FWS San Luis Park Entrances on State Highway 165

On State Route 165, from south of Wolfsen Road, to north of Salt Slough
10-MER-165-PM 14.9/15.4,18.2/18.6, 22.0/22.3
10-0W680
Project ID 10-1200-0026

Initial Study
with Proposed Mitigated Negative Declaration

Prepared by the
State of California Department of Transportation

February 2013

General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project in Merced, California. The document describes the project, the existing environment that could be affected by the project, potential impacts from the project, and proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read this Initial Study. Additional copies of this document and the technical studies are available for review at the Caltrans district office at 1976 East Dr. Martin Luther King Boulevard , Stockton, CA 95205 and Los Banos Library, 1312 S. 7th Street, Los Banos, CA 93635 at give address for each one. The document can also be accessed electronically at the following website: http://www.dot.ca.gov/dist10/

- We welcome your comments. If you have any concerns about the project, please send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

  Scott Smith, Environmental Branch Chief
  Central Sierra Environmental Analysis Branch
  California Department of Transportation
  855 M. Street, Suite 200
  Fresno, CA 93721

  Submit comments via email to: Scott_Smith@dot.ca.gov.

- Submit comments by the deadline: __March 28, 2013_.

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 sections.

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please contact: Caltrans, Attn: Scott Smith, Central Sierra Environmental Analysis, [mailing address]; 559-445-6172 Voice, or use the California Relay Service TTY number, [1-800-735-2929] or dial 711.

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) in cooperation with the United States Fish and Wildlife Service (USFWS), using funding provided by the Federal Highway Administration (FHWA), is proposing to add turn lanes at three sites along State Route 165 to improve access and safety. The proposed work would occur at the intersection with Wolfsen Road, at the Blue Goose Cache Fire Station access road, and at the entrance to the Salt Slough Boat Ramp parking area. With the exception of a small area at the Wolfsen Road intersection on property owned by the Bureau of Reclamation, all work will be within the State Route 165 right-of-way.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision on the project is final. This Mitigated Negative Declaration is subject to change based on comments. Caltrans has prepared an Initial Study for this project and, following public review, has determined from this study that the project would not have a significant effect on the environment for the following reasons.

The proposed project would have no effect on land use, or growth, farmland, residences, or businesses, local or regional air quality, water quality, floodplains, noise receptors, traffic levels, hazardous wastes, visual resources, emergency services, pedestrian facilities, or endangered species or special status species.

In addition, the proposed project would have no significant effect on species and their habitat, or on archaeological, historical, or paleontological sites of record.

In addition, the proposed project would have no significantly adverse effect on wetlands or Waters of the U.S. because the following mitigation measures would reduce potential effects to insignificance:

- The wetland vegetation would be mitigated by U.S. Fish and Wildlife Service (FWS) with in-kind on site replacement at a 2:1 ratio would compensate for the proposed impacts.

Draft

_____ _____

Scott Smith Date
Branch Chief
Central Sierra Environmental Analysis

Section 1 Project Information

Project Title

FWS San Luis Park Entrances on State Highway 165.

Lead Agency Name and Address

California Department of Transportation (Caltrans) –District 10
1976 E. Martin Luther King Jr. Blvd.
Stockton, CA 95205

Contact Person and Phone Number

Scott Smith, Branch Chief
855 M Street, Suite 200,
Fresno, CA 93721
559-445-6172

Project Location

The proposed project is located at three separate locations, within Merced County on State Route 165 from 0.5 miles south of Wolfsen Road to 0.5 miles north of Salt Slough. See Project Vicinity Map (Figure 1), Project Location Map (Figure 2)

Project Sponsor's Name and Address California Department of Transportation (Caltrans) –District 10
1976 E. Martin Luther King Jr. Blvd.
Stockton, CA 95205

General Plan Description and Zoning

Agricultural and Open Land Use (state wildlife areas, federal wildlife refuges, and privately held wetlands). At the project sites the highway is surrounded by public lands: the California Department of Parks and Recreation's (CDPR) Great Valley Grasslands State Park on the northwest side north of the Salt Slough Bridge and FWS refuge lands on the rest.

Zoning

Agricultural and Open Land Use (state wildlife areas, federal wildlife refuges, and privately held wetlands)

Description of Project

Caltrans proposes to construct turn lanes at the following three sites:

Wolfsen Road Entrance:

- Widen roadway to add left and right turn lanes
- Extend two existing 48-inch concrete pipes at Grassland Water District Canal by 60 feet and replace concrete headwall

- Install 18-inch culvert under Wolfsen Road
- Extend existing 18-inch culvert under SH 165

• Blue Goose Cache Fire Station:

  - Widen existing roadway to add left and right turn lanes

• Freitas boat launch and parking lot:

  - Widen existing roadway to add left and right turn lanes

<u>Right-of-Way Impacts</u>

The Federal Highway Administration, Central Federal lands Division, proposes to transfer a right-of-way easement, located upon U.S. Bureau of Reclamation (BOR) land in Merced County California, to the State of California. The proposed right of way transfer would only include a portion of BOR land adjacent to State Route 165 at the Wolfsen Road Intersection. State Route 165, locally known as Mercy Springs Road, is described as beginning at the intersection with Interstate 5 in Merced County and proceeds northerly to the intersection with State Route 99 in Stanislaus County. No private land easements are proposed in this transfer

Surrounding Land Uses and Setting

The project area consists of agricultural land, duck club land, and public land. Public lands include both state wildlife areas and federal wildlife refuges that are adjacent to both sides of State Route 165. State Route 165 is a conventional two-lane highway running on a north-south alignment west of Interstate 5. The route begins at Interstate 5 in Merced County and ends at State Highway 99 in Stanislaus County.

