatives. This avoidance alternative would increase delay costs by $5.89 million as compared to the No-



LEGEND

Avoidance Alternative Geometrics

FIGURE 6

N

0 550 1100
FEET

SOURCE: City of Bakersfield (2008)

24th Street Improvement Project

Category 1 Avoidance Alternative

EA 06-493900
EA 06-484700

Build alternative. In other words, 100 percent of the project congestion-relief benefits would be lost and congestion would be increased compared to the No Build alternative (based upon the analysis using the Surface Transportation Efficiency Analysis Model, which converts the cost of congestion to dollars). This alternative would therefore compromise the project purpose of congestion relief to such a large degree that the project would be abandoned.

- The boundaries of the historic districts are shown in Figure 2. In addition, cultural resource surveys indicated that there are most likely other potentially eligible historic properties south of 22nd Street.

As stated above, the 19th Street avoidance alternative best represented the possible alternatives in this category. There are no alignments in Category 1 either north of or south of 24th Street that would not have similar problems because they would all go through similarly developed neighborhoods. Any alignment would cause similar severe neighborhood impacts that could not be mitigated, and would be substantially more expensive. Other alignments would provide substantially less reduction of delay and undermine the basic project purpose of congestion relief. Potential avoidance alignments, as far north as State Route 204 and as far south as Truxtun Avenue, would affect potentially eligible historical properties.

5.3.2 Category 2 Avoidance Alternative (Airport Drive/State Route 99 Interchange)

This avoidance alternative would use existing State Route 204 to cross the Kern River and extend to the State Route 99/Airport Drive interchange. The Kern Council of Governments transportation model assigns future trips to 24th Street based in large part on it being the most direct route. These trips would not be redistributed to State Route 204, which would add about 3 miles to the trip, unless congestion increased on 24th Street to the point that it would be faster to use State Route 204. Congestion relief on 24th Street is the purpose of the project. Therefore, this alternative would not be prudent because it depends on the project purpose not being met. This alternative compromises the project to a degree that it is unreasaonable to proceed with the project in light of its stated purpose and need.

5.3.3 Category 3 Avoidance Alternatives (California Avenue/State Route 99 Interchange)

Alternatives that would direct substantial traffic to the California Avenue interchange with State Route 99 would require major widening of existing arterials in order to distinguish this alternative from the No Build. A representative example is considered

here using the widening of Chester Avenue from 24th Street to California Avenue and the widening of California Avenue from Chester Avenue to State Route 99. Although feasible from an engineering perspective, this avoidance alternative would not be prudent because:

- Chester Avenue has 116 feet of existing right-of-way; widening to the east or west would cause the removal of more than 38 commercial properties including major downtown buildings such as the City Hall north and south annex buildings, the Haberfelde Building, Chamber of Commerce building, and the Sill Building.
- Widening California Avenue to the south would cause the removal of more than 74 residences and 74 businesses.
- The cost of right-of-way acquisition would be approximately $181 million along Chester Avenue and $107 million along California Avenue, for an approximate total right-of-way cost of $288 million. Construction cost would be approximately $100 million.
- Delay costs would be reduced by only $7.0 million as compared to the proposed project build alternatives which would reduce delay costs by $43.6 million (based upon the analysis using the Surface Transportation Efficiency Analysis Model, which converts the cost of congestion to dollars). In other words, 84 percent of the project congestion-relief benefits would be lost. This alternative would therefore compromise the project purpose of congestion relief to such a large degree that the project would be abandoned.
- A direct connection to Rosedale Highway would not be provided.
- The potential for encountering additional National Register eligible properties in the historic downtown business district is high. The Haberfelde building in the business district was designed by locally renowned architect Charles Howatt Biggar. Another Section 4(f) property along Chester and California Avenues is Bakersfield High School. The high school contains sports fields, the Harvey Auditorium (built in 1940) and the Industrial Arts building, both designed by Charles Biggar.

Other north-south arterials in Category 3 would have similar constraints as Chester Avenue. For example, H Street south of 24th Street has potentially National Register eligible properties including the Bakersfield Fox Theater, the Padre Hotel, and the Bakersfield Fire Station No.1 (Bakersfield Central Fire Station) at 21st and H Street. Along the east side of H and 17th Street is the parking lot to the Bakersfield Californian (newspaper) building, which was officially added to the National Register of Historic Places in 1983 (#83001183). In addition, an avoidance alternative using H

Street would require substantial relocation of businesses. Mr. Biggar also designed the Bell Tower Church (1st Baptist Church), the Bakersfield Fire Department's Station 1 and the Bakersfield Californian building.

Union Avenue (State Route 204) is a National Register eligible historical property and does not qualify as an avoidance alternative. These alternative routes would be substantially more expensive with construction costs similar to that of Chester Avenue. These alternatives like Chester Avenue would elminate about 85 percent of the congestion relief benefits of the proposed project, which would compromise the basic project purpose to the degree that the project would be abandoned.

5.3.4 Category 4 (The No-Build Alternative)

Under the No-Build Alternative, the operation of 14 key intersections worsens as traffic demand grows from existing to 2015 to 2035 no-build conditions. Note that the morning traffic demand grows on 24th Street from about 4,000 vehicles under existing conditions to about 5,500 vehicles in 2035, and that the evening traffic demand grows from about 4,300 vehicles under existing conditions to about 6,000 vehicles in 2035. All the key intersections that constrain the 24th Street corridor are forecast to operate deficiently during one or both peak hours for 2035 no-build conditions (see Section 1.2.2).

In addition, all but one of the study ramps at State Route 99 are forecast to operate deficiently during one or both peak hours for 2035 no-build conditions. Deficient ramp operations would affect traffic flow on mainline State Route 99 as congestion occurs at diverge and merge points.

The No-Build Alternative would result in a delay cost of $43.6 million (based upon the analysis using the Surface Transportation Efficiency Analysis Model, which converts the cost of congestion to dollars). Therefore, the No-Build Alternative would not be prudent as it does not meet the basic project purpose.

6.0 Measures to Minimize Harm to the Section 4(f) Properties

The process of developing Alternatives 1 and 2 for the 24th Street Improvement Project considered a wide range of engineering, feasibility, and environmental constraints, including Section 4(f) properties in the study area. Avoiding or minimizing use of Section 4(f) properties was a key criterion during the alternatives development and refinement processes.

The conceptual mitigation measures are:

1. Detailed documentation of the historic district as a whole, and of each adversely affected contributing property at a level specified by the State Historic Preservation Officer (similar to Historic American Building Survey Level II documentation, consisting of large format archival quality photographs, available as-built plans, and written historical data in the form of a historical report), distribution to the appropriate Regional Information Center, local public library, and other repositories to be determined;
2. Preparation of a brochure on the local history and architecture of the affected historic district(s);
3. Adding information to existing social media sites dealing with related architectural topics;
4. Incorporation of hardscape features (including soundwalls), landscape, and architectural treatments that are compatible with the historic character of the affected historic district(s), such as color, texture, and vine treatment as feasible. (see Noise, Section 2.2.5, for location and heights of proposed soundwalls. See Visual, Section 2.1.5, for integration of hardscape feature treatments);
5. Prior to demolition of contributing properties for which an adverse effect finding is made, strategies such as working with a local agency to identify appropriate sites, or offering the properties for sale for $1 (or other reasonable amount) and paying up to the cost of demolition and removal of each contributing property would be attempted;
6. Architectural and structural elements or character-defining features would be made available for reuse in other buildings of the same age and style through an architectural salvage operation. No salvage would take place until an opportunity for the relocation described in item 5 above has taken place; and
7. District contributing buildings/structures with temporary construction easements would be protected by the establishment of Environmentally Sensitive Areas. After construction, the land, hardscape (e.g., residential walkways, garden walks/walls, etc.) and vegetation would be replaced in-kind as per the Secretary of the Interior's *Standards for the Treatment for Historic Properties with Guidelines for Rehabilitation*.

Potential opportunities to further minimize the use of land from the two historic districts as the project develops would continue to be sought and incorporated in the alternatives as appropriate. This may include adjustment of the location of the

proposed right-of-way and anticipated project disturbance limits to further minimize the use impacts of the project.

Specifically, as more detailed engineering is developed, opportunities to reduce the acquisition of land from these Section 4(f) properties would be considered and incorporated in the project, consistent with applicable engineering design standards.

Additional standard measures that are applicable include:

- Compensation for land permanently used at the affected Section 4(f) properties would be consistent with the requirements of the Uniform Relocation Assistance Act.
- Land temporarily occupied for temporary construction easements would be restored to its existing or better condition at the completion of the construction of Alternatives 1 and 2 in those areas.

In summary, the planning for Alternatives 1 and 2 includes design considerations and measures to reduce the overall harm to the historic districts, with those impacts having the least overall harm to those properties in light of the preservation purposes of the Section 4(f) statute. Section 8.0 provides some preliminary analysis of the alternative that would cause the least harm to properties protected under Section 4(f).

7.0 Coordination

A Section 4(f) evaluation requires documentation of the Section 106 process. Consultation with the State Historic Preservation Officer is ongoing. Prior to making Section 4(f) approvals under Section 774.3(a), the Section 4(f) evaluation must be provided for coordination and comment to the official(s) with jurisdiction over the Section 4(f) resource and to the Department of the Interior. A Section 4(f) evaluation prepared under Section 774.3(a) must include sufficient supporting documentation to demonstrate why there is no feasible and prudent avoidance alternative, and it must summarize the results of all possible planning to minimize harm to the Section 4(f) property.

On November 8, 2010, Caltrans initiated consultation with the State Historic Preservation Officer in regard to the 24th Street Improvement Project. Caltrans submitted the Historic Property Survey Report and its attachment, the Historical Resources Evaluation Report, to the State Historic Preservation Officer to seek State Historic Preservation Officer concurrence with National Register of Historic Places

determinations of eligibility for historic properties made by Caltrans. On August 10, 2011, the State Historic Preservation Officer concurred with the ineligibility of a number of properties within the APE and requested additional information. A series of correspondence took place that addressed requests for additional information from the State Historic Preservation Officer and involved additional input from both Caltrans and the City of Bakersfield regarding the determination of eligible properties within the project limits (letters provided in Appendix D).

On January 30, 2012, Caltrans submitted to the State Historic Preservation Officer a request for concurrence on eligibility for five individually eligible properties and two historic districts. But on January 31, 2012, Caltrans sent the State Historic Preservation Officer an email message withdrawing this request because Caltrans determined that the prior request for concurrence on the same five properties had exceeded the 30-day review period and notified the State Historic Preservation Officer that Caltrans is moving forward with the assumption of eligibility of the five individually eligible properties and two historic districts for purposes of this project only.

The Caltrans Division of Environmental Analysis Cultural Studies Office, in its role as the Federal Highway Administration, determined that one individual property at 2327 Cedar Street was not individually eligible for the National Register because there was not enough information to justify that it met National Register eligibility criteria. In response, the status of the property at 2327 Cedar Street was changed from individually eligible for the National Register to not individually eligible (it remains a contributor to the historic district south of 24th Street). With the historic status change for 2327 Cedar Street, the total number of historic properties within the APE decreased from a total of seven to six, which includes two districts and four individually eligible properties.

A Finding of Effect document will be prepared for the project. Because both project Build Alternatives would result in the demolition of residences in both historic districts, it is anticipated that the project would result in a finding of adverse effect and that a Memorandum of Agreement would be necessary, which would provide measures to help reduce and/or offset the adverse effects of the project on historic properties.

8.0 Least Harm Analysis

Preliminary information concerning least harm is included here but conclusions and final analysis will be included in the final environmental document.

If there is no prudent and feasible alternative to avoid harm to the Section 4(f) property, then only the alternative that causes the least overall harm in light of the statute's preservation purpose can be chosen. The least overall harm is determined by balancing the:

a. Ability to mitigate adverse impacts to each Section 4(f) resource
b. Relative severity of the remaining harm, after mitigation, to the protected activities and attributes or features (document even if harm is substantially equal)
c. Relative significance of each Section 4(f) property
d. Views of the officials with jurisdiction over each Section 4(f) property
e. Degree to which each alternative meets the purpose and need
f. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
g. Substantial differences in costs among alternatives

Not all uses of Section 4(f) properties have the same magnitude of impact, and not all Section 4(f) properties have the same quality or significance. A qualitative analysis of the permanent use of the two historic districts was conducted to assist in understanding the net impact of each Build Alternative on those Section 4(f) properties. This analysis considered the impacts of the Build Alternatives on these Section 4(f) properties after implementation of the avoidance, minimization, and mitigation measures described in Section 6.0, Measures to Minimize Harm.

Table B identifies permanent use impacts for each Build Alternative on those Section 4(f) properties. The table also compares whether or not the build alternatives meet the project purpose and need, and their comparative economic feasibility (cost). The overall environmental impacts of the two build alternatives are essentially the same with minor differences, as shown in Table B. Alternative 1 would result in seven residences being left with unmitigated noise levels, while Alternative 2 would result in eight residences with unmitigated noise. Alternative 2 would require an additional 6,000 square feet of property acquisition. Alternative 1 would potentially require additional temporary construction easements; however, the exact number of properties affected (without use as defined under Section 4(f)) during the construction phases would be refined during final design.

Table B. Summary of Least Harm Information

Criteria		Build Alternative 1	Build Alternative 2	No-Build Alternative
Meets the project purpose and need/objectives		Yes	Yes	No
Reduction of driveway in/out points		Elimination of 11 driveways on the north side of 24th Street and fewer driveways at bus turnouts	0	0
Requires acquisition of the least amount of right-of-way necessary from adjacent property owners	Number of full acquisitions	23	23	0
	Number of partial acquisitions	29 (Totaling 59,281 square feet)	21 (Totaling 66,309 square feet)	0
	Number of Temporary Construction Easements (TCEs)	110	97	0
	Number of permanent easements	3	3	0
Relocations	Residential	49 residents	49 residents	0
	Nonresidential	0	0	0
Viability and economic feasibility		$42.8 million	$43.7 million	$0
Environmental Footprint and Project Effects				
Cultural Resources	Historic district north of 24th Street	12 full parcel acquisitions, 2 partial parcel acquisitions, 14 TCEs	1 full parcel acquisition, 0 partial parcel acquisitions, 5 TCEs	0
	Historic district south of 24th Street	9 full parcel acquisitions, 6 partial parcel acquisitions, 12 TCEs	22 full parcel acquisitions, 1 partial acquisition, 2 partial parcel acquisitions with TCEs, 9 TCEs	0
Section 4(f) Resources	Beach Park	0.11 acre (ac) TCE, 0.8 ac permanent acquisition	0.11 ac TCE, 0.8 ac permanent acquisition	0
	Kern River Parkway Bike Trail	0.37 ac TCE	0.37 ac TCE	0
	Cultural Resources	(see cultural resources above)	(see cultural resources above)	0
Noise		6 soundwalls (829 feet total length)	6 soundwalls (559 feet total length)	0
		Approach or exceed noise abatement criteria at 25 sensitive receptors; reduced through abatement measures. Noise at all but 7 receptors would be mitigated.	Approach or exceed noise abatement criteria at 22 sensitive receptors; reduced through abatement measures. Noise at all but 8 receptors would be mitigated.	14

TCE = Temporary Construction Easement

Alternatives 1 and 2 would result in the permanent use of land from the two historic districts, as shown in Table B and in Figures 3 and 4. Measures to minimize harm are provided in Section 6.0.

