Kings Canyon Expressway, Segment 3

On State Route 180 from 0.7 mile west of Smith Avenue
to 0.7 mile east of Frankwood Avenue in Fresno County

06-FRE-180-PM R74.1/R78.6

Project EA 06-34253

Project ID 06-0000-0382

SCH# 91022072

Draft Supplemental Environmental Impact Report

Prepared by the
State of California Department of Transportation

June 2014

Caltrans

General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Draft Supplemental Environmental Impact Report for review and comment. This supplemental document addresses changes made to the alternatives for the project, potential impacts from these changes, and proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read this document.
- Additional copies of this document and related technical studies are available for review at the Caltrans District 6 office, 1352 W. Olive Avenue, Fresno, CA 93728; Fresno County Public Library, Central Library, 2420 Mariposa Street, Fresno, CA 93721; and the Fresno County Public Library, Sanger Branch Library, 1812 Seventh Street, Sanger, CA 93257. The document can also be accessed electronically at the following website: http://www.dot.ca.gov/dist6/factsheets/index.htm.
- We welcome your comments on the proposed project. Please send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

  Michelle Ray, Senior Environmental Planner
  Sierra Pacific Environmental Analysis Branch
  California Department of Transportation
  855 M Street, Suite 200
  Fresno, CA 93721
- Submit comments via email to: michelle.ray@dot.ca.gov.
- Submit comments by the deadline: **July 28, 2014**

What happens next?

After comments are received from the public and reviewing agencies, Caltrans 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.

Printing this document: To save paper, this document has been set up for two-sided printing (to print the front and back of a page). Blank pages occur where needed throughout the document to maintain proper layout of the chapters and appendices.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Michelle Ray, Sierra Pacific Environmental Analysis Branch, 855 M Street, Suite 200, Fresno, CA 93721; (559) 445-5286 (voice) or 711.

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On State Route 180 from 0.7 mile west of Smith Avenue
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DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

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

THE STATE OF CALIFORNIA
Department of Transportation

6/11/14
Date of Approval

Jennifer H. Taylor, Office Chief South
Central Region Environmental Division
California Department of Transportation

6/11/14
Date of Approval

Christine Cox-Kovacevich, Chief
Central Region Environmental Division
California Department of Transportation
California Environmental Quality Act Lead Agency

Summary

This draft environmental document for Segment 3 of the Kings Canyon Expressway (FRE180-EA06-34253) is a supplemental report to the previously prepared and certified State Route 180 Improvement Project Final Environmental Impact Report (September 1995, State Clearinghouse Number 91022072). This Draft Supplemental Environmental Impact Report (DSEIR) presents additional analysis or information in regard to parks and recreational facilities, relocations, utilities/emergency services, traffic/pedestrian and bicycle facilities, climate change, and biological impacts (natural communities, wetlands and other waters, and threatened and endangered species), resulting from changes to the design of the project and new laws or regulations.

State Route 180 is the main east-west highway in eastern Fresno County, connecting the Fresno-Clovis metropolitan area to Kings Canyon National Park and Sequoia National Park, as well as other rural recreational areas in the western Sierra Nevada Mountains. The route passes through the unincorporated rural communities of Centerville and Minkler and is important for moving agricultural goods from ranches and farms east of Fresno. State Route 180 also serves the commuter traffic coming from the developed foothill communities of Tivy Valley, Wonder Valley and Squaw Valley, as well as the many residential developments along the Kings River. State Route 180 provides one of the main crossings of the Kings River in the county.

The project corridor remains as described in the 1995 Final Environmental Impact Report (FEIR). The existing alignment of State Route 180 crosses the floodplain of the Kings River, and the surrounding rural area is mainly used for grazing with low-density housing and small commercial operations. Exceptions are the small communities of Centerville, Minkler, and a large sand/rock excavation company south of the existing route on the west side of the Kings River.

The existing State Route 180 crosses the Kings River in a location where the forks of the river merge together and there is one body of water to cross. The 1995 Preferred Alternative remains the least environmentally damaging practicable alternative (LEDPA) largely due to this existing environmental setting. The California Department of Transportation (Caltrans) has determined that crossing the Kings River in a location farther north or south would result in an increase of impacts to biological resources and residential/commercial developments.

The proposed project is the third and last segment of a larger State Route 180 East widening project (FRE180-EA06-34250). The original environmental document evaluated the proposed improvements from Temperance Avenue to Cove Road (post miles R65.6 to 84.0). The FEIR was approved on September 29, 1995, and construction of the project was proposed in four phases. Due to differences in project scope, purpose and need, scheduling, and funding, the project's original Segment 4, from Alta Main Canal to Cove Road, was dropped from consideration. Consequently, the expressway would be constructed in only three phases.

A National Environmental Policy Act (NEPA) Reevaluation and California Environmental Quality Act (CEQA) Addendum to File were approved in June 2004 for Segments 1-3. These environmental documents primarily provided environmental clearance for right-of-way acquisition and considered design changes related to intersections of the expressway with local streets, Caltrans Highway Design Manual standards, a utility corridor, and property access. The project description proposed constructing a four-lane expressway from east of Temperance Avenue to east of Academy Avenue, and a two-lane expressway on a four-lane right-of-way from east of Academy Avenue to the Alta Main Canal.

A second NEPA Reevaluation and CEQA Addendum to File were approved in December 2005 for Segments 1-3. The 2005 environmental documents were necessary to update the previous Biological Assessment submitted to the U.S. Fish and Wildlife Service. The project description in the 2005 Reevaluation was the same as the one in the 2004 NEPA Reevaluation citing that all construction phases are documented in the 1994 Regional Transportation Plan and the 1994 Federal Transportation Improvement Program.

In spring 2011, the project limits of Segment 2 (FRE180-EA06-34252) were decreased to avoid additional environmental impacts discovered during supplemental environmental studies, and the portion of Segment 2 that was dropped was added to Segment 3. The construction of Segment 1 was completed in fall 2011, and Segment 2 is currently under construction.

Proposed Action

Segment 3 (FRE180-EA06-34253), the proposed project, would realign and widen State Route 180 from 0.7 mile west of Smith Avenue to 0.7 mile east of Frankwood Avenue (post miles R74.1 to R78.6) near the communities of Centerville and Minkler in eastern Fresno County. The project would widen the existing two-lane conventional highway to a four-lane divided expressway. This 4.5-mile segment would connect with the previously

constructed Kings Canyon Expressway Segment 2 west of Smith Avenue (FRE180-EA06-34252).

The project would provide intersections for major roads, drainage, signage, and shoulders while maintaining or improving access for the local road network and community. The project would require the acquisition of new right-of-way and the abandonment of some existing State Route 180 right-of-way. The new alignment would cross grazing land and would intersect with occasional business properties and residential homes. New crossings would be constructed over the Centerville-Kingsburg Canal, China Slough, Collins Creek, Kings River, Cameron Slough, Byrd Slough, Carmelita Ditch, and Mt. Campbell Ditch.

Segment 3 begins west of the Centerville-Kingsburg Canal, which runs diagonally across the realignment of State Route 180. After crossing the canal, the project turns north of Centerville to avoid eligible historical properties located adjacent to the existing State Route 180 and intersects with Oliver Avenue. Residents west of Oliver Avenue would have access on a new frontage road. Trimmer Springs Road would no longer intersect with State Route 180 and would be realigned to the west to connect with Oliver Avenue. After intersecting with Oliver Avenue, the new alignment turns south and constructs a new bridge over China Slough north of the existing crossing.

The project then parallels the existing alignment of State Route 180 past the Kings River. Along the way, the new alignment would cross grazing land sprinkled with heritage oaks on the north, woodlands to the south, and Collins Creek, which runs diagonally across the proposed alignment of State Route 180 and the existing roadway. The large sand/rock company and residents south of the existing alignment would use a new intersection at Rio Vista Avenue for access, and a second bridge would be constructed north of the existing bridge at Kings River. After crossing the Kings River, the project would intersect Piedra Road, which would be realigned to improve sight distance. New frontage roads would be constructed for residents located on the east side and west side of Piedra Road north of State Route 180 for access.

After intersecting with Piedra Road, the new alignment no longer parallels the existing State Route 180 but passes northeast of the small community of Minkler. The realignment of this segment of the project is necessary to avoid an historical structure and to eliminate several sharp turns. The new alignment would require construction of new bridges over Cameron Slough and Byrd Slough. Reed Avenue would be extended

northeast beyond its current intersection with the existing State Route 180. New intersections would be constructed at the new State Route 180 and extended Reed Avenue and Frankwood Avenue. Past Frankwood Avenue, the new alignment would connect with the existing alignment of State Route 180 before reaching the Alta Main Canal. Segments of the existing State Route 180 would be converted into frontage or access roads.

California Environmental Quality Act Document

The proposed project is subject to state and has been prepared in compliance with the California Environmental Quality Act. Caltrans is the lead agency under the California Environmental Quality Act. Following receipt of public comments on the draft Supplemental Environmental Impact Report and circulation of the final Supplemental Environmental Impact Report, Caltrans will be required to take actions regarding the environmental document and will determine whether to certify the Supplemental Environmental Impact Report and issue Findings and a Statement of Overriding Considerations under the California Environmental Quality Act.

However, because funding for the proposed project includes federal funds, a National Environmental Policy Act Revalidation would be prepared after circulation and public comment of this document. Impacts determined 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.

Summary of Changes

Caltrans has made several design changes to Segment 3 from how the segment was described in the 1995 environmental document. These changes relate to intersections of the expressway with local streets, Caltrans design standards, utility corridors, and property access. Changes in the design or scope of Segment 3 include the following:

- Beginning at 0.7 mile west of Smith Avenue (post mile R74.1) to include a portion of Segment 2 that was dropped for advanced project delivery.

- Constructing a four-lane expressway instead of a two-lane limited access highway on a four-lane right-of-way as stated in the 1995 Environmental Impact Report.

- Constructing a 62-foot median as reported in the 2004 and 2005 Environmental Reevaluations.
- Acquiring a utility easement to consolidate the existing utilities along the north side of the new alignment.
- Acquiring Private Vehicle Access Easements (PVAE) for utility and private access easements to avoid properties from being "land-locked."
- Raising the profile (height) of the roadway at the Kings River, Cameron Slough, and Byrd Slough to achieve a mandated 3-foot clearance between high water and bottom of the bridge (also known as freeboard).
- Removing a temporary intersection 0.7 mile west of Smith Avenue and a temporary cul-de-sac 0.2 mile west of Smith Avenue constructed for Segment 2.
- Adding left-turn lanes for northbound and southbound traffic at the intersections of Piedra Road and Oliver, Rio Vista, Reed and Frankwood avenues.
- Realigning Oliver Avenue slightly to the east to avoid an eligible historic building.
- Adding frontage roads for access to the north side of State Route 180 west of Oliver Avenue, west of Piedra Avenue, and east of Frankwood Avenue.
- Eliminating the direct connection of Trimmer Springs Road to State Route 180 (Caltrans Highway Design Manual requirements for intersection spacing).
- Realigning Trimmer Springs Road to connect to Oliver Avenue.
- Constructing a bridge over China Slough instead of using a box culvert.
- Adding a cul-de-sac to the existing State Route 180 east of Collins Creek.
- Adding right-turn-only lanes with through bicycle lanes on eastbound State Route 180 at Rio Vista and Reed avenues.
- Adding eastbound and westbound acceleration lanes at Rio Vista Avenue.
- Adding a traffic signal at Reed Avenue.

- Extending the box culverts at the Centerville-Kingsburg Canal and Collins Creek for frontage roads and private vehicle access easements.

Table S.1 summarizes the revisions in major potential impact changes.

Table S.1 Summary of Major Potential Impact Changes

Potential Impact	Build Alternative
Parks and Recreation Facilities	Requires right-of-way from Thorburn Park and would temporarily interfere with recreational activities during construction of the new Kings River Bridge.
Relocations—Real Property Acquisition	Acquires all of the Sandy Point Mobile Home Park, increasing relocations from approximately 11 residences to approximately 32 residences/mobile homes.
Utilities/Emergency Services	A utility easement would be acquired adjacent to the expressway to consolidate (and relocate) utilities, including AT&T, Comcast, Verizon, and PG&E utility poles. In addition, two PG&E transmission towers would be relocated within PG&E's existing easements near Piedra Road and State Route 180.
Traffic and Transportation/ Pedestrian and Bicycle Facilities	Constructs a 4-lane expressway with frontage roads and private access easements and changes some local road and residential circulation.
Natural Communities	Impacts 33.28 acres of riparian habitat containing 818 trees, including 422 valley oaks (84 heritage) and 396 riparian trees (55 heritage).
Wetlands and Other Waters of the United States	Increases impacts to wetlands from 0.84 acre (1995 EIR) to 5.54 acres; reduces impacts to waters of the United States from 2.32 acres (1995 EIR) to 1.82 acres.
Plant Species	The California Natural Diversity Database (CNDDB) documented an occurrence of the federally listed San Joaquin adobe sunburst (*Pseudobahia Peirsonii)* outside but near the project limits; no species were identified within the Caltrans biological study area.
Animal Species	The California Natural Diversity Database documented occurrences of the California Species of Concern tricolored blackbird 5 miles north of the project limits; no species were identified within the Caltrans biological study area.
Threatened and Endangered Species	Vernal pool fairy shrimp – Caltrans mitigated for impacts to 1.053 acres of poor quality fairy shrimp habitat for the entire Kings Canyon Expressway Project Segments 1-3 by purchasing 0.43 vernal pool conservation credits. Swainson's hawk – The California Natural Diversity Database has no documentation of occurrences of the state threatened species, and no species were identified within Caltrans' biological study area. San Joaquin kit fox – The California Natural Diversity Database documented 2 occurrences of the federally listed endangered species, 1 mile north and 4.5 miles northeast of the project limits; no species were identified within the Caltrans biological study area. Valley elderberry longhorn beetle – Increases elderberry shrubs needing replanting from 84 shrubs (1995 EIR) to 104 shrubs.

Permits and Approvals

Table S.2 provides the permits and agreements required for the project.

Table S.2 Coordination with Other Agencies

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 Biological Opinion for Threatened and Endangered Species	An Amended Biological Assessment was submitted on November 6, 2013.
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement, 2080.1 for a consistency determination with the Biological Opinion issued by the U.S. Fish and Wildlife Service	An application for a 1602 permit was submitted on November 6, 2013.
United States Army Corps of Engineers	Section 404 Nationwide Permit for permanent impacts to Waters of the United States	An application for a Section 404 permit was submitted on November 6, 2013.
San Joaquin Valley Regional Water Quality Control Board	Section 401 Certification for a Water Discharge Permit	An application for a Section 401 permit was submitted on November 6, 2013.
State Water Resources Control Board	Section 402 National Pollutant Discharge Elimination System	An application for a Section 402 permit was submitted on November 6, 2013.
San Joaquin Valley Air Pollution Control District	Dust Control Plan Notification would be required before demolition of any bridges or structures	Caltrans Standard Specifications pertaining to a dust control plan would be in the construction contracts. Notification would be made during the construction phase of the project.
Central Valley Flood Protection Board	Encroachment Permits	Applications for Encroachment Permits were submitted on April 4, 2014.