Other Public Agencies Whose Approvals Are Required

The following permits are expected to be required: Regional Water Quality Control Board (RWQCB) water quality certification (Section 401, Clean Water Act), Section 404 Permit (Clean Water Act), and an Environmental Protection Agency (EPA) NPDES General Permit for storm water discharges associated with construction activity.

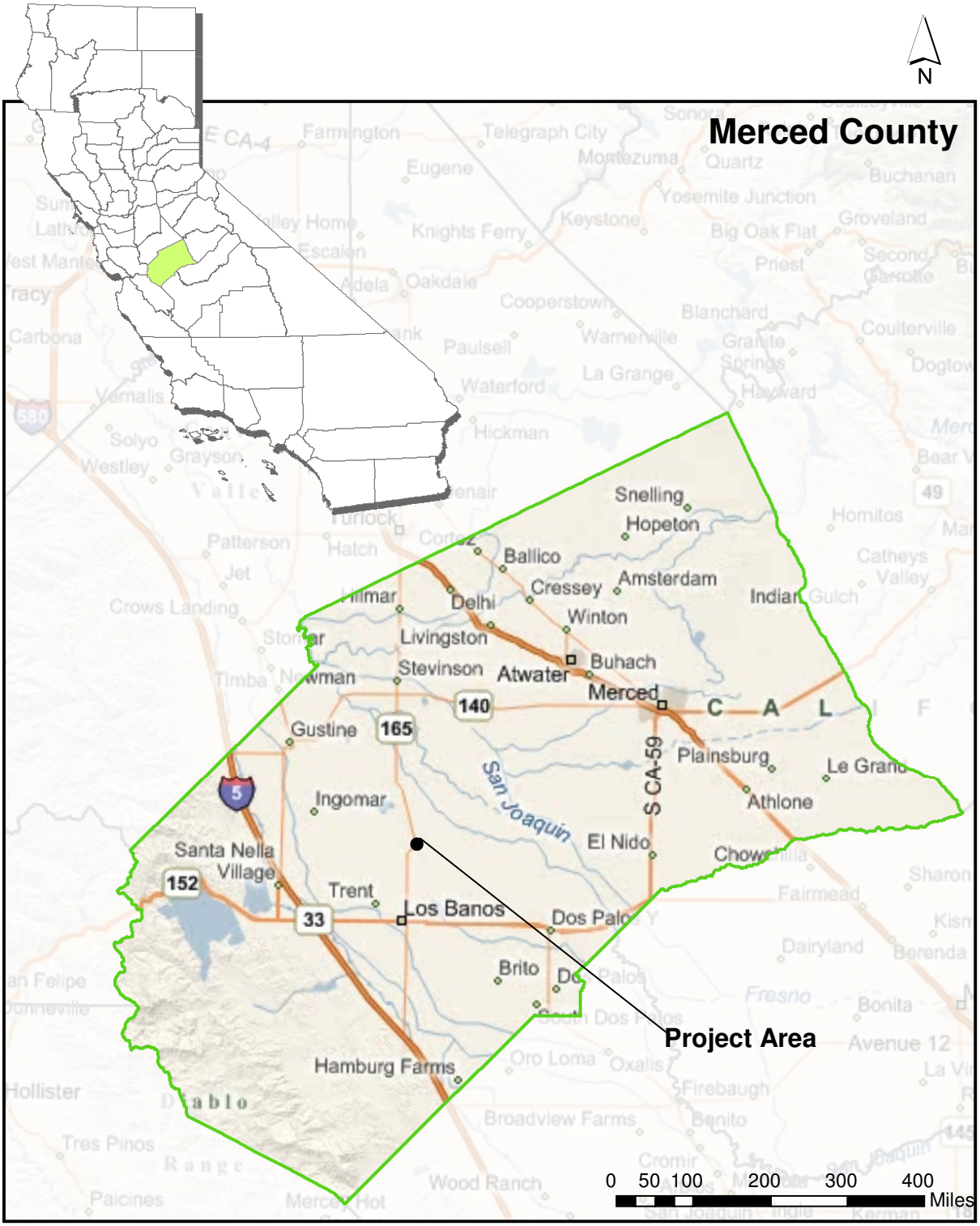


Figure 1 Project Vicinity Map

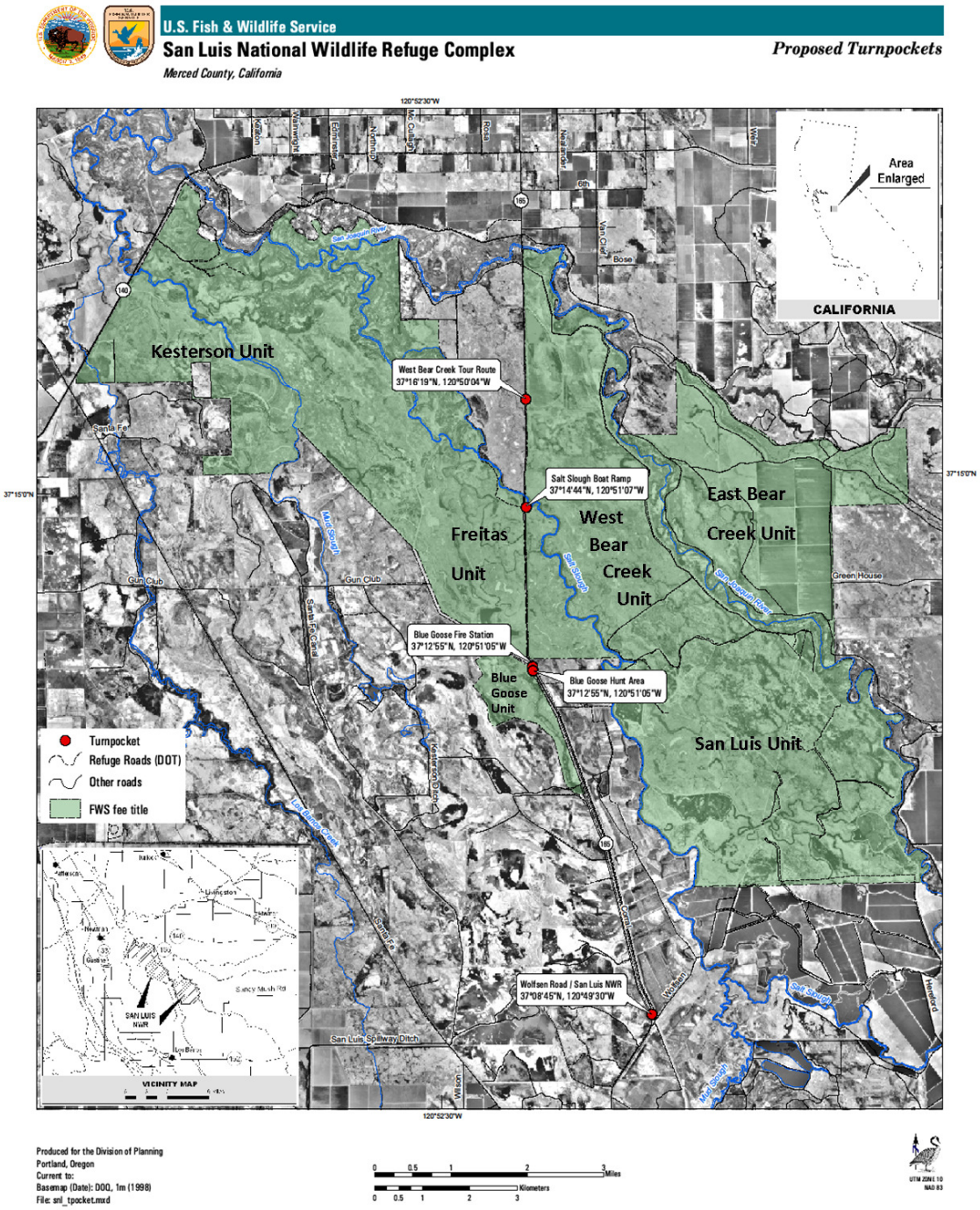


Figure 2 Project Location Map

Section 2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

Section 3 Determination

On the basis of this determination

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

2/12/13

Scott Smith
Senior Environmental Planner
Central Sierra Environmental Analysis

Date

Section 4 Impacts Checklist

The impacts checklist starting on the next page identifies physical, biological, social, and economic factors that might be affected by the project. Direct and indirect impacts are addressed in checklist items I through XVII. Mandatory Findings of Significance are discussed in item XVIII. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

A brief explanation of each California Environmental Quality Act checklist determination follows each checklist item. Lengthy explanations, if needed, are provided after the checklist.

	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?	☐	☐	☐	X

Explanation: There are no scenic resources affected by the project (Scenic Resource Evaluation, June 13, 2006).

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	X

Explanation: There will not be any vegetation removal from the transferred right of way. (FWS EA, 10/2012)

c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	X

Explanation: Vegetation would be altered at an existing disturbed site within the highway right-of-way. Removal of vegetation (primarily non-native) in the highway right-of-way construction site would be a temporary impact because the site would be seeded and mulched to establish a grass cover. (FWS EA, 10/2012)

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	X

Explanation: Please refer to I (a) above. (Scenic Resource Evaluation, June 13, 2006).

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	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				

Explanation: FWS acquired the lands on both sides of the project site and restored/enhanced wetland and upland habitats to manage as part of San Luis NWR. (FWS EA, 10/2012)

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	X

Explanation: Please refer to II (a) above. (FWS EA, 10/2012)

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))?	☐	☐	☐	X

Explanation: Please refer to II (a) above. (FWS EA, 10/2012)

d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	X

Explanation: Please refer to II (a) above. (FWS EA, 10/2012)

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 if forest land to non-forest use?	☐	☐	☐	X

Explanation: Please refer to II (a) above. (FWS EA, 10/2012)

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?	☐	☐	☐	X

Explanation According to 40 Code of Regulations, Section 93.126, the project is exempt from regional emissions analysis requirements. Current ozone and particulate matter pollutants are in compliance with state and federal regulations, the Regional Transportation Plan, the Transportation Improvement Program, and the appropriate State Implementation Plan (Air Quality Assessment Report, May 25, 2006).
b) Violate any air quality standard or contribute

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
substantially to an existing or projected air quality violation?				X

Explanation: Please refer III (a) above.

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)?				X

Explanation: Please refer III (a) above.

d) Expose sensitive receptors to substantial pollutant concentrations?				X

Explanation Construction activities under the preferred alternative would temporarily increase dust and other emissions. The appropriate best management practices would be implemented during construction as developed in coordination with the San Joaquin Valley Air Pollution Control District. These may include activities such as covering trucks hauling soil, sand, and other loose materials, and replanting vegetation in disturbed areas as quickly as possible. (FWS EA, 10/2012)

e) Create objectionable odors affecting a substantial number of people?				X

Explanation: The project does not propose any activity that would introduce new objectionable odors.

