SJ SR-4 Rock Slope Protection

State Route 4 two miles west of Middle River Bridge

10-SJ-4-2.1

Project Number 10-1200-0189

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 San Joaquin County, 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 as well as the technical studies are available for review at the Caltrans District Office at 1976 E. Martin Luther King Jr. Boulevard , Stockton, CA 95205;and the Cesar Chavez Central Library at 605 N. El Dorado Street, Stockton, CA 95202.

- We welcome your comments. If you have any concerns regarding the proposed project, send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:
  Scott Smith, Senior Environmental Planner
  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: _____.

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 call or write to Caltrans, Attn: Scott Smith, Central Sierra Environmental Analysis Branch, 855 M Street, Suite 200., Fresno, CA 93721; 559-445-6172 Voice, or use the California Relay Service TTY number, 1-800-735-2929.

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to place rock slope protection on the westbound State Route 4 in San Joaquin county at post mile 2.1.

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 received by interested agencies and the public.

Draft

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed 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, floodplains, noise receptors, traffic levels, visual resources, emergency services, or pedestrian facilities.

In addition, the proposed project would have no significant effect on: water quality, or hazardous wastes.

In addition, the proposed project would have no significantly adverse effect on animal species, threatened and endangered species, or Wetlands and waters of the United States because the following mitigation measures would reduce potential effects to insignificance:

- The impacts to threatened and endangered species (Giant Garter Snake) would be minimized by the purchase of habitat credits from a mitigation bank, construction windows (May through September 30), worker education, pre-construction surveys, following protocol if species is found on project site.
- The impacts to animal species would be minimized by pre-construction surveys, monitoring by a qualified biologist, confining clearing to minimal area necessary, following protocol if species are found on site,
- The impacts to Water of the United States would be minimized by purchase of bank credits or an in-lieu fee.

_____ _____

Scott Smith
Senior Environmental Planner
California Department of Transportation

Date

Section 1 Project Information

Project Title

San Joaquin SR 4 Rock Slope Protection

Lead Agency Name and Address

California Department of Transportation (Caltrans)
855 M St., Suite 200
Fresno, CA 93721

Contact Person and Phone Number

Scott Smith, Branch Chief, San Joaquin Valley Analysis Branch
559-445-6172

Project Location

The proposed project is located within San Joaquin county on State Route 4, two miles east of the Middle River Bridge. (Please see Figures 1 and 2).

Project Sponsor's Name and Address

Same as lead agency

General Plan Description and Zoning

Agricultural (Irrigated Row Crops)

Description of Project

Caltrans proposes to place rock slope protection on the westbound State Route 4.

Surrounding Land Uses and Setting

The surrounding area is irrigated row crops.

Other Public Agencies Whose Approvals Are Required

California Department of Fish and Wildlife is a California Environmental Quality Act responsible agency and is responsible for a Section 1602 Permit. The Army Corps of Engineers is responsible for issuance of a Section 404 Nationwide Permit. The Central Valley Regional Water Quality Control Board is responsible for issuance of a 401 Permit as well as a National Pollution Discharge Elimination System Permit. Section 7 consultation is required for Giant Garter Snake with the United States Fish and Wildlife Service.