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) is the lead agency for this project under the California Environmental Quality Act (CEQA).

This draft environmental document is a supplemental report to the previously prepared and certified State Route 180 Improvement Project Final Environmental Impact Report (September 1995, State Clearinghouse Number 91022072). This Draft Supplemental Environmental Impact Report (DSEIR) presents additional analysis or information in regard to parks and recreational facilities, relocations, utilities/emergency services, traffic/pedestrian and bicycle facilities, climate change, and biological impacts (natural communities, wetlands and other waters, and threatened and endangered species), resulting from changes to the design of the project and new laws or regulations. Since 1995, additional environmental clearances under the California Environmental Quality Act and National Environmental Policy Act have been completed for this project and are discussed in Section 1.2.2 of this document.

Following receipt of public comments on the Draft Supplemental Environmental Impact Report and circulation of the final Supplemental Environmental Impact, Caltrans will be required to take actions regarding the environmental document and will determine whether to certify the report and issue Findings and a Statement of Overriding Considerations under the California Environmental Quality Act. Because funding for the proposed project includes federal funds, a National Environmental Policy Act Revalidation would be prepared after circulation and public comment of this document.

Impacts determined 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.

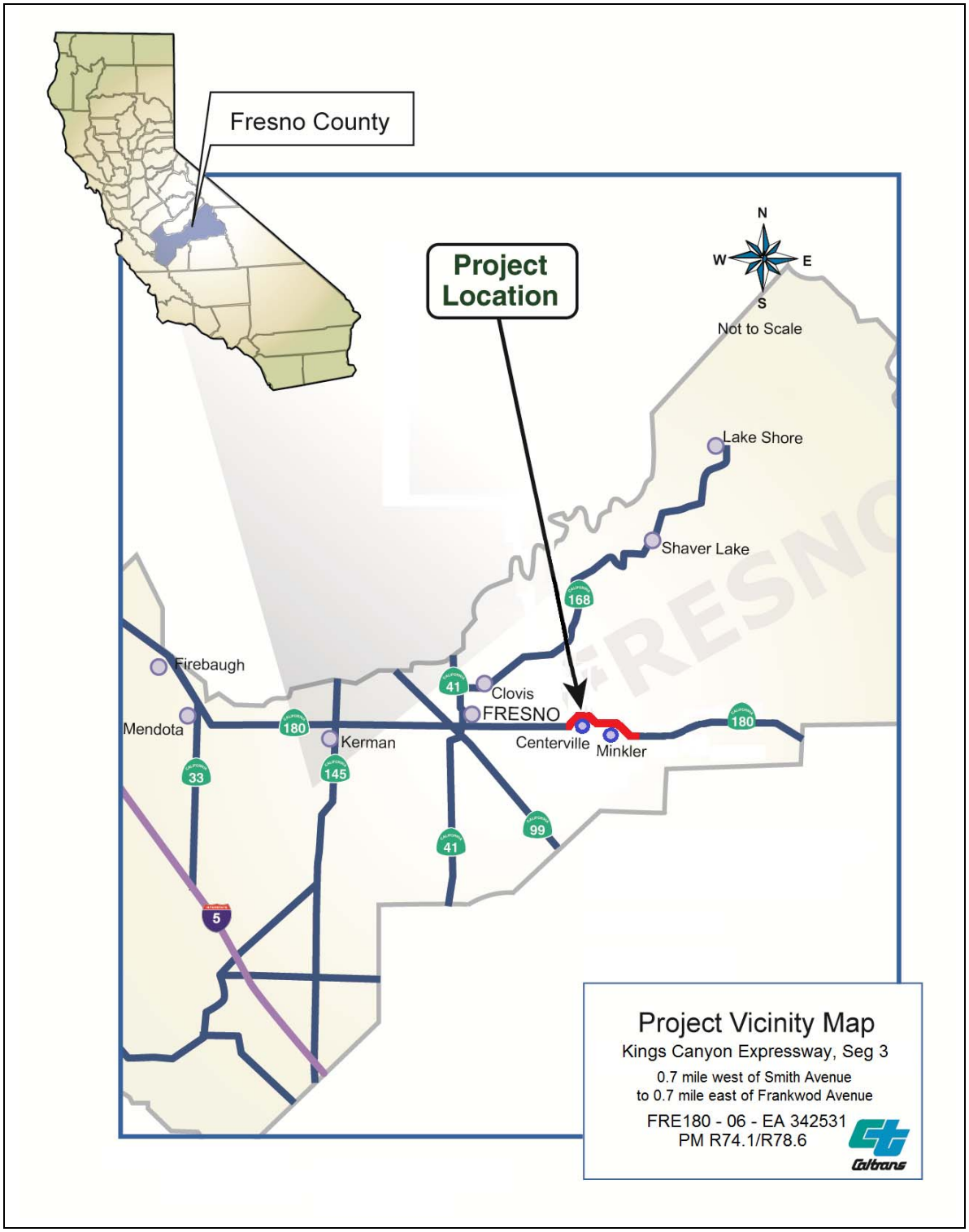

Figure 1-1 Project Vicinity Map

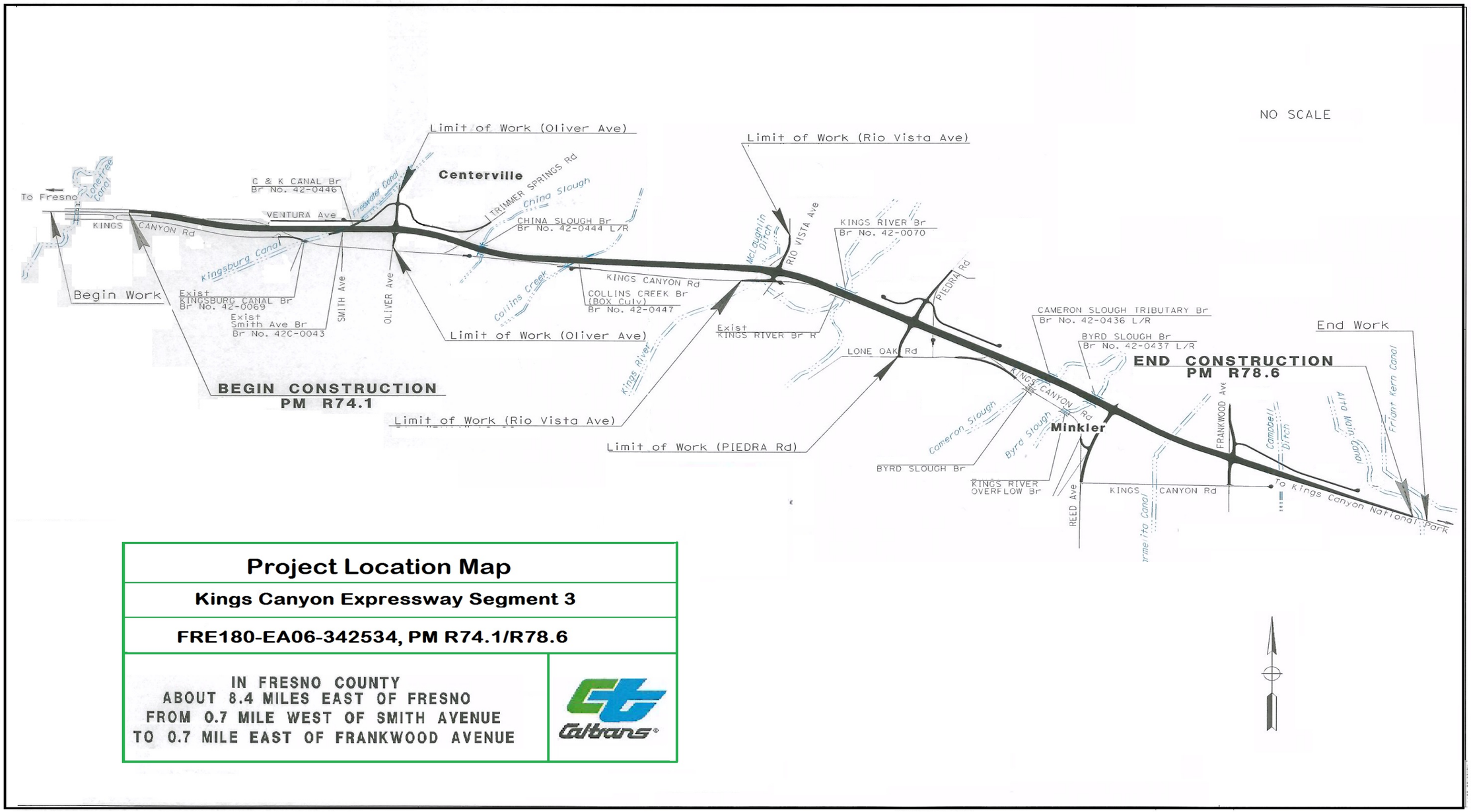

Figure 1-2 Project Location Map

1.2 Project Description

Segment 3 of the Kings Canyon Expressway project would realign and widen a 4.5-mile segment of State Route 180 near the rural communities of Centerville and Minkler in eastern Fresno County (see Figure 1.1). The project begins at 0.7 mile west of Smith Avenue and ends 0.7 mile east of Frankwood Avenue (post miles R74.1 to R78.6) and would connect with the previously constructed Kings Canyon Expressway Segment 2 west of Smith Avenue (FRE180-EA06-34252). The new alignment would widen the existing two-lane conventional highway to a four-lane divided expressway (see Figure 1.2). The purpose of the project is to improve continuity, safety, and capacity along State Route 180 to and from Fresno and areas east.

The project would provide intersections for major roads, drainage, signage, and shoulders while maintaining or improving access for the local road network and community. The project would require the acquisition of new right-of-way and the abandonment of some existing State Route 180 right-of-way. The new alignment would cross agricultural land and would intersect with occasional business properties and residential homes. New crossings would be constructed over the Centerville-Kingsburg canal, China Slough, Collins Creek, Kings River, Cameron Slough, Byrd Slough, Carmelita Ditch, and Mt. Campbell Ditch.

Segment 3 begins west of the Centerville-Kingsburg Canal, which runs diagonally across the realignment of State Route 180. After crossing the canal, the project turns north of Centerville to avoid eligible historical properties adjacent to the existing State Route 180 and intersects with Oliver Avenue. Residents west of Oliver Avenue would have access via a new frontage road. Trimmer Springs Road would no longer intersect with State Route 180 and would be realigned to the west to connect with Oliver Avenue. After intersecting with Oliver Avenue, the new alignment turns south, with a new bridge over China Slough north of the existing crossing.

The project then parallels the existing alignment of State Route 180 past the Kings River. Along the way, the new alignment would cross grazing land sprinkled with heritage oaks on the north, woodlands to the south, and Collins Creek, which runs diagonally across the proposed alignment of State Route 180 and the existing roadway. The large sand/rock company and residents south of the existing alignment would use a new intersection at Rio Vista Avenue for access, and a second bridge would be constructed north of the existing bridge at Kings River. After crossing the Kings River, the project would intersect Piedra Road, which would be realigned to improve sight distance. New frontage roads

would be constructed for residents on the east side and west side of Piedra Road north of State Route 180 for access.

After intersecting with Piedra Road, the new alignment no longer parallels the existing State Route 180 but passes northeast of the small community of Minkler. The realignment of this segment of the project is necessary to avoid an historical structure and to eliminate several sharp turns. The new alignment would require construction of new bridges over Cameron Slough and Byrd Slough. Reed Avenue would be extended northeast beyond its current intersection with the existing State Route 180. New intersections would be constructed at the new State Route 180 and extended Reed Avenue and Frankwood Avenue. Past Frankwood Avenue, the new alignment would connect with the existing alignment of State Route 180 before reaching the Alta Main Canal. Segments of the existing State Route 180 would be converted into frontage or access roads.

1.2.1 Purpose and Need

According to the 1995 Environmental Impact Report, the purpose of the project is to facilitate safe vehicle operation on State Route 180 and improve the capacity of the highway. The project need included highway deficiencies at several locations in the project area that were not built to current Caltrans Highway Design Standards, such as horizontal and vertical alignments, lane widths, shoulder widths, and sight distances. These deficiencies resulted in low operating speeds, inadequate passing opportunities, and higher-than-average accident rates. In addition, the existing highway had insufficient capacity for future project traffic volumes.

Future project traffic volumes have increased beyond the estimated volumes discussed in the 1995 Environmental Impact Report, however. The estimated traffic volume for the future year (2010) was based on data prepared by the Fresno County Council of Governments and Caltrans.

Table 1.1 provides the annual average daily traffic counts that the 1995 Environmental Impact Report estimated for 2010 and the most recent traffic data for the project for 2012, 2020 and 2030.

Table 1.1 Estimated Annual Average Daily Traffic Counts

Year and Segment of State Route 180	Estimated	No-Build Alternative	Build Alternative
2010 Between McCall and Reed Avenues (1995 Environmental Impact Report)	16,000		
2010 Reed Avenue to Alta Main Canal (1995 Environmental Impact Report)	5,000		
2012 project limits		20,000	20,900
2020 project limits (construction-year traffic)		38,000	45,000
2030 project limits (future-year traffic)		72,000	96,000

**1995 Environmental Impact Report/Environmental Impact Statement*
***2012 Caltrans Traffic Operations*

The increase in the estimated future traffic volume appears to be a result of residential growth in the surrounding rural and foothill communities. The average increase in population for the area surrounding the project between 2000 and 2010 was 19.84 percent (www.zip-codes.com). The average growth was determined by using the population data reported by the U.S. Census for 2000 and 2010. The communities of Sanger, Reedley, Orange Cove, and Squaw Valley were chosen because their zip codes include the rural and foothill communities of Tivy Valley, Wonder Valley, and Navalencia and areas surrounding the project limits. All of these areas are a source of commuter traffic.

Caltrans Design Engineering has initiated a Draft Supplemental Project Report that addresses the change of scope (design changes) and cost for Segment 3. The purpose and need for the project have not changed.

1.2.2 Previous Environmental Clearance

The proposed project is the third and last segment of a larger State Route 180 East widening project (FRE180-EA06-34250). The original environmental impact report was approved on September 29, 1995 and evaluated the proposed improvements from Temperance Avenue to Cove Road (post miles R65.6 to 84.0) with construction of the project proposed in four phases. Due to differences in project scope, purpose and need, scheduling, and funding, Segment 4, from the Alta Main Canal to Cove Road, was dropped from consideration. Consequently, the expressway would be constructed in only three phases. In spring 2011, the project limits of Segment 2 (FRE180-EA06-34252) were decreased to avoid additional environmental impacts discovered during supplemental environmental studies, and the portion of Segment 2 that was dropped was

added to Segment 3. Construction of Segment 1 was completed in fall 2011, and Segment 2 is currently under construction.