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?				X

Explanation: See additional explanations

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

Explanation: There is no riparian habitat within the project area. (FWS EA, 10/2012)

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,		X		

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				

Explanation: See additional explanation

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

Explanation: The project would not interfere with the movement of species or impede use of nursery sites. (FWS EA, 10/2012)

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

Explanation: The project does not conflict with local policies or ordinances concerning biological resources. (FWS EA, 10/2012)

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

Explanation: The project would not conflict with the provisions of Habitat Conservation Plans. (FWS EA, 10/2012)

V. CULTURAL RESOURCES — Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	X

Explanation: Based on the recent surveys conducted by Caltrans (Layland and Silva 1999), there would be no impacts to cultural resources from this project. However if any cultural resources were discovered during earth moving activities, mitigation measures for cultural resources, including compliance with the Programmatic Agreement between the Service, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer (SHPO), would be exercised at site-specific project levels to avoid adverse effects. (FWS EA, 10/2012)

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☐

Archaeological resources are considered "historical resources" and are covered under question V(a).

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	X

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

Explanation: The project would not cause direct or indirect destruction of geologic feature (FWS EA, 10/2012)

d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	X

Explanation: Please refer V (a) above. (FWS EA, 10/2012)

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.	☐	☐	☐	X

Explanation: The grading and site preparation work would be relatively short–term; following construction, disturbed areas would be seeded and mulched to establish a grass cover. (FWS EA, 10/2012)

ii) Strong seismic ground shaking?	☐	☐	☐	X

Explanation: Please refer to VI (a) I above. (FWS EA, 10/2012)

iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	X

Explanation: Please refer to VI (a) I above. (FWS EA, 10/2012)

iv) Landslides?	☐	☐	☐	X

Explanation: Construction activities under the preferred alternative would require grading and site preparation which could result in soil erosion from the project site. Because the project site is relatively flat we do not anticipate that construction activities would result in substantial soil erosion. The grading and site preparation work would be relatively short–term; following construction, disturbed areas would be seeded and mulched to establish a grass cover. (FWS EA, 10/2012)

b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	X

Explanation: Please refer to VI (a) iv above. (FWS EA, 10/2012)

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	X

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

Explanation: Please refer to VI (a) iv above. (FWS EA, 10/2012)

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.	☐	☐	☐	X

Explanation: Please refer to VI (a) iv above. (FWS EA, 10/2012)

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	X

Explanation: Please refer to VI (a) iv above. (FWS EA, 10/2012)

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 Appendix A of the 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 on 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 Appendix A 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?	☐	☐	☐	X

Explanation: The project would not create a significant hazard to the public through disposal of hazardous material. No hazardous materials would be transported all required fill would come from the refuge. (Asbestos and Lead-Based Paint Survey Report, December 8, 2000).

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
accident conditions involving the release of hazardous materials into the environment?				

Explanation: The project is a turn-pocket project and would reduce the potential for accidents and a spill or release of hazardous materials. Please see VII(a)

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	X

Explanation: There are no schools located within one-quarter mile of the project area (Field Visit, June 2012).

d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	X

Explanation: The project is not located on a listed hazardous materials site (Initial Site Assessment for Hazardous Waste, August 7, 2000).

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?	☐	☐	☐	X

Explanation: The project is not located within an airport land use plan or within two miles of an airport (Field Visit, June 2012).

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	X

Explanation: The project is not located within the vicinity of a private airstrip (Field Visit, June 2012).

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	X

Explanation: During construction, Caltrans special provisions Traffic Management Plan would be implemented to handle traffic management and emergency services. One travel lane would remain open, including at the bridge, in order to avoid extensive detouring of traffic (FWS EA, 10/2012)

h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	X

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

Explanation: The project would not expose nearby residences to wildland fires (Field Visit, June 2012).

IX. HYDROLOGY AND WATER QUALITY —
Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	X

Explanation This project would not violate any water quality standards or waste discharge. The construction will be during the dry summer/fall season so there will be no run-off into the San Joaquin River or any nearby tributaries(FWS EA, 10/2012)

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	X

Explanation: The project would not deplete groundwater supplies or interfere with groundwater recharge (Water Quality Assessment Report, November 14, 2006).

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?	☐	☐	☐	X

Explanation: Please refer to IX (a) above. (FWS EA, 10/2012)

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☐	X

Explanation: Please refer to IX (a) above. (FWS EA, 10/2012)

e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	X

Explanation: Please refer to IX (a) above. (FWS EA, 10/2012)

f) Otherwise substantially degrade water quality?	☐	☐	☐	X

Explanation: Please refer to IX (a) above. (FWS EA, 10/2012)

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	X

Explanation: The project would not place housing within a flood zone (Location Hydraulic Study/Floodplain Evaluation Report Summary, March 3, 2005).

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	X

Explanation: The project would not significantly impact the floodplain (Location Hydraulic Study/Floodplain Evaluation Report Summary March 3, 2005).

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	X

Explanation: Please refer to VIII(c) and (h) above.

j) Result in inundation by a seiche, tsunami, or mudflow?	☐	☐	☐	X

Explanation: The project would not result in an inundation by a seiche, tsunami, or mudflow.

X. LAND USE AND PLANNING — Would the project:

a) Physically divide an established community?	☐	☐	☐	X

Explanation: The area surrounding the project consists of agricultural and duck club land as well as state wildlife areas and federal wildlife refuges (Field Visit, June 2012).