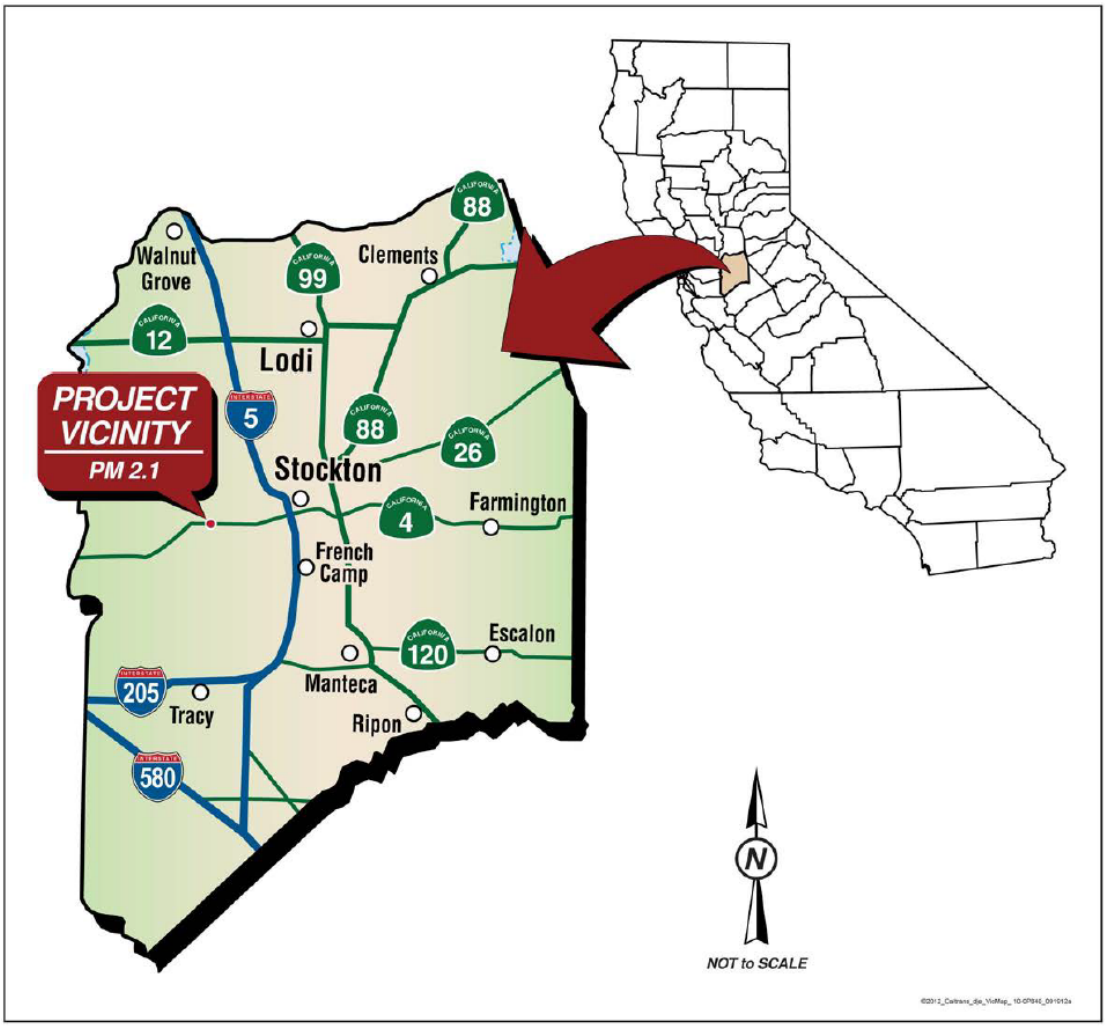


Figure 1 Project Location Map

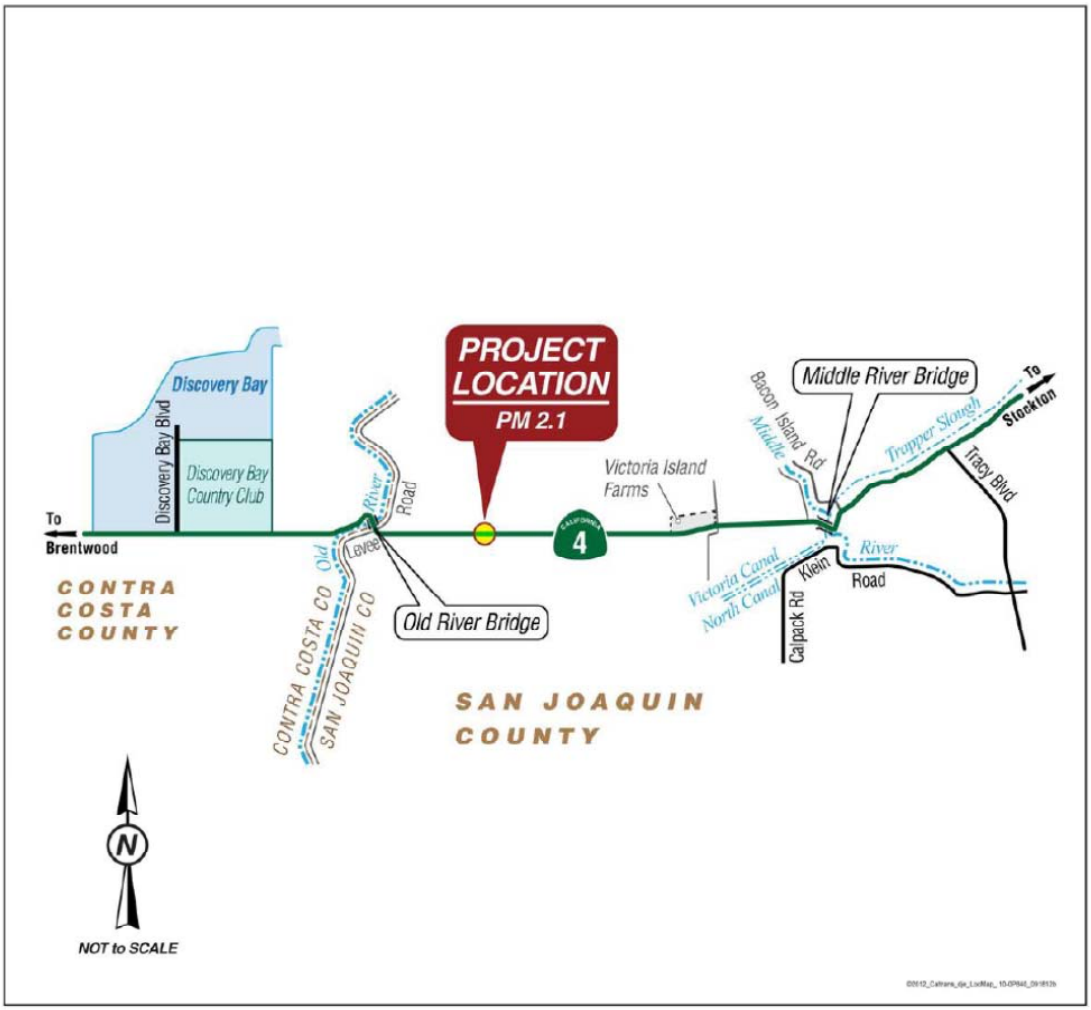


Figure 2 Project Vicinity Map

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.

2/25/13

Scott Smith
Senior Environmental Planner
Central Sierra Environmental Analysis Branch

Date

Section 3 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
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?				X
II. AGRICULTURE AND FOREST RESOURCES —. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) 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
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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
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
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?				X
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
Air Quality Assessment Report, January, 2013				
e) Create objectionable odors affecting a substantial number of people?				X
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	

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
Explanation: See additional explanations.				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X
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
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
d) Disturb any human remains, including those interred outside of formal cemeteries?				X
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:				

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
c) Be 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
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	
Caltrans Standard Plans, 2010				
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: The project would not need septic tanks or alternative wastewater disposal systems.

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?

An assessment of the greenhouse gas emissions and climate change is included in Appendix A of the environmental document. While Caltrans

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	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
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
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
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
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or			X	

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
emergency evacuation plan?				

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.

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

IX. HYDROLOGY AND WATER QUALITY — Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	X
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?	☐	☐	☐	X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☐	X
e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	X
f) Otherwise substantially degrade water quality?	☐	☐	☐	X
g) Place housing within a 100-year flood hazard area				

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
	☐	☐	☐	X
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	X
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	X
Explanation:				
j) Result in inundation by a seiche, tsunami, or mudflow?	☐	☐	☐	X