A National Environmental Policy Act Reevaluation and California Environmental Quality Act Addendum to File were approved for Segments 1 through 3 in June 2004. These environmental documents primarily provided environmental clearance for right-of-way acquisition and considered design changes related to intersections of the expressway with local streets, Caltrans Highway Design Manual standards, a utility corridor, and property access. The project description proposed constructing a four-lane expressway from east of Temperance Avenue to east of Academy Avenue and a two-lane expressway on a four-lane right-of-way from east of Academy Avenue to the Alta Main Canal.

A second National Environmental Policy Act Reevaluation and California Environmental Quality Act Addendum to File were approved in December 2005. The 2005 environmental documents were necessary to update the previous Biological Assessment submitted to the U.S. Fish and Wildlife Service. The project description in the 2005 Reevaluation was the same as the one in the 2004 National Environmental Policy Act Reevaluation and all construction phases are documented in the 1994 Regional Transportation Plan and the 1994 Federal Transportation Improvement Program. Throughout the life of the project (including Segments 1-3), Caltrans biologists have been consulting with representatives from the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, and the U.S. Army Corps of Engineers.

1.2.3 Changes in Project Setting and Circumstances

State Route 180 is the main east-west highway in eastern Fresno County, connecting the Fresno-Clovis metropolitan area to Kings Canyon National Park and Sequoia National Parks, as well as other rural recreational areas in the western Sierra Nevada Mountains. The route passes through the unincorporated rural communities of Centerville and Minkler and is important for moving agricultural goods from ranches and farms east of Fresno. State Route 180 also serves the commuter traffic coming from the developed foothill communities of Tivy Valley, Wonder Valley, and Squaw Valley, as well as the many residential developments along the Kings River. State Route 180 provides one of the main crossings of the Kings River in the county.

The project corridor remains as described in the 1995 Final Environmental Impact Report. The existing alignment of State Route 180 crosses the floodplain of the Kings River where the surrounding rural area is used mostly for grazing, with some low-density

housing and small commercial operations. Exceptions are the small communities of Centerville and Minkler, and a large sand/rock excavation company south of the existing route on the west side of the Kings River. The existing State Route 180 crosses the Kings River at a point where there are no other forks or tributaries (see Appendix C), and the alignment of the 1995 Preferred Alternative remains the least environmentally damaging practicable alternative (LEDPA).

1.2.4 Proposed Project Changes

Caltrans has made several design changes to the project relating to intersections of the expressway with local streets, Caltrans design standards, utility corridors, and property access. Changes in the design or scope of Segment 3 include the following:

- Beginning at 0.7 mile west of Smith Avenue (post mile R74.1) to include a portion of Segment 2 that was dropped for advanced project delivery.
- Constructing a four-lane expressway instead of a two-lane limited access highway on a four-lane right-of-way as stated in the 1995 Environmental Impact Report.
- Constructing a 62-foot median as reported in the 2004 and 2005 Environmental Reevaluations.
- Acquiring a utility easement to consolidate the existing utilities along the north side of the new alignment.
- Acquiring Private Vehicle Access Easements (PVAE) for utility and private access easements to avoid properties from being “land-locked.”
- Raising the profile (height) of the roadway at the Kings River, Cameron Slough, and Byrd Slough to achieve a mandated 3-foot clearance between high water and bottom of the bridge (also known as freeboard).
- Removing a temporary intersection 0.7 mile west of Smith Avenue and a temporary cul-de-sac 0.2 mile west of Smith Avenue constructed for Segment 2.
- Adding left-turn lanes for northbound and southbound traffic at the intersections of Piedra Road and Oliver, Rio Vista, Reed and Frankwood avenues.
- Realigning Oliver Avenue slightly to the east to avoid an eligible historic building.

- Adding frontage roads for access to the north side of State Route 180 west of Oliver Avenue, west of Piedra Avenue, and east of Frankwood Avenue.
- Eliminating the direct connection of Trimmer Springs Road to State Route 180 (Caltrans Highway Design Manual requirements for intersection spacing).
- Realigning Trimmer Springs Road to connect to Oliver Avenue.
- Constructing a bridge over China Slough instead of using a box culvert.
- Adding a cul-de-sac to the existing State Route 180 east of Collins Creek.
- Adding right-turn-only lanes with through bicycle lanes on eastbound State Route 180 at Rio Vista and Reed avenues.
- Adding eastbound and westbound acceleration lanes at Rio Vista Avenue.
- Adding a traffic signal at Reed Avenue.
- Extending the box culverts at the Centerville-Kingsburg Canal and Collins Creek for frontage roads and private vehicle access easements.

Some of these changes were included in the 2005 Environmental Reevaluation but, for the convenience of the reader, those changes and the respective justifications have been included in Table 1.2.

Table 1.2 Project Changes

Proposed Project Changes	Justification
Widen intersections at all local roads	• Wider intersections would improve safety and operations of intersections by allowing for larger truck-turning radii. • Traffic projections indicate a need to accommodate a larger traffic demand from local streets and roads.
Widen median along entire project	• The current Caltrans Highway Design Manual has increased the standard median width from 46 feet to 62 feet in suburban and rural areas where High Occupancy Vehicle or transit lanes may be added in the future. • Increased median width provides improved refuge area for trucks at intersections without signals.
Purchase right-of-way for utility easements along the north side of the project	• The utility easements would consolidate locations of existing utilities to the north side of the expressway to provide better maintenance access for utility and irrigation companies and reduce conflicts with traffic coming from multiple easements. PG&E will relocate transmission towers crossing the project at Piedra Road and the existing State Route 180 into their existing easement.
Additional frontage roads and private vehicle access easements	• The frontage roads and private vehicle access easements would eliminate non-standard spacing between access openings to the new expressway while still providing access to local streets.
Additional private vehicle access easements	• The private vehicle access easement would prevent properties from becoming “land-locked.”
Additional right-of-way for China Slough, Collins Creek, and Carmelita Ditch easements	• An easement would be necessary for the irrigation district to perform maintenance on the canals next to the new expressway. Current access to the canal is directly from the existing State Route 180; with the new expressway, direct access is eliminated.
Additional right-of-way from Thorburn Park and Sandy Point Mobile Home Park	• The current Caltrans Highway Design Manual has increased the standards for median widths and approaches to new bridges resulting in the need for additional right-of-way. • The Central Valley Flood Protection Board requires 3 feet of freeboard (distance between the bottom of the bridge and high water) to address 100-year storm flows resulting in the need for additional right-of-way for the bridge approach.
Move the expressway alignment near Frankwood Avenue to the north	• The relocation of the new alignment was necessary to change a curve.

1.2.5 Permits and Approvals Needed

Table 1.3 shows the permits and agreements required for the Kings Canyon Expressway Project, Segment 3.

Table 1.3 Coordination with Other Agencies

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 Biological Opinion for Threatened and Endangered Species	An Amended Biological Assessment was submitted on November 6, 2013.
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement, 2080.1 for a consistency determination with the Biological Opinion issued by the United States Fish and Wildlife Service	An application for a 1602 permit was submitted on November 6, 2013.
United States Army Corps of Engineers	Section 404 Nationwide Permit for permanent impacts to Waters of the United States.	An application for a Section 404 permit was submitted on November 6, 2013.
San Joaquin Valley Regional Water Quality Control Board	Section 401 Certification for a Water Discharge Permit.	An application for a Section 401 permit was submitted on November 6, 2013.
State Water Resource Control Board	Section 402 National Pollutant Discharge Elimination System	An application for a Section 402 permit was submitted on November 6, 2013.
San Joaquin Valley Air Pollution Control District	Dust Control Plan Notification would be required before demolition of any bridges or structures	Caltrans Standard Specifications pertaining to a dust control plan would be in the construction contracts. Notification would be made during the construction phase of the project.
Central Valley Flood Protection Board	Encroachment Permits	Applications for Encroachment Permits were submitted on March 27, 2014.

1.3 Consultation and Coordination

Caltrans has held several open forum public information meetings for the Kings Canyon Expressway Project, Segments 1 through 3.

On May 24, 2001, an information meeting was held in the town of Centerville at the local elementary school. About 170 people attended the meeting.

In March 2007, an open forum public information meeting was held to show the proposed design changes to Segment 1. About 100 people attended the meeting held at Fancher Creek Elementary School in east Fresno.

Consultation for Segment 3 has also been conducted with the following agencies, tribes, and interested parties:

- Consolidated Irrigation District
- Kings River Water Association
- Kings River Water District
- Kings River Conservation District
- Kings River Conservancy
- Fresno County Parks and Recreation
- Choinumi Tribe
- Cal Fire
- Army Corps of Engineers
- U.S. Fish and Wildlife
- California Department of Fish and Wildlife
- Central Valley Flood Prevention Board
- California Department of Water Resources

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

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

As part of the environmental analysis conducted for the project, only new information or substantial changes are discussed at length and only the avoidance, minimization and mitigation measures for the project that have changed are included in the CEQA Checklist in Appendix A. No further discussion is included in this document for any environmental issues that did not change from the original conclusions of the 1995 Environmental Impact Report. Therefore, the following environmental issues were considered but no adverse impacts were identified:

- Land Use – The project is consistent with existing and future land use and with state, regional, and local plans (Fresno County General Plan 2012, Regional Transportation Plan 2012, Federal Transportation Improvement Program 2012). The project would have an effect on parks and recreational facilities, which is discussed in Section 2.1.1.1.

- Coastal Zone – The project is not within a Coastal Zone, but is near the foothills of the Sierra Nevada Mountain Range (Field survey 2013).

- Wild and Scenic Rivers – No rivers classified as wild or scenic exist within the proposed project area (Wild and Scenic Resources database, March 2012).

- Growth – The findings of the 1995 Final Environmental Impact Report remain valid. The proposed project eventually would help achieve planned residential development in the project corridor, but would not accelerate planned growth or induce unplanned growth.

- Farmlands and Timberlands – The project requires the purchase of approximately 155 acres of farmland. Of that, 64 acres are considered Prime and Unique Farmland, and 51

acres are considered Statewide and Local Important farmland (Natural Resources Conservation Services, Farmland Conversion Impact Rating, 2013). The impact rating total for Segment 3 was 155 points on the NRCS-CPA-106; therefore, the findings of the 1995 Final Environmental Impact Report remain valid. No forest or tree stands are within the project area (Field visit, March 2012).

- Visual/Aesthetics – The findings of the 1995 Final Environmental Impact Report remain valid. The proposed project would not have a negative effect on the overall rural character of the landscape (Visual Impact Assessment, January 2014).

- Cultural Resources – No archaeological or historical resources were identified within the project area of Segment 3 based on surface identification efforts and geo-archaeology efforts (Cultural Resources Memorandum, January 2014).

- Hydrology and Floodplain – The findings of the 1995 Final Environmental Impact Report and subsequent report remain valid (Email from D. Caldera, Caltrans Hydraulics, January 28, 2013). The floodplain designation on the Flood Insurance Rate Maps (FIRM) issued by the Federal Emergency Management Agency (FEMA) was changed, but the changes were minor and only in the wording of descriptions and did not change the design or scope of the project (Addendum to the 1992 Location Hydraulic Study, April 2004).

- Water Quality and Storm Water Runoff – Based on the water quality information and the nature of the proposed project, no new impacts should occur when compared to the original design (Re-Evaluation of the Water Quality Report for the State Route 180/Kings Canyon Expressway Segment #3 in Fresno County, December 2012).

- Geology/Soils/Seismic/Topography – No geologic or topographic features were identified within the project area (National Registry of Natural Landmarks, Tulare County, California, 2011). No active faults exist within the proposed project area (2010 Fault Activity Map of California).

- Paleontology – The geologic units associated with the project are categorized as “low” sensitivity for paleontological resources. It is unlikely that paleontological resources will be encountered because excavation will be within the upper few feet of soil (Updated Paleontological Identification Report for Kings Canyon Expressway Segment 3 Project Fresno County, September 2011).

- Hazardous Waste/Materials – The findings of the 1995 Final Environmental Impact Report remain valid. A bridge survey on the Centerville-Kingsburg canal bridge on Smith Avenue (Bridge Number 42C-0043) would be completed prior to awarding the construction contract to determine the appropriate Standard Special Provisions (Memorandum, December 2013).

- Air Quality – The findings of the 1995 Final Environmental Impact Report remain valid (Environmental [Air Quality] Reevaluation for Kings Canyon Expressway Project Segment 3, December 2012). Caltrans has determined the project is not a project of air quality concern and will submit a complete request for a project level conformity determination from the Federal Highway Administration (FHWA) and Interagency Consultation Partners prior to awarding the construction contract.

- Noise – No sound abatement is recommended. The area of the proposed project was studied in 2002 and revisited in 2012, and no new developments within the project limits were identified. Therefore, the proposed changes to Segment 3 would not have new noise impacts or result in any changes to the outcome of the noise study completed on September 12, 2002 (Noise Study Reevaluation for the Kings Canyon Expressway Segment #3, January 2013).

- Energy – When balancing energy used during construction and operation against energy saved by relieving congestion and other transportation efficiencies, the project would not have substantial energy effects.

- Invasive Species – In compliance with Executive Order 13112 pertaining to invasive species, best management practices would be used to reduce the potential spread of noxious weeds to or from the project site. This would include using clean dirt for fill, properly disposing of soil from any excavated areas, and deploying proper erosion control techniques.

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Park and Recreation Facilities

Affected Environment

The public is provided access to areas along the Kings River, which is popular for fishing, rafting, and canoeing. Several public and private recreational facilities sit near the project

area: Thorburn Park, Pierce's Park campground, Whispering Waters Recreation Park, and a Kampground of America (KOA).

Thorburn Park – This public park is owned by Fresno County, but maintained and operated by the Kings River Conservancy under an agreement and grant received from the California Wildlife Conservation Board. During the process to obtain the California Wildlife Conservation Board grant, an Inter-Governmental Review between Caltrans, Fresno County and the Kings River Conservancy was conducted to establish a boundary for Thorburn Park based on the preliminary right-of-way lines for the proposed highway project, including a utility easement. Subsequently, a cyclone fence was built separating the proposed park from the proposed right-of-way needed for the highway project.

The park is used primarily for river access and includes an unpaved access road, an unpaved parking lot, an information kiosk, picnic tables, permanent vault toilets, and a trail connecting the parking area to a boat launch. It is open year-round, but only on weekends from September 2 through May 14. Its access gate is locked during non-operational hours. This facility is north of the existing State Route 180, on the west side of the Kings River. The public accesses the parking lot via Rio Vista Avenue on the west side of the property parcel.

Pierce's Park Campground – This campground is privately owned and operated year-round. Patrons pay for day use or overnight stays and the "dry" campground. This facility does not offer recreational vehicle facilities, and access to the river is limited to its patrons. The facility is south of the existing State Route 180 on the west side of the Kings River. The public accesses the campground via the existing State Route 180. Scott's Canoe Rental is operated seasonally at this location and offers canoe and tire tube rentals for use on the river when the water level allows it. A mobile home also sits on this property.