As shown in Figure 2, the historic district north of 24th Street is considerably larger and contains more representative residential structures contributing to the styles and period associated with the historic district. The historic district south of 24th Street is smaller and has fewer properties representative of the district's characteristics. The historic district south of 24th Street is viewed as a more unique and limited resource when compared to the northern district. For these reasons, it is anticipated that the project alternatives would not have an adverse effect on the historic district north of 24th Street. An adverse effect on the historic district south of 24th Street is expected.

Alternative 1 would would have a smaller impact on the historic district south of 24th Street by minimizing the number of contributing properties impacted within the district. This is the key difference between the build alternatives.

Impacts other than Section 4(f) historic properties would be similar (see Table B). Both project build alternatives meet the defined project objectives, purpose and need. The cost of the build alternatives are similar. However, Alternative 1 is considered superior in engineering design as it provides a minimum number of driveway in/out points, which would enable a more efficent flow of traffic and possibly reduce the risk of vehicle collisions along 24th Street. The key distinguishing elements of the comparison of build alternatives are;

1. Alternative 1 would better protect 4(f) properties of higher significance, and
2. Alternative 1 would better meet the project purpose and need.

The final least overall harm analysis and conclusion will be reported in the Final Environmental Assessment/Final Section 4(f) Evaluation.

9.0 Resources Evaluated Relative to the Requirements of Section 4(f)

This section discusses parks, recreational facilities, wildlife refuges, and historic sites found within or next to the project area that do not trigger Section 4(f) protection because (1) they are not publicly owned, (2) they are not open to the public, (3) they are not National Register-eligible historic properties, (4) the project does not permanently use the property and does not hinder the preservation of the property, or (5) the proximity impacts do not result in a constructive use.

For this analysis, public parks, recreation areas, and wildlife refuges within about 0.25 mile of the project limits were identified. Included was Beach Park at the southwest corner of 24th Street and Oak Street, and the Kern River Parkway Bike Trail. These resources were the subject of separate de minimus findings.

In accordance with Federal Highway Administration regulations and guidance, the requirements for protection of historic properties under Section 4(f) are triggered only by significant historical resources, which are defined as sites on or eligible for listing on the National Register of Historic Places, or sites otherwise determined significant by the Federal Highway Administration Administrator (23 Code of Federal Regulations Section 771.135[e]). Resources within the APE for the 24th Street Improvement Project determined to be eligible for the National Register of Historic Places were found. Those historic properties were evaluated to assess whether they would trigger the requirements for protection under Section 4(f). The following historic properties were determined not to do so, as discussed below:

- Bungalow Courts at 2100 23rd Street, 2300 D Street, and 2210 D Street.
- Commercial building (Healthland) at 2323 E Street.

9.1 Bungalow Courts

9.1.1 Overview of the Bungalow Courts

Three bungalow courts in the APE were identified as eligible for listing in the National Register at the local level under Criterion C for property type. Cultural historic properties meeting Criterion C "embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction."

The bungalow courts are on three assessor's parcels in the APE: Parcel number 003-102-04 at 2100 23rd Street, Parcel number 003-111-08 at 2300 D Street, and Parcel number 003-141-02 at 2216 D Street (see Figure 7). Caltrans, as assigned by the Federal Highway Administration assumed individual eligibility for purposes of Section 106 and this project only for the three bungalow courts within the APE. Bungalow courts first appeared in Southern California in the 1910s as tourist accommodations. However, as developers appreciated the low cost and relative desirability of this land use, the property type proliferated throughout urban areas in Southern California. Generally, bungalow courts served as an intermediate choice between detached single-family residences and apartments. They offered light, garden

LEGEND

- Bungalow Courts
- Project Improvements
- Grading Limit
- Temporary Construction Easement
- Permanent Easement

0 50 100 FEET

SOURCE: City of Bakersfield (2008).

FIGURE 7

24th Street Improvement Project

Bungalow Courts

EA 06-493900
EA 06-484700

space, and other amenities available in a detached residence, but they also offered the economy and security of an apartment complex. The arrangement of units around a landscaped courtyard or along a narrow lane served to create some community among the residents and brought green space just outside residents' doorsteps. Early examples of bungalow courts used the Craftsman and Mission Revival styles to underscore the allure of the California climate and romanticized Hispanic heritage. By the 1920s, builders were using several period-revival styles, and some later examples used early modern styles like Art Deco and Streamline Moderne.

The Great Depression and World War II resulted in a sharp decrease in the construction of bungalow courts. After World War II, overwhelming public preference for affordable suburban homes outside the inner City pushed this type of residential use out of favor. Today, bungalow courts are a vanishing property type as many have been demolished.

Alternatives 1 and 2 would not result in the permanent or temporary use of any land from these bungalow courts, (see Figure 8). In addition, the bungalow courts are not publicly owned and are not open to the public as historic properties. As a result, these bungalow courts do not trigger the requirements for protection under Section 4(f).

9.2 Commercial Building (Healthland) at 2323 E Street

One commercial office building (Healthland) in the APE, at 2323 E Street, was identified as individually eligible for listing in the National Register at the local level under Criterion B for property type. Historic properties meeting Criterion B are recognized as having association with the lives of significant persons in our past. This property is eligible for listing because of its association with locally known architects A. Metcalf, F. Parsons, and W. Wright. Numerous buildings in the area were designed by this locally recognized partnership.

Built circa 1952, the Healthland building is a modern-influenced Ranch-style commercial office building. It has a low-pitched front gable roof with wide eaves, and its facade walls are clad with wide vertical boards. The Healthland building was built circa 1952, remains in good condition, and retains a high degree of integrity. This Ranch-style commercial building is on the west side of E Street in an area with commercial and residential uses. The building can be accessed by pedestrians from the alley between D and E streets, and by pedestrians and vehicular traffic from E Street. The location of the Ranch-style commercial building on Assessor's Parcel Number 003-111-04 in the APE is shown in Figure 8. The State Historic Preservation

LEGEND

- Bungalow Courts
- Project Improvements
- Grading Limit
- Temporary Construction Easement
- Permanent Easement

0 12.5 25
FEET

SOURCE: City of Bakersfield (2008).

FIGURE 8

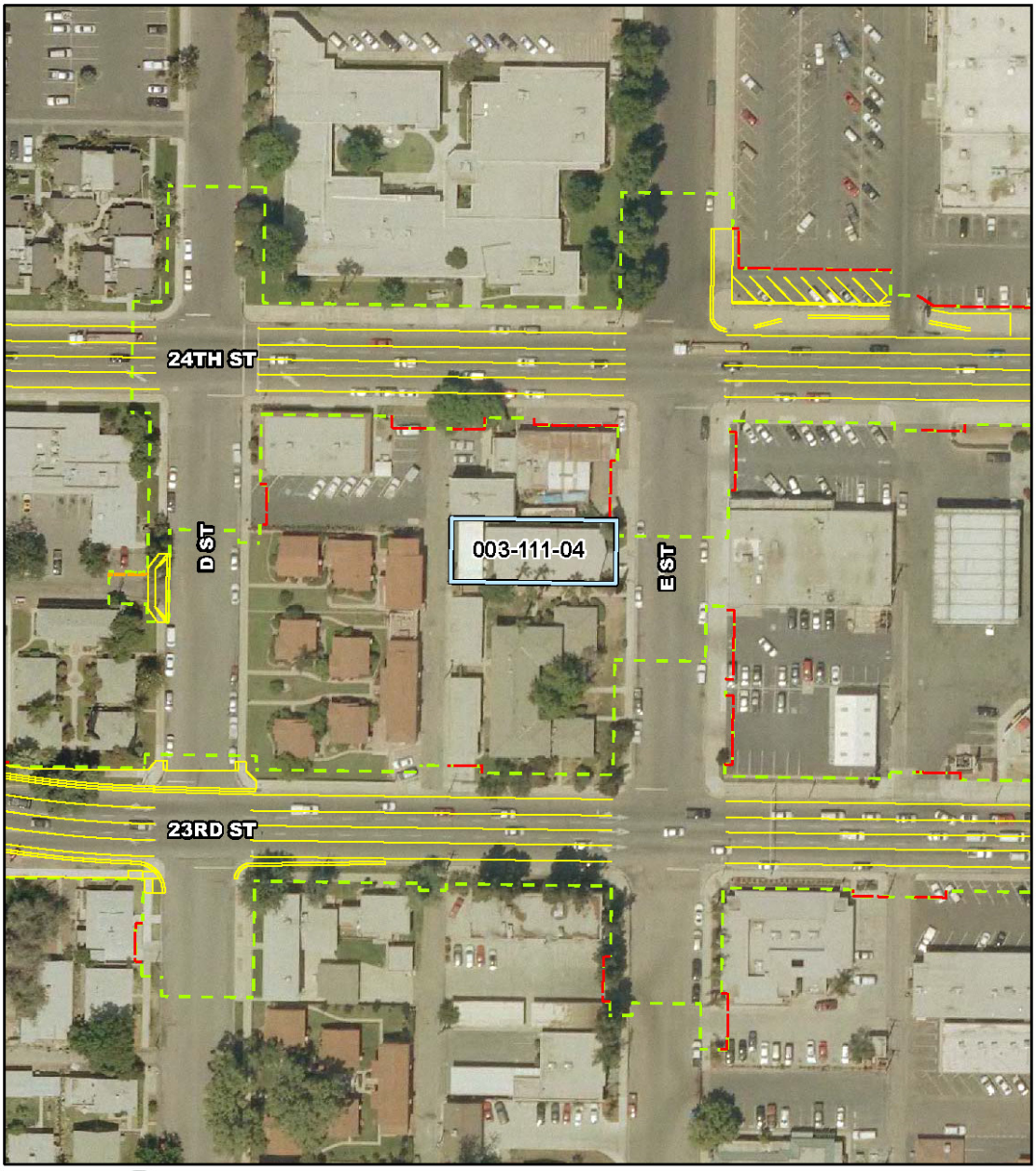
24th Street Improvement Project

Project Limits at the Bungalow Courts

EA 06-493900
EA 06-484700

Officer did not comment on any properties that may be individually eligible; therefore, Caltrans, as assigned by the Federal Highway Administration assumed individual eligibility for purposes of Section 106 and this project for the commercial building (Healthland) at 2323 E Street in the APE.

Alternatives 1 and 2 would not result in the permanent use or temporary occupancy of any land from this property as shown in Figure 9. This building is not publicly owned and is not open to the public as an historic property. Therefore, this commercial building does not trigger the requirements for protection under Section 4(f).



LEGEND

- 2323 E Street
- Project Improvements
- Grading Limit
- Temporary Construction Easement
- Permanent Easement

0 50 100
FEET

SOURCE: City of Bakersfield (2008).

FIGURE 9

24th Street Improvement Project

Project Limits for the Commercial Building (Healthland) at 2323 E Street

EA 06-493900
EA 06-484700

Appendix C Correspondence with the City of Bakersfield Regarding *De Minimis* Section 4(f) Finding

BAKERSFIELD

ALL-AMERICA CITY
1990

DRAFT 4(F) CONSULTATION LETTER FOR THE CITY OF BAKERSFIELD

August 4, 2010

Ms. Kirsten Helton
Senior Environmental Planner
California Department of Transportation
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726-5428

Dear: Ms. Helton:

Subject: Section 4(f) Consultation for the Proposed 24th Street Improvement Project

The City of Bakersfield (City) is the California Environmental Quality Act lead agency and applicant for the proposed 24th Street Improvement Project. Pursuant to the provisions of Section 4(f) of the United States Department of Transportation Act of 1966, a *Draft Section 4(f) Evaluation* (LSA Associates, Inc., 2010) was prepared and submitted to the City for review.

The *Draft Section 4(f) Evaluation* identified Beach Park as a Section 4(f) property under the jurisdiction of the City. The City, as the owner and operator of Beach Park, is responsible for any planning and environmental analyses related to proposed improvements or modifications to the park.

Actual Use Effects

The project Build Alternatives (Alternatives 1 and 2) would permanently use a strip of land on the north side of the park and a strip of land on the east side of the Park. The total area that would be permanently used at Beach Park by Alternatives 1 and 2 would be 0.8 acre (ac). The 0.8 acres is mostly slope with no recreational equipment, or trees on the slope that could be used by the public. Based on the documentation in the *Draft Section 4(f) Evaluation*, The City acknowledges that 0.8 ac of land from the park would be permanently incorporated into the public street rights-of-way for 24th and Oak Streets by Alternatives 1 and 2 and that the 0.8 ac of land would no longer be available for recreation uses at Beach Park. The taking of park land shall be mitigated by payment of a fee equal to the appraised value of the park land permanently encumbered by the project.

RECREATION AND PARKS
1600 Truxtun Avenue • Bakersfield • California • 93301
(661) 326-FUNN • Fax (661) 852-2140

Temporary Occupancy Effects

Although the temporary occupancy of land during construction is exempt from the requirements of Section 4(f), the City acknowledges that 0.11 ac on the north side of the park would be used temporarily for a temporary construction easement (TCE) during construction of Alternatives 1 and 2. The City further acknowledges that, after the completion of construction, the area used for the TCE will be restored to its existing or better condition and returned to the City.

Constructive Use Impacts

The City has reviewed the environmental analyses which considered the potential for constructive or indirect use impacts at Beach Park under Alternatives 1 and 2 as described in the following sections.

Visual Impacts. The City concurs that the short- and long-term visual impacts (e.g. temporary views of construction activities and nighttime lighting), associated with construction and operation of Alternatives 1 and 2 would not substantially impair the activities, features, and/or attributes of Beach Park that qualify the park for protection under the requirements of Section 4(f).

Noise Impacts. The City concurs that the short-term construction noise impacts and the long-term traffic noise impacts under Alternatives 1 and 2 would not substantially impair the activities, features, and/or attributes of Beach Park that qualify this park for protection under the requirements of Section 4(f). Alternatives 1 and 2 may permanently increase noise levels in the park and exceed thresholds established for sensitive receptors at the Cancer Survivor Memorial. However, this impact will not be mitigated with a sound wall because of line-of-sight distance issues that could result in traffic safety concerns, and because a sound wall would result in obstruction of views of the memorial, which is not consistent with the intent of the memorial to be visible to travelers on roads adjacent to the park. The City acknowledges that a sound wall at the corner of 24th and Oak Streets would adversely affect views of the memorial. As a result, the City concurs that due to environmental and safety concerns, a sound wall at this location should not be implemented as part of the project.

Vegetation and Wildlife Impacts. The City concurs that the permanent removal of 0.8 ac of vegetated land along the north and east boundaries of Beach Park shall be mitigated by a fee to be used for park improvements so as to not substantially impair the activities, features, and/or attributes of Beach Park that qualify this park for protection under the requirements of Section 4(f).

Air Quality Impacts. The City concurs that the short- and long-term air quality impacts associated with construction and operation, respectively, of Alternatives 1 and 2 would not substantially impair the activities, features, and/or attributes of Beach Park that qualify this park for protection under the requirements of Section 4(f).

Water Quality Impacts. Alternatives 1 and 2 are not expected to adversely impact water quality in the Kern River or Beach Park. Therefore, the City concurs that Alternatives 1 and 2 would not substantially impair the activities, features, and/or attributes of Beach Park that qualify this park for protection under the requirements of Section 4(f).

Summary

In summary, the City has determined that the proposed 24th Street Improvement Project Build Alternatives (Alternatives 1 and 2) will result in the actual use of 0.8 ac of land from Beach Park and further determined with the payment of a fee to be used for park improvements that the use of 0.8 ac from this park will not substantially impair the activities, features, and/or attributes of Beach Park that qualify the park for protection under the requirements of Section 4(f). In addition, the City concurs that the temporary use of 0.11 ac of land for a TCE during construction of Alternatives 1 and 2 and the indirect impacts of the construction and operation of Alternatives 1 and 2 will not result in impacts that would substantially impair the activities, features, and/or attributes that qualify the park for protection under the requirements of Section 4(f).

Sincerely,

Dianne Hoover

Dianne Hoover
Director of Recreation and Parks

BAKERSFIELD

ALL-AMERICA CITY
1990

September 16, 2010

Ms. Kirsten Helton
Senior Environmental Planner
California Department of Transportation
2015 East Shields Avenue, Suite 100
Fresno, CA 93726-5428

Dear Ms. Helton:

Subject: Proposed 24th Street Improvement Project: Section 4(f) Temporary Occupancy of the Kern River Trail

The City of Bakersfield (City) is the California Environmental Quality Act (CEQA) lead agency and applicant for the proposed 24th Street Improvement Project. Pursuant to the provisions of Section 4(f) of the United States Department of Transportation Act of 1966, a *Draft Section 4(f) Evaluation* was completed.

The *Draft Section 4(f) Evaluation* identified the Kern River Trail (Trail) as a recreation resource under the jurisdiction of the City. The City, as the owner and operator of the Trail, is responsible for any planning and environmental analyses related to proposed improvements or modifications to the trail, including potential effects as a result of the proposed Project.

Permanent Use Effects

Based on the *Draft Section 4(f) Evaluation*, the Build Alternatives (Alternatives 1 and 2) would not result in the permanent use of any land from the Trail right-of-way.

Temporary Occupancy Effects

Alternatives 1 and 2 will require a temporary construction easement (TCE) along the east bank of the Kern River for construction work under the east end of the 24th Street bridge. Construction vehicles would enter the Kern River right-of-way through a single entrance and exit at the cul-de-sac at the northernmost end of Oak Street. Construction vehicles would reach the Kern River Bridge construction area under the bridge via a 30-foot (ft) wide TCE in the Trail right-of-way on the east side of the Kern River. A scissor lift would be placed on the Trail, and temporary scaffolding would be placed between the Trail and the bridge abutment, for construction work under the east end of the bridge. To access the remaining length of the bridge, a temporary ramp will be provided within a 45 ft-wide TCE from the Trail, down to the river bed, and toward the bridge. The segment of the Trail within the boundary of this TCE would be closed temporarily for approximately a week for raising the scaffolding for any use by bicyclists and pedestrians

RECREATION AND PARKS
1600 Truxtun Avenue • Bakersfield • California • 93301
(661) 326-FUNN • Fax (661) 852-2140

A temporary detour for bicyclists and pedestrians will be provided during the period that the scaffolding is constructed in the Trail right-of-way. Temporary safety measures (e.g. signing, barricades) will be implemented during construction for pedestrians and bicyclists.
The detour for southbound bicyclists and pedestrians will begin at the cul-de-sac at the north end of Oak Street, north of 24th Street, and then will extend southbound, cross 24th Street, and turn west onto 21st Street. Bicyclists and pedestrians will then travel through Beach Park and reconnect with the Trail using the existing paved path from Beach Park. The detour for northbound bicyclists and pedestrians will be the reverse of southbound detour, beginning at the existing paved path from the Trail to Beach Park and ending at the Oak Street cul-de-sac. At the completion of construction of the bridge improvements in this area, the area used for the TCE will be restored to its original condition.

Exemption of the Temporary Occupancy of the Trail from Section 4(f)

A portion of the Kern River Trail would be temporarily occupied during construction of Alternatives 1 and 2. Per 23 Code of Federal Regulations [CFR] 774.13, Exemption, construction activities in the Trail right-of-way do not meet the criteria for a temporary *use* of a Section 4(f) property. The *Draft Section 4(f) Evaluation* considered the criteria that, if met, classify a proposed project as a temporary *occupancy* rather than a temporary *use* of a property potentially protected under the requirements of Section 4(f). The analysis indicates that the TCE in the Trail right-of-way needed during construction of Alternatives 1 and 2 meets the criteria for a temporary *occupancy*, but not a temporary *use* of land from, of a Section 4(f) property. As a result, the TCE at the Kern River Trail meets the criteria for exemption from the requirements of Section 4(f).

Summary

In summary, the City has determined that the proposed 24th Street Improvement Build Alternatives (Alternatives 1 and 2) will not result in the permanent use of any land from the Kern River Trail. The City concurs that the temporary occupancy of part of the Trail right-of-way for a TCE during construction is exempt from the requirements of Section 4(f) consistent with 23 CFR 774.13.

Sincerely,

Dianne Hoover

Dianne Hoover
Director of Recreation and Parks

Appendix D State Historic Preservation Officer Consultation

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
2015 EAST SHIELDS AVENUE, SUITE A-100
FRESNO, CA 93726-5428
PHONE (559) 243-8222
FAX (559) 243-8215
TTY (559) 488-4066

Flex your power!
Be energy efficient!

November 8, 2010

M. Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

EA 06-49390 & 06-48470

Subject: Transmittal of Historic Property Survey Report for the 24th Street Improvement Project

Dear Mr. Donaldson

The California Department of Transportation (Caltrans), under the authority of the Federal Highway Administration (FHWA), is initiating consultation with the State Historic Preservation Officer (SHPO) regarding the project referenced above. This consultation is undertaken in accordance with the *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation* (PA), executed January 1, 2004.

The City of Bakersfield (City), in cooperation with the California Department of Transportation (Caltrans), proposes to construct arterial widening and intersection/ interchange improvements on State Route 58 (SR-58) west of State Route 99 (SR-99), and on State Route 178 (SR-178) east of SR-99. The alternatives include the No Build Alternative and two others, both of which require right-of-way acquisition. Alternative 1 consists of improvements at the SR-99 interchange; SR-99 auxiliary lane; improvements to the Oak Street intersection; 24th Street widening from Olive Street to D Street, with widening to the north; and improvements to the 23rd Street and 24th Street couplet. Alternative 2 shifts the 24th Street widening to the south side of the street.

Enclosed is the Historic Property Survey Report (HPSR) for the project. The HPSR is intended to fulfill three of Caltrans' responsibilities under Section 106 of the National Historic Preservation Act: determination of the Area of Potential Effects (APE); identification of potential historic properties located within the undertaking's APE; and evaluation of potential historic properties for eligibility to the National Register of Historic Places (NRHP). Under the PA, Caltrans is responsible for ensuring the appropriateness of the APE (Stipulation VIII.A) and the adequacy of historic property identification efforts (Stipulation VIII.B). We are consulting with you at the present time under Stipulation VIII.C.5 of the PA, which requires that we seek your concurrence on Caltrans determinations of eligibility for potential historic properties.

"Caltrans improves mobility across California"

Mr. Donaldson
November 8, 2010

Pursuant to Stipulation VIII.C.5 of the PA, Caltrans is requesting your concurrence that the following properties are **not eligible** for inclusion in the NRHP:

Map Reference #	Description
1	City Auto Group, 3130 24th Street, Bakersfield, CA
10	2315 Myrtle Street, Bakersfield, CA
12	2330 Myrtle Street, Bakersfield, CA
13	2300 Myrtle Street, Bakersfield, CA
18	2300 Pine Street, Bakersfield, CA
25	2407 Myrtle Street, Bakersfield, CA
27	2406 Myrtle Street, Bakersfield, CA
30	2407 Pine Street, Bakersfield, CA
35	2404 Cedar Street, Bakersfield, CA
39	2401 Alder Street, Bakersfield, CA
40	2404 Alder Street, Bakersfield, CA
51	2315 A Street, Bakersfield, CA
54	2311 24th Street, Bakersfield, CA
43	2312 24th Street, Bakersfield, CA
44	2200 24th Street, Bakersfield, CA
45	Center for Children and Family Services, 2000 24th Street, Bakersfield, CA
46	Pep Boys, 2411 F Street, Bakersfield, CA
47	Kern Driving School, 2416 F Street, Bakersfield, CA
48	Westchester Liquor, 2408 F Street, Bakersfield, CA
63	2301 C Street, Bakersfield, CA
65	VIPS Insurance, 2130 23rd Street, Bakersfield, CA
67	2219 D Street, Bakersfield, CA
71	2301 E Street, Bakersfield, CA
72	2205 E Street, Bakersfield, CA
73	GM Liquor, Subway, 1921 24th Street, Bakersfield, CA
74	1809 23rd Street, Bakersfield, CA
75	Kern Dermatology, 2215 G Street, Bakersfield, CA
76	2214 G Street, Bakersfield, CA
77	Aamco, 2415 Chester Avenue, Bakersfield, CA
78	Furniture Gallery, 2407 Chester Avenue, Bakersfield, CA
79	Lussack Pre-Owned Motor Sports, 2305–2309 Chester Avenue, Bakersfield, CA
80	Kingdom Furniture, 2301 Chester Avenue, Bakersfield, CA
81	Kern Schools Federal Credit Union, 2424 Chester Avenue, Bakersfield, CA
82	2324 Chester Avenue, Bakersfield, CA
83	2300 Chester Avenue, Bakersfield, CA
84	Furniture 4 Less, 1414 24th Street, Bakersfield, CA
85	W W Harper Pools, 2418 K Street, Bakersfield, CA
86	Pacific Express Tires, 2400 K Street, Bakersfield, CA

"Caltrans improves mobility across California"

Mr. Donaldson
November 8, 2010

87	1330 23rd Street, Bakersfield, CA
88	2419 L Street, Bakersfield, CA
89	Vigil Designs, TGIF Automotive, 1300 24th Street, Bakersfield, CA
90	2406 L Street, Bakersfield, CA
91	2230 L Street, Bakersfield, CA
92	Dan's Signs, 2216 M Street, Bakersfield, CA
93	2323 A Street, Bakersfield, CA

Pursuant to Stipulation VIII.C.5 of the PA, Caltrans is also requesting your concurrence that the following properties are **eligible** for inclusion in the NRHP:

Map Reference #	Description
2	2323 Elm Street, Bakersfield, CA
3	2301 Elm Street, Bakersfield, CA
4	2330 Elm Street, Bakersfield, CA
5	2320 Elm Street, Bakersfield, CA
6	2310 Elm Street, Bakersfield, CA
7	2300 Elm Street, Bakersfield, CA
8	2331 Beech Street, Bakersfield, CA
9	2317 Beech Street, Bakersfield, CA
11	2307 Myrtle Street, Bakersfield, CA
14	2307 Spruce Street, Bakersfield, CA
15	2312 Spruce Street, Bakersfield, CA
16	2308 Spruce Street, Bakersfield, CA
17	2307 Pine Street, Bakersfield, CA
19	2327 Cedar Street, Bakersfield, CA
20	2307 Cedar Street, Bakersfield, CA
21	2401 Beech Street, Bakersfield, CA
22	2404 Beech Street, Bakersfield, CA
23	2400 Beech Street, Bakersfield, CA
24	2411 Myrtle Street, Bakersfield, CA
26	2408 Myrtle Street, Bakersfield, CA
28	2413 Spruce Street, Bakersfield, CA
29	2418 Spruce Street, Bakersfield, CA
31	2401 Pine Street, Bakersfield, CA
32	2412 Pine Street, Bakersfield, CA
33	2401 Cedar Street, Bakersfield, CA
34	2412 Cedar Street, Bakersfield, CA
36	2400 Cedar Street, Bakersfield, CA
37	2409 Alder Street, Bakersfield, CA
38	2405 Alder Street, Bakersfield, CA

"Caltrans improves mobility across California"

Mr. Donaldson
November 8, 2010

41	2413 Bay Street, Bakersfield, CA
42	2409 Bay Street, Bakersfield, CA
49	2328 Cedar Street, Bakersfield, CA
50	2320 Cedar Street, Bakersfield, CA
52	2330 A Street, Bakersfield, CA
53	2316 A Street, Bakersfield, CA
55	2311 B Street, Bakersfield, CA
56	2231 B Street, Bakersfield, CA
57	2330 B Street, Bakersfield, CA
58	2318 B Street, Bakersfield, CA
59	2310 B Street, Bakersfield, CA
60	2304 B Street, Bakersfield, CA
61	2230 B Street, Bakersfield, CA
62	2315 C Street, Bakersfield, CA
64	2223 C Street, Bakersfield, CA
66	2100 23rd Street, Bakersfield, CA
68	El Encanto, 2300 D Street, Bakersfield, CA
69	2210 D Street, Bakersfield, CA
70	Healthland, 2323 E Street, Bakersfield, CA

In accordance with Stipulation VIII.C.5a of the PA, we look forward to receiving your response within 30 days of your receipt of this submittal. If you concur with our determinations, consultation on the assessment of effects will be carried out under Stipulation X of the PA. In the event that you do not concur with Caltrans determinations, further consultation will be carried out in accordance with Stipulation VIII.C.5b.

If you need any additional information, please do not hesitate to contact me (telephone: (559) 243-8224; fax: (559) 243-8215; e-mail: Kirsten_Helton@dot.ca.gov) or John Whitehouse, Associate Environmental Planner (telephone: (559) 243-8305; email: John_Whitehouse@dot.ca.gov). Thank you for your assistance with this undertaking.

Sincerely,

Kirsten Helton

Kirsten Helton, Environmental Branch Chief
Central Region Environmental Division

Attachment: HPSR for 24th Street Improvement Project

"Caltrans improves mobility across California"

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

August 10, 2011 Reply To: FHWA110111B

Kristen Helton, Environmental Branch Chief
Caltrans Central Region Environmental Division
2015 East Shields Avenue, Suite A-100
Fresno, CA 93726-5428

Re: Determinations of Eligibility for the 24th Street Improvement Project, Bakersfield, CA

Dear Ms. Helton:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has determined that the following properties are not eligible for the National Register of Historic Places (NRHP):

- 3130 24th Street
- 2315 Myrtle Street
- 2330 Myrtle Street
- 2300 Myrtle Street
- 2407 Myrtle Street
- 2406 Myrtle Street
- 2407 Pine Street
- 2404 Cedar Street
- 2401 Alder Street
- 2404 Alder Street
- 2315 A Street
- 2311 24th Street
- 2312 24th Street
- 2200 24th Street
- 2411 F Street
- 2416 F Street
- 2408 F Street
- 2301 C Street
- 2130 23rd Street
- 2301 E Street
- 2205 E Street
- 1921 24th Street
- 1809 23rd Street
- 2215 G Street
- 2214 G Street
- 2415 Chester Avenue
- 2407 Chester Avenue
- 2305-2309 Chester Avenue
- 2301 Chester Avenue
- 2424 Chester Avenue
- 2324 Chester Avenue
- 2300 Chester Avenue
- 1414 24th Street
- 2418 K Street
- 2400 K Street
- 1330 23rd Street
- 2419 L Street
- 1300 24th Street
- 2406 L Street
- 2230 L Street
- 2216 M Street
- 2323 A Street

Based on my review of the submitted documentation, I concur.

Ms. Helton
August 10, 2011
Page 2 of 2

Before I can comment further on this project I will need the following additional information:

- I will need better photos for 2100 23rd Street, 2404 Beech Street, 2400 Cedar Street, 2310 Elm Street and 2300 Pine Street.
- For 2230 B Street I would like to see additional photos of the different sides of the building.
- For 2000 24th Street I would also like to see additional photos showing all sides of the property. In particular I am interested in photos of the alterations to the property and an explanation of how these alterations affect the building's eligibility. Do the additions cover areas of the building that were originally of architectural interest? When were alterations done?
- Was 2219 D Street considered as a contributor to the Western Addition Historic District?
- For 2327 Cedar Street and 2323 E Street I would like additional contextual information under Criteria B that better describes the association that the important individuals had to the properties in question.
- With regards to 2413 Spruce Street, please describe any alterations that have been made to the property and how these alterations affect the property's overall integrity.
- For each of the potential historic districts I would like to see district record forms that describe the characteristics of the neighborhood and how it is laid out. I would also like to see maps of the potential historic districts. The maps should include an approximation of the district boundaries outside of the APE for this project. Pictures of signature properties within a historic district that may not be part of the APE for the project would also be helpful. I would also like a list of all properties within the APE that are considered potential contributors to each historic district.
- For the Western Addition Historic District I would like to see additional context to describe how the district fits together. Is there a possibility that the district might be eligible under Criterion A?
- Map Reference Numbers 16 & 19 make reference to a Northern Division Historic District but it appears this may be part of either the Western Addition Historic District or the Westchester Historic District. If the Northern Division Historic District is a district then I will require additional contextual information as well as maps.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY Edmond G. Brown, Jr., Governor

DEPARTMENT OF TRANSPORTATION
855 M Street, Suite 200
Fresno, CA 93721
PHONE (559) 445-6455
FAX (559) 445-6236
TTY (559) 488-4066

Flex your power!
Be energy efficient!

December 14, 2011

Milford Wayne Donaldson, FAIA, LEED AP
State Historic Preservation Officer
Office of Historic Preservation
23rd Street, Suite 100
Sacramento, CA 95816

FHWA110111B
Expenditure Authorizations:
06-49390 and 06-48470

Subject: Response to Request for Additional Information for the 24th Street Improvement Project

Dear Mr. Donaldson:

Thank you for your letter and comments of August 10, 2011 regarding the Determinations of Eligibility for the 24th Street Improvement Project, Bakersfield, CA. We are continuing our consultation in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Thank you also for allowing us to consult with you further clarify your request for information on the identification of historic properties located within the Area of Potential Effect (APE) in your offices on December 8, 2011. As the consulting parties agreed at the meeting, while Caltrans is assuming, for the purposes of this undertaking, two potential historic districts, Caltrans is not determining the boundaries of either. Caltrans assumes the two historic districts to abut either side and including 24th Street because of the nature of each district, each which has independent, distinctive contributors. For the purposes of this undertaking only, we are referring to the potential historic districts to be located both north and south of 24th Street, and are referencing them in that manner.

Your correspondence requested further information on and documentation of properties within the project Area of Potential Effects (APE). The following items respond to your original correspondence requesting additional information:

1. As per your request for better photos of 2100 23rd Street, 2404 Beech Street, 2400 Cedar Street, 2310 Elm Street, and 2300 Pine Street, a new series of photographs has been taken to show the various sides of these properties. The properties in question are assumed to be eligible for the National Register of Historic Places as contributors to a potential historic district located on the south side and including 24th Street. Caltrans is assuming the presence of this historic district for

"Caltrans improves mobility across California"

Mr. Milford Donaldson
December 14, 2011
Page 2

the purposes of this Section 106 undertaking only. Revised DPR 523 forms that include additional photos are attached to this letter (Attachment1).

2. Your request for additional photos of the 2230 B Street property has been addressed and the revised DPR 523 form for this property. This form with additional photos is attached to this letter (Attachment 2).

3. Additional photos of the various sides of 2000 24th Street have been added to the DPR 523 for the property. Photo number 5a shows the west rear addition to the building that was added in the 1990s. However, this addition does not deviate from the original design of the building. The west rear of the building is not a significant design element of the building as a whole, thus the addition extended and amplified the character of the building but did not change it. This information is covered in the DPR 523 form for this property (Attachment 3).

4. With regard to the property at 2219 D. Street, it is assumed eligible for the National Register of Historic Places as a contributor to a potential historic district located on 24th Street and to the south. Although it is not known at this time which architect or builder built this house, one of its early residents was the master architect, Charles Biggar, who owned it during the early part of his illustrious career.

5a The property at 2327 Cedar Street is significant, not only because it was owned by two of Bakersfield's highly regarded residents in different generations but because the house was designed and constructed by a master craftsmen. Builder Alva Hackney was responsible for the construction of the house. It was built after the design of Master Architect Clarence Cullimore, Sr., who was well known for his architectural designs in Southern California. Supporting documentation regarding this property is provided in the form of an updated DPR 523 form (Attachment 4).

5b. The property at 2323 E Street was designed by the firm of Metcalf, Parsons, and Wright about 1952 and served as the firm's office during the 1950s and part of the 1960s. The three architects were held in high esteem in Bakersfield and were responsible for the design of many of the city's new schools after the 1952 earthquake and its aftershocks damaged most of the schools in the area. This is an eligible property via Criterion B, as described in the attached revised DPR 523 form (Attachment 5).

6. The property at 2413 Spruce Street has not been altered since the period of significance other than a simple shed-roof awning in the rear of the house. This awning has no negative affect on the property's integrity and is a reversible addition (Attachment 6).

7. Per our consultation with SHPO on December 8, 2011, neither the HPSR submittal nor this letter need contain exhibits depicting boundaries for any potential historic district(s) Caltrans is assuming to be present in the APE, nor is your Office requesting individual DPR 523 forms be submitted for any potential historic district(s) that may lie within or immediately adjacent to the APE for the proposed undertaking. Properties evaluated and assumed eligible for the National Register of Historic Places as contributors to either of the potential historic districts is done for the purposes of this federal undertaking only.

Mr. Milford Donaldson
December 14, 2011
Page 3

Pursuant to Stipulation VIII.C.5 of the PA, Caltrans is requesting your concurrence that the following properties are assumed to be contributors to two potential historic districts for the purpose of this undertaking only. Only the contributing properties within the currently defined APE for the undertaking are listed in this table.

Map Reference #	Address	OHP Status Code	Potential Historic District North of 24th St	Potential Historic District South of 24th St.
2	2323 Elm Street	3D		X
3	2301 Elm Street	3D/5S3		X
4	2330 Elm Street	3D		X
5	2320 Elm Street	3D		X
6	2310 Elm Street	3D		X
7	2300 Elm Street	3D		X
8	2331 Beech Street	3D		X
9	2317 Beech Street	3D		X
11	2307 Myrtle Street	3D		X
14	2307 Spruce Street	3D/5S3		X
15	2312 Spruce Street	3D/5S3		X
16	2308 Spruce Street	3D		X
17	2307 Pine Street	3D		X
19*	2327 Cedar Street	3D/3S		X
20	2307 Cedar Street	3D/5S3		X
21	2401 Beech Street	3D	X	
22	2404 Beech Street	3D	X	
23	2400 Beech Street	3D	X	
24	2411 Myrtle Street	3D	X	
26	2408 Myrtle Street	3D	X	
28	2413 Spruce Street	3D	X	
29	2418 Spruce Street	3D	X	
31	2401 Pine Street	3D	X	
32	2412 Pine Street	3D	X	
33	2401 Cedar Street	3D	X	
34	2412 Cedar Street	3D	X	
36	2400 Cedar Street	3D	X	
37	2409 Alder Street	3D	X	
38	2405 Alder Street	3D/5S3	X	
41	2413 Bay Street	3D	X	
42	2409 Bay Street	3D	X	
49	2328 Cedar Street	3D/5S3		X
50	2320 Cedar Street	3D/5S3		X
52	2330 A Street	3D		X
53	2316 A Street	3D/5S3		X
55	2311 B Street	3D/5S3		X
56	2231 B Street	3D/5S3		X
57	2330 B Street	3D/5S3		X
58	2318 B Street	3D/5S3		X
59	2310 B Street	3D/5S3		X
60	2304 B Street`	3D/5S3		X
61	2230 B Street	3D/5S3		X
62	2315 C Street	3D		X
64	2223 C Street	3D		X
66	2100 23rd Street	3D/3S		X
68	2300 D Street	3D/4S		X
69	2210 D Street	3D/3S		X
70	2323 E Street	3D/3S		X

Mr. Milford Donaldson
December 14, 2011
Page 4

We look forward to receiving your concurrence on these determinations as discussed in our December 8, 2011 meeting. We will continue consulting with you on the assessment of effects in accordance with the PA.

If you require further information, please do not hesitate to contact Bryan Apper via telephone (559-445-6461) or by email at bryan_apper@dot.ca.gov). Thank you for your assistance with Section 106 compliance for this undertaking.

Sincerely,

Christine Cox-Kovacevich, Chief
Central Region Environmental Division

Attachments

BAKERSFIELD

PUBLIC WORKS DEPARTMENT
1600 TRUXTUN AVENUE
BAKERSFIELD, CA 93301
(661) 326-3724

RAUL M. ROJAS, DIRECTOR • CITY ENGINEER

November 28, 2011

Mr. Milford Wayne Donaldson, FAIA, LEED AP
State Historic Preservation Officer (SHPO)
Office of Historic Preservation
Department of Parks and Recreation
1725 23rd Street, Suite 100
Sacramento, CA 95816-7100

Re: Recent SHPO Correspondence regarding the Potential Westchester and Western Addition Historic Districts along 24th Street from Elm to D Streets Bakersfield, California

Dear Mr. Donaldson:

The City of Bakersfield (City) recently became aware of the California Department of Transportation's (Caltrans) District 6 response to SHPO's letter of August 10, 2011 regarding the 24th Street Project (FHWA110111B). The City is the lead agency for the California Environmental Quality Act (CEQA) and Caltrans is the lead agency for the National Environmental Policy Act (NEPA) for the Project. Caltrans' response to SHPO included additional information for properties within the project's Area of Potential Effects (APE). In addition, District Record forms were prepared for the potential Westchester Historic District located north of 24th Street, and for the potential Western Addition Historic District located south of 24th Street. Additional context information beyond what was originally provided for the potentially eligible Western Addition Historic District was also included in the new District Record.

The City and the City's consultants have never concurred with Caltrans' determination regarding the significance of the potential Westchester Historic District area. The housing in this area is well-maintained and there may be a few individual properties that could separately qualify; but it appears to our non-expert (historically speaking) City staff that the residences are primarily common post World War II era residences found throughout many areas of Bakersfield and together are not worthy of historical district status. But to keep the 24th Street Project from coming to a complete halt, the City acquiesced to Caltrans on this and the potential Westchester District was submitted.

On November 11, 2011 Caltrans submitted the response to SHPO's August 11, 2011 letter. That response significantly expanded the area for the potential Western Addition Historic District from that originally proposed in the Historic Property Survey Report (HPSR) submitted to your office in February 2011. This original area had been sized at 69 acres

and had been the premise for project studies and reviews that have taken place over the past several years. Caltrans is now proposing to increase the size of this potential district to an area of over 203 acres.

Further, City ordinance identifies the process by which a historic district is created within the City and requires a vote of both the residents and the council. City staff strongly believe that neither the residents nor the City Council have any intention of pursuing a district in this area at the local level. And the City has recently understood that there are potential future implications with even just the determination (because of this road widening project) that these areas could potentially be historic districts, and that the designation could complicate what the City under CEQA could do within these potential historic districts.

Caltrans staff has stated that the City may submit a comment to SHPO regarding their recent submittal, and so on behalf of the City I must submit our comments objecting to:

1. The new boundary for the proposed Western Addition Historical District. Neither the City nor our consultants were contacted by or participated in any discussions with Caltrans regarding the development of the increased size and extent of the Western Addition Historic District, and the new size of this district seems unreasonable.

2. The creation of the Westchester Historic District. It does not appear to the City that this neighborhood contains unique residences or neighborhoods that would qualify it as historic.

The City received updated DPR forms on November 14, 2011. And while there was an understanding that the potential Western Addition District was getting larger, the actual historic district boundary maps were not received from Caltrans by the City until after the Caltrans response had already been submitted to SHPO. Increasing the potential District's size by almost three-fold from what was shown in the original HPSR does not seem reasonable to the City, and based on your letter of August 11th it does not appear to be something SHPO was requesting.

The City requests a meeting with you or your staff and possibly a representative from Caltrans to consult on these potential historic districts. Please contact me at your convenience to arrange a meeting. Thank you for your consideration.

Sincerely,

Raul Rojas
Public Works Director
City of Bakersfield

Encl.

Cc: Sharri Bender Ehlert, Interim Director, Caltrans District 6

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
855 M Street, Suite 200
Fresno, CA 93721
PHONE (559) 445-6479
FAX (559) 445-6236
TTY (559) 488-4066

Flex your power!
Be energy efficient!

December 23, 2011

Milford Wayne Donaldson, FAIA, LEED AP
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

FHWA110111B
Expenditure Authorizations:
06-49390 and 06-48470

Subject: Response to Request for Additional Information for the 24th Street Improvement Project -Attachment Submittal

Dear Mr. Donaldson

Thank you for allowing us to consult with you further regarding your letter and comments of August 10, 2011. Please find enclosed with this letter attachments that correspond with the response letter dated December 14, 2011provided by Christine Cox-Kovacevish, Chief of the Central Region Environmental Division, regarding additional information for the 24th Street Improvement Project. Included are revised HRER pages (7) to be inserted within the original HRER document along with updated Department of Parks and Recreation (DPR) 523 Forms (48) to be substituted with those found in Section IX of the HRER.

If you require further information, please do not hesitate to contact Juan Torres via telephone (559-445-6479) or email (juan_torres@dot.ca.gov). Thank you for your assistance with Section 106 compliance for this undertaking.

Sincerely,

JUAN TORRES, Associate Environmental Planner
Central Region Environmental Division

Attachments

"Caltrans improves mobility across California"

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

January 23, 2012 Reply To: FHWA110111B

Christine Cox-Kovacevich, Chief
Central Region Environmental Division
Department of Transportation
855 M Street, Suite 200
Fresno, CA 93721

Re: Determinations of Eligibility for the 24th Street Improvement Project, Bakersfield, CA

Dear Ms. Cox-Kovacevich:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has determined that the properties listed in the chart of page 3 of your letter of December 14, 2011 are eligible for the National Register of Historic Places (NRHP), for the purposes of this project, as contributors to two potential historic districts that have not as yet been properly documented. I concur. Please note that I am not making a determination at this time on the individual eligibility of any of these properties as Caltrans did not request it. In the interests of expediting the project I would recommend that Caltrans move forward since these properties are already being considered eligible for the NRHP.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 6
855 M STREET, SUITE 200
FRESNO, CA 93721-2716
PHONE (559) 445-5793
FAX (559) 445-6236

Flex your power!
Be energy efficient!

January 30, 2012

Milford Wayne Donaldson, FAIA, LEED AP
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

FHWA110111B
Expenditure Authorizations:
06-49390 and 06-48470

Subject: Response to Request for Additional Information for the 24th Street Improvement Project -Attachment Submittal

Dear Mr. Donaldson

The California Department of Transportation (Caltrans), under the authority of the Federal Highway Administration (FHWA), is continuing consultation with the State Historic Preservation Officer (SHPO) regarding additional information for the 24th Street Improvement Project. This consultation is undertaken in accordance with the January 1, 2004 *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation* (PA).

In your letter dated January 23, 2010 your office concurred with the National Register eligibility of 48 properties identified as contributors to two potential historic districts that have not as yet been property documented. As a part technical documents associated with this project, i.e. the Historic Resources Evaluation Report and corresponding DPR 523 forms, five of these properties were identified as individually eligible properties as well as contributors to the said potential districts.

In an effort to prevent any ambiguity and/or inconsistency, Caltrans, as assigned by FHWA, and pursuant to Stipulation VIII.C.5 of the Section 106 PA, is now requesting your concurrence regarding the individual eligibility of the following five properties:

- 2327 Cedar Street (Map Reference # 19- see Attachment 1)
- 2100 23rd Street (Map Reference # 66- see Attachment 2)
- 2300 D Street (Map Reference # 68- see Attachment 3)
- 2210 D Street (Map Reference # 69- see Attachment 4)
- 2323 E Street (Map Reference # 70- see Attachment 5)

Per your response letter dated August 10, 2011 your office requested additional information regarding three of the five individual properties. The following items respond to your correspondence requesting additional information for these individual properties:

"Caltrans improves mobility across California"

- In regards to your request for additional contextual information for the property at 2327 Cedar Street, the property was found significant not only because it was owned by two of Bakersfield's highly regarded residents in different generations, but also because the house was designed and constructed by a master craftsman. Builder Alva Hackney was responsible for the construction of the house. It was built after the design of Master Architect Clarence Cullimore, Sr., who was well known for his architectural designs in Southern California. Supporting documentation regarding this property is provided in the form of an updated DPR 523 form (Attachment 1).

- As per your request for better photos of 2100 23rd Street, a new series of photographs has been taken to show the various sides of these properties. A revised DPR 523 form including these additional photos is attached to this letter (Attachment 2)

- In regards to your request for additional contextual information for the property at 2323 E Street, the property was designed by the firm of Metcalf, Parsons, and Wright circa 1952 and served as the firm's office during the 1950s and part of the 1960s. The three architects were held in high esteem in Bakersfield and were responsible for the design of many of the city's new schools after the 1952 earthquake and its aftershocks damaged most of the schools in the area. This is an eligible property via Criterion B, as described in the attached revised DPR 523 form (Attachment 5).

Thank you for allowing us to consult with you further regarding this project. Please find enclosed with this letter Attachments 1 through 5 that correspond with the five individual properties Caltrans is currently seeking concurrence on.

If you require further information, please do not hesitate to contact Jeanne Binning via telephone (559-445-5793) or email (jeanne_binning@dot.ca.gov). Thank you for your assistance with Section 106 compliance for this undertaking.

Sincerely,

Jeanne Binning, Ph. D
Branch Chief, Central California Cultural Resources Branch

Attachments

Philip Vallejo/D06/Caltrans/CAGov
04/16/2012 05:18 PM

To Juan Torres/D06/Caltrans/CAGov@DOT
cc
bcc
Subject Email message to Natalie Lindquist

----- Forwarded by Philip Vallejo/D06/Caltrans/CAGov on 04/16/2012 05:16 PM -----

Philip Vallejo/D06/Caltrans/CAGov
01/31/2012 11:21 AM

To nlindquist@parks.ca.gov
cc Jeanne Binning/D06/Caltrans/CAGov@DOT, Todd Jaffke/D04/Caltrans/CAGov@DOT, Christine Cox/D06/Caltrans/CAGov@DOT, Bryan Apper/D06/Caltrans/CAGov@DOT, Juan Torres/D06/Caltrans/CAGov@DOT
Subject

Hi Natalie,

Caltrans is withdrawing the request for concurrence of eligibility for the five individual properties associated with the 24th Street Improvement project in Bakersfield (2327 Cedar Street, 2100 23rd Street, 2300 D Street, 2210 D Street, and 2323 E Street) . Please disregard yesterdays correspondence. Per Section VIII C5 of the PA, Caltrans has determined that consultation has exceeded the 30-day review period and will move forward and assume eligibility for the five properties. Again please disregard yesterdays submitted request for concurrence. I apologize for any inconvenience this may have caused. If you have any questions please feel free to contact me or Jeanne Binning at jeanne_binning@dot.ca.gov (phone 559 445-5793).

Thanks and again sorry for the inconvenience,

Philip Vallejo
Associate Environmental Planner
PQS: Principal Architectural Historian
California Department of Transportation, D06
855 M Street, Suite 200
Fresno, CA 93721

Thomas Roads Improvement Program

900 Truxtun Avenue, Suite 200, Bakersfield, California 93301
Telephone: (661) 326-3700 • Fax: (661) 852-2195

Mr. Milford Wayne Donaldson, FAIA, LEED AP
State Historic Preservation Officer, Office of Historic Preservation
Department of Parks and Recreation
1725 23rd Street, Suite 100
Sacramento, California 95816

January 27, 2012

Dear Mr. Donaldson:

Thank you for returning the signed agreement for augmenting your staff resources to provide enhanced services to the City of Bakersfield as part of the Thomas Roads Improvement Program (TRIP). We look forward to meeting with your staff next week, on Tuesday, January 31, to discuss the functional aspects of putting the agreement into operation.

We also wanted to express our thanks and appreciation to your staff for your concurrence letter of January 23, 2012 regarding the 24th Street Improvement Project in Bakersfield. In a meeting we held back on December 8, with Caltrans also in attendance, Ms. Natalie Lindquist offered many valuable suggestions for the Historic Property Survey Report so that we might keep the project moving forward to help meet the tight environmental approval schedule.

We also wanted to confirm with your staff that we correctly interpreted an item of brief discussion back at the meeting in December. As we understand, for any undertaking that is reviewed as part of the Section 106 compliance process, and for which a yet to be fully determined or documented historic district is identified as the historic property type , that the SHPO concurrence with the federal agency's finding does not automatically make any potential contributors to that same historic property that are located outside the project's Area of Potential Effect (APE) historic resources for purposes of the California Environmental Quality Act (CEQA). In addition, for any DPR 523 evaluation forms prepared for Section 106 undertakings, even for properties that meet the criteria for National Register eligibility, statements such as, "It is also a historical resource for purposes of CEQA," are unnecessary. If we have not properly characterized the position of your Office, perhaps you could clarify our interpretation at the meeting in your offices next week.

We look forward to the opportunity of continuing to work with you on TRIP projects. Please contact me at (661) 326-3700 or via email at TWright@bakersfieldfreeways.us with any questions you might have.

Sincerely,

Theodore D. Wright
City TRIP Program Manager

cc: Raul M. Rojas
Greg King
David Clark

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

February 6, 2012 Reply To: FHWA110111B

Theodore D. Wright
City TRIP Program Manager
Thomas Roads Improvement Program
900 Truxtun Avenue, Suite 200
Bakersfield, CA 93301

Re: Clarification of CEQA Status on Section 106 Concurrence Properties

Dear Mr. Wright:

Thank you for your letter of January 27, 2012, requesting clarification of items discussed at our meeting of December 8, 2012.

During that meeting we agreed that the State Historic Preservation Officer (SHPO) would only make eligibility determinations for properties located within the area of potential effect (APE) for a project. In the case of a historic district whose boundaries extend outside of the APE, only those properties within the APE will receive SHPO comment with regards to eligibility. Those properties located outside of the APE remain indeterminate with regards to Section 106.

You are also requesting clarification with regards to DPR 523 forms submitted for Section 106 purposes and whether or not the CEQA status of a property need be discussed. From my perspective I am only reviewing these projects under Section 106 unless otherwise requested from the agency. As a result I do not require a CEQA status be included on the submitted DPR 523 forms.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Appendix E Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. Box 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711

Flex your power!
Be energy efficient!

July 20, 2010

TITLE VI
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Charles Wahnon, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353 or toll free 1-866-810-6346 (voice), TTY 711, fax (916) 324-1869, or via email: charles_wahnon@dot.ca.gov.

CINDY McKIM
Director

"Caltrans improves mobility across California"

Appendix F Summary of Relocation Benefits

The City of Bakerfield and the County of Kern will be the agencies responsible for acquiring the necessary right-of-way for the project. These agencies will follow the same process that Caltrans uses, which is outlined in the California Department of Transportation Relocation Assistance Program, provided below.

California Department of Transportation Relocation Assistance Program

The California Department of Transportation (Caltrans) would provide relocation advisory assistance to any person, business, farm, or non-profit organization displaced as a result of Caltrans' acquisition of real property for public use. Caltrans would assist residential displacees in obtaining comparable decent, safe, and sanitary replacement housing by providing current and continuing information on sales price and rental rates of available housing. Non-residential displacees would receive information on comparable properties for lease or purchase.

Residential replacement dwellings would be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, displacees would be offered comparable replacement dwellings that are open to all persons regardless of race, color, religion, sex, or national origin, and are consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance would also include supplying information concerning federal- and State-assisted housing programs, and any other known services being offered by public and private agencies in the area.

Declaration of Policy

"The purpose of this title is to establish a uniform policy for fair and equitable treatment of persons displaced as a result of federal and federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole."

The Fifth Amendment to the United States Constitution states, "No Person shall…be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation." The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide

single rule for all agencies to follow, set forth in 49 Code of Federal Regulations, Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

Fair Housing

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This Act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized, and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the State's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations, and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Caltrans relocation advisor.

Relocation Assistance Advisory Services

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, Caltrans will provide relocation advisory assistance to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. Caltrans will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for sale and rental units that are "decent, safe and sanitary." Nonresidential displacees will receive information on comparable properties for lease or purchase (For business, farm and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning Federal and State assisted housing programs, and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe and sanitary" replacement dwelling, available on the market, is offered to them by Caltrans.

Residential Relocation Payments

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until the Department obtains control of the property in order to be eligible for relocation payments.

Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 180 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. The maximum combination of these three supplemental payments that the owner-occupant can receive is $22,500. If the total entitlement (without the moving payments) is in excess of $22,500, the Last Resort Housing Program will be used (see the explanation of the Last Resort Housing Program below).

Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by Caltrans prior to the date of the initiation of negotiations may qualify to receive a rent differential payment. This payment is made when Caltrans determines that the cost to rent a comparable "decent, safe and sanitary" replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the Down Payment section below. The maximum amount payable to any eligible tenant and any owner-occupant of less than 180 days, in addition to moving expenses, is $5,250. If the total entitlement for rent supplement exceeds $5,250, the Last Resort Housing Program will be used.

In order to receive any relocation benefits, the displaced person must buy or rent and occupy a "decent, safe and sanitary" replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner-occupants of less than 180 days and tenants in legal occupancy prior to Caltrans' initiation of negotiations. The down payment and incidental expenses cannot exceed the maximum payment of $5,250. The one-year eligibility period in which to purchase and occupy a "decent, safe and sanitary" replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 Code of Federal Regulations 24) contain the policy and procedure for implementing the Last Resort Housing Program on federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been deigned primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the $22,500 and $5,250 limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

For more information or a brochure on the residential relocation program, please contact Luis Topete, City of Bakersfield, at (661) 326-3700.

The brochure on the residential relocation program is also available in English at http://www.dot.ca.gov/hq/row/pubs/residential_english.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/residential_spanish.pdf.

If you own or rent a mobile home that may be moved or acquired by Caltrans, a relocation brochure is available in English at http://www.dot.ca.gov/hq/row/pubs/mobile_eng.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/mobile_sp.pdf.

After the initiation of negotiations, Caltrans will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced
- Specific arrangements needed to accommodate any family member(s) with special needs
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family
- Preferences in area of relocation
- Location of employment or school

Nonresidential Relocation Assistance

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms, and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent,

suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms, and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching, and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment, and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the Right of Way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is not permitted to move.
- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred.

Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to $10,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses which meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than $1,000 nor more than $20,000.

Additional Information

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, *except* for any Federal law providing local "Section 8" Housing Programs.

Any person, business, farm, or nonprofit organization which has been refused a relocation payment by the Caltrans relocation advisor or believes that the payment(s)

offered by the agency are inadequate, may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a pubic project. A list of ineligible expenses can be obtained from Caltrans Right of Way. California's law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Business and Farm Relocation Assistance Program

For more information or a brochure on the relocation of a business or farm, please contact Luis Topete, City of Bakersfield, at (661) 326-3700.

The brochure on the business relocation program is also available in English at http://www.dot.ca.gov/hq/row/pubs/business_farm.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/business_sp.pdf.

Additional Information

No relocation payment received would be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law (except for any federal law providing low-income housing assistance).

Persons who are eligible for relocation payments and who are legally occupying the property required for the project would not be asked to move without being given at least 90 days advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments would not be required to move unless at least one comparable "decent, safe, and sanitary" replacement residence, open to all persons regardless of race, color, religion, sex, or national origin, is available or has been made available to them by the State.

Any person, business, farm, or non-profit organization, which has been refused a relocation payment by Caltrans, or believes that the payments are inadequate, may appeal for a hearing before a hearing officer or Caltrans' Relocation Assistance Appeals Board. No legal assistance is required; however, the displacee may choose to obtain legal counsel at his/her expense. Information about the appeal procedure is available from Caltrans' Relocation Advisors.

The information above is not intended to be a complete statement of all of Caltrans' laws and regulations. At the time of the first written offer to purchase, owner-occupants are given a more detailed explanation of the State's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and also given a more detailed explanation of Caltrans' relocation programs.

Important Notice

To avoid loss of possible benefits, no individual, family, business, farm, or non-profit organization should commit to purchase or rent a replacement property without first contacting a Department of Transportation relocation advisor at:

State of California
Department of Transportation, District 6
2015 E. Shields Avenue, Suite 100
Fresno, CA 93726

Appendix G Minimization and/or Mitigation Summary

This appendix summarizes the avoidance, minimization and/or mitigation measures for the project. Table G.1 lists avoidance and minimization measures that are typically followed during project construction, and Table G.2 lists mitigation measures that are above and beyond standard construction contract requirements. Mitigation measures are provided for relocations (land use), visual, cultural resources, paleontological resources, noise, natural communities, animal species, and threatened and endangered species.

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
2.1.1.2 Parks and Recreation	LU-1	When temporary closures of the Kern River Parkway Bike Trail are necessary to accommodate construction on the 24th Street bridge from under the bridge, trail users shall be stopped north and south of the closure by flag persons and directed to a temporary detour route. Trail users shall be provided maps showing the detour route and shall be provided information on the anticipated length of time each closure will be in effect. The detour for southbound bicyclists shall begin at the cul-de-sac at the north end of Oak Street, north of 24th Street, and then travel southbound, cross 24th Street, and turn west onto 21st Street. Bicyclists shall then travel through Beach Park and reconnect with the Kern River Parkway Bike Trail using the existing paved path from Beach Park. The detour for northbound bicyclists shall be opposite the detour for southbound bicyclists, beginning at the existing paved path from the bike trail to Beach Park and ending at the Oak Street cul-de-sac.
	LU-2	Land affected by the Temporary Construction Easements within Beach Park and the Kern River Parkway Bike Trail shall be restored to its existing or better condition at the completion of the construction of Alternatives 1 or 2 in those areas.
2.1.3 Utilities	U-1	Notice shall be given to owners of utility companies before the relocation of any utilities, and an encroachment permit shall be obtained for relocated utilities.
	U-2	During construction, the City shall be required to coordinate in advance of all temporary street or lane closures and detour plans with fire, emergency, medical, and law enforcement providers to minimize temporary delays in emergency services response times.
	U-3	Per Caltrans Deputy Directive 60-R1 (September 2007), a Transportation Management Plan shall be prepared in consultation with the City and with all emergency service providers within the project study area.

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
2.1.5 Visual/Aesthetics	V-1	The project must include landscaping that is compatible with the existing landscaping of the project area. Landscaping must include specimen-sized trees (24-inch box or greater) where feasible and shrub/mass planting to soften the hardscape features. Areas of vegetation buffer must not conflict with applicable safety-related standards and regulations pertaining to roadway line-of-sight or landscape worker safety. Landscaping must include, to the extent feasible, the following measures: • Landscaping species should be well suited for the local climate, humidity, soil types, and local wind conditions. • Selected species should share similar water requirements. • Appropriate plant spacing should be allowed to avoid overcrowding. • Landscape concepts should include zoning areas of high, medium, and low water use to meet the needs for water usage and achieve efficiency. • Mulches, gravels (or other inert materials), and drip (or other nonspray irrigation) should be implemented. • Irrigation equipment should be to maximize maintenance worker safety.
	V-2	To enhance the pedestrian experience along 24th Street, provide a sense of security, and increase the visual intactness, a vegetation buffer must, where feasible, be installed between 24th Street and sidewalks along the northern and southern sides of the roadway. Trees, where feasible, must also be included within and along 24th Street. Areas of the vegetation buffer must not conflict with applicable safety-related standards and regulations pertaining to roadway line-of-sight.
	V-3	The City must review and approve the use of project lighting types, plans, and placement to minimize light and glare impacts on surrounding sensitive uses.

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
2.1.6 Cultural	CR-1	If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area shall be diverted until a qualified archaeologist or historian can assess the nature and significance of the find. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.
	CR-2	If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner shall notify the Native American Heritage Commission, which shall then notify the Most Likely Descendant. The City's Resident Engineer shall contact the City and the District 6 Environmental Branch Chief and/or Cultural Studies Staff so that they may work with the Most Likely Descendant on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 shall be followed as applicable.
2.2.1 Water Quality and Storm Water Runoff	WQ-1	The proposed project shall develop and implement a Storm Water Pollution Prevention Plan and Erosion and Sedimentation Plan. The proposed project shall implement temporary erosion and sediment control best management practices during construction and implement the requirements of the statewide General Construction permit. Temporary best management practices such as desilting basins, erosion control blankets, and other minimum construction best management practices shall be implemented consistent with the Storm Water Pollution Prevention Plan and Erosion and Sedimentation Plan. In addition, the Storm Water Pollution Prevention Plan shall contain provisions for changes to the plan such as Alternative mechanisms, if necessary, during project design and/or construction could be used to achieve the stated goals and performance standards.
	WQ-2	The proposed project shall develop and implement a Standard Urban Storm Water Management Plan and Storm Water Data Report. The proposed project shall be designed to include treatment control best management practice devices such as detention devices, vegetated treatment, and other Caltrans-approved devices per the Storm Water Data Report. Treatment control best management practices shall capture and treat storm water

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
		runoff from the project and treat the anticipated targeted design constituents (pollutants) to the maximum extent practicable.
	WQ-3	Construction of the extended culvert under 24th Street at Carrier Canal shall require dry conditions to permit construction in the canal. A temporary diversion conduit shall be built next to Carrier Canal to divert flows during construction of the culvert extension. The diversion conduit shall be operational for about three months. Flows shall be redirected to the extended culvert underneath 24th Street following completion of construction activities.
	WQ-4	A floodplain encroachment permit shall be obtained from the Central Valley Flood Protection Board for construction activities along the Kern River bridge within 20 feet of the river banks.
Geology/Soils/Seismic/Topography	GEO-1	Final design and construction shall comply with the Caltrans Seismic Design Criteria and address potential impacts associated with ground shaking, liquefaction, and seismically induced settlement.
	GEO-2	The project shall implement safe construction practices and comply with the Caltrans and California Division of Occupational Safety and Health Administration requirements.
2.2.3 Hazardous Waste or Materials	HAZ-1	Before construction, a site-specific Health and Safety Plan consistent with Caltrans requirements, including identification of key personnel, summary of risk assessment for workers, the community, and the environment, Air Monitoring Plan, and Emergency Response Plan, shall be prepared.
	HAZ-2	Asbestos, lead-based paint, and polychlorinated biphenyl surveys shall be conducted by a certified consultant for any building structures that would be renovated or demolished as part of the proposed project. Surveys for asbestos, lead-based paint, and polychlorinated biphenyl surveys of building structures shall be conducted during preparation of project construction plans and when access to parcels outside the existing right-of-way is available. Estimates during the Plans, Specifications, and Estimates phase of the proposed project shall include provisions for proper removal and disposal by a licensed contractor registered with the California Occupational Safety and Health Administration for asbestos-related work, or by a licensed and certified asbestos abatement contractor.

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
	HAZ-3	During final design, all utility pole-mounted and pad-mounted transformers in the study area shall be inspected for leaks. Leaking transformers shall be considered a potential polychlorinated biphenyl hazard unless tested and shall be handled accordingly.
	HAZ-4	Removal of yellow paint striping on the 24th Street bridge over the Kern River during construction shall require transport and disposal to a Class 1 landfill. Depending on the method of removal, appropriate Standard Special Provisions shall be provided regarding handling, transport, and disposal of traffic stripe/pavement marking-generated waste.
	HAZ-5	Special handling, treatment, or disposal of aerially deposited lead in soils during construction activities shall be consistent with the Department of Toxic Substance Control Lead Variance (No. V09HQSCD006) dated July 1, 2009.
	HAZ-6	All wooden utility poles that are to be removed or relocated as part of the proposed project, as well as those soils at the bases of these utility poles (unless documentation from the utility company indicates that creosote was not used), shall be handled for treated wood waste in accordance with Caltrans Standard Special Provision 14-010.
	HAZ-7	Before construction, the utility company shall be notified to ensure that the locations of underground transmission lines and facilities are marked. In addition, Underground Service Alert of Southern California shall be contacted at least two working days before subsurface excavation.
	HAZ-8	The procedures outlined in Caltrans Unknown Hazards Procedures for Construction shall be followed during construction in the event that an unknown hazardous contamination is revealed or unknown hazardous waste/material is encountered.
	HAZ-9	Any demolition or renovation of a building structure requires notification and submittal fees to the San Joaquin Valley Air Pollution Control District at least 10 days before proceeding with the demolition work. Contractors shall adhere to the requirements of San Joaquin Valley Air Pollution Control District during renovation/demolition activities.
	HAZ-10	When lead-impacted soils are identified, a Lead Compliance Plan shall be prepared by the contractor to prevent or minimize worker exposure to lead from handling material containing aerially-deposited lead (California Code of Regulations, Title 8, Section 1532.1).

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
		This plan shall also be required for work performed on painted structures. The contractor shall prepare a written, project-specific Excavation and Transportation Plan establishing procedures the contractor shall use for excavating, stockpiling, transporting, and placing (or disposing) of material containing aerially deposited lead. The plan must conform to Department of Toxic Substance Control and California Occupational Safety and Health Administration regulations. For samples where lead levels exceed hazardous waste criteria, the excavated soil shall be either managed or disposed of as a California hazardous waste or stockpiles and resampled to confirm waste classification and potential utilization of Caltrans' hazardous waste variance agreement to recycle soil on site. The appropriate Standard Special Provision shall be included in the Plans, Specifications, and Estimate.
2.2.4 Air Quality	AQ-1	San Joaquin Valley Air Pollution Control District Regulation VIII, Control Measures for Construction Emissions of Particulate Matter Less than 10 Microns in Size, shall be implemented at all construction sites. Per San Joaquin Valley Air Pollution Control District Regulation VIII, Rule 8021, a fugitive dust control plan shall be submitted to the Air Pollution Control Officer of the San Joaquin Valley Air Pollution Control District before the start of any onsite construction activity.
	AQ-2	The project contractors shall implement the following feasible measures: <u>*Enhanced Control Measures*</u> • Limit traffic speeds on unpaved roads to 15 miles per hour. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent. <u>*Additional Control Measures*</u> • Install wheel washers for all exiting trucks, or wash all trucks and equipment leaving the site. • Install wind breaks at the windward side(s) of construction areas. • Suspend excavation and grading activity when winds exceed 20 miles per hour.

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
		• Limit the area subject to excavation, grading, and other construction activity at any one time. *Heavy-Duty Equipment (scrapers, graders, trenchers, earthmovers, etc.) Measures* • Use alternative-fueled equipment or catalyst-equipped diesel construction equipment. • Minimize idling time (such as 5 minutes maximum). • Limit the hours of operation of heavy-duty equipment and/or the amount of equipment in use. • Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set). • Curtail construction during periods of high ambient pollutant concentrations; this may include stopping construction activity during the peak hour of vehicular traffic on adjacent roadways. • Implement activity management (such as rescheduling activities to reduce short-term impacts).
	AQ-3	All trucks that are to haul excavated or graded materials onsite shall comply with California Vehicle Code Section 23114, with special attention to Sections 23114(b)(F), (e)(2), and (e)(4) as amended, regarding the prevention of such materials from spilling onto public streets and roads.
	AQ-4	The contractor shall adhere to the Caltrans Standard Specifications for Construction (Sections 10 and 18, Dust Control; and Section 39-3.06, Asphalt Concrete Plant Emissions).
	AQ-5	Before applying for a final discretionary approval, the City of Bakersfield shall comply with the San Joaquin Valley Air Pollution Control District Regulation IX, Mobile and Indirect Sources, Rule 9510, Indirect Source Review, and submit an Air Impact Assessment to the San Joaquin Valley Air Pollution Control District.

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
2.2.5 Noise	NOI-1	To minimize construction noise impacts on sensitive land uses adjacent to the project study area, construction noise is regulated by the Caltrans Standard Specifications in Section 148.02, "Noise Control," and also by Standard Special Provision S5-310, "Noise Control." Noise control shall conform to the provisions in Section 14-8.02 and Standard Special Provision S5-310.
	NOI-2	If nighttime construction is necessary, the noise level from the contractor's operation, between the hours of 9:00 p.m. and 6:00 a.m. shall not exceed 86 dBA at a distance of 50 feet.
	NOI-3	The contractor shall use an alternative warning method instead of a sound signal unless required by safety laws.
	NOI-4	The contractor shall equip all internal combustion engines with the manufacturer-recommended muffler and shall not operate any internal combustion engine on the jobsite without the appropriate muffler.
2.2.6 Energy	E-1	The proposed project shall incorporate the use of energy-efficient lighting such as light-emitting diode traffic signals to the extent feasible.
	E-2	Before starting grading activities, the City shall ensure that construction documents require the contractor to select the construction equipment used on site based on low-emissions factors and high energy efficiency. Before starting grading activities, the City shall verify that the grading plans include a statement that the construction contractor shall ensure that all construction equipment is tuned and maintained in accordance with manufacturer specifications.
	E-3	Before issuing a Notice to Proceed, the City shall verify that construction contracts and/or grading plans include a statement that the construction contractor shall support and encourage ride-sharing and transit incentives for the construction crew.
	E-4	To the extent feasible and to the satisfaction of the City, the following measures shall be incorporated into the design and construction of the proposed project:

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
		• Reuse and recycle construction waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard). • Provide adequate recycling containers in public areas.
2.3.1 Natural Communities	NC-1	A biological monitor shall be onsite during construction activities within the Kern River riverbed on an as-needed basis to assist the contractor in complying with the project minimization measures and to provide guidance in avoiding and/or minimizing impacts to biological resources.
	NC-2	A biologist shall monitor construction within the vicinity of sycamore/willow woodland areas within the Kern River riverbed, as needed, for the duration of the project to flush any wildlife species present before construction and to ensure that vegetation removal, best management practices, environmentally sensitive area avoidance, and all other avoidance and minimization measures are properly observed and implemented.
	NC-3	Highly visible barriers (such as orange construction fencing) shall be installed around the sycamore/willow woodland habitat adjacent to the proposed project footprint to designate this environmentally sensitive area to be preserved. No grading or fill activity of any type shall be permitted within this environmentally sensitive area. In addition, no construction activities, materials, or equipment shall be allowed within the environmentally sensitive area. All construction equipment should be operated in such a manner as to prevent accidental damage to this environmentally sensitive area. No structure of any kind, or incidental storage of equipment or supplies, shall be allowed within this protected zone. Silt fence barriers shall be installed at the environmentally sensitive area boundaries to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.
	NC-4	Any native vegetation removal or tree (native or exotic) trimming activities shall occur outside of the nesting bird season (February 15–August 31). In the event that vegetation clearing is necessary during the nesting season, a qualified biologist shall conduct a preconstruction survey to identify the locations of nests.

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
	NC-5	All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities shall occur in developed or designated nonsensitive habitat areas outside of the Kern River bed. The designated upland areas shall be in such a manner as to prevent any spill runoff from entering waters of the United States.
	NC-6	A weed abatement program shall be developed to minimize the importation of nonnative plant material during and after construction. Eradication strategies shall be employed should an invasion occur.
	NC-7	During the night, the wildlife corridor shall be kept clear of all equipment that could potentially serve as barriers to wildlife passage. All equipment storage shall occur in designated areas outside of the Kern River.
	NC-8	Before grading and/or construction activity involving the disturbance of any native vegetation, the City shall install fencing, flagging, lathe and rope, or other devices to delineate the maximum disturbance limits acceptable to and under the supervision of a qualified biologist.
	NC-9	Equipment maintenance, lighting, and staging shall be in designated areas and directed away from the wildlife corridor, and it shall be limited in duration. Construction work shall not be conducted at night adjacent to the wildlife corridor to the extent feasible. However, if work must be done at night, noise and lighting shall be directed away from the wildlife corridor. All nighttime work adjacent to the wildlife corridor shall be coordinated with the City and a qualified biologist.
2.3.2 Wetlands and Other Waters	W-1	Before construction at Carrier Canal, a permit shall be obtained through the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act, if necessary.
	W-2	Before construction on the 24th Street Bridge over the Kern River, an agreement shall be obtained from the California Department of Fish and Game pursuant to Section 1602 of the Fish and Game Code.
	W-3	Before construction, a permit shall be obtained from the Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act. Coordination with the Regional Water Quality Control Board shall be required to obtain a Water Quality Certification.

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
2.3.3 Animal Species	**Burrowing Owl**	
	AS-1	A preconstruction survey shall be conducted at the Kern River banks and the detention basin in the southeast quadrant of the Oak Street/24th Street intersection before starting construction activities to determine the presence of burrowing owl onsite.
	Special-Status Bridge and Crevice-Dwelling Animal Species	
	AS-4	A qualified bat biologist shall survey the project study area in June, before construction, to assess the potential for maternity roosting, since maternity roosts are generally formed in late spring.
	AS-5	To avoid direct mortality to bats roosting in areas subject to impacts from construction activities between December 1 and October 31, any structure with potential bat habitat affected by the construction shall have temporary bat exclusion devices installed under the supervision of a qualified bat biologist before construction activities begin. Exclusion shall be conducted during the fall (September or October) to avoid trapping flightless young inside during the summer months or hibernating individuals during the winter. Such exclusion efforts shall be continued to keep the structures free of bats until the completion of construction. Replacement roosting habitat may also be needed to minimize effects to excluded bats. All bat exclusion techniques shall be coordinated among the City, Caltrans, a qualified bat biologist, and the resource agencies.
	AS-6	A qualified bat biologist shall perform an inspection of exclusionary devices before construction to determine success. Coordination between the City, Caltrans, and the resource agencies shall be conducted by a qualified bat biologist should any alterations need to be made.
	AS-7	All construction work on the 24th Street Bridge over the Kern River shall be limited to the daytime hours to the maximum extent feasible. If nighttime construction is necessary for work conducted on the bridge, impacts shall be minimized by directing lighting and noise away from night roosting areas as much as possible.
	AS-8	To prevent project impacts to bridge- and crevice-dwelling birds (e.g., swallows), all work on existing bridges with potential bird habitat that would be affected by construction shall

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
		include removal of all bird nests before construction under the guidance and observation of a qualified biologist before February 1 of that year, before the bird nesting season. Removal of nests that are under construction must be repeated as frequently as necessary to prevent nest completion or until nest exclusionary devices (such as netting or a similar mechanism that keeps birds from building nests) are installed. Nest removal and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts must be continued to keep the structures free of swallows until September 1 or the completion of construction (whichever comes first). All nest exclusion techniques shall be coordinated among the City, Caltrans, a qualified biologist, and the resource agencies.
2.3.4 Threatened and Endangered Species	TE-1	Construction activities shall adhere to the standard construction and operational requirements as described in the *United States Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to and During Ground Disturbance* (USFWS 1999).
	TE-2	Approximately 60 days before road construction, a U.S. Fish and Wildlife Service and California Department of Fish and Game-approved biologist shall conduct a survey for San Joaquin kit fox dens within 200 feet of the construction footprint, including utility relocations. A letter report and map of known and potential San Joaquin kit fox dens shall be submitted to the U.S. Fish and Wildlife Service and California Department of Fish and Game. Preactivity clearance surveys for San Joaquin kit fox shall be repeated about 2 weeks before construction or after any delays in construction of over 2 weeks. Any new San Joaquin kit fox dens identified since completing the 60-day survey shall be reported to the U.S. Fish and Wildlife Service and California Department of Fish and Game in a letter report and map. If no new San Joaquin kit fox dens are identified, an internal record shall be maintained that includes the survey date, designated biologist conducting the survey, and general survey findings. The records shall be submitted to the U.S. Fish and Wildlife Service and California Department of Fish and Game upon request.
	TE-3	If dens or potential dens are detected within the project footprint during 60-day and/or 2-week pre-activity clearance surveys, agency permission shall be requested to monitor and

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
		excavate dens that would be affected by the project. The biologist shall monitor potential dens for 3 consecutive nights and submit monitoring results in a letter report to the U.S. Fish and Wildlife Service and California Department of Fish and Game. The biologist shall oversee the excavation of dens following approval by the U.S. Fish and Wildlife Service and California Department of Fish and Game. Dens found within 200 feet of project construction but not affected by construction activities shall be monitored and buffered from construction by an exclusion zone. The biologist shall place flagged stakes in a 50-foot radius buffer around any potential or atypical den and 100 feet from a known den; the U.S. Fish and Wildlife Service shall be contacted if a natal den is found. The biologist shall submit results of den excavation and exclusion in a letter report to the U.S. Fish and Wildlife Service and California Department of Fish and Game.
	TE-4	The biologist shall conduct an environmental awareness training for all construction crews before ground-disturbing activities. The purpose of this training is to inform construction crew members of permit terms and conditions and the potential for San Joaquin kit fox to occur at a site and be affected by construction activities. The training shall be repeated to all new crew members and annually to all crew members working in San Joaquin kit fox habitat. Following the training, crew members shall sign an attendance sheet stating that they attended the training and understand the protection measures and construction restrictions. Training materials and records of attendees shall be submitted to the U.S. Fish and Wildlife Service and California Department of Fish and Game.
	TE-5	The biologist shall monitor road construction activities once daily. The biologist shall verify that construction complies with permit terms and conditions and construction and operation requirements described in *United States Fish and Wildlife Service Standardized Recommendations for the Protection of the San Joaquin Kit Fox Prior to Ground Disturbance* (USFWS 1999). The biologist shall maintain a log of daily monitoring notes that can be summarized and transmitted to the U.S. Fish and Wildlife Service and California Department of Fish and Game at their request.

Table G.1. Avoidance and Minimization Measures

Section Number Reference and Resource	Avoidance and Minimization Measures	
2.3.5 Invasive Species	IS-1	In compliance with the Executive Order on Invasive Species (Executive Order 13112) and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control measures included in the proposed project shall not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions shall be taken if invasive species are found in or adjacent to the construction areas. These would include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.
	IS-2	To prevent the further spread of invasive plant species, a noxious weed special provision would be included on project construction plan specifications and adhered to during construction. In addition, any areas revegetated following disturbance would be seeded with a weed-free/native plant mixture following construction.

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures	
2.1.2.2 Relocations	R-1	Where acquisition and relocation are unavoidable, the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the 1987 Amendments, as implemented by the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs adopted by the U.S. Department of Transportation (March 2, 1989) shall be followed. Relocation advisory assistance shall be provided to any person, business, farm, or nonprofit organization displaced as a result of the acquisition of real property for public use.
2.1.5 Visual/Aesthetics	V-4	To decrease the appearance of hardscape features, including soundwalls, medians, and opaque fencing materials, landscape and architectural treatments such as color, texture, and vine treatment must be applied where feasible. Aesthetic enhancement shall be similar in character to the surrounding environment.
	V-5	To buffer views of the realigned roadway from residents, a vegetation buffer must be installed south of the S-curve between the proposed roadway and existing residents. Areas of the vegetation buffer must not conflict with appropriate safety-related standards and regulations pertaining to roadway line-of-sight. In consultation with the City before project approval, the vegetative buffer must be included on the landscape concept plan and plant palette.
2.1.6 Cultural	CR-3	The conceptual mitigation measures for effects to the historic districts north and south of 24th Street would include as appropriate: 1. Detailed documentation of the historic district as a whole, and of each adversely affected contributing property at a level specified by the SHPO, (similar to Historic American Building Survey Level II documentation, consisting of large format archival quality photographs, available as-built plans, and written historical data in the form of a historical report), distribution to the appropriate Regional Information Center, local public library, and other repositories to be determined. 2. Preparation of a brochure on the local history and architecture of the affected historic district(s). 3. Adding information to existing social media sites dealing with related architectural topics.

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures	
		4. Incorporation of hardscape features (including soundwalls), landscape, and architectural treatments that are compatible with the historic character of the affected historic district(s), such as color, texture, and vine treatment as feasible. (See Noise, Section 2.2.5, for location and heights of proposed soundwalls. See Visual, Section 2.1.5, for integration of hardscape feature treatments.) 5. Prior to demolition of contributing properties for which an adverse effect finding is made, strategies such as working with a local agency to identify appropriate sites, or offering the properties for sale for $1 (or other reasonable amount) and paying up to the cost of demolition and removal of each contributing property would be attempted. 6. Architectural and structural elements or character-defining features would be made available for reuse in other buildings of the same age and style through an architectural salvage operation. No salvage would take place until an opportunity for the relocation described in item 5 above has taken place. 7. District contributing buildings/structures impacted by temporary construction easements would be protected by the establishment of Environmentally Sensitive Areas. After construction, the land, hardscape (e.g., residential walkways, garden walks/walls, etc.) and vegetation would be replaced in-kind as per the Secretary of the Interior's *Standards for the Treatment for Historic Properties with Guidelines for Rehabilitation*.
2.2.2 Paleontology	PAL-1	Before completion of final engineering and in accordance with the guidelines in the Caltrans Standard Environmental Reference, a Paleontological Mitigation Plan shall be prepared by a qualified paleontologist for inclusion in the Plans, Specifications, and Estimate and implemented during the excavation phase of the project. The qualified Principal Paleontologist shall attend pregrading meetings and consult with grading and excavation contractors. The construction contractor's employees shall attend paleontological resource awareness training session(s) if they will be involved in earthmoving project activities. The Paleontological Mitigation Plan shall generally discuss fossil discovery, recovery, and subsequent handling. Paleontological monitoring shall be conducted by a qualified individual.

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures	
		Based on field reviews and the paleontological literature available, it does not appear that full-time monitoring would be required at all of the proposed excavation sites within the project. It is anticipated that only minor monitoring and spot checks would be necessary where soil disturbance below a depth of 5 feet in native sediments would occur. However, the actual extent of monitoring would be dictated by the design details of the selected alternative and would be determined during design by a qualified Principal Paleontologist (who holds an M.S. or Ph.D. in paleontology or geology, and is familiar with paleontological procedures and techniques). The Principal Paleontologist would review the construction plans with proposed excavation sites and the Paleontological Evaluation Report to determine which, if any, project components would involve earthmoving activities at depths sufficient to warrant development of a Paleontological Mitigation Plan, consistent with Caltrans' Standard Environmental Reference. The Principal Paleontologist would review the construction schedule in order to develop the monitoring schedule and compile accompanying costs. A nonstandard special provision to address paleontological resources would also be incorporated into the construction contract to notify the construction contractor to cooperate with the paleontological monitoring and salvage activities. Paleontological resources should also be discussed at the pre-bid meeting.
2.2.5 Noise	NOI-5	Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of soundwalls at the following locations under Alternatives 1 and 2. **Alternative 1:** Soundwall 6 at Receiver R-52 with a respective length of 60 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 6 would reduce noise levels by 8 dBA and benefit one residence at a cost of $36,230. Soundwall 8 at Receivers R-57 through R-59 with a respective length of 166 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 8 would reduce noise levels by 5 to 8 dBA and benefit seven residences at a cost of $99,884.

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
	Soundwall 9 at Receivers R-76 through R-77 with a respective length of 194 feet and average height of 6 feet. Calculations based on preliminary design data indicate that Soundwall 9 would reduce noise levels by 6 dBA and benefit two residences at a cost of $97,570. Soundwall 10 at Receiver R-82 with a respective length of 65 feet and average height of 10 feet. Calculations based on preliminary design data indicate that Soundwall 10 would reduce noise levels by 10 dBA and benefit one residence at a cost of $45,195. Soundwall 11 at Receivers R-90 through R-91 with a respective length of 207 feet and average height of 12 feet. Calculations based on preliminary design data indicate that Soundwall 11 would reduce noise levels by 5 to 11 dBA and benefit four residences at a cost of $163,398. Soundwall 12 at Receivers R-96 through R-97 with a respective length of 137 feet and average height of 10 feet. Calculations based on preliminary design data indicate that Soundwall 12 would reduce noise levels by 6 to 10 dBA and benefit three residences at a cost of $95,517. **Alternative 2:** Soundwall 19 at Receiver R-26 with a respective length of 100 feet and average height of 6 feet. Calculations based on preliminary design data indicate that Soundwall 19 would reduce noise levels by 7 dBA and benefit one residence at a cost of $50,324. Soundwall 20 at Receiver R-28 with a respective length of 79 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 20 would reduce noise levels by 7 dBA and benefit one residence at a cost of $44,697. Soundwall 21 at Receiver R-32 with a respective length of 89 feet and average height of 6 feet. Calculations based on preliminary design data indicate that Soundwall 21 would reduce noise levels by 7 dBA and benefit one residence at a cost of $44,953.

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures	
		Soundwall 24 at Receiver R-52 with a respective length of 60 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 24 would reduce noise levels by 8 dBA and benefit one residence at a cost of $36,230. Soundwall 26 at Receivers R-57 through R-59 with a respective length of 166 feet and average height of 8 feet. Calculations based on preliminary design data indicate that Soundwall 26 would reduce noise levels by 6 to 8 dBA and benefit seven residences at a cost of $99,884. Soundwall 27 at Receiver R-95 with a respective length of 65 feet and average height of 12 feet. Calculations based on preliminary design data indicate that Soundwall 27 would reduce noise levels by 5 to 11 dBA and benefit three residences at a cost of $52,506. If during final design conditions have substantially changed, noise abatement may not be necessary. The final decision of the noise abatement will be made upon completion of the project design and the public involvement processes.
3.3 Mitigation Measures under California Environmental Quality Act	**Alternative 1**	
	N-1	The contractor shall implement mitigation in the form of a soundwall at location R-16 at a minimum height of 8 feet.
	N-2	The contractor shall implement mitigation in the form of a soundwall at location R-91 at a minimum height of 6 feet.
	Alternative 2	
	N-3	The contractor shall implement mitigation in the form of a soundwall at location R-39 at a minimum height of 6 feet.
2.3.1 Natural Communities	NC-10	Following project construction, all disturbed habitat adjacent to the Kern River shall be restored with native vegetation to the best extent feasible.

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures	
2.3.3 Animal Species	**Burrowing Owl**	
	AS-2	Should burrowing owl burrows be found, no disturbance shall occur within 160 feet of occupied burrows during the nonbreeding season or within 250 feet during the breeding season.
	AS-3	If any of the preconstruction surveys determine that burrowing owls are present, one or more of the following mitigation measures shall be required: (1) avoidance of active nests and the surrounding buffer area during construction activities; (2) passive relocation of individual burrowing owl; (3) active relocation of individual burrowing owls; and (4) preservation of onsite habitat with long-term conservation value for the burrowing owl. The specifics of the required measures shall be coordinated between the City, Caltrans biologist, and the resource agencies.
	Special-Status Bridge and Crevice-Dwelling Animal Species	
	AS-9	If bats are determined present, before construction activities begin, alternative roosting habitat shall be installed at an onsite location approved by a qualified bat biologist or at a nearby location such as the State Route 99 bridge to provide additional roosting habitat during construction. Forms of alternative roosting habitat may include construction of bat houses, add-on panels, or sections of low-density concrete slabs installed on the undersides of the State Route 99 bridge. Designs for alternative roosting habitat attached to the bridge shall be made by an engineer in consultation with a qualified bat biologist to ensure that the habitat is both structurally sound and ecologically feasible for use by bats. To the extent feasible, newly created expansion joint crevices shall be left unrubberized so that they are available to bats for day roosting after construction is complete.
2.3.4 Threatened and Endangered Species	TE-6	Permeable fencing shall be installed along the proposed right-of-way of 24th Street in all locations where new fencing is required. One or a combination of the following three design options may be adopted to provide San Joaquin kit fox with movement opportunities: elevating the bottom of the fence 5 inches above ground to allow unobstructed movement by San Joaquin kit foxes under the fence; installing ground-level 8-x-8-inch-wide gaps no

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures	
		more than 100 feet apart for the length of the fence, which would allow San Joaquin kit fox movement at regular intervals along the right-of-way; and installing fencing with a minimum mesh size of 3.5 x 7 inches, but preferably 5 x 12 inches, which would allow unlimited movement by San Joaquin kit fox through the fence. Locations that are currently fenced shall remain fenced or shall have new fencing installed in relatively the same location and shall not have permeable design.
	TE-7	Curbed medians and median barriers may be used as part of project design. If curbed medians are required for public safety, the height of curbed medians shall be no greater than 10 inches. Ten-inch curbed medians shall remain unvegetated to prevent obstructing the visual field of San Joaquin kit foxes near the roadway. Curbed medians less than 10 inches in height and requiring landscaping shall be planted with low-level vegetation (i.e., less than 6 inches) or be frequently mowed to prevent overgrowth. If taller median barriers are required in a later planning stage for public safety, Caltrans-designed modified median barrier type 60/S shall be used. Caltrans type 60/S design has been approved by the U.S. Fish and Wildlife Service (Biological Opinion No. 81420-2009-F-0752; U.S. Fish and Wildlife Service 2009) and includes 9-inch-radius openings (9-inch-high x 18-inch-wide half-circle openings) spaced every 150 feet to allow passage by San Joaquin kit fox.
	TE-8	Project landscaping shall be designed to allow unobstructed visibility to San Joaquin kit fox and to provide opportunities for movement across the roadway. Curbed median less than 10 inches in height and roadside landscaping shall be planted in one of three alternative strategies: selecting plants that do not exceed 6 inches tall at maturity, maintaining vegetation height so that it does not exceed 6 inches, and/or creating gaps no less than 4 feet wide every 12 feet in areas landscaped with trees and shrubs.
	TE-9	The toe of road fill, walls, fencing, and any other permanent physical obstruction shall be designed no less than 20 feet from the centerline of the bike trail on the Kern River corridor and shall have a minimum vertical clearance of 10 feet to maximize horizontal and vertical passable space for continued San Joaquin kit fox movement.

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
	TE-10 Permanent and temporary loss of San Joaquin kit fox habitat shall be mitigated by participating in the Metropolitan Bakersfield Habitat Conservation Plan fee payment program. The permanent loss of 1.21 acres of ruderal/disturbed and barren ground habitats for both build alternatives and the temporary disturbance of 1.07 acres under Alternative 1 and 1.04 acres under Alternative 2 of ruderal/disturbed and barren ground habitats shall be mitigated by participating in the Metropolitan Bakersfield Habitat Conservation Plan at agency-approved ratios. Sufficient funding would be paid to allow the Metropolitan Bakersfield Habitat Conservation Plan Trust Group to purchase at least 4.77 acres of suitable San Joaquin kit fox habitat (see table below).

Kit Fox Suitable Habitat Compensatory Mitigation Ratios, Anticipated Acreage of Impact, and Mitigation Acreage

Habitat Type Affected	Proposed Compensatory Mitigation Ratios		Alt 1	Alt 2	Alt 1	Alt 2	Alt 1	Alt 2
	Permanent Impacts	Temporary Impacts[1]	Permanent Impacts (Acreage)		Temporary Impacts (Acreage)		Acreage to Mitigate With Metropolitan Bakersfield Habitat Conservation Plan	
Ruderal*	Acquisition of habitat at 3:1 ratio	1.1:1 + restoration	1.21	1.21	1.07	1.04	4.77	4.74
Total Acreage to Mitigate with Metropolitan Bakersfield Habitat Conservation Plan							**4.77**	**4.74**

Source: U.S. Fish and Wildlife Service 2008

[1] This includes portions of the potentially suitable San Joaquin kit fox habitat: ruder/disturbed and barren ground. To replace habitat values temporarily lost, the City and Caltrans shall restore all vegetated areas disturbed by road construction.

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures	
	TE-11	Before construction, the limits of permanent and temporary impacts would be verified and mapped by habitat type within those limits. The map would be submitted for approval by the U.S. Fish and Wildlife Service before submittal to the City of Bakersfield Planning Department for fee payment. Upon completion of project construction, all areas subject to temporary ground disturbance, including storage and staging areas, temporary roads, and pipeline corridors, shall be recontoured if necessary and revegetated to promote restoration of the area to preproject conditions. Appropriate methods and plant species used to revegetate such areas shall be determined on a site-specific basis in consultation with the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and revegetation experts.
2.4 Cumulative (Threatened and Endangered Species)	C-1	The plan includes a sump habitat element, which would provide long-term habitat conservation for the urban San Joaquin kit fox population in the metro-Bakersfield area by focusing on sumps (i.e., stormwater drainage basins) as known and functional habitat for the species. The City, in coordination with Caltrans, proposes to use the Sump Habitat Program to compensate for cumulative effects to the San Joaquin kit fox affected by this and five future Thomas Roads Improvement Program projects. Conservation goals of this program include measures addressing the installation of artificial dens in selected sumps; enhancement of San Joaquin kit fox habitat by controlling vegetation in and around dens; the increase in San Joaquin kit fox accessibility to sumps through fence/gate openings (with proposed dimensions of 6 x 6 inches to exclude predators like coyotes and medium- to large-sized dogs); and reduction in the potential for impacts to the San Joaquin kit fox associated with regular maintenance activities and predator access. The City provided a letter of commitment to the U.S. Fish and Wildlife Service, dated August 10, 2010, fully supporting and providing assurance of the implementation and management of the Sump Habitat Program and its conservation efforts. The current Sump Habitat Program conceptual framework includes:

Table G.2. Mitigation and Abatement Measures

Section Number Reference and Resource	Mitigation Measures
	• Selection of sumps that maintain San Joaquin kit fox accessibility and/or habitat (those of high/medium conservation priority based on the relative potential for minimizing both project-level and program-level effects) • Installation and maintenance of San Joaquin kit fox enhancement features (fences/gate gaps, artificial dens, conservation zones, signs, and enhancement maintenance and repair) • Management of sump vegetation compatible with San Joaquin kit fox presence and/or use (performance of routine maintenance outside the San Joaquin kit fox natal season and the use of hand tools in conservation zones and new active dens) • Biological monitoring and reporting of results (pre-maintenance surveys, den monitoring and supervised den excavation, environmental awareness training, maintenance monitoring, annual enhancement inspection, annual San Joaquin kit fox sump use monitoring, and annual reporting) • Provision of long-term conservation assurances (individual conservation easements for each sump, a perpetual non-wasting endowment for management, maintenance, and monitoring costs associated with ongoing implementation, and an agency-approved long-term Management Plan. The proposed easement and endowment holders must be U.S. Fish and Wildlife-approved third-party organizations).

Appendix H Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

April 11, 2012

Document Number: 120411043352

Laurel Frakes
LSA Associates, Inc.
1998 Santa Barabara Street, Suite 120
San Luis Obispo, CA 93401

Subject: Species List for 24th Street Improvement Project (RBF0608)

Dear: Ms. Frakes

We are sending this official species list in response to your April 11, 2012 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be July 10, 2012.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found here.

Endangered Species Division

TAKE PRIDE IN AMERICA

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 120411043352

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- Branchinecta lynchi
  - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
  - valley elderberry longhorn beetle (T)

Fish

- Hypomesus transpacificus
  - delta smelt (T)

Amphibians

- Rana draytonii
  - California red-legged frog (T)

Reptiles

- Gambelia (=Crotaphytus) sila
  - blunt-nosed leopard lizard (E)
- Thamnophis gigas

- giant garter snake (T)

Birds

- Empidonax traillii extimus
  - southwestern willow flycatcher (E)

Mammals

- Dipodomys nitratoides nitratoides
  - Tipton kangaroo rat (E)
- Vulpes macrotis mutica
  - San Joaquin kit fox (E)

Plants

- Monolopia congdonii (=Lembertia congdonii)
  - San Joaquin woolly-threads (E)
- Opuntia treleasei
  - Bakersfield cactus (E)

Quads Containing Listed, Proposed or Candidate Species:

OILDALE (240A)

County Lists

Listed Species

Invertebrates

- Branchinecta conservatio
  - Conservancy fairy shrimp (E)

  S

- Branchinecta longiantenna
  - Critical habitat, longhorn fairy shrimp (X)
  - longhorn fairy shrimp (E)

  S

- Branchinecta lynchi
  - Critical habitat, vernal pool fairy shrimp (X)
  - vernal pool fairy shrimp (T)

  S

- Desmocerus californicus dimorphus
  - valley elderberry longhorn beetle (T)

S

- Euproserpinus euterpe
  - Kern primrose sphinx moth (T)

S

Fish

- Hypomesus transpacificus
  - delta smelt (T)

S

Amphibians

- Ambystoma californiense
  - California tiger salamander, central population (T)
  - Critical habitat, CA tiger salamander, central population (X)

S

- Rana draytonii
  - California red-legged frog (T)
  - Critical habitat, California red-legged frog (X)

S

Reptiles

- Gambelia (=Crotaphytus) sila
  - blunt-nosed leopard lizard (E)

S

- Thamnophis gigas
  - giant garter snake (T)

S

Birds

- Charadrius alexandrinus nivosus
  - western snowy plover (T)

S

- Empidonax traillii extimus
  - Critical habitat, southwestern willow flycatcher (X)
  - southwestern willow flycatcher (E)

S

- Gymnogyps californianus
  - California condor (E)
  - Critical habitat, California condor (X)

  S

- Vireo bellii pusillus
  - Least Bell's vireo (E)

  S

Mammals

- Dipodomys ingens
  - giant kangaroo rat (E)

  S

- Dipodomys nitratoides nitratoides
  - Tipton kangaroo rat (E)

  S

- Ovis canadensis californiana
  - Sierra Nevada (=California) bighorn sheep (E)

  S

- Sorex ornatus relictus
  - Buena Vista Lake shrew (E)
  - Critical habitat, Buena Vista Lake shrew (X)

  S

- Vulpes macrotis mutica
  - San Joaquin kit fox (E)

  S

Plants

- Caulanthus californicus
  - California jewelflower (E)

  S

- Eremalche kernensis
  - Kern mallow (E)

  S

- Monolopia congdonii (=Lembertia congdonii)
  - San Joaquin woolly-threads (E)

S

- Opuntia treleasei
  - Bakersfield cactus (E)

S

- Pseudobahia peirsonii
  - San Joaquin adobe sunburst (T)

S

- Sidalcea keckii
  - Critical habitat, Keck's checker-mallow (X)
  - Keck's checker-mallow (=checkerbloom) (E)

S

Proposed Species

Amphibians

- Rana draytonii
  - Critical habitat, California red-legged frog (PX)

S

Candidate Species

Amphibians

- Rana muscosa
  - mountain yellow-legged frog (C)

S

Birds

- Coccyzus americanus occidentalis
  - Western yellow-billed cuckoo (C)

S

Mammals

- Martes pennanti
  - fisher (C)

S

Key:

- (E) Endangered - Listed as being in danger of extinction.

- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.
See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.
- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404

of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be July 10, 2012.

List of Technical Studies that are Bound Separately

Air Quality Assessment Report

Community Impact Assessment

Relocation Impact Statement

Hazardous Waste Initial Site Assessment

Historic Property Survey Report

Historic Resources Evaluation Report

Hydrology, Water Quality, and Stormwater Runoff Report

Jurisdictional Delineation of Waters

Location Hydraulic Study

Natural Environment Study

Noise Abatement Decision Report

Noise Study Report

Paleontological Resources Identification and Evaluation Report

Preliminary Roadway and Foundation Report

Traffic Analysis

Visual Impact Assessment