X. LAND USE AND PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	X
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?	☐	☐	☐	X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	X
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
b) Exposure of persons to or generation of excessive				

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
groundborne vibration or groundborne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X
e) For a project 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
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X
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
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

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

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X
XVII. UTILITY AND SERVICE SYSTEMS — Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in 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
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

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: See the Biology Section in the Additional Explanations after the checklist .

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

c) Does the project have environmental effects that

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	X

Additional Explanations for Questions in the Impacts Checklist

IV. Biological Resources (checklist questions a and c)

Threatened and Endangered Species

Affected Environment

Giant Garter Snake

Giant garter snake is a state and federally listed as threatened and is protected by the State and Federal Endangered Species Act. Giant garter snake inhabit agricultural waterways such as irrigation and drainage canals, rice lands marshes, sloughs, pounds, small lakes, low gradient streams and adjacent uplands in the Central Valley. Essential habitat components consists of

- adequate water storage during the active season (spring through fall)
- emergent, herbaceous wetland vegetation for escape cover during active season
- upland habitat with grassy banks and opening in waterside vegetation for basking
- higher elevation update habitat for cover and refuge from flood water during active season

No Giant Garter Snake were identified within the project area. However, a habitat assessment found that suitable habitat exists with the drainage ditch as part of the project.

Swainson's Hawk

The Swainson's hawk is listed by the State of California as threatened and is protected by the Migratory Bird Treaty Act. Surveys identified suitable habitat for Swainson's hawk with the study area in the form of an apricot tree and a willow tree. Nearby farmland provides suitable foraging habitat.

Environmental Consequences

Giant Garter Snake

Potential habitat for giant garter snake is present with the project area. The rock slope would result in permanent loss of 0.216 acres of potential aquatic habitat and the

temporary loss of 0.184 acres of potential aquatic habitat. No loss of upland habitat would result for the project.

Swainson's Hawk

No impacts to Swanson's hawk are anticipated with the implementation of the measures listed below.