Whispering Waters Recreation Park – This privately owned facility is operated seasonally from March through November. The park contains two fishing ponds. Patrons pay admission and for the fish they catch. There is no access to the river from this park, which sits south of the existing State Route 180 on the east side of the Kings River. The public accesses the park via the existing State Route 180.

Kampground of America – This facility offers tent camping, full recreational vehicle hookups, a laundry and showers, WiFi, and a recreational room. The public accesses this facility via a driveway that is shared with the Sandy Point Mobile Home Park off the existing State Route 180 or via a dirt road from Piedra Road.

Kings River – The Kings River offers the public fishing, rafting, and canoeing at this portion of the river depending on how much water is released from Pine Flat Dam. At times, there is not enough release of water to support watercrafts.

Environmental Consequences

Thorburn Park – The Highway Design Standards requiring wider medians and the requirement for 3 feet of freeboard under the new bridge proposed at the Kings River have resulted in design changes for the approach of the new bridge. The 3 feet of freeboard, the distance between the bottom of the bridge and high water to address 100-year storm flows, is mandated by the Central Valley Flood Protection Board.

These new design requirements result in an additional sliver of right-of-way, approximately 20 feet wide or 0.1 acre, from the southern boundary of the park. Acquiring additional right-of-way from the park would require moving the existing cyclone fence 20 feet to the north, a permanent impact. The relocation of the cyclone fence would also result in moving the utility easement to the north by 20 feet, a temporary easement which would not permanently interfere with the intended use of Thorburn Park or its activities, features, and attributes. During construction, access into this facility may be temporarily disrupted due to the relocation of underground utilities.

Note: Under the National Environmental Policy Act (NEPA), this facility has been determined a Section 4(f) resource as a publicly owned park under Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303. Caltrans has also determined the additional right-of-way is a de minimus impact, which, on impacts on publicly owned parks, is defined as those that do not adversely affect the activities, features, and attributes of the Section 4(f) resource. Section 4(f) and de minimus impacts are not determinations made under the California Environmental Quality Act (CEQA) and, therefore, not ordinarily mentioned in the California Environmental Quality Act (CEQA) environmental document. However, these determinations are required public notification to support the National Environmental Policy Act environmental revalidation of the 1995 Environmental Impact Study (EIS).

Pierce's Park Campground – A sliver of property is needed from the north side of this property parcel. As a result, the project would relocate the driveway from the north side to the west side of the property parcel. An access road would be constructed from a proposed cul-de-sac south of the new alignment of State Route 180 at Rio Vista Road. The project would relocate the mobile home and its water and septic facilities. During construction,

patrons may be temporarily unable to use certain portions of the campground and access into the campground may be temporarily disrupted.

Whispering Waters Recreation Park – A sliver of right-of-way is needed from the northern boundary of this property parcel requiring the relocation of the existing driveway. New access into the park would be constructed on the south side of the property parcel on Lone Oak Road via the new intersection of Piedra Road and the new alignment of State Route 180. The project would relocate a breeding pond and move two fishing ponds to the south to accommodate the new state right-of-way fence. In addition, a PG&E tower would be relocated within PG&E's easement, which crosses the park's existing parking lot. During construction, patrons may be temporarily unable to use certain portions of the park and access into the park may be temporarily disrupted.

Kampground of America – No right-of-way is needed from this property parcel, but access into this facility would be relocated to Piedra Road via a new frontage road. Patrons would access Piedra Road via the new intersection of Piedra Road and the new alignment of State Route 180. During construction, no disruption is expected for this facility.

Kings River – The project would construct a new two-lane bridge over the Kings River north of the existing bridge. During construction of the Kings River bridge, the public would not have access there to the river for fishing, rafting or canoeing for safety reasons.

Avoidance, Minimization, and/or Mitigation Measures

Thorburn Park – The acquisition of additional right-of-way from the park cannot be avoided due to the mandated design requirements. To minimize impacts during construction, any constructions activities would be coordinated with the jurisdictional agency, Fresno County, to avoid interruption to park patrons.

Note: As required by the National Environmental Quality Act, Caltrans would comply with the public review requirements for a Section 4(f) De Minimus finding on the project's effect, which requires concurrence from the responsible official with jurisdiction over the resource after the public comment period.

Pierce's Park Campground, Whispering Waters Recreation Park, and Kampground of America – To minimize impacts during construction, any construction activities would be coordinated with the respective park or campground to avoid disruptions for park patrons as much as possible.

Kings River – Construction of the bridge across the Kings River would be done during low water levels as much as possible. Efforts to notify the public about temporary closure to water activities at the river during construction would be made through local news releases and public notification.

2.1.2 Community Impacts

2.1.2.1 Relocations and Real Property Acquisition

Affected Environment

The original environmental document reported that only 11 mobile homes would need relocation. Based on field reviews conducted for the project from Temperance Avenue to the Alta Main Canal, the Sandy Point Mobile Home Park has approximately 32 mobile homes.

The size, quality and condition of dwellings to be impacted by this project vary widely. Some parcels are improved with quality dwellings, while others suffer from disrepair. Some of the manufactured homes are substantial enough to be moved, while others will require demolition and the displacees relocated to another area.

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.

Environmental Consequences

The Highway Design Standards requiring wider medians and 3 feet of freeboard under the new bridge proposed at the Kings River have resulted in design changes for the approach of the new bridge. The 3 feet of freeboard, the distance between the bottom of the bridge and high water level to address 100-year storm flows, is mandated by the Central Valley Flood Protection Board. These new design requirements result in additional right-of-way being needed from the Sandy Point Mobile Home Park. This would result in the relocation of all of the mobile homes in the park (about 32 mobile homes). There is also a potential for several single-family residences and mobile home relocations near the Byrd Slough.

Avoidance, Minimization, and/or Mitigation Measures

Relocation of the Sandy Point Mobile Home Park cannot be avoided due to the mandated design requirements for construction of the new bridge. Because the Kings River forks north and south of the existing State Route 180 bridge, any other location for a new bridge would result in significant environmental impacts.

Adequate relocation resources for homeowners and renters exist within the local area (2013 Relocation Impact Document). All displacees will be contacted by a Relocation Agent, who will ensure that eligible displacees receive their full relocation benefits, including advisory assistance, and that all activities will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources will be available to all displacees free of discrimination. At the time of the first written offer to purchase, owner occupants are given a detailed explanation of Caltrans' "Relocation Program and Services." Soon after the first written offer to purchase, tenant occupants of properties to be acquired are given a detailed explanation of Caltrans' "Relocation Program and Services."

2.1.3 Utilities and Emergency Services

Affected Environment

Utilities – PG&E currently owns a 30-foot-wide (approximately) easement that diagonally crosses Piedra Road and the existing State Route 180 in a north-south direction. Two transmission towers are located within the realignment of Piedra Road and the expressway.

Emergency Services – Law enforcement is provided by the Fresno County Sheriff's Department, and fire suppression is provided by Cal Fire.

Environmental Consequences

Utilities – Caltrans would acquire a new utility easement next to the project to consolidate utilities. In addition, near Piedra Road, the project requires the relocation of two PG&E transmission towers within PG&E's easement. One tower would be relocated within the state right-of-way west of the new alignment of Piedra Road between the frontage road leading to the Sandy Point Mobile Home Park and the expressway. The other tower would be relocated to the southern portion of the Whispering Waters parking lot. The towers would have a base of about 6 feet by 6 feet.

Emergency Services – Emergency response vehicles would have access via frontage roads. Although direct access from the expressway has been eliminated (except for intersections), the additional travel lanes will provide a safer and speedier response time for emergency services by avoiding the conflict with slower-moving vehicles and oncoming traffic.

Avoidance, Minimization, and/or Mitigation Measures

Utilities – Relocation of the towers cannot be avoided, and Caltrans has been consulting with PG&E to minimize the temporary disruption of services as much as possible.

Emergency Services – A Traffic Management Plan would be developed to handle local traffic patterns and reduce delays for emergency response vehicles during construction.

2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities

Affected Environment

Traffic and Transportation – The existing State Route 180 is a two-lane conventional highway with narrow or no shoulders and a speed limit of 55 miles per hour. Within the project limits, the existing highway is intersected by a number of local roads controlled by stop signs: Smith Avenue, Oliver Avenue, Trimmer Springs Road, Rio Vista Avenue, Piedra Road, Lone Oak Road, Reed Avenue, and Frankwood Avenue (see Figure 1-2). These roads are described below:

- Smith Avenue – This small road has a bridge over the Centerville-Kingsburg Canal and provides access to the existing State Route 180 from the north side of the canal.

- Oliver Avenue – This road begins at Belmont Avenue to the north and crosses the existing State Route 180 in Centerville before continuing into the city of Sanger and the surrounding area.

- Trimmer Springs Road – This segment of Trimmer Springs Road begins at Belmont Avenue to the north and meanders along the river bottom before ending at the existing State Route 180. Residents on the west side of the Kings River can use either Trimmer Springs Road or Rio Vista Avenue for access to the existing State Route 180.

- Rio Vista Avenue – This road intersects with Trimmer Springs Road and travels along the west side of the Kings River before ending at the existing State Route 180.

- Piedra Road – This road is a major connector to the foothill communities of Tivy Valley and Wonder Valley, and to residents living on the east side of the Kings River. The road is also a connector to recreational areas along the east side of the Kings River, such as Avocado Lake and Pine Flat Dam.

- Lone Oak Road – This road currently intersects with the existing State Route 180 east of Piedra Road and provides access to residents living along the east side of the Kings River south of the existing highway.

- Reed Avenue – This road ends at the existing State Route 180 and is a major connector to the city of Reedley.

- Frankwood Avenue – This road begins at Piedra Road near the Friant-Kern Canal near the foothill community of Tivy Valley and is a north-south connector to the City of Reedley. The Sherwood Golf Course and a large mobile home park sit along north Frankwood Avenue.

Trimmer Springs Road, Rio Vista Lane, Piedra Road and Lone Oak Road intersect the existing highway at a "skewed" angle that restricts a driver's ability to see clearly to the right and left; the driver must look nearly all the way behind him- or herself to see approaching traffic. Drivers are also subject to marked pedestrian crossings and a reduced speed of 45 miles per hour in the community of Centerville. Drivers on the existing State Route 180 must also be aware of the numerous driveways belonging to rural residents, farmers, ranchers, and commercial businesses, as well as the recreational areas along the Kings River.

Pedestrian Facilities – The existing State Route 180 has no designated pedestrian facilities, such as sidewalks or pedestrian walkways within the project limits. But within the community of Centerville, pedestrian crosswalks are provided at Smith Avenue and Oliver Avenue.

Bicycle Facilities – Currently, there are no designated Class One (bicycle paths) or Class Three (bicycle routes) bicycle facilities within the proposed project limits. According to the recently adopted Fresno County Regional Bicycle and Recreational Trails Master Plan (September 24, 2013): "Approximately 86 miles of existing Class II bike lanes are generally located in the eastern section of Fresno County east of Maple Avenue…along Belmont Avenue to Trimmer Springs Road and then to the Friant-Kern Canal…" The Master Plan also designates the rural portion of State Route 180 as a "Planned Bikeway" (except for segments within Tulare County).

Environmental Consequences

Traffic and Transportation – Removal of driveways and additional lanes are expected to reduce accidents and conflicts between slower-moving vehicles and through traffic. The divided highway or median is anticipated to reduce the number of head-on collisions and the wider shoulders (and shoulder backing) would provide a wider recovery zone for drivers drifting off the travel lanes.

Change in traffic patterns would occur at almost all the local roads that intersect with the existing State Route 180 (see Figure 1-2):

- Smith Avenue – The bridge at Smith Road would be demolished, Smith Avenue would be eliminated, and a frontage road (Ventura Avenue) would be constructed to provide access to Oliver Avenue for residents living on the north side of the Centerville-Kingsburg Canal (see Figure 1-2).

- Oliver Avenue – A new intersection would be constructed north of the existing State Route 180. North of the new intersection, Oliver Avenue would also intersect with a new frontage road to the west (Ventura Avenue) and the realigned Trimmer Springs Road to the east to provide access to local residents north of State Route 180.

- Trimmer Springs Road – This road would be realigned to the west to intersect with Oliver Avenue slightly north of the proposed intersection of the expressway and Oliver Avenue.

- Rio Vista Avenue – A new intersection would be constructed slightly to the east of the existing intersection, removing the skewed angle and providing access for drivers to the new expressway.

- Piedra Road – A new intersection would be constructed to the west of the existing intersection, removing the skewed angle and providing access for drivers to the new expressway. This road would also have frontage roads to the east and west to provide access to local residents.

- Lone Oak Road – This road would remain in place. Residents could access the new expressway via Piedra Road or go south to Reed Avenue. The existing intersection of Lone Oak Road and the existing State Route 180 would remain, but the existing State Route 180 would become a frontage road between Lone Oak Road and its new intersection with the realignment of Reed Avenue.

- Reed Avenue – This road would be extended beyond the existing State Route 180 to the northeast to intersect with the new expressway. It would be controlled by traffic signals.

- Frankwood Avenue – The existing roadway would be realigned slightly before intersecting with the new expressway. A frontage road would be constructed to the

east toward Alta Main Canal to provide access to residents living north of the expressway.

Portions of the existing State Route 180 would become a frontage road in the following areas (west to east):

- Within the community of Centerville, the existing State Route 180 would connect with the newly constructed frontage road completed for Segment 2 east of the Centerville-Kingsburg Canal and end with a cul-de-sac before crossing China Slough, east of Trimmer Springs Road.
- Between Collins Creek and Rio Vista Avenue.
- Between Lone Oak Road and the new intersection with the realignment of Reed Avenue.
- Between Reed Avenue and Alta Main Canal.

Traffic delays are expected to be minimal because most of the new expressway would be built on new alignments avoiding any conflict with the existing traffic. The longest detour expected during construction would be at Frankwood Avenue where drivers would be detoured 2 miles north to Piedra Road to access State Route 180. This detour is needed to avoid any conflicts with construction equipment and should last about 3 weeks. Based on "test runs" conducted in December 2013, this particular detour would result in increasing travel times for commuters living on North Frankwood Avenue, or patrons of the Sherwood Golf Course, by about 10 minutes.

Pedestrian Facilities – The pedestrian crosswalks on the existing State Route 180 in Centerville would remain. Although no pedestrian crosswalks would be provided on the new State Route 180 alignment, the project would provide wider shoulders for pedestrians. The proposed side ditches would also provide an area for pedestrians away from traffic.

Bicycle Facilities – Bike lanes would be provided at right-only turns, but no other bicycle facilities on the expressway are proposed. The expressway would provide 10-foot paved shoulders, which would be safer for bicyclists to use.