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

Explanation: The project is consistent with the 2012 State Highway Operations and Protection Program as well as the 2012 State Highway Operations and Protection Program list for Merced County as a roadway preservation project.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	X

Explanation: The project would not conflict with any habitat conservation plans (FWS EA, 10/2012).

XI. MINERAL RESOURCES — Would the project:

a) Result in the loss of availability of a known mineral

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
resource that would be of value to the region and the residents of the state?				X

Explanation: The project would not result in the loss of mineral resources (FWS EA, 10/2012)

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X

Explanation: Please refer to XI (a) above. (FWS EA, 10/2012)

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?				X

Explanation: The project would not result in additional traffic. Noise impacts would not occur as a result of the project (Noise Study Report, May 25, 2006).

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X

Explanation: Please refer to XII (a).

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X

Explanation: Please refer to XII (a).

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X

Explanation: Please refer to XII (a).

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?				X

Explanation: The project is not located within an airport land use plan or within two miles of an airport (Field Visit, June 2012).

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
in the project area to excessive noise levels?				
Explanation: Please refer to XII (e).				
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)?	☐	☐	☐	X
Explanation: This question is not applicable for a turn-pocket project.				
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
Explanation: Please refer to XIII (a).				
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
Explanation: Please refer to XIII (a).				
XIV. PUBLIC SERVICES —				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	X
Police protection?	☐	☐	☐	X
Schools?	☐	☐	☐	X
Parks?	☐	☐	☐	X
Other public facilities?	☐	☐	☐	X

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

Explanation: There would be no adverse impacts, this project would add turn lanes, and remove turning traffic from the through lanes and provide improvements to State Highway 165. (Traffic Study Report by HDR 8/2012.

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?	☐	☐	☐	X

Explanation: This project would not increase use of existing parks to an extent that it would cause substantial physical deterioration of the facility would occur or be accelerated . (FWS EA, 10/2012)

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	X

Explanation: The project would not include recreational facilities (Project Scope Summary Report, February 2007).

XVI. TRANSPORTATION/TRAFFIC — Would the project:

a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	X

Explanation: This project is a turn-pocket project and is not capacity increasing. (FWS EA, 10/2012)

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	X

Explanation: Please refer to XVI (a).

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	X

Explanation: There are no airports within the project vicinity (Field Visit, June 2012).

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	X

Explanation: This turning lane construction project is being proposed due to concerns about highway safety. (FWS EA, 10/2012)

e) Result in inadequate emergency access?	☐	☐	☐	X

Explanation: The project would not change emergency access. (FWS EA, 10/2012)

f) Result in inadequate parking capacity?	☐	☐	☐	X

Explanation: No parking is required (FWS EA, 10/2012)

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	X

Explanation: The project is consistent with all general planning for the area (Merced County Association of Governments, 2002 Regional Bicycle Plan).

XVII. UTILITY AND SERVICE SYSTEMS — Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	X

Explanation: T The project does not require wastewater treatment. (FWS EA, 10/2012)

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	X

Explanation: Please refer to XVI I (a).

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	X

Explanation: The project would not require the construction of additional storm water drainage facilities

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	X

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

Explanation: The project would not require water supplies.

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X

Explanation: Please refer to XVI I (a).

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X

Explanation: The project can be served by existing facilities.

g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

Explanation: Please refer to XVI I (a).

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE —

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	

Explanation: Removal of vegetation (primarily non-native) in the highway right-of-way construction site would be a temporary impact because the site would be seeded and mulched to establish a grass cover. Delineated wetland vegetation in the drainage ditch (narrow tule stands, native and non-native grasses and forbs) would also be lost during construction, however in-kind on site replacement at a 2:1 ratio would compensate for the proposed impacts. In order to compensate for the loss of vegetation in the drain ditch an adjacent wetland on the refuge would be enlarged. Since existing use by wildlife of the roadway and adjacent area is minimal, it is unlikely that this action would have any significant impacts to fish and wildlife resources. (FWS EA, 10/2012)

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				X

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

Explanation: None of these locations, singly or combined together would be growth-inducing, but rather a response to increased highway traffic that is independent of the Refuge, the need for the public and employees to safely access the Refuge, the acquisition of new refuge lands, and the ensuing development of public use programs. Because all of these projects would occur on highly disturbed highway right-of-way, impacts to wildlife and other biological resources would be minimal. Public safety would be greatly improved, and potential for property damage and human injury/death reduced significantly. (FWS EA, 10/2012)

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

Explanation: On the basis of this evaluation, the project would not have substantial or adverse effects to human beings. (FWS EA, 10/2012)

Additional Explanations for Questions in the Impacts Checklist

IV. Biological Resources (checklist questions a and c)

Threatened and Endangered Species

Affected Environment

.

(FT=Federal Threatened, FE=Federal Endangered, ST–State Threatened, SE=State Endangered)

- California Tiger Salamander (*Ambystoma californiense*) (FT): California tiger salamanders are known to be present in vernal pools on San Luis NWR through past sampling done by FWS staff and others. However, no such vernal pool habitat exists within 10 km of the project site. The roadway drain ditch adjacent to the highway would provide marginal habitat for salamander larvae during winter but would be completely dry at the time of construction

- Swainsons' Hawk (*Buteo swainsoni*) (ST): This species nests in mature trees on the Refuge and surrounding area. It uses open grasslands for foraging. There are no trees in the immediate project site and thus no potential nesting habitat. The project site is currently a heavy traffic area with a high level of disturbance and provides marginal foraging habitat.

- San Joaquin Kit Fox (*Vulpes macrotis mutica*) (FE,ST): Merced County lies within the historic range of San Joaquin kit fox. The species has been recorded in past surveys and telemetry projects in Great Valley Grasslands State Park and San Luis NWR. However, spot-light and scent detection (trained dog) surveys done in recent years have not documented any kit fox in the immediate or general area since the early 1990s. No den sites are known to occur within or near the project site. No records of road-killed kit fox have been documented along that stretch of Hwy 165 or Wolfsen Road. However, kit fox could be potentially present; most likely as individuals moving through the area while foraging.

Environmental Consequences

Although San Joaquin kit fox could potentially use the project site during foraging activities, it is unlikely that the project would have any adverse impacts on the species. Construction

will occur during daylight hours when kit fox are normally not active. Standard avoidance measures to prevent kit fox from being attracted to or potentially being entrapped within the construction site will be employed during implementation of the project (USFWS 1999). Once completed, the presence of the turn lanes would present no more danger to kit foxes than the existing roadway.

Avoidance, Minimization, and/or Mitigation Measures

The following measures would be implemented to avoid impacts to these species:

San Joaquin Kit Fox

- The were would be no night work and standard provisions for kit would be followed.

Swainsons hawk

- Pre-construction surveys would be conducted prior to construction.

California tiger salamander

- Construction would be limited to the dry season.

Wetlands and Other Waters of the U.S.

Affected Environment

A draft wetland delineation report for the San Luis National Wildlife Refuge was completed in September 2012 by ERO Resources Corp. Before conducting the wetland delineation, ERO researched wetland delineation requirements specific to the Sacramento office of the U.S. Army Corps of Engineers (Corps). ERO reviewed National Wetlands Inventory (NWI) maps, USGS topographic maps, and color and infrared aerial photographs of the wetland survey area before conducting fieldwork. On July 23 and 24, 2012, ERO visited the wetland survey area to map the boundaries of wetlands and waters of the U.S. (2012 site visit).

Using methods outlined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps 1987) and the *Interim Regional Supplement to the Corps Wetland Delineation Manual: Arid West Region* (Corps 2008), wetlands were determined based on the presence of three wetland indicators: hydrophytic vegetation, wetland hydrology, and hydric soils. Hydric soils were identified using field observation for gleying, mottling, sulfidic odor, or other hydric soil indicators accepted by the Corps. A Munsell Soil Color Chart was used to determine soil color. Wetland indicator status for vegetation (Table 1) was based on the National Wetland Plant List (Lichvar and Kartesz 2009) and the authority for

nomenclature for plant species was taken from "The PLANTS Database" (USDA NRCS 2012).

Fieldwork was completed during the dry season, in a drought year. In addition, soils in the wetland survey area are naturally problematic due to alkaline conditions. For these reasons, some areas were mapped as wetlands although clear indicators of wetland hydrology and hydric soils were not always present. When considering areas with marginal indicators, ERO attempted to be as inclusive as possible, taking into account that fieldwork was performed during unusually dry conditions.

The wetland survey area contains alkali marsh wetlands in low-lying areas adjacent and parallel to State Route 165 within the highway right-of-way. Wetlands typically occur on both sides of the road in areas that appear to be borrow ditches created during construction of the highway or nearby irrigation canals. These roadside ditches receive runoff from the roadway and nearby uplands. Standing water in the ditches during the wet season has led to development of wetland conditions in some locations. The wetland boundary is abrupt due to steep slopes between the edge of the highway and the bottom of the ditch. The wetland delineation identified wetlands and open water in the wetland survey area. The wetland boundaries should be considered preliminary until reviewed and approved by the Corps.

Work will occur at the intersection with Wolfsen Road, the Blue Goose Cache Fire Station access road, and the entrance to the Freitas Boat Ramp parking area. With the exception of a small area at the Wolfsen Road intersection on property owned by the Bureau of Reclamation, all work will be within the State Route 165 right-of-way. Project impacts are summarized in Table 1.

Table 1. Wetland Impacts and Proposed Mitigation by Project

Project	Permanent wetland impacts (acres)	Mitigation proposed (acres)
Wolfsen Road Entrance	0.257	0.514
Blue Goose Cache Fire Station	0.447	0.894
Freitas Boat Ramp	0.045	0.090
Total	0.749	1.50

The impacts from the proposed project will be much less than the total area of wetlands mapped in the wetland survey area. The impacts will be determined during project design.

Environmental Consequences

This project would permanently impact 0.749 acres of wetlands. This impact will be mitigated at a 2:1 ratio within the refuge.

Avoidance, Minimization, and/or Mitigation Measures

The following permits will be required: Regional Water Quality Control Board (RWQCB) water quality certification (Section 401, Clean Water Act), Section 404 Permit (Clean Water Act), and an EPA NPDES General Permit for Storm Water Discharges Associated with Construction Activity.

Delineated wetland vegetation in the drainage ditch (narrow tule stands, native and non-native grasses and forbs) would also be lost during construction, however in-kind replacement habitat at a 2:1 ratio would compensate for the proposed impacts. U.S. Fish and Wildlife Service would provide this replacement habitat by enlarging an adjacent wetland on the Refuge. Since existing use by wildlife of the construction site is minimal, it is unlikely that this action would have any significant impacts to fish and wildlife resources. The construction will be during the dry summer season so there will be no run-off into the San Joaquin River or any nearby tributaries.

Construction of turn lanes on State Route 165 would result in the unavoidable placement of fill material in wetlands in road side ditches adjacent to the road. Permanent fill material placed in wetlands will include clean fill dirt and aggregate road base.

Temporary construction impacts will extend no more than 2 feet beyond the edge of the fill. In areas with wetlands, every attempt will be made to avoid clearing beyond the toe of slope to eliminate temporary impacts. There will be no permanent change in grade in temporarily impacted areas, and temporary impacts will be restored by seeding with a native seed mix immediately following construction. In all locations, the amount of fill placed in wetlands is the minimum needed to complete the project. Impacts were minimized by using a 1:2 side slope instead of 1:4, reducing the project footprint and reducing impacts to wetlands.

Standard BMPs will be established and maintained during construction to minimize sediment reaching wetlands that will not be filled. The following BMPs will be implemented:

• Disturbed areas will be revegetated with native plant species to protect exposed soils from erosion.

• Silt fencing will be installed to delineate the limits of project disturbance and protect against migration of disturbed soils.

• Work areas will be limited as much as possible to minimize construction impacts to surrounding areas.

• Sediment logs and temporary inlet protection will be used where appropriate to prevent sediment from entering waterways.

Appendix A 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 GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs 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 GHG 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 (second to electricity generation) of GHG emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas Mitigation" is a term for reducing GHG emissions in order 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 growth of vehicle miles traveled (VMT), 3) transitioning to lower GHG emitting fuels, and 4) improving vehicle technologies. To be most effective all four strategies should be pursued collectively. The following Regulatory Setting section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

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

Regulatory Setting

State

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

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases, 2002: requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the U.S. Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars model years 2017-2025.

Executive Order (EO) S-3-05: (signed on June 1, 2005, by former Governor Arnold Schwarzenegger) the goal of this EO is to reduce California's GHG 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 the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB 32, the Global Warming Solutions Act of 2006, Núñez and Pavley: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan, (which includes market mechanisms) and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06: (signed on October 18, 2006 by former Governor Arnold Schwarzenegger) further directs state agencies to begin implementing AB 32, including the recommendations made by the California's Climate Action Team.

Executive Order S-01-07: (signed on January 18, 2007 by former Governor Arnold Schwarzenegger) set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by the year 2020.

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

Caltrans Director's Policy 30 (DP-30) Climate Change (approved June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. This policy contributes to the Department's stewardship goal to preserve and enhance California's resources and assets.

Federal

Although climate change and GHG reduction is a concern at the federal level; currently there are no regulations or legislation that have been enacted specifically addressing GHG 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 promulgated explicit guidance or methodology to conduct project-level GHG analysis. As stated on FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in the growth of vehicle hours travelled.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct 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.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

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

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

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

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009[2]. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles,

[2] http://www.epa.gov/oms/climate/regulations.htm#1-1

as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.[3]

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO_2) per mile, (the equivalent to 35.5 miles per gallon [MPG] if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards will cut GHG 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 November 16, 2011, U.S. EPA and NHTSA issued their joint proposal to extend this national program of coordinated greenhouse gas and fuel economy standards to model years 2017 through 2025 passenger vehicles.

Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[4] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA 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 in order to make this determination is a difficult, if not impossible, task.

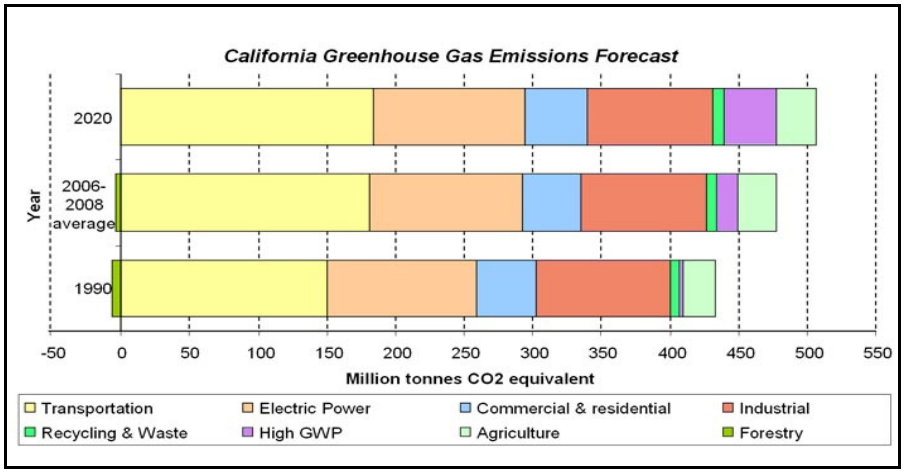
The AB 32 Scoping Plan mandated by AB 32 contains the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan

[3] http://epa.gov/otaq/climate/regulations.htm

[4] 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).

were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

FIGURE1. 3 CALIFORNIA GREENHOUSE GAS FORECAST



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

The Department and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[5]

The purpose of the proposed project is to reduce the number of collisions at the entrances to the San Luis Wildlife refuge by adding turn lanes at three entrance locations. The proposed project will not add capacity to the existing facility and will likely improve operations at these locations. Operational emissions are not expected to increase as a result of the proposed project.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction

[5] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. 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 GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

CEQA Conclusion

While there may be a slight increase in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. 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 determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following sections

Greenhouse Gas Reduction Strategies

AB 32 Compliance

The Department continues to be actively involved on the Governor's Climate Action Team as ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies the Department is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Former Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways,

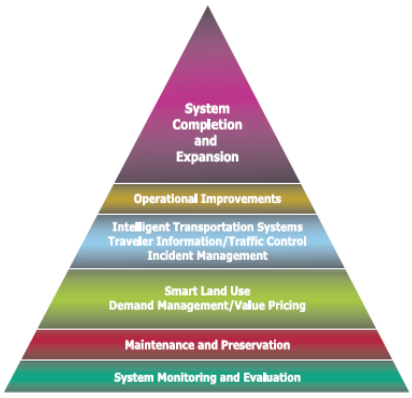


Figure 1.4: Mobility Pyramid

including $100.7 billion in transportation funding during the next decade. The

Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in Figure 1.4: The 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 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 its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by U.S. EPA and ARB.

Table 1.1 summarizes the Departmental and statewide efforts that the Department is implementing in order to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 1.1 Climate Change/CO_2 Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	**Caltrans**	**Local governments**	**Review and seek to mitigate development proposals**	**Not Estimated**	**Not Estimated**
	Planning Grants	**Caltrans**	**Local and regional agencies & other stakeholders**	**Competitive selection process**	**Not Estimated**	**Not Estimated**
	Regional Plans and Blueprint Planning	**Regional Agencies**	**Caltrans**	**Regional plans and application process**	**.975**	**7.8**
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	**Caltrans**	**Regions**	**State ITS; Congestion Management Plan**	**.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, CalEPA, 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**	**.0045**	**.0065 .045 .0225**
Non-vehicular Conservation Measures	Energy Conservation Program	**Green Action Team**		**Energy Conservation Opportunities**	**.117**	**.34**
Portland Cement	Office of Rigid Pavement	**Cement and Construction Industries**		**2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix**	**1.2 .36**	**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 following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

- Planting—Riparian planting would be included to maintain shade along creek corridors. In the short term, immature tree planting would probably not offset greenhouse gas produced as a result of project construction. In the long-term, however, tree planting should enhance the carbon sequestration potential of the project site and greenhouse gas emission levels would, in theory, continue to improve over time as the trees mature, except as counteracted by increased traffic volumes.

- Idling restriction—According to the Caltrans Standard Specification Provisions, idling time for lane closure during construction is restricted to 10 minutes in each direction. In addition, the contractor must comply with the San Joaquin Valley Air Basin's rules, ordinances, and regulations regarding air quality restrictions.

- Recycling—Where feasible, existing material would be salvaged and incorporated into the final design. Candidates for recycling include existing metal beam barriers and the structural section of the existing shoulders.

- Rubberized asphalt concrete—Rubberized asphalt concrete would be used as road material. This material is made with recycled tires and has been in use since the late 1970s as a cost-efficient and environmentally friendly alternative to traditional road paving.

- Landscaping—All removed trees and vegetation would be replaced in accordance with established the Caltrans policy for replacement planting. Landscaping reduces surface warming and, through photosynthesis, decreases carbon dioxide levels. Vegetation would help offset potential carbon dioxide emissions increase.

The following waste reduction and energy conservation practices and materials would be used in the project as part of replacement planting and erosion control work:

- Compost—Caltrans specifies that compost comes from green material consisting of chipped, shredded, or ground vegetation and clean, processed recycled wood products, including biosolids. This compost does not contain paint, petroleum products, pesticides or any other chemical residues harmful to animal life or plant growth.

- Fiber rolls and mats—Rolls from recycled products should be used for erosion control. Fiber weed-control mats are used under guardrails to reduce maintenance and use of herbicides to control weeds.

- Wood mulch—Caltans specifies that wood mulch comes from green material consisting of chipped, shredded, or ground vegetation and clean, processed recycled wood products. If a coloring agent is used on the mulch, it must be free of copper, mercury, and arsenic. The mulch must also be biodegradable and nontoxic.

- Replanting—Caltrans specifies native or drought tolerant plants and seeds should be used. Where feasible, slow-growing plants that require less maintenance, water, pesticides, and herbicides should be used.

- Irrigation—Water valve actuators should be low voltage (24 volts). After the plant establishment period, irrigation schedules are reduced to the least amount of water possible to reduce weeds and erosion.

- Vegetation maintenance—Careful attention to design would minimize vegetation maintenance expenditures such as water, pesticide and herbicide usage.

- Weed control—Biological control can also be an effective alternative to chemical controls. Fiber weed-control mats are used under guardrails to reduce maintenance and use of herbicides to control weeds.

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; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency report on October 14, 2010 outlining recommendations to President Obama for how Federal Agency policies and programs can better prepare the U.S. to respond to the impacts of climate change. The Progress Report of the Interagency Climate Change Adaptation Task Force recommends that the federal government implement actions to expand and strengthen the nation's capacity to better understand, prepare for, and respond to climate change.

Climate change adaption 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, former Governor Arnold Schwarzenegger signed EO S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of 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)[6], which summarizes the best known 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 EO 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 Resources Agency was also directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010[7] to advise how California should plan for future sea level rise. The report is to include:

- 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.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data

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

[7] Pre-publication copies of the report, *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*, were made available from the National Academies Press on June 22, 2012. For more information, please see http://www.nap.edu/catalog.php?record_id=13389.

Interim guidance has been released by The Coastal Ocean Climate Action Team (CO-CAT) as well as the Department as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise.

All projects that have filed a Notice of Preparation as of the date of EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed 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 warranted in order 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 EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

Additional Guidance

- For additional information regarding the potential impacts of climate change in California, see *Our Changing Climate: Assessing the Risks to California, A Summary Report from the California Climate Change Center* at

http://www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.PDF.

- **For additional information on how to analyze and discuss future Sea Level Rise, see Caltrans' Guidance on Incorporating Sea Level Rise http://www.dot.ca.gov/ser/guidance.htm#sealevelrise**