Avoidance, Minimization, and/or Mitigation Measures

Giant Garter Snake

The following measures would be implemented to avoid and minimize effects to the giant garter snake.

- In-water and bank-side construction activities will take place between May 1 and October 1, the active period for giant garter snake. Any work occurring after October 1 will be restricted to road surface work with water quality controls in place.

- Between April 15 and September 30, any waterway in the project area will be dewatered and remain dry, with no puddle water, for at least 15 consecutive days before workers excavate or fill dewatered habitat. Efforts will be made to ensure that the dewatered habitat does not continue to support giant garter snake prey, which could detain or attract giant garter snakes into the area. This measure would also encourage them to exit the site.

- A qualified US Fish and Wildlife approved biologist will perform worker environmental awareness education to all construction personnel.

- A qualified biologist will conduct a pre-construction survey for giant garter snake, no more than 24 hours prior to the start of construction activities (site preparation and grading). If construction activities stop for a period of two or more weeks, a new survey will be completed no more than 24 hours prior to the reinitiating of construction activities.

- If a live giant garter snake is encountered during construction activities, the biological monitor will do the following:

i. Stop construction activity in the vicinity of giant garter snake. Monitor and allow the giant garter snake to leave on its own. The monitor will remain in the area for the remainder of the workday to make sure that the snake is not harmed or that it leaves the site and does not return. Escape routes will be determined in advance of construction. If the giant garter snake doesn't leave on its own within one working day, further consultation with US Fish and Wildlife Service will be conducted.

ii. Only personnel with a US Fish and Wildlife recovery permit will have the authority to capture and/or relocate giant garter snake encountered in the work area.

iii. Upon locating dead, injured or sick giant garter snake, Caltrans will notify the US Fish and Wildlife Service Division of Law Enforcement and/or Jennifer Schofield at the Sacramento Fish and Wildlife Office within one working day. Written notification to both offices will be made within (3) calendar days and will include the date, time, and location of the finding of a specimen and any other pertinent information.

- Clearing will be confined to the most minimal area necessary within 200 feet of aquatic habitat to facilitate construction activities.

- Standard construction Best Management Practices (BMPs) will be implemented throughout construction to avoid and minimize adverse effects to water quality within the project impact area.

Mitigation measures proposed for impacts to giant garter snake include:

- Compensation for loss of habitat through purchase of credits from a mitigation bank, preservation of habitat, or enhancement or restoration of habitat. The ratio of compensation will be 3:1 for permanent impacts and 0.5 to 1 for temporary impacts.

Swainson's Hawk

The following measures would be implemented to avoid impacts to Swainson's hawk, if construction occurs during breeding season (late March to late August):

- Pre-construction surveys would be conducted no less than 14 days and no more than 30 days before construction starts.
- A qualified biologist will monitor any active nest during construction activities to ensure that no interference with the birds' breeding activities occur.
- Removal of any trees with the project area should be done outside the nesting area. However, f a tree in the project areas needs to be removed during nesting season, a qualified biologist would inspect the tree prior to removal to ensure that no nests are present.

Animal Species

Affected Environment

Tri-colored black bird

The tricolored blackbird is a designated species of special concern by the State of California and is also protected by the Migratory Bird Treaty Act. Survey identified suitable roosting habitat for this species in and near the study area. The drainage canal in the project is dense with aquatic vegetation, and there are two trees in the study area that may provide potential roosting or perching habitat. Nearby farmland provides suitable foraging habitat for tri-colored black bird.

Western Pond Turtle

The western pond turtle is a California Species of Special Concern. No focused surveys were conducted for western pond turtle but there are several California Natural Diversity Database, and Caltrans verified occurrences near the study area, the closest being less than one mile away at Trapper Slough, CA

Environmental Consequences

Tri-colored black bird

No impacts to tri-colored black bird are anticipated with the implementation of the avoidance and minimization measures listed below.

Western Pond Turtle

No impacts to western pond turtle are anticipated with the implementation of the avoidance and minimization measures listed below.

Avoidance, Minimization, and/or Mitigation Measures

Tri-colored black bird

The following measures would be implemented to avoid impacts to tri-colored black bird, if construction occurs during breeding season (mid-April through July):

- Pre-construction surveys would be conducted no less than 14 days and no more than 30 days before construction starts.
- A qualified biologist will monitor any active nest during construction activities to ensure that no interference with the birds' breeding activities occur.
- Removal of any trees with the project area should be done outside the nesting area. However, f a tree in the project areas needs to be removed during nesting season, a qualified biologist would inspect the tree prior to removal to ensure that no nests are present.