Avoidance, Minimization, and/or Mitigation Measures

Traffic and Transportation – A Traffic Management Plan would be developed to handle local traffic patterns and reduce delays, congestion, and the likelihood of accidents during

construction. The Traffic Management Plan includes notifying the public of construction activities via media outlets, using changeable message signs, using construction strategies, and using the Central Valley Traffic Management Center, which reduces congestion by monitoring traffic and informing the public via media outlets, such as radio and television.

Pedestrian and Bicycle Facilities – No mitigation is required.

2.2 Biological Environment

Caltrans completed a Re-evaluation Report for Segment 3 in March 2014. The biological study area encompassed a 337-acre area containing agricultural fields, eight water crossings, riparian areas, open fields, ranch-style homes, a mobile home park, and a few local businesses. The topography of the area consists mostly of flat terrain ranging in elevation from 385 feet to 400 feet above sea level.

Background research on sensitive species that could occur within the biological study area was conducted using the California Natural Diversity Database, California Native Plant Society on-line inventory, and U.S. Fish and Wildlife Service's official species list for the Sanger, Round Mountain, Piedra, and Wahtoke quadrangles.

References to the biological study area or the project limits or project (Segment 3) are not the same. The biological study area is much larger than the project limits or the project, and it takes into consideration the project limits and adjacent areas surrounding the project limits in all directions. Reference to the project limits and the impacts resulting from Segment 3 include, but are not always limited to, the proposed right-of-way, utility easements, and private vehicle access easements.

2.2.1 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 below in the Threatened and Endangered Species section, Section 2.2.5. Wetlands and other waters are discussed in Section 2.2.2.

Affected Environment

Valley Oak Woodland – An "oak woodland" is defined under Senate Concurrent Resolution Number 17 as a 5-acre circular area containing 5 or more oak trees per acre. Species protected under this resolution include blue oak (*Quercus douglasii*), Engelmann oak (*Quercus engelmannii),* coast live oak *(Quercus agrifolia)* and valley oak *(Quercus lobata).*

Caltrans biologists conducted several surveys in 2012 and 2013 and identified 49.21 acres of valley oak woodland. The valley oak woodland area contains 226 valley oaks plus 50 riparian trees that are not located within the riparian habitat identified in the following discussion. Out of the 226 valley oaks and 50 riparian trees, 37 oaks and 26 riparian trees are considered heritage oaks. "Heritage trees" are classified as any tree with a diameter at breast height equal to or greater than 24 inches.

Trees outside of the identified valley oak woodland include 47 oak trees, including 21 oak trees considered heritage oaks.

Riparian Habitat – Riparian habitat exists next to waterways within the biological study area. Dominant species observed within the identified riparian habitat include valley oak, western sycamore *(Platanus racemosa),* black willow *(Salix gooddingii),* tail-leaf willow *(Salix lasiandra caudata),* Oregon ash *(Fraxinus latifolia),* and Fremont cottonwood *(Populus fremontii).*

The 2012/2013 surveys conducted by Caltrans biologists identified 33.28 acres of riparian habitat. The area contained a total of 818 trees, 422 valley oak trees and 396 riparian trees, mostly cottonwoods, and several species of willow, ash, and sycamore. Of the 396 identified riparian trees, 55 of the trees would be considered heritage.

Trees outside the identified riparian habitat include 33 riparian trees (cottonwoods, willows, and sycamores), including 22 trees considered heritage trees.

Environmental Consequences

It is anticipated that Segment 3 would impact 33.28 acres of riparian habitat containing 818 trees. The riparian habitat includes valley oak trees.

Valley Oak Woodland – It is anticipated that Segment 3 would remove 442 valley oak trees, including 84 trees considered heritage oaks.

Riparian Habitat – It is anticipated that Segment 3 would impact 396 other types of trees that were identified as riparian trees, including 55 trees considered heritage.

Table 2.1 shows the tree distribution in the biological study area.

Table 2.1 Tree Distribution in the Biological Study Area

	Oak Woodland		Riparian Zone		Trees Outside Woodland and Riparian Zone	
	Oak Trees	Riparian Trees	Oak Trees	Riparian Trees	Oak Trees	Riparian Trees
Total Trees	226	*50*	442	*396*	47	*33*
Total Heritage Trees	**37**	***26***	**84**	***55***	**21**	***22***

Caltrans Re-evaluation Report, Kings Canyon Expressway Segment 3, April 2014

Avoidance, Minimization, and/or Mitigation Measures

Valley Oak Woodland – The regional offices of the California Department of Fish and Wildlife, formerly known as the California Department of Fish and Game, enforce implementation of Senate Concurrent Resolution Number 17 as a natural resources trustee agency under the California Environmental Quality Act. Senate Concurrent Resolution Number 17, as well as 2004 Senate Bill 1334, requests that state agencies provide replacement planting of oak trees that are removed from oak woodlands due to land use planning duties to the maximum extent possible and consistent with the performance of those duties and responsibilities.

To mitigate for the loss of oak woodland resulting from Segment 3, Caltrans will be purchasing an offsite conservation easement from the Sequoia Riverlands Trust for the preservation of oaks at a suitable parcel.

Riparian Habitat – For the loss of riparian habitat, the required compensatory mitigation includes replanting native oaks and riparian trees at a 3:1 ratio (replanting 3 trees for every 1 tree lost) for trees between 4–23 inches in diameter at breast height. Trees that are 24 inches or more in diameter at breast height are defined as heritage trees and require replanting at a 10:1 ratio (replanting 10 trees for every 1 heritage tree lost).

Caltrans proposes to compensate for the loss of native trees at an offsite location within the Kings River watershed in conjunction with Sequoia Riverlands Trust.

2.2.2 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 main law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the 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 (U.S. EPA).

The U.S. Army Corps of Engineers issues two types of 404 permits: General and Standard 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 allow 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. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with the U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines (U.S. EPA 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. EPA 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 (LEDPA) 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 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 State Water Resources Control Board (SWRCB), the Regional Water Quality Control Board (RWQCB) and the California Department of Fish and Wildlife. 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 Wildlife before beginning construction. If the California Department of Fish and Wildlife 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 Wildlife 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 Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Board also issues water quality certifications for activities that may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request.

Affected Environment

Caltrans biologists conducted wetland delineations for Segment 3 in the spring of 2011 and spring of 2012. In the fall of 2012, Caltrans contracted sub-consultants to complete the wetland delineations, tree counts, and elderberry counts. Fieldwork conducted by the sub-consultants was completed during the fall of 2012 and into January 2013. After submitting the Preliminary Jurisdictional determination to the U.S. Army Corps of Engineers, the

agency requested additional delineation, which was completed by Caltrans biologists in July and August 2013.

Construction of Segment 3 would require 8 water crossings (see Figure 1-2): the Centerville-Kingsburg Canal, China Slough, Collins Creek, Kings River, Cameron Slough, Byrd Slough, Carmelita Ditch, and Mount Campbell Ditch. Construction of the project ends before crossing the Alta Main Canal and Friant-Kern Canal.

All of the identified waterways originate from the Kings River, which flows through Fresno County and Kings County in a southwestern direction (see Appendix C E). The Kings River is impounded by Pine Flat Dam in Piedra north of the project area.

Below Pine Flat Dam, the Alta Main Canal branches off of the Kings River and flows in a southern direction into Wahtoke Lake, then flows into the Alta East Branch Canal and the Reedley Main Canal both continuing to flow southeast. The Byrd Slough branches off of the Alta Main Canal just north of Friant-Kern Canal, which crosses the Kings River approximately 10 miles west of Pine Flat Dam.

Just south of Friant-Kern Canal, the Kings River also flows into the Fresno Canal and the Consolidated Canal. The Consolidated Canal then flows into the Fowler-Switch Canal and the Centerville-Kingsburg Canal. Collins Creek branches off of the Centerville-Kingsburg Canal, and China Slough branches off of Collins Creek. China Slough flows back into Collins Creek, and then Collins Creek flows back into the Kings River.

Just north of the existing State Route 180, a tributary of Cameron Slough flows out of Byrd Slough and just below the existing State Route 180, a tributary of Cameron Slough flows out of the Kings River. Both Cameron Slough and Byrd Slough flow back into the Kings River.

Near the end of the project are two irrigation canals: the Carmelita Ditch and the Mount Campbell Ditch. Both are dirt-lined irrigation ditches used to transport irrigation water to adjacent farmland.

Wetlands – Caltrans biologists identified 28 wetlands, totaling 6.71 acres within the biological study area. Table 2.2 shows the number of wetlands associated with each waterway identified within the biological study area.

Table 2.2 Wetlands in Biological Study Area

Waterway	Number of Associated Wetlands
Centerville-Kingsburg Canal	5
China Slough	3
Collins Creek	5
Kings River	11
Cameron Slough	1
Byrd Slough	1
Alta Main Canal	2
Total	**28**

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Waters of the U.S. – Within the biological study area, Caltrans biologists identified 8 waterways containing 6.78 acres that are potentially jurisdictional under the U.S. Army Corps of Engineers. These waterways include the Centerville-Kingsburg Canal (including a side ditch next to the canal), China Slough, Collins Creek, Kings River, Cameron Slough, Byrd Slough, Carmelita Canal (Ditch), and Mount Campbell Canal (Ditch).

Environmental Consequences

Wetlands – It is anticipated that Segment 3 would permanently impact 5.54 acres of wetlands associated with the 8 waterways within the project limits. No temporary impacts are anticipated.

Waters of the U.S. – It is anticipated that Segment 3 would permanently impact 1.45 acres of waters of the U.S. associated with the 8 waterways within the project limits

Avoidance, Minimization, and/or Mitigation Measures

Caltrans proposes to compensate for the permanent impacts to wetlands and waters of the U.S. by creating and restoring existing wetlands at an offsite location, Bennett-Fit Wetlands Forever, near Helm in Fresno County. The Fresno Slough flows through the parcel and receives water from the North Fork of the Kings River.

LEDPA Alternative Analysis – A corridor study was conducted for the project in 1990 to identify alternative alignments that could minimize environmental impacts. The corridor study area began at the eastern end of the future State Route 180 freeway/expressway near the intersection of Fowler and Harvey Avenues in Fresno and extended east for about 9.4 miles to Cove Road (Segments 1-4). After the public hearing for the draft Environmental Impact Report/Environmental Impact Statement, and based on community and agency input, Alternative 1A was the preferred alternative selected for funding.

Supplemental environmental studies conducted for Segment 3 have determined that Alternative 1A remains the least environmentally damaging practicable alternative (LEDPA). An application for a Section 404 Nationwide Permit was submitted to the U.S. Army Corps of Engineers on November 6, 2013.

2.2.3 Plant Species

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. "Special status" is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA).

This section of the document discusses all the other special-status plant species, including California Department of Fish and Wildlife species of special concern, U.S. Fish and Wildlife Service candidate species, and California Native Plant Society rare and endangered plants.

The regulatory requirements for the Federal Endangered Species Act can be found at 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. The regulatory requirements for the California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, California Public Resources Code, Sections 2100-21177.

Affected Environment

Botanical surveys conducted in 2001/2002 for the Kings Canyon Expressway projects, Segments 1-3, did not identify any special-status plant species. To update the botanical findings, Caltrans biologists conducted botanical surveys for Segment 3 in March 2014. The following species were identified as having a potential to occur in the area:

Forked hare-leaf – The forked hare-leaf (*Lagophylla dichotama*) is on the California Native Plant Society's 1B list. It is an annual herb that is native to California and endemic (limited) to California alone. It is a small genus of flowering plants in the Asteraceae family. This plant has furry leaves and small yellow flowers that open up during the night (CNPS, 2014).

The California forked hare-leaf was not identified within the biological study area for Segment 3 during the 2014 surveys.

San Joaquin Adobe Sunburst – The San Joaquin adobe sunburst is federally listed as threatened, state listed as endangered, and on the California Native Plant Society's 1B list. It is an annual herb that is native to California and is part of the Asteraceae family (CNPS, 2014). This plant is 8 to 28 inches tall with triangular feather-shaped leaves with yellow flowers. This species is typically found in grasslands within bare dark clay soils. The San Joaquin adobe sunburst was not identified within the biological study area for Segment 3 during the 2014 surveys.

The California Natural Diversity Database documented an occurrence of this plant on the east side of the Alta Main Canal in Porterville clay soil (the preferred soil for this species) at the edge of the biological study area, and Porterville clay soil was identified within the biological study area during the 2014 surveys near the end of the project limits.

Environmental Consequences

Forked hare-leaf – No impacts to the forked hare-leaf are anticipated as a result of the proposed project.

San Joaquin Adobe Sunburst – No impacts to the San Joaquin adobe sunburst are anticipated as a result of the proposed project. Although the San Joaquin adobe sunburst was not identified during the 2014 botanical surveys, there is a potential for the plant to grow within the biological study area because the preferred soil is present.

Avoidance, Minimization, and/or Mitigation Measures

California Native Plant Society-listed plants have the potential to occur within the project area. To minimize potential impacts to any California Native Plant Society-listed plants, botanical surveys will be conducted in the blooming season before construction is scheduled to begin. If a California Native Plant Society-listed plant is found in the project area, 4 inches of topsoil from the area where the plant is found will be collected and stored until construction is complete. At that time, the topsoil will be restored to the temporarily disturbed area.

With the above-mentioned avoidance and minimization measures, there will be no impacts to the forked hare-leaf (*Lagophylla dichotoma*).

To minimize potential impacts for the federally listed San Joaquin adobe sunburst (*Pseudobahia Peirsonii*), pre-construction surveys would be conducted in the appropriate blooming period (March and April) prior to the beginning of construction activities.

2.2.4 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 (NOAA Fisheries Service) and the California Department of Fish and Wildlife 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 federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.2.5 below. All other special-status animal species are discussed here, including the California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act
- State laws and regulations relevant to wildlife include the following:
- California Environmental Quality Act
- Sections 1600–1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

Affected Environment

The tricolored blackbird is considered a California Species of Concern by the California Department of Fish and Wildlife. This species is similar to the more common red-winged blackbird, except for a prominent white stripe under the red wing patch, and more pointed wings and bill. It is common locally throughout the Central Valley, breeding near fresh water, preferably in emergent wetlands. Tricolored blackbirds usually nest in dense cattails, tules, and thickets of willows, blackberry, wild rose, and tall forbs. Mud or plant material nests are usually located a few feet over or near freshwater, or may be hidden on the ground

among low vegetations. The typical breeding season for tricolored blackbirds is mid-April to late July.

The California Natural Diversity Database documents two occurrences of tricolored blackbirds 5 miles north of the biological study area.

Environmental Consequences

No impacts to the tricolored blackbird are anticipated as a result of the proposed project. Although the tricolored blackbird has not been documented within the project site by the California Natural Diversity Database, there may be additional nesting habitat for this species in valley freshwater marshes, riparian habitats, and foraging habitats within the biological study area prior to construction.

Avoidance, Minimization, and/or Mitigation Measures

To minimize potential impacts to the tricolored blackbird, pre-construction surveys would be conducted within the biological study area. In addition, a standard special provision for migratory bird protection would be included in the construction contract and would minimize impacts to the special-status species.

The Federal Migratory Bird Treaty Act protects most North American migratory birds, nests, and eggs. It is preferable that tree removal occur outside of the nesting season (February 15-September 1). If tree removal is not conducted during this time, a qualified biologist must survey all trees and shrubs to be removed for active bird nests prior to the tree removal.

2.2.5 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later 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 (NOAA 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 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence

and/or documentation of a No Effect finding. 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 (CESA), California Fish and Game Code Section 2050, et seq. This 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 Wildlife 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 Wildlife.

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 Wildlife may also authorize impacts to the 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

Vernal Pool Fairy Shrimp – The vernal pool fairy shrimp (*Branchinecta lynchi*) is a federally listed threatened species. The 1995 Environmental Impact Report/Environmental Impact Statement determined the Kings Canyon Expressway Project, Segments 1-4, would have a direct effect to seasonal pools and puddles potentially containing fairy shrimp along the

existing State Route 180. Although the fairy shrimp surveys conducted for the project at that time determined the seasonal pools and puddles did not contain listed fairy shrimp, it was also agreed they may be present.

The vernal pool fairy shrimp is widespread throughout California, but there is only one occurance recorded near the project site. The location is about 6 miles east of Centerville, outside the project limits of Segment 3 near State Route 180 and Alta Road. This occurrence is within the project limits of Segment 4 of the Kings Canyon Expressway Project, which was dropped from further consideration.

Valley Elderberry Longhorn Beetle – The valley elderberry longhorn beetle is listed as a federally threatened species. The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus)* is completely dependent on the blue elderberry shrub (*Sambuscus mexicana),* a common component of riparian forests of the Central Valley and associated foothills. The current distribution of the species is patchy throughout the remaining riparian forests of the Central Valley from Redding to Bakersfield.

Adults emerge from pupation inside the wood of elderberry shrubs in the spring as the flowers begin to open. The exit holes made by the emerging adults are distinctive small oval openings. Often these holes are the only clue that the beetles occur in an area. The adults eat the elderberry foliage until mating season, about June. The females lay eggs in crevices in the bark. Upon hatching, the larvae then begin to tunnel into the tree where they will spend 1-2 years eating the interior wood, which is their sole food source.

The 1995 Environmental Impact Report determined the project would not have any direct impact to any elderberry shrubs growing along the existing highway, but proposed transplanting any displaced elderberry at a ratio of 3 replantings to every 1 removal. The 2005 Reevaluation of the project identified only 73 elderberry shrubs within the original study area, and the 2012/2013 surveys conducted by Caltrans biologists identified 134 elderberry shrubs within the project limits. The addition of 59 shrubs could be attributed to new growth of the species.

San Joaquin Kit Fox – The San Joaquin kit fox is federally listed as endangered and state listed as threatened. It is the smallest candid species in North America and is mostly nocturnal. The historic range of the San Joaquin kit fox included most of the San Joaquin Valley from San Joaquin County southward to southern Kern County. Currently, kit foxes occur in the remaining native valley floor and surrounding foothills from Kern County north to Merced County. Distribution is spotty within this range.

The California Natural Diversity Database has documented two known occurrences of San Joaquin kit foxes within the quadrangle maps that encompass the project site. One of the occurrences is 1 mile south of State Route 180 in Sanger, and the second occurrence is 4.5 miles northeast of State Route 180. No San Joaquin kit foxes were identified within the biological study area.

Swainson's Hawk – The Swainson's hawk is listed as a state threatened species. The Swainson's hawk is a summer migrant in the Central Valley that breeds in riparian and oak savannah habitat and forages in adjacent grasslands or suitable grain or alfalfa fields or livestock pastures. Swainson's hawks that breed in California typically spend winters in Mexico and South America. In the Central Valley, over 85 percent of Swainson's hawk territories are in riparian systems that are next to suitable foraging habitat. In addition, the hawks use lone trees or groves of trees in agricultural fields. Large trees and large willows are most often used for nesting. Breeding occurs in March to late August, with peak activity during late May through July.

The Swainson's hawk was historically regarded as one of the most numerous raptors in the state. The dramatic decline in the population of the Swainson's hawk has been attributed to the loss of native nesting and foraging habitat, and more recently to the loss of suitable nesting trees. The loss of nesting habitat within riparian areas has been accelerated by flood control practices and bank stabilization programs.

Environmental Consequences

Vernal Pool Fairy Shrimp – In 2005, the U.S. Fish and Wildlife Service issued a Biological Opinion requiring Caltrans to mitigate for the loss of 1.053 acres of fairy shrimp habitat. However, because the habitat was of poor quality, the mitigation ratio was only 0.3 acre to 1 acre of impact (0.3:1 ratio).

Valley Elderberry Longhorn Beetle – The project would require the removal of approximately 104 elderberry shrubs within the project limits.

San Joaquin Kit Fox – No impacts to the San Joaquin kit fox are anticipated as a result of the proposed project. Although no San Joaquin kit foxes were identified within the biological study area, considering the distribution of the known occurrences and suitable foraging habitats that are present throughout the biological study area, the San Joaquin kit fox could den, forage, and disperse throughout the biological study area.

Swainson's Hawk – No impacts to the Swainson's hawk are anticipated as a result of the proposed project. Although the Swainson's hawk has not been documented near the project site by the California Natural Diversity Database, because of the existing potential nesting habitat, a Swainson's hawk could build a nest within the biological study area prior to construction.

Avoidance, Minimization, and/or Mitigation Measures

Vernal Pool Fairy Shrimp – No avoidance, minimization, or mitigation measures are proposed for vernal pool fairy shrimp for Segment 3. Caltrans mitigated impacts to 1.053 acres of poor quality fairy shrimp habitat by purchasing 0.43 vernal pool conservation credits from the Great Valley Conservation Bank in Rancho Cordova, California, which was approved by the U.S. Fish and Wildlife Service for the entire Kings Canyon Expressway project, including Segment 3.

Valley Elderberry Longhorn Beetle – The 104 elderberry shrubs that are within the project impact area would be relocated to Fresno Camp Conservation Bank. This facility is a U.S. Fish and Wildlife Service-approved mitigation bank for the valley elderberry longhorn beetle. In addition, Caltrans will purchase conservation credits at French Camp Conservation Bank.

Swainson's Hawk – The Federal Migratory Bird Treaty Act protects most North American migratory birds, nests and eggs. It is preferable that tree removal occur outside of the nesting season (February 15-September 1). If tree removal is not conducted during this time, a qualified biologist must survey all trees and shrubs to be removed for active bird nests prior to the tree removal.

2.3 Climate Change

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 gas (GHG) emissions, 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 (IPCC) 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 primarily concerned with the emissions of greenhouse gases generated by human activity including

carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of greenhouse gas emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of greenhouse gas-emitting sources. The dominant greenhouse gas emitted is carbon dioxide (CO_2), mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: “Greenhouse Gas Mitigation” and “Adaptation.” "Greenhouse Gas Mitigation" is a term for reducing greenhouse gas emissions to reduce or "mitigate" the impacts of climate change. “Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)[1].

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.[2]

Regulatory Setting

This section outlines state and federal efforts to comprehensively reduce greenhouse emissions from transportation sources.

State

With passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002:
This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter

[1] http://climatechange.transportation.org/ghg_mitigation/

[2] http://www.fhwa.dot.gov/environment/climate_change/mitigation/

emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order (EO) S-3-05 (June 1, 2005): The goal of this executive order is to reduce California's greenhouse gas emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, 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 scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This executive order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This executive order 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 ten percent by 2020.

Senate Bill 97 (SB 97), Chapter 185, 2007, Greenhouse Gas Emissions: required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board (CARB) to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This senate bill requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill 32.

Federal

Although climate change and greenhouse gas reduction are a concern at the federal level; currently no regulations or legislation have been enacted specifically addressing greenhouse gas emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level greenhouse gas analysis.[3] The Federal Highway Administration supports the approach that 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 assist in 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 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 outlined by the Federal Highway Administration to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are 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 (October 5, 2009): This executive order 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 national strategy for adaptation to climate change.

The U.S. Environmental Protection Agency's authority to regulate greenhouse gas emissions stems from the U.S. Supreme Court decision in *Massachusetts v. Environmental Protection Agency* (2007). The Supreme Court ruled that greenhouse gases meet the definition of air

[3] To date, no national standards have been established regarding mobile source GHGs, nor has U.S. EPA established any ambient standards, criteria or thresholds for GHGs resulting from mobile sources.

pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Supreme Court's ruling, the U.S. Environmental Protection Agency finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and the Environmental Protection Agency's assessment of the scientific evidence that form the basis for the Environmental Protection Agency's regulatory actions. The U.S. Environmental Protection Agency in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of greenhouse emission standards for new cars and light-duty vehicles in April 2010.[4]

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.

The final combined standards that made 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 implemented by this program are expected to reduce 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 August 28, 2012, the U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is projected to save approximately four billion barrels of oil and two billion metric tons of greenhouse gas emissions.

The complementary U.S. Environmental Protection Agency and National Highway Traffic Safety Administration standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to

[4] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

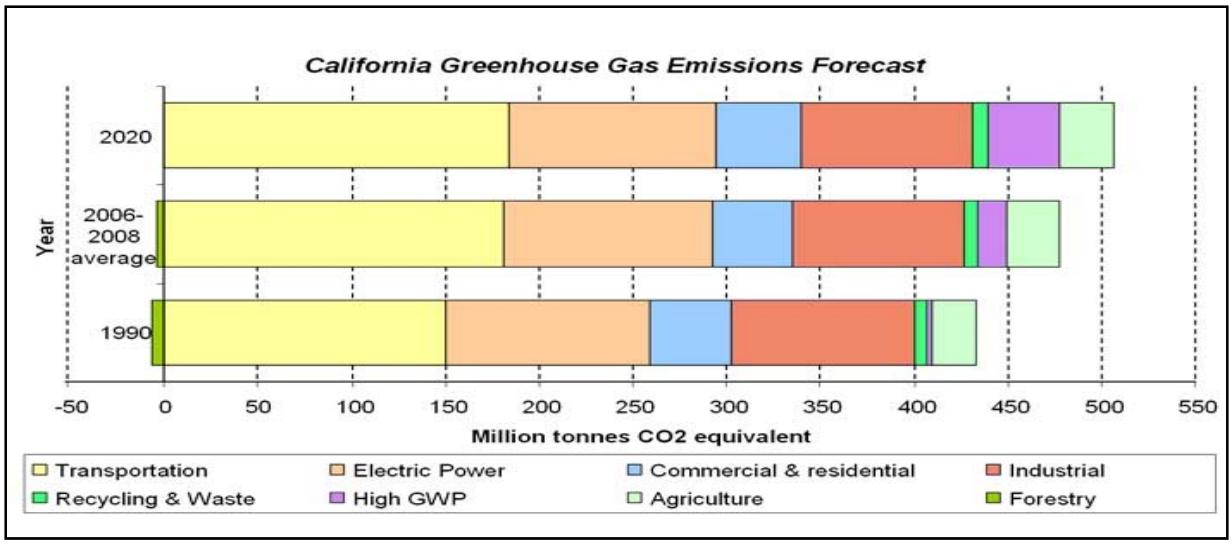
President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce carbon dioxide (CO_2) emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

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 contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of greenhouse gas.[5] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (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 mandated by Assembly Bill 32 includes the main strategies California will use to reduce greenhouse gas emissions. 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: October 28, 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.

[5] This approach is supported by the AEP: *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 CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).



Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Figure 2-1 California Greenhouse Gas Forecast

The Department and its parent agency, the Transportation 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 emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[6]

One of the main strategies in the Department's Climate Action Program to reduce greenhouse emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide (CO_2) 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 2-2). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors greenhouse gas emissions, particularly carbon dioxide (CO_2), may be reduced.

[6] 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

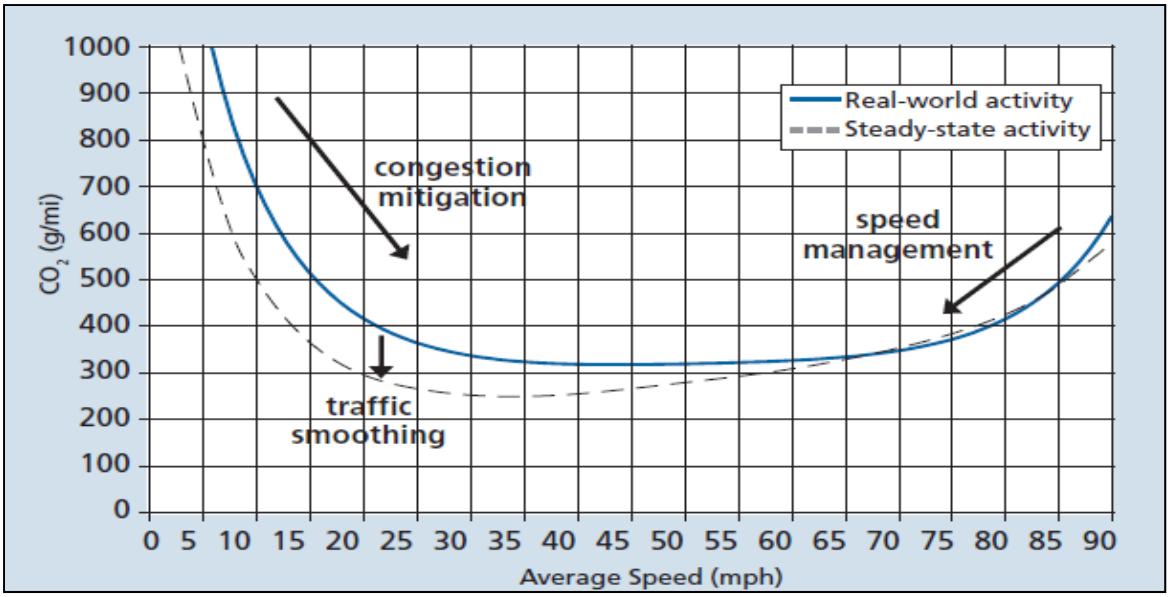


Figure 2-2 Possible Effect of Traffic Operation Strategies in Reducing On-Road Carbon Dioxide (CO2) Emission[7]

The Kings Canyon Expressway Project, Segment 3, proposes to realign and widen a 4.5 mile segment of State Route 180 in eastern Fresno County. This project is the third and last segment of a larger State Route 180 East Widening Project (FRE180-EA06-342500). The purpose of the project is to improve the continuity, safety, and capacity along State Route 180 to and from the City of Fresno and areas east.

The proposed project would widen the existing two-lane conventional highway to a four-lane divided expressway and would provide intersections for major roads, drainage, signage, and shoulders while maintaining or improving access for the local road network and community. The project requires new right-of-way acquisition and the abandonment of some existing State Route 180 right-of-way. The additional lanes would increase the vehicle capacity of the project roadway.

The Fresno Council of Governments (Fresno COG) is the designated Metropolitan Planning Organization (MPO) in Fresno County, California, and is responsible for regional transportation planning. Fresno Council of Governments has a 2014 Sustainable Communities Strategy (SCS) document in conjunction with the regional plan. Sustainable Communities Strategy plans consider long-term housing, transportation and land use needs

[7] Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010)<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>

by envisioning how to use resources efficiently, protect existing communities, conserve farmland and open space, and support the economy while growing over time.

The State Route 180 Improvement Project Final Environmental Impact Report (1995) evaluated transportation system management (TSM) as a method to increase the efficiency of moving people over the existing roadway. The objective of transportation system management is to increase the capacity of the existing transportation facility with minimal expenditures by such means as restriping the roadway to add lanes, providing left- and right-turn lanes to minimize disruption of through traffic, providing park-and-ride lots to facilitate carpooling, instituting employer trip reduction programs, and synchronizing traffic signals to improve circulation. However, the existing lane and shoulder widths were not to Caltrans standard and it was not possible to restripe the existing roadway to add lanes. Providing left-hand turn lanes would not result in accommodating additional traffic capacity because the two-lane conventional highway was largely dependent on the ability for motorists to pass. Providing park and ride lots are best suited to major transportation corridors such as State Route 180 and one was constructed in Segment 2 at McCall Avenue. An additional park and ride was not proposed for Segment 3 because it would not necessarily reduce traffic demand.

The State Route 180 Improvement Project Final Environmental Impact Report (1995) also evaluated mass transit such as bus and light rail transit for the project but determined that, based on existing and future land use plans for the project area, residential densities would not support either one.

Quantitative Analysis

The project would relieve traffic congestion and improve traffic flow by providing two additional travel lanes for State Route 180. As shown in Figure 2-2, vehicles tend to operate less efficiently at low speeds and very high speeds. However, the highway surface smoothness and highway's level of service would be improved if the project is built, contributing to increased vehicle efficiency through reducing congestion and decreasing rolling resistance.

Estimated annual carbon dioxide (CO_2) emissions were modeled using the CT-EMFAC 2011 tool. EMFAC is California's model for estimating emissions from on-road vehicles operating in California and CT-EMAC 2011 is the latest model. The average annual daily traffic count (AADT) was the same for the No-Build Alternative and the project. The model assumed a peak hour (two hours per day) with prevailing speeds of 5–45 miles per hour and a non-peak hour with prevailing free-flow speed of 35–60 miles per hour for the No-Build Alternative.

For the project, the peak speed assumption was 40–45 miles per hour, and the non-peak hour speed assumption was 35–55 miles per hour. The total vehicle miles traveled were allotted 2 hours for peak and 22 hours for off-peak for all scenarios. The annual average daily traffic volume includes 7 percent truck traffic.

The results indicate only a rough estimate of emissions based on projected annual average daily traffic data. Table 2.3 displays carbon dioxide emissions in tons per year for the project and the No-Build Alternative.

Table 2.3 Estimated Carbon Dioxide Emissions (Tons per Year)

Volume	2013 Existing Year	2019 Construction Year		2029 Future 10-year		2039 Future 20-year	
		No Build	Project	No Build	Project	No Build	Project
Carbon Dioxide (CO_2)	12,162	19,436	12,242	21,783	15,133	27,722	19,170

Source: Caltrans Central Region Environmental Engineering February 2014

According to EMFAC modeling results, both the No-Build Alternative as well as the Build Alternative would result in more greenhouse gasses than the existing condition in 2013. The proposed project is predicted to reduce carbon dioxide emissions when comparing to the future No-Build Alternative to the future Build Alternatives. The No-Build Alternative indicates more tons of carbon dioxide emissions per year: 7,194.15 more tons in 2019; 6,650.3 more tons in 2029; and 8,551.95 more tons in 2039. These values, however, are subject to the uncertainty within the EMFAC model and traffic analyses.

Limitations and Uncertainties with Modeling

EMFAC

Although EMFAC can calculate CO_2 emissions from mobile sources, the model does have limitations when it comes to accurately reflecting changes in CO_2 emissions due to impacts on traffic. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008) and a 2009 University of California study[8], brief but rapid accelerations, such as those occurring during congestion,can contribute significantly to a vehicle's CO_2 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 idling) in the operation of a vehicle and instead estimate

[8] Matthew Bartha, Kanok Boriboonsomsin. 2009. *Energy and emissions impacts of a freeway-based dynamic eco-driving system.* Transportation Research Part D: Transport and Environment Volume 14, Issue 6, August 2009, Pages 400–410

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 EPA and the CARB 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.

CARB is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the CARB has made this decision. Their website only states:

> REVISION: Both the EMFAC and OFFROAD Models develop CO2 and C4 (methane) emission estimates; however, they are not currently used as the basis for (CARB's) official (greenhouse gas) inventory which is based on fuel usage information. . . However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models.[9]

Other Variables

With the current science, project-level analysis of greenhouse gas emissions has limitations. 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 CO_2 emissions.

First, vehicle fuel economy is increasing. The EPA's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2012 ,"[10] 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 at a record high. Corporate Average Fuel Economy (CAFE) standards remained the same between model years 1995 and 2003 and subsequently began setting increasingly higher fuel economy standards for future vehicle model years. The EPA estimates that light duty fuel economy rose by 16% from 2007 to 2012. Table 2.4 shows the increases in required fuel economy standards for cars and trucks between Model Years 2012 and 2025 as available from the National Highway Traffic Safety Administration for the 2012-2016 and 2017-2025 CAFÉ Standards.

[9] http://www.arb.ca.gov/msei/offroad.htm

[10] http://www.epa.gov/oms/fetrends.htm

Table 2.4 Average Required Fuel Economy (mpg)

	2012	2013	2014	2015	2016	2018	2020	2025
Passenger Car	33.3	34.2	34.9	36.2	37.8	41.1-41.6	44.2-44.8	55.3-56.2
Light Truck	25.4	26	26.6	27.5	28.8	29.6-30.0	30.6-31.2	39.3-40.3
Combined	29.7	30.5	31.3	32.6	34.1	36.1-36.5	38.3-38.9	48.7-49.7

Source: EPA 2013, http://wwww.epa.gov/fueleconomy/fetrends/1975-2012/420r13001.pdf

Second, near zero carbon vehicles will come into the market during the design life of this project. According to the 2013 Annual Energy Outlook (AEO2013):

> "LDVs that us diesel, other alternative fuels, hybrid-electric, or all-electric systems play a significant role in meeting more stringent GHG emissions and CAFE standards over the projection period. Sales of such vehicles increase from 20 percent of all new LDV sales in 2011 to 49 percent in 2040 in the AEO2013 Reference case."[11]

The greater percentage of alternative fuel vehicles on the road in the future will reduce overall GHG emissions as compared to scenarios in which vehicle technologies and fuel efficiencies do not change.

Third, 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, California 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.

Lastly, 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,"[12] the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists adjust 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 declined from 2003 to 2008 as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel efficient vehicles. More recent reports from the Energy Information

[11] http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf

[12] http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf

Agency[13] and Bureau of Economic Analysis[14] also show slowing re-growth of vehicle sales in the years since its dramatic drop in 2009 due to the Great Recession as gasoline prices continue to climb to $4 per gallon and beyond.

Limitations and Uncertainties with Impact Assessment

Taken from pages 5-22 of the National Highway Traffic Safety Administration Final EIS for MY2017-2025 CAFE Standards (July 2012), Figure 2-3 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:

"Moss and Schneider (2000) characterize the 'cascade of uncertainty' in climate change simulations Figure 2-3. As indicated in Figure 2-3, the emission estimates used in this EIS have narrower bands of uncertainty than the global climate effects, which are less uncertain than regional climate change effects. The effects on climate are, in turn, less uncertain than the impacts of climate change on affected resources (such as terrestrial and coastal ecosystems, human health, and other resources […] Although the uncertainty bands broaden with each successive step in the analytic chain, all values within the bands are not equally likely; the mid-range values have the highest likelihood."[15]

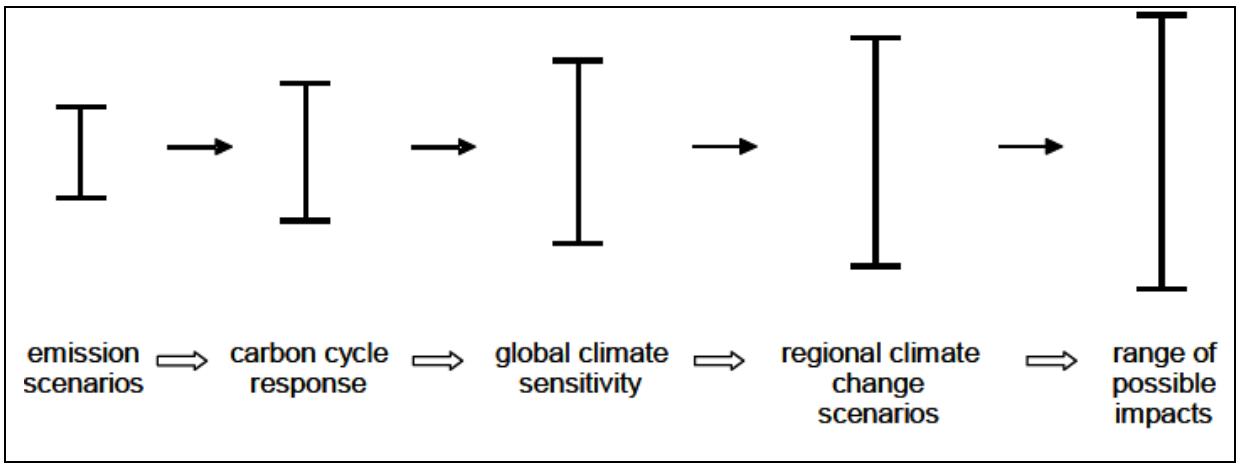


Figure 2-3 Cascade of Uncertainties

Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that

[13] http://www.eia.gov/oiaf/aeo/tablebrowser/aeo_query_server/?event=ehExcel.getFile&study=AEO2013&region=0-0&cases=ref2013-d102312a&table=114-AEO2013&yearFilter=0

[14] Historical Vehicle Sales: www.bea.gov/national/xls/gap_hist.xls

[15] http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FINAL_EIS.pdf. page 5-22

would allow for a ready assessment of what any modeled increase in CO_2 emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of CO_2 equivalent. This uncertainty only increases when viewed globally. The IPCC 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 IPCC scenarios project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons CO2 from 2000 to 2030, which represents an increase of between 25 and 90%.[16]

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 CO_2 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.

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 onsite 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.

CEQA Conclusion

While the project will result in a slight increase in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions as

[16] Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. http://www.ipcc.ch/SPM2feb07.pdf.

compared to the No-Build scenarios. While it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

The Department continues to be involved on the Governor's Climate Action Team as the California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Many of the strategies the Department is using to help meet the targets in Assembly Bill 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in greenhouse emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain carbon dioxide ($CO_{2)}$ reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 2-3: Mobility Pyramid.

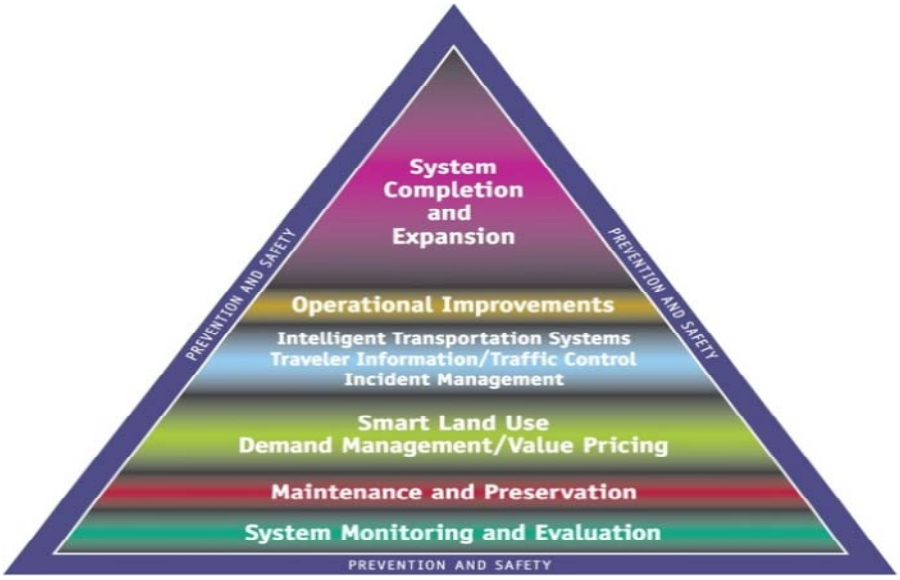


Figure 2-4 Mobility Pyramid

The Department 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. The Department works closely with local jurisdictions on planning activities, but does not have local land use planning authority. The Department also assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; the Department is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. Environmental Protection Agency and Air Resources Board.

The Department is also working toward enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), Senate Bill 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. The California Transportation Plan defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the California Transportation Plan is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the California Transportation Plan 2040 will identify the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the State's transportation needs.

Table 2.5 summarizes the Department and statewide efforts that being implementing to reduce greenhouse emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 2.5 Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings Million Metric Tons (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, Cal EPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.0450 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 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.20 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

The Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013)[17] provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measures will also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

- Landscaping reduces surface warming and, through photosynthesis, decreases carbon dioxide (CO_2). The project would seed slopes, drainage channels, and other disturbed areas with native and drought-tolerant shrubs, perennials, and grasses but would not obstruct the view of the mountains or interfere with the floodway.

- The project would incorporate the use of energy-efficient lighting, such as LED traffic signals.

- According to Caltrans Standard Specifications, the contractor must comply with all local Air Pollution Control District (APCD) rules, ordinances, and regulations for air quality restrictions.

- In 2008, the Air Resources Board (ARB) adopted a regulation for In-Use Off-Road Diesel Vehicles, which restricts idling time during construction to 5 consecutive minutes (*Advisory Number 377,* June 2008 California Environmental Protection Agency, Air Resources Board).

Also, the Council of Fresno County Governments provides ridesharing services and park-and-ride facilities. A park-and-ride facility is not planned for this segment of the State Route 180 Expressway, but was constructed within Segment 1 of the Kings Canyon Expressway Project. Also, Valleyrides.com, in cooperation with the Council of Fresno County Governments, established the following website, Climate Change Information Portal, which provides links to information on climate change: http://www.fresnocog.org/files/Air%20Quality/Climate%20Change/website%20content5-14-09.pdf

[17] http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml

Adaptation Strategies

"Adaptation strategies" refer to how the Department 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, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increased storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011[18], outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

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 Arnold 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. This executive order set in motion several agencies and actions to address the concern of sea level rise. In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop *The California Climate Adaptation Strategy* (Dec 2009)[19], which summarizes the best-known

[18] http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation

[19] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF

science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to Executive Order S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: public health; biodiversity and habitat; ocean and coastal resources; water management; agriculture; forestry; and transportation and energy infrastructure. As data continues to be developed and collected, the State's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report[20] to recommend how California should plan for future sea level rise. The report was released in June 2012 and included the following:

- The relative sea level rise projections for California, Oregon, and Washington, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- The range of uncertainty in selected sea level rise projections.
- A 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.
- A discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by the Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, the Coastal Ocean Climate Action Team updated the Sea Level Rise guidance to include information presented in the National Academy's study.

[20] *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at: http://www.nap.edu/catalog.php?record_id=13389.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are 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. 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.

All projects that have filed a Notice of Preparation (NOP) as of the date of the Executive Order S-13-08, and/or are programmed for construction funding through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. As part of the California Environmental Quality Act, an NOP was filed for the 1995 Environmental Impact Report in February 1991, and a subsequent NOP was filed for this Draft Supplemental EIR on January 28, 2014. However, the project is outside the coastal zone, and direct impacts to transportation facilities due to projected sea level rise are not expected.

Executive Order S-13-08 also 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 economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, the Department 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 effects, the Department 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, the Department will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

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. The Department is an active participant in the efforts being conducted in response to Executive Order S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

Appendix A California Environmental Quality Act (CEQA) Checklist

This draft environmental document for Segment 3 is a supplemental report to the previously prepared and certified State Route 180 Improvement Project Final Environmental Impact Report, and presents additional analysis or information in regard to only parks and recreational facilities, relocations, utilities/emergency services, traffic/pedestrian and bicycle facilities, climate change, and biological impacts (natural communities, wetlands and other waters, and threatened and endangered species) resulting from changes to the design of the project and new laws or regulations.

The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.” The 1995 Environmental Impact Report did not include a California Environmental Quality Act checklist or determine impact threshold. The following checklist includes the impact levels of the unchanged impact areas based on the original 1995 Environmental Impact Report for the entire project, Segments 1 through 4, but the supporting documentation is explained in the original 1995 document.

The impact areas that are affected by the new or changed design items of the project (Segment 3 only) are indicated by a line in the border and supporting documentation for the new checklist items is discussed in Chapter 2.

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
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?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☒	☐
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
XIV. 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:	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Appendix B Summary of New Avoidance, Minimization and Mitigation Measures

Only the new avoidance, minimization, and mitigation measures discussed in this document are summarized in this appendix. Other measures that remain valid for the project are included in the 1995 Environmental Impact Report/Environmental Impact Statement.

Park and Recreation Facilities

Thorburn Park – To minimize impacts during construction, any constructions activities would be coordinated with the jurisdictional agency, Fresno County, to avoid interruption to park patrons.

Pierce's Park Campground, Whispering Waters Recreation Park, and Kampground of America – To minimize impacts during construction, any constructions activities would be coordinated with the park or campground to avoid the temporary disruption to patrons as much as possible.

Kings River – Construction of the bridge across the Kings River would be conducted during low water levels as much as possible. Efforts to notify the public about temporary closure to water activities at the river during construction would be made through local news releases and public notification.

Relocations and Real Property Acquisition

All displacees will be contacted by a Relocation Agent, who will ensure that eligible displacees receive their full relocation benefits, including advisory assistance, and that all activities will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources shall be available to all displacees free of discrimination. At the time of the first written offer to purchase, owner occupants are given a detailed explanation of Caltrans' "Relocation Program and Services." Tenant occupants of properties to be acquired are contacted soon after the first written offer to purchase and are given a detailed explanation of Caltrans' "Relocation Program and 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.

Utilities and Emergency Services

Utilities – Caltrans has been consulting with PG&E to minimize the temporary disruption of services as much as possible.

Emergency Services – A Traffic Management Plan would be developed to handle local traffic patterns and reduce delays for emergency response vehicles during construction.

Traffic and Transportation/Pedestrian and Bicycle Facilities

Traffic and Transportation – A Traffic Management Plan would be developed to handle local traffic patterns and reduce delays, congestion, and the likelihood of accidents during construction. The Traffic Management Plan includes notifying the public of construction activities via media outlets, using changeable message signs, construction strategies, and using the Central Valley Traffic Management Center, which reduces congestion by monitoring traffic and informing the public via media outlets such as radio and television.

Natural Communities

Valley Oak Woodland – To mitigate for the loss of oak woodland resulting from Segment 3, Caltrans will be purchasing an offsite conservation easement from the Sequoia Riverlands Trust for the preservation of oaks at a suitable parcel.

Riparian Habitat – For the loss of riparian habitat, the required compensatory mitigation includes replanting native oaks and riparian trees at a 3:1 ratio (replanting 3 trees for every 1 tree lost) for trees between 4–23 inches in diameter at breast height. Trees that are 24 inches or more in diameter at breast height are defined as heritage trees and require replanting at a 10:1 ratio (replanting 10 trees for every 1 heritage tree lost).

Caltrans proposes to compensate for the loss of native trees at an offsite location within the Kings River watershed in conjunction with Sequoia Riverlands Trust.

Wetlands and Other Waters

Caltrans proposes to compensate for the permanent impacts to wetlands and waters of the U.S. by creating and restoring existing wetlands at an offsite location, Bennett-Fit Wetlands Forever, near Helm in Fresno County. The Fresno Slough flows through the parcel and receives water from the North Fork of the Kings River.

Plant Species

California Native Plant Society-listed plants have the potential to occur within the project area. To minimize potential impacts to any California Native Plant Society-listed plants,

botanical surveys will be conducted in the blooming season before construction is scheduled to begin. If a California Native Plant Society-listed plant is found in the project area, 4 inches of topsoil from the area where the plant is found will be collected and stored until construction is complete. At that time, the topsoil will be restored to the temporarily disturbed area. With the above-mentioned avoidance and minimization measures, there will be no impacts to forked hare-leaf (*Lagophylla dichotoma*).

To minimize potential impacts for the federally listed San Joaquin adobe sunburst (*Pseudobahia Peirsonii*), pre-construction surveys would be conducted at the appropriate blooming period (March and April) prior to the beginning of construction activities.

Animal Species

To minimize potential impacts to the tricolored blackbird, pre-construction surveys would be conducted within the biological study area. In addition, a standard special provision for migratory bird protection would be included in the construction contract and would minimize impacts to the special-status species.

The Federal Migratory Bird Treaty Act (MBTA) protects most North American migratory birds, nests, and eggs. It is preferable that tree removal occur outside of the nesting season (February 15-September 1). If tree removal is not conducted during this time, a qualified biologist must survey all trees and shrubs to be removed for active bird nest prior to the tree removal.

Threatened and Endangered Species

Valley Elderberry Longhorn Beetle – The 104 elderberry shrubs that are within the project impact area would be relocated to Fresno Camp Conservation Bank. This facility is a U.S. Fish and Wildlife Service-approved mitigation bank for the valley elderberry longhorn beetle. In addition, Caltrans will purchase conservation credits at French Camp Conservation Bank.

Swainson's Hawk – The Federal Migratory Bird Treaty Act protects most North American migratory birds, nests, and eggs. It is preferable that tree removal occur outside of the nesting season (February 15-September 1). If tree removal is not conducted during this time, a qualified biologist must survey all trees and shrubs to be removed for active bird nests prior to the tree removal.

Appendix C Maps

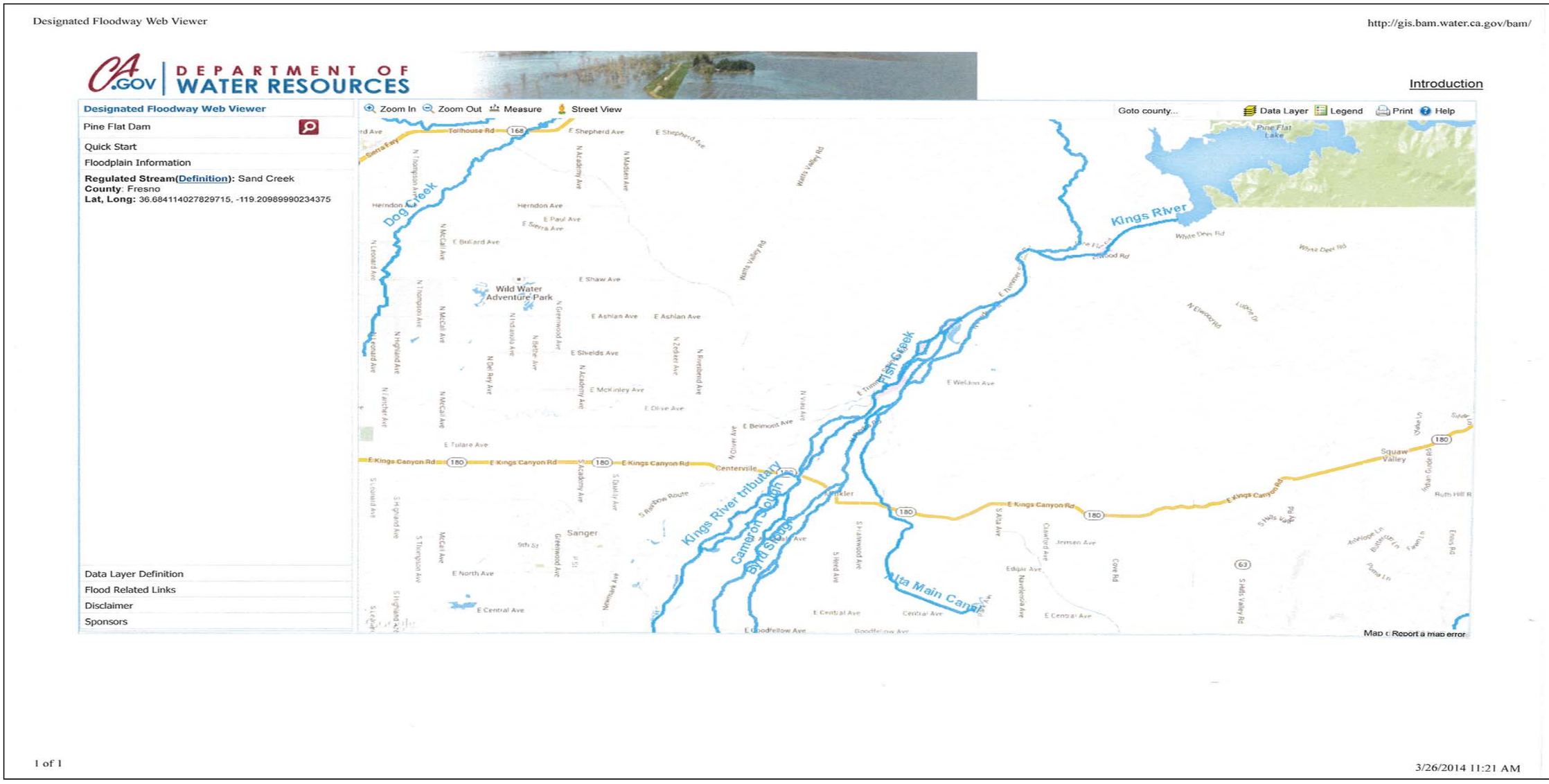


Figure C-1 Kings River and Tributaries

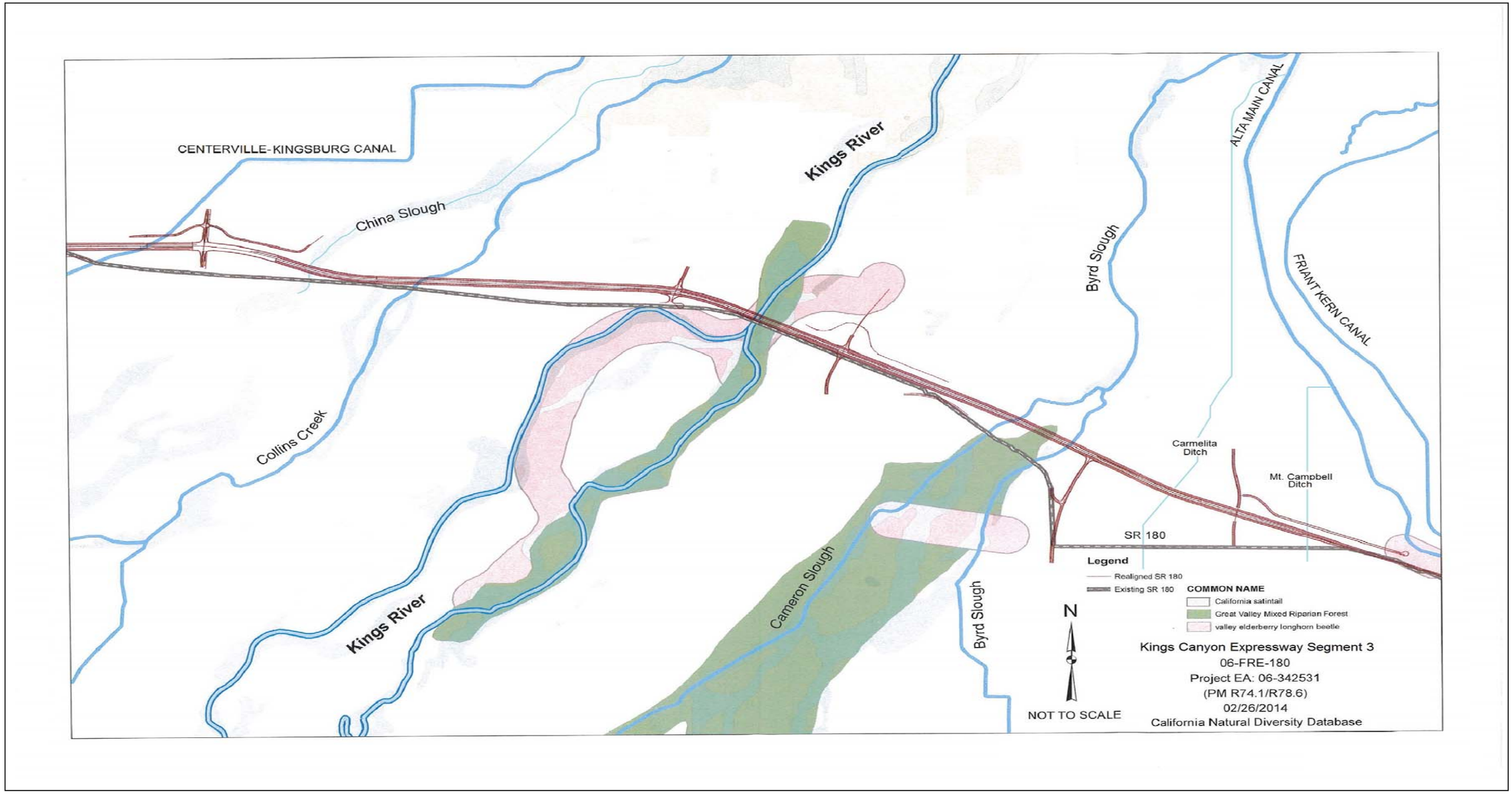


Figure C-2 Waterway Habitats