Western pond turtle

The avoidance and minimization measures proposed for giant garter snake are also appropriate for the western pond turtle. In addition, the following avoidance and minimization measures would be implemented:

- Confine clearing to facilitate construction activities to the minimal area necessary.
- Preconstruction surveys to determine presence of western pond turtle within the project area will be conducted no less than 14 days and no more than 30 days before any ground-disturbing activities.
- If a western pond turtle is observed, it will be moved outside of the project area and the California Department of Fish and Game would be consulted.
- If a western pond turtle is observed during construction, the resident engineer should notify a Caltrans biologist immediately.

Wetland and Waters of the United States

Affected Environment

The study area is 435-feet long and spans the width of the drainage ditch from road edge to the opposite edge of the ditch. The area is highly disturbed and contains both paved areas and ruderal vegetation and is completely surrounded by cultivated cropland. The topography within the area is relatively flat with elevation ranges from five feet below sea level to five feet above sea level.

There are no wetland features identified within the project area.

There are two drainage ditches located in the study area, the unnamed north drainage ditch, and the unnamed south drainage ditch. The unnamed north drainage ditch where the rock slope protection will be installed is man-made, but is bordered by Middle River (to the east) and Old River (to the west). The ditch is relatively permanent as well as a tributary to navigable Waters of the United States (Old River and Middle River). Therefore, Caltrans has determined the unnamed ditch, located north of State Route 4, is a United States Army Corps of Engineers jurisdictional Waters of the United States. The impacts to the ditch are approximately 0.4 acres.

Environmental Consequences

This project would permanently impact 0.4 acres of Waters of the United States.

Avoidance, Minimization, and/or Mitigation Measures

The project would obtain a United States Army Corps of Engineers 404 permit prior to construction. Caltrans will follow all avoidance and minimization measures outlined within that permit.

Caltrans will also mitigate for the 0.4 acres of Waters of the United States impacts by purchasing 0.4 acres from a United States Army Corps of Engineers approved conservation bank or an in-lieu fee.

Appendix A Climate Change

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[1]. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse*

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

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, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.[2]

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.[3] 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

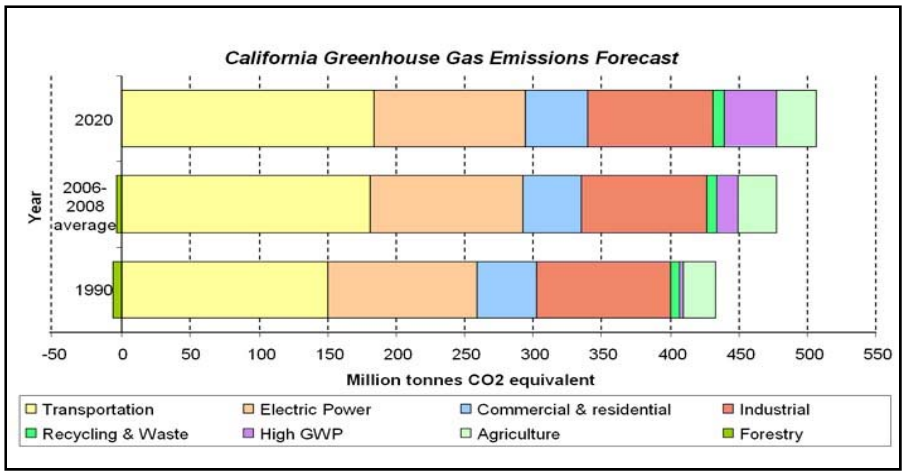
[2] http://epa.gov/otaq/climate/regulations.htm

[3] 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).

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

Figure 1-1 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.[4]

[4] 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

Caltrans proposes to place rock slope protection on the embankment of State Route 4 two miles west of the Middle River Bridge Creek. One build alternative and the No-Build Alternative are under consideration.

The purpose of the proposed project is to correct stormwater damage and prevent roadway failure by placing rock slope protection to minimize further erosion. Construction greenhouse gas emissions are unavoidable, but the project as proposed would not increase or change long-term traffic volumes and is not expected to cause an overall increase in operational greenhouse gas emissions.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. 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 construction will result in a slight increase in greenhouse gas emissions during construction, Caltrans expects that there would be no operational increase in GHG emissions associated with this proposed project. However, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination on the project's direct impact and its contribution on the cumulative scale to climate change. Nonetheless, Caltrans is taking further measures to help reduce energy consumption and greenhouse gas emissions. These measures are outlined in the following section.

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, 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 1-3: 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).

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)[5], 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[6] 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.

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

[6] 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.

- 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

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 project is located outside a coastal zone and direct impacts to transportation facilities 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.

Table A-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: