Colusa Shoulder Widening
& Clear Recovery Zone (CRZ)

Colusa County
03-COL-20
PM: 34.8-36.5
EA: 03-0H650 / EFIS: 0316000003

Initial Study with Mitigated Negative Declaration

Prepared by the State of California, Department of Transportation

December 2019

Caltrans

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 Colusa County in California. The document explains why the project is being proposed, the alternatives being considered for the project, the existing environment that could be affected by the project, potential impacts of each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read the document.
- Additional copies of the document and the related technical studies are available for review at the Caltrans District Office at 703 B Street Marysville, CA 95901. Or at the Colusa County Library at 738 Market St, Colusa CA 95932.
- Send comments via postal mail to: California Department of Transportation Attn: Marta Martinez-Topete, Associate Environmental Planner, California Department of Transportation, 703 B Street, Marysville, CA, 95901. Submit comments via email to: Marta.Martinez-Topete@dot.ca.gov.
- Submit comments by the deadline: TBD

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 construct all or part of the project.

Alternative Formats

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or email Marta Martinez-Topete, 703 B Street Marysville, CA 95901 530-741-4249.

SCH TBD
District 3-COL-20-34.8/36.5
03-0H650 and 0316000003

Colusa Shoulder Widening and CRZ

INITIAL STUDY with Proposed Mitigated Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The project proposes to install standard 8-foot shoulders, provide 20-foot Clear Recovery Zone (CRZ), and rehabilitate the drainage system. The project will construct embankments with 4:1 side slope, except where adjacent to standing water (PM 35.5 to 36.5) where the side slopes may be reduced to 2:1, and place rumble stripe on both edge of way (ETWs). Tree removal will also be required on the southeast side of the project area.

Installing 8-foot shoulders will improve the roadway to allow more space for vehicles to redirect back into the traffic lanes. Also, widening shoulders to 8 feet should help reduce rear end accidents by allowing vehicles to use the wider shoulder as an emergency for sudden stopped or turning vehicles. This improvement will promote alternative transportation by providing a continuity of wider shoulders on SR 20.

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 from interested agencies and the public.

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 project would have no effect on aesthetics, air quality, cultural resources, energy, geology/soils, greenhouse gas emission, hazards and hazardous material, hydrology water quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation, tribal cultural resources, utilities/service system, and wildfire.

The project would have no significant effects on:

- Wetlands and other waters of the United States
- Federal and State listed endangered species or their habitats

With the following mitigation measures incorporated, the proposed project would have less than significant effects to wetland and other waters and biological resources because the following mitigation measures would reduce potential effects to less than significant

- The permanent loss of 3.021 acres of jurisdictional wetland and 0.001 acres of jurisdictional waters of the United States will be mitigated by the purchase

of credits at an approved mitigation bank or through “in-lieu-fee” mitigation. Temporary impacts for 2.692 acres of jurisdiction wetlands will be mitigated through the purchase of in-lieu fee credit purchase.

- The permanent and temporary loss of giant garter snake habitat will be mitigated by the purchase of credits from an approved mitigation bank at a 3:1 ratio. A total of 17.139 giant garter snake credits will be purchased.

Date of Approval

Mike Bartlett, Acting Office Chief
North Region Office of Environmental Management
California Department of Transportation

Table of Contents

Chapter 1 Proposed Project

Introduction

The California Department of Transportation (Caltrans) proposes a safety project on State Route (SR) 20 between post miles 34.8 to 36.5 in Colusa County, from Niagara Road to West of Steidlmayer Road (Figure 1 Project Location). Caltrans is proposing to widen shoulders to 8 feet, provide a 20-foot Clear Recovery Zone (CRZ), and rehabilitate the drainage system along the road. The total project length is 1.7 miles.

The project is approximately 4 miles east of the City of Colusa and about 19 miles west of the City of Yuba City. The project is surrounded by agricultural fields, a storage business is on the northwestern end of the Environmental Study Limits (ESL) (see Figure 2), and the county airport along with other businesses to the northwest. The Dolan Ranch Conservation Bank is on the northeastern end of the project.

SR 20 is a major route in the North-Central Region, providing a west to east connection that extends over 211 miles. The route starts in Mendocino and crosses Lake, Sutter, Colusa, and Nevada County. It ends at the junction of SR 20 and Interstate 80 in Nevada County.

Project Funding

Funding will be through the State Highway Operation and Protection Program (SHOPP) Safety Improvement Program (40.50.201.015) proposed in the 2018 SHOPP and asset management. The project is eligible for Federal-aid funding.

Purpose and Need

The project will enhance safety for all users by providing standard 8-foot shoulders and improved Clear Recovery Zone. The 8-foot shoulders will reduce collisions by allowing vehicles to use the wider shoulder as an emergency parking; pedestrian and bicycle usage; and will close the gap between two sections on State Route 20 that have 8-foot wide shoulders.

Within the project limits, the existing shoulder width do not meet the current standard. The existing shoulders width do not allow for bicycle and pedestrian travel, emergency parking and errant vehicle recovery.

This section of SR 20 (PM 34/36.5) currently has zero to 3-foot shoulders and is located between two sections with standard 8-foot shoulder. The need for the project is based on the opportunity to provide standard shoulder and comply with the SR 20 Transportation Concept Report.

Installing 8-foot shoulders will improve the roadway to allow more space for vehicles to redirect back into the traffic lanes. Also, widening shoulders to 8 feet should help reduce rear end accidents by allowing vehicles to use the wider shoulder for sudden stopped or turning vehicles. This improvement will promote alternative transportation by providing a continuity of wider shoulders on SR 20.

Project History

The 2006 project scope was reduced for the portion of the project between Niagara Road to west of Steidlmayer Road and 8-foot shoulders & CRZ were not constructed/scoped down due to excessive cost of the environmental mitigation. The proposed project is needed to extend safety improvements to PM 36.5.

Project Description

The project proposes to install standard 8-foot shoulders, provide 20-foot CRZ, and rehabilitate the drainage system. The project will construct embankments with 4:1 side slope, except where adjacent to standing water (PM 35.5 to 36.5) where the side slopes may be reduced to 2:1, and place rumble stripe on both ETWs. Tree removal will also be required on the southeast side of the project area.

Features of the Build Alternative

The build alternative will include the following features:

Alternative 1

- Widen shoulders to 8 feet with a rubber hot mix asphalt-gap (RHMA) structural section,
- Construct embankments with 4:1,
- Improve side slopes except where adjacent to standing water (PM 35.5 - 36.5) where side slopes might be reduced to 2:1,
- Rehabilitate roadside drainage
- Install new rumble stripe on both ETWs.

No Build Alternative

The no build alternative does not address the project purpose and need.

Figure 1. Project Location

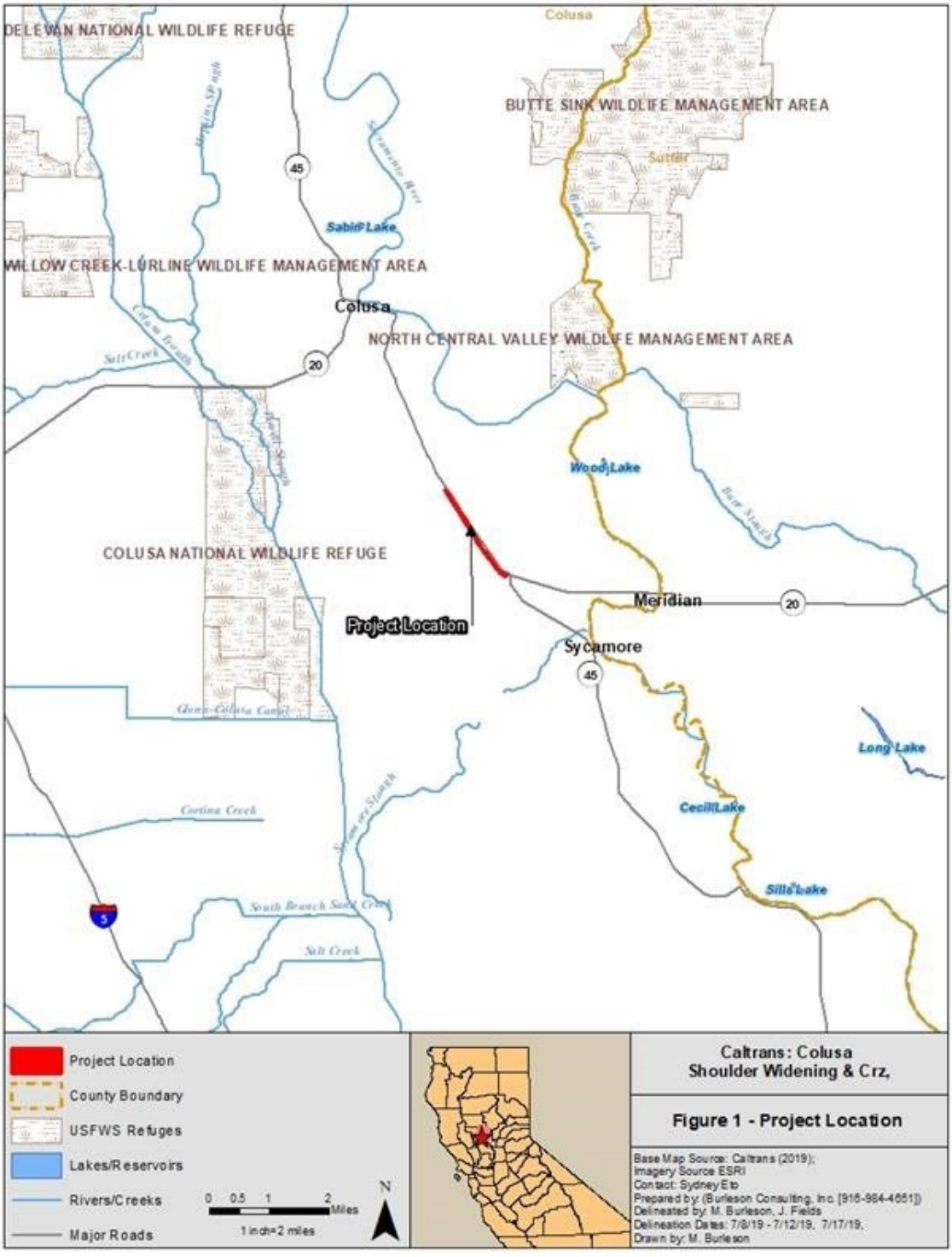

Figure 2. Environmental Study Limit

Permits and Approval Needed

The proposed project would require the following permits:

- Section 404 Nationwide from the United States Army Corps of Engineers.
- Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board.
- 1602 Lake and Streambed Alternation Agreement from the California Department of Fish and Wildlife.
- Incidental Take Permit from the Department of Fish and Game.

Chapter 2 Environmental Factors Potentially Affected/CEQA Environmental Checklist

The environmental factors checked below would be potentially affected by this project as indicated by the checklist on the following.

	Aesthetics	X	Agriculture / Forestry Resources		Air Quality
X	Biological Resources		Cultural Resources		Energy
	Geology / Soils	X	Greenhouse Gas Emissions		Hazards and Hazardous Materials
	Hydrology Water Quality		Land Use / Planning		Minerals Resources
	Noise		Population / Housing		Public Services
	Recreation		Transportation		Tribal Cultural Resources
	Utilities / Service System		Wildfire	X	Mandatory Findings of Significance

CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Significant and Unavoidable Impact, Less Than Significant with Mitigation Incorporated, Less Than Significant Impact, and No Impact. In many cases, background studies performed in connection with a project will indicate that there are no impacts to a particular resource. A No Impact answer reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 to provide you with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

For those areas that a “no impact” determination is made, there will be no further discussion in the document.

Aesthetics

CEAQ Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on a scenic vista?

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

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

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

Explanation for a, b, c, and d - No Impact. The no impact determination is based on the project scope, project setting, field reviews, and the Visual Impact Assessment (VIA) completed on March 28, 2019. The Route is not a designated State Scenic Highway.

The project will not degrade the existing visual character of the project area. The project is in the unincorporated area of Colusa County. It is surrounded by agricultural fields. The area is relatively flat; irrigation canals and ditches are located along the highway. The project area is highly disturbed by regular maintenance, farming equipment, and road maintenance.

A few trees will need to be removed along the southeast end of the project ESL. However, there will be no obstruction to the view from the road. The project will not introduce new source of light or glare, and the project will not create an impact on a scenic vista.

Agriculture and Forest Resources

CEQA Significance Determinations for 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 Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

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

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

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

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Explanation for a - Less Than Significant. The less than significant impact determination is based on project scope, research, and field reviews. The proposed project would occur on Caltrans right of way (R/W) and in a rural agricultural area. The project area contains farmland, which is designated by the Department of Conservation Farmland Mapping and Monitoring Program (FMMP), as Prime Farmland and Unique Farmland (California Department of Conservation 2014).

Permanent land acquisitions would occur through the build alternative. R/W acquisition will be required under Alternative 1. The total amount would be 2.63 acres; the strips of land to be acquired are adjacent to SR 20. Acquisition of the narrow strips of land would not take the parcels out of agricultural projection and would not cancel the Williamson Act contracts.

Explanation for b - Less Than Significant. The less than significant impact determination is based on the research and field reviews. No changes would occur to farmland and timberland. The project is surrounded by agricultural land and parcels enrolled in Williamson Act contracts. Although acquisition would be required, the strips of land to be acquired are adjacent to SR 20. Acquisition of these narrow strips of land would not take the parcels out of agricultural projection and would not cancel the Williamson Act contracts. The impact would be less than significant.

Explanation for c, d, and e - No Impact. The no impact determination is based on project scope and field reviews. There are no timberlands and no rezoning will occur in the project vicinity; therefore, no impacts to timberland and zoning would occur.

Air Quality

CEQA Significance Determinations for Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) 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?

c) Expose sensitive receptors to substantial pollutant concentrations?

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Explanation for a, b, c, and d - No Impact. The no impact determination is based on the Air Quality Analysis prepared on July 26, 2019. Colusa County is categorized as attainment/unclassified area for current National Ambient Air Quality Standards (NAAQS). An attainment/unclassified area is a geographic area that meets national standards for air quality.

The project would not change traffic volume, fleet mix, speed, or increase emissions. During construction, short-term emission would be generated from excavating, grading, hauling, and other construction-related activities. The following measures will be implemented to reduce air quality impacts during construction.

- Comply with Caltrans Standard Specifications (CSS) in Section 14-9, including laws and regulations related to air quality.
- Follow the Colusa County Air Pollution Control District regulations and local ordinances for air quality.
- Apply water or a dust palliative to the project site and the equipment as needed.
- Maintain and tune construction equipment and/or vehicles and use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.
- Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and timely re-vegetation of disturbed slopes to minimize construction impacts.
- Keep the construction area clean.
- Implement track-out reduction measures to minimize dust and mud deposits on roads.
- Cover or provide freeboard for loads of soils and wet materials to minimize emissions.
- Remove dust and mud placed on roads during construction to reduce Particulate Matter (PM) emissions.

Biological Resources

CEQA Significance Determinations for Biological Resources

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

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

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

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

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

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

Explanation for a and c - Less than Significant with Mitigation. The project may affect, and is likely to adversely affect Federally listed Giant Garter Snake (*Thamnophis gigas*). The project will permanently affect 3.021 acres and temporarily affect 2.692 acres of aquatic snake habitat. Caltrans proposes to mitigate for impacts to snake habitat with the purchase of mitigation credits at an approved US Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) mitigation bank.

The project will permanently impact 3.021 acres and temporarily impact 2.693 acres of seasonal and emergent wetlands. Caltrans proposes to mitigate for impacts to jurisdictional wetlands with the purchase of in-lieu fee credits.

With mitigation, the impacts would be less than significant.

Explanations for b, d, e, and f - No Impact. The no impact determination in this section is based on the project scope, field reviews, and information provided in the Natural Environmental Study (NES) prepared in October 2019. The proposed project would not conflict with any local plans/policies

protecting biological resources. Refer to Chapter 3 – Biological Environment for additional information.

Cultural Resources

CEQA Significance Determinations for Cultural Resources

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

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

c) Disturb any human remains, including those interred outsides of dedicated cemeteries.

Explanation for a, b, and c - No Impact. The no impact determination to cultural resources is based on the project scope, field reviews, and the information provided in the Cultural Resources Compliance Memo prepared August 15, 2019.

Energy

CEQA Significance Determinations for Energy

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Explanation for a and b - No Impact. The no impact determination is based on the Energy Study prepared July 26, 2019. The construction related energy consumption would be temporary. There will be no new source of energy demand. The need for fuel would have no noticeable effect on peak or baseline demand for energy. Therefore, the project would not result in inefficient, waste, and unnecessary consumption of energy. The project will not conflict with state or local plans for renewable energy or energy efficiency.

Geology and Soils

CEQA Significance Determinations for Geology and Soils

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

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

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

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

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

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Explanation a, b, c, d, e, and f No Impact. The no impact determination for geology and soil is based on the project scope, field reviews, California Geological Survey Maps, U.S. Geological Survey Landslide Inventory, Department of Conservation/Caltrans Highway Corridor Landslide Hazard Mapping program, California Geological Survey (CGS), Earthquake Zones of Required Investigation map, and the Colusa County Local Hazard Mitigation Plan.

The project is not in a fault zone. The area is not in a liquefaction zone; the general composition of the soils are marine and nonmarine (continental) sedimentary rocks. The proposed project would not expose people to injury.

Considerable earth-moving activities would be necessary to construct the project. The scope of work would include the construction of access roads and staging areas, placing of fill into trenches, excavation to remove existing pavement for cut and cover operations, and excavation for drainage work as well as other activities.

Since earth-moving activities have the potential to cause soil erosion or loss of topsoil, construction site best management practices (BMPs) will be implemented to reduce the amount of erosion and tops soil loss.

The project is not located on unstable or expansive soils. The primary scope of work is located on engineered soils consisting of silty sand and gravel material used for pavement subgrade. Moreover, the project will not include septic or water disposal systems, and there is no paleontological resource or geologic feature. Therefore, there would be no impact to geology and soils.

Greenhouse Gas Emissions

CEQA Significance Determinations for 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?

Explanation for a and b – Less than significant Impact. Construction Greenhouse Gas Emissions (GHG) emissions will consist of short-term emissions produced by materials processing, on-site construction equipment, and temporary traffic delays. The project would not increase capacity, travel demand, or traffic patterns.

Hazards and Hazardous Materials

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

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

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

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Explanation for a, b, c, d, e, f, and g - No Impact. The no impact determination is based on the project scope and Initial Site Assessment (ISA), prepared on August 23, 2019.

Lead contaminated soil may exist within and near the R/W due to the historical use of leaded gasoline, leaded airline fuels, waste incineration, and et-cetera. The areas of concern are soils historically high vehicle emissions due to large traffic volumes, congestion, or stop-and-go situations. The excess soils will be relinquished to the contractor, so an Aerially Deposited Lead (ADL) and a Lead Compliance Plan (LCP) investigation shall be required.

Also, hazardous levels of lead and chromium are known to exist in the yellow color traffic stripes. Since these traffic stripes will be removed along with the roadway, the levels of lead and chromium will become non-hazardous. The grindings (which consist of the roadway material and the yellow color traffic stripes) shall be removed and disposed in accordance with Standard Special Provision 36-4 (Residue Containing High Lead Concentration Paints).

The non-hazardous levels of lead are known to exist in white traffic striping, so grindings shall be removed and disposed following Special Provision 36-4; it requires a LCP to address the hazardous and non-hazardous levels of lead.

Moreover, hazardous chemicals are known to exist in wood post signs. If wood posts are removed, they shall be disposed in accordance with Standard Special Provision 14-11.14 (Treated Wood Waste).

Hydrology and Water Quality

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site;

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv) Impede or redirect flood flows?

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Explanation for a, b, c, d, and e - No Impact. The no impact determination in this section is based on the Water Quality Assessment Report completed on August 15, 2019. The report found that no water quality impacts are expected.

During construction, site BMPs will be implemented for construction activities to avoid and reduce potential water quality to project limits and storm water runoff resulting from construction.

The following will be applied during construction:

- Comply with the conditions applied in the Caltrans Statewide NPDES Permit.
- Contractor shall prepare a Stormwater Pollution Prevention Plan (SWPPP), incorporate Temporary Construction Site BMPs, placement, handling, storage, and disposal practices of all BMPs used during construction operations and field activities.

Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Explanation for a and b - No Impact. The no impact determination for land use and planning is based on the project scope, project area, research, and field reviews. The project is located within a rural area. Due to the rural nature of the area and the scope of the project, the project would not divide an established community. The project area is zoned Agriculture General, which is intended to preserve agriculture. The project would not conflict with land use planning, policies, or regulations.

Mineral Resources

CEQA Significance Determinations for Mineral Resources

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

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

Explanation for a and b - No Impact. The no impact determination to mineral resources is based on the project scope and field reviews. No mineral resources were identified in the ESL that would be affected by the project.

Noise

CEQA Significance Determinations for Noise

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Generation of excessive ground borne vibration or ground borne noise levels?

c) For a project located within the vicinity of a private airstrip or 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?

Explanation for a, b, and c - No Impact. The no impact determination for noise is based on the project scope, field reviews, and information provided in the Noise Analysis competed on June 28, 2019.

The project will not construct a new highway in a new location. The project will not substantially change the vertical or horizontal alignments of the highway. The traffic volumes, composition, and speed would remain the same. The project would not result in a permanent increase in noise levels.

During construction, noise would result from heavy equipment and the arrival and departure of heavy-duty trucks which are not considered a substantial increase in ambient noise levels as construction will occur adjacent to the roadway with existing noise generated by traffic. The noise levels will vary on a day-to-day basis, depending on the tasks being completed.

To minimize the noise the 2018 CSS Section 14-8.02, Noise Control will be implemented.

Population and Housing

CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Explanation for a and b - No Impact. The no impact determination for population and housing is based on the description and location of the proposed project. The project would not increase capacity or access; it would not directly or indirectly induce population growth in the area. The project would not add new homes, businesses, and it would not extend roads or other infrastructure.

The surrounding parcels are zoned Agriculture General. The Colusa County General Plan restricts the uses. “The Agriculture General designation identifies areas to be retained for agriculture and/or uses that are complementary to existing or nearby agricultural uses.” Also, “Lands designated Agriculture General are planned to be preserved for agricultural uses and the intent of the designation is to preserve such lands for existing and future agricultural use and protect these lands from the pressure of development.”

There are no residences within the project area, and the replacement of housing would not be necessary. The proposed project is not anticipated to induce population or displace people.

Public Services

CEQA Significance Determinations for Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

Police protection?

Schools?

Parks?

Other public facilities?

Explanation for a – No Impact. The no impact determination for public services is based on the project scope and field reviews. The proposed project would not require new, or changes to government facilities to maintain acceptable service ratios, response times, or other performance objectives. Emergency services vehicles, pedestrians, and bicyclists would be accommodated through the work zone, during construction.

Recreation

CEQA Significance Determinations for Recreation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

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

Explanation for a and b – No Impact. The no impact determination for recreation is based on the description and location of the proposed project. The project would not increase the use of any existing neighborhood, regional parks, or other recreational facilities. Furthermore, there are no neighborhood parks, regional parks adjacent to or nearby the project.

Transportation

CEQA Significance Determinations for Transportation

Would the project:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

b) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

d) Result in inadequate emergency access?

Explanation for a, b, c, d - No Impact. The no impact determination for transportation is based on the project scope and field reviews. The proposed project scope will not conflict with an applicable congestion management program, result in a change in air traffic patterns, substantially increase hazards due to a design feature, or conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. Moreover, the project would not change emergency access.

Tribal Cultural Resources

CEQA Significance Determinations for Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Explanation for a and b - No Impact. The no impact determination is based on the information provided in the Cultural Resource Compliance Memo,

prepared August 15, 2019. There are no listed or eligible tribal cultural resources in the project area.

Utilities and Service Systems

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

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

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Explanation for a, b, c, d, and e – No Impact. The no impact determination is based on the project scope and field reviews. There are no utility conflicts.

Wildfire

CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities)

that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Explanation for a - No Impact. The no impact determination is based on the proposed project. The safety project will not impair the Colusa County Local Hazard Mitigation Plan approved in 2018; the plan focuses on reducing and eliminating risk to people and property from hazards. The project would not substantially impair the county plan because the existing structures and roadway would remain open to traffic during construction.

Explanation for b and c- No Impact. The no impact determination is determined by the project scope and would not exacerbate wild fire risks. In addition, the project would not require installation or maintenance of additional infrastructure that would result in temporary or ongoing impacts to the environment.

Explanation for d – No Impact. The no impact determination is based on the proposed project. The project will improve the conditions of the roadway and improve the drainage system along the highway and reduce the risk of fire related flooding. According to the Colusa County Local Hazard Mitigation Plan, the project area is in low level area for landslide incidence. Furthermore, the work will primarily be within the existing road and right of way; it will not expose people to fire related landslides and flooding. Therefore, there is no impact.

Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

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

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

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

Explanation for a – Less Than Significant with Mitigation. The proposed project does not have the potential to degrade the quality of the environment. The project may have minimal impacts to sensitive species known to occur in the vicinity of the project area and wetlands. These impacts have been reduced to "less than significant with mitigation" incorporated into the project features.

Explanation for b and c – No Impact. The no impact determination is based on the scope of work. The proposed project would not result in any adverse effects that, when considered in connection with other projects, would be considered cumulatively considerable. Based on the description of the proposed project and consideration of potential effects, the project would not cause substantial adverse effects on human beings, either directly or indirectly.

Chapter 3 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

Biological Environment

This section discusses natural communities of concern; the focus is on biological communities, not individual plant or animal species. Information on wildlife corridors and habitat fragmentation is also included. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in the Threatened and Endangered Species section. Also, wetlands and other waters are also discussed.

- As part of the environmental analysis carried out for the project, the following environmental issues were considered but no impacts were identified:
    - The project would not have a substantial adverse effect on any riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or the US. Fish and Wildlife Service.
    - Project would not substantially interfere 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.
    - Project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
    - Project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

As a result, there is no further discussion about these issues in this document.

Affected Environment

The proposed project is located within the California Central Valley, surrounded by rice cultivations and managed irrigation canals. Dolan Ranch conservation bank is located on the northeastern end of the project limits; it is habitat to several State and Federally listed species including the Giant Garter Snake (GGS) and vernal pool fairy shrimp. The project area is highly disturbed by farming equipment and road maintenance. Many areas in the ESL are dominated by non-native annual herbs.

Table 3.1: Land Cover Types within the BSA

Vegetation Type	Area (Acres)
Black Willow Thicket	0.082
Bulrush-Cattail Marsh	4.133
California Annual Grassland	5.112
Fremont Cottonwood Forest	0.741
Saltgrass Flat	3.322
Barren	10.63
Irrigation Canal	0.102
Total	**24.122**

Two sensitive natural communities were identified within the ESL: black willow thicket and Freemont cottonwood. These communities are found along the margins of the emergent wetlands.

Black Willow Thicket

Black willow thicket communities within the ESL occur along Steer Ditch irrigation canal, and it is dominated by black willow (Salix gooddingii). This community primarily occurs adjacent to the south bound lane of SR-20 and is part of a larger riparian forest observed outside the ESL.

Freemont Cottonwood Forest

Freemont cottonwood forest communities within the ESL occur along Steer Ditch irrigation canal and is dominated by cottonwoods (Populus fremontii). This community occurs adjacent to the north and south bound lanes of SR-20 and is part of a larger riparian forest observed outside the ESL.

Environmental Consequences

The project would not impact black willow thicket communities, but it would permanently impact approximately 0.68 acres of cottonwood forest communities that boarder the roadway.

Avoidance and Minimization Measures

- Install fencing to protect sensitive biological resources.
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats.
- Limit excavation to the minimum required to complete project.
- Limit the construction footprint to the minimum area possible to complete the project.

Mitigation Measure

Habitat restoration or purchase of mitigation credits from a California Department of Fish and Wildlife (CDFW) approved mitigation bank is proposed.

Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation’s waters would be significantly degraded. The Section 404 permit

program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as FHWA and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCBs) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is

wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

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

Affected Environment

SR 20 within the ESL is elevated higher than the adjacent wetland features found within the roadside basins and parcels. Within the basins, wetlands and upland are interspersed in a complex of emergent and seasonal wetlands. There is a total of 7.461 acres of wetlands within the project limits including 4.136 acres of emergent wetlands and 3.325 acres of seasonal wetlands. Additionally, there are 0.102 acres of irrigation canal within the ESL.

Analysis of wetlands and other waters analysis is based on the Biological Assessment, Natural Environmental Study (NES), and Aquatic Resource Delineation Report prepared for the proposed project.

Emergent Wetland

The emergent wetlands within the project area are located near the irrigation canal. They are dominated by common tule (Schoenoplectus acutus) and cattails (Typha latifolia, Typha angustifolia) and were found in and along the margins of the channel, with perennial water flow or flooding.

Seasonal Wetland

Seasonal wetlands are wetlands and swales that pond water during the rainy season and are mostly vegetated with annual plants. The seasonal wetlands within the ESL are dominated by low cover perennial and annual plants, including salt grass (Distichlis spicata), with patches of rabbitsfoot grass (Polypogon monspeliensis), and hyssop loosestrife (Lythrum hyssopifolia). They were observed within roadside basins along the outer edge of emergent wetlands influenced by irrigation flooding or precipitation ponding.

Non-Wetland Waters – Irrigation Canals

Two irrigation canals exist within the ESL. One large irrigation canal, Steer Ditch, bisects the ESL near the center and is hydrologically connected to Powell Slough and the Sacramento River through various irrigation canals to

the west and east respectively. The second irrigation canal is located adjacent to a storage facility and a managed wetland. This canal routes excess irrigation water west, under SR 20 and away from Dolan Ranch Conservation Bank.

Environmental Consequences

The proposed project would result in 3.020 acres of permanent impacts and 2.692 acres of temporary impacts to seasonal and emergent wetlands. The project would not affect Steer Ditch but would temporarily impact 0.001 acres of irrigation canal at the unnamed irrigation canal near the storage facility during culvert replacement.

Table 3.2 Impacts to Waters of the United States/Waters of the State

	Permanent Impacts (Acres)	Temporary Impacts (Acres)
Emergent Wetlands	1.416	1.566
Seasonal Wetlands	1.605	1.126
Total Wetland	3.021	2.692
Irrigation Canal	0.0	0.001
Total Other Waters	0.0	0.001
Total	**3.021**	**2.693**

In accordance with EO 11990, before impacting wetlands it must be demonstrated 1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

The project's Purpose and Need is to widen existing shoulders to increase safety. There are no practicable alternatives that achieve the Purpose and Need.

Alternatives proposed in Project Initiation Report (PIR) that would result in a greater impact to wetlands and other waters of the US than the selected alternative were rejected. Additionally, the design was modified to incorporate 2:1 slopes instead of the standard 4:1 to reduce the project's footprint and further reduce impacts to wetlands.

Based on alternative selection and project modifications to reduce project impacts to wetland to the minimum needed to construct the project, a

wetlands only practicable finding can be made that supports the build alternative.

No Build Alternative

The no build alternative does not meet project need and purpose.

Avoidance and Minimization Measures

- Install fencing to protect sensitive biological resources.
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats.
- Protect water quality to minimize sedimentation in and sediment-laden runoff to wetlands and other waters.
- Limit ground disturbance to the minimum required to complete project.
- Limit the construction footprint to the minimum area possible to complete the project.

Mitigation Measure

Caltrans proposes to mitigate for impacts to jurisdictional wetlands with the purchase of in-lieu fee credits.

Plant Species

Regulatory Setting

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

This section of the document discusses all other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also

subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), found at California Public Resources Code, Sections 21000-21177.

Affected Environment

The proposed project is located within the California Central Valley, surrounded by rice cultivations and managed irrigation canals. SR 20 within the ESL is elevated higher than the adjacent wetland features found within the roadside basins and parcels. The basins, wetlands and upland are interspersed in a complex of emergent and seasonal wetlands. Seven special status plant species had the potential to occur within the ESL. The potential species include heartscale (Atriplex cordulata var. cordulata), San Joaquin spearscale (Extriplex joaquinana), brittlescale (Atriplex depressa), vernal pool smallscale (Atriplex persistens), palmate-bracted bird's-beak (Chloropyron palmatum), and California alkali grass (Puccinellia simplex). Species analysis surveys were conducted in early to mid-July when all species of concern would display the proper phenology for identification. No special status plant species were observed within the ESL.

Environmental Consequences

The project would not affect any special status plant species identified by CDFW, CNPS or USFWS.

Avoidance and Minimization Measures

No avoidance and minimization measures for special status plants is necessary as they will not be affected by the project.

No mitigation is necessary.

Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in the Threatened and Endangered Species Section 3.5 below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

National Environmental Policy Act

Migratory Bird Treaty Act

Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

California Environmental Quality Act

Sections 1600 – 1603 of the California Fish and Game Code

Sections 4150 and 4152 of the California Fish and Game Code

Affected Environment

The following animal species analysis is based on the Biological Assessment, Natural Environmental Study (NES), and Aquatic Resource Delineation Report prepared for the proposed project on October 25, 2019.

After a review of recorded species occurrences and habitat requirements, it was determined that four special status species not listed under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA) have the potential to occur within the ESL.

The potentially present species are the western pond turtle (*Emys marmorata)*, and several bat species such as the western red bat (*Lasiurus blossevillii)*, hoary bat (*Lasiurus cinereus)*, song sparrow (*Melospiza melodia)*, western small-footed myotis (*Myotis cillolabrum)*, and Yuma myotis (*Myotis yumanensis)*. Field surveys were performed and available habitat was evaluated against the habitat requirements of the previously listed species. Suitable habitat for longfin smelt is not present within the project area.

Western Pond Turtle

Western pond turtle is a California species of special concern (SSC). Within the ESL, emergent wetlands, canals, and irrigation ditches provide suitable habitat for western pond turtle.

Bats

The Steer Canal bridge could provide suitable night and day roosting habitat for bats and adjacent riparian areas could provide tree roosting sites for western red bat, Hoary bat, and western small-footed myotis.

Migratory Birds

Several migratory birds have the potential to occur within the ESL during various times of the year and use a variety of habitats that are available. The Steer Canal bridge provides suitable nesting habitat for swallows while the large riparian trees can also provide nesting sites.

Environmental Consequences

The project has the potential to temporarily effect special status animal species within the project area. They could be impacted by construction activities, which have the potential to disrupt natural behaviors or could experience direct mortality if an equipment-wildlife conflict occurs. Temporary impacts during construction are possible but risk is minimized though avoidance and minimization measures.

Avoidance and Minimization Measures

- Install ESA to identify environmentally sensitive areas.
- Install exclusionary fencing to prevent wildlife from entering the ESL.
- Limit ground disturbance to the minimum required to complete project.
- Limit the construction footprint to the minimum area possible to complete the project.
- Construction work windows will be established to avoid and/or minimize impacts to special status species.
- Pre-construction surveys will be performed for special status species
- An aquatic organism rescue plan will be developed and utilized during dewatering to minimize the effects of dewatering and prevent mortality of existing aquatic organisms. This plan will require the capture and relocation of organisms from dewatered areas to a preselected relocation in the adjacent to the ESL.
- Worker awareness training will be performed to educate personnel, explaining protective measures, species identification, life history, habitat requirements during all life stages, and species' protective status. It will also include instructions that if any worker encounters a hardhead within or near the worksite, work shall halt, and biological representative will be informed.
- A qualified biologist will be present during in-water work, dewatering activities and will record all observations and detections of other sensitive species during surveys.
- Tree removal will occur during the non-nesting season (October 1st through January 31st), if it is not possible, trees will be surveyed for birds and their nests prior to tree removal.

Mitigation Measure

No compensatory mitigation is proposed.

Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA) (and the Department, as assigned), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and

Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Affected Environment

The following threatened and endangered species analysis is based on the BA and NES, and Aquatic Resource Delineation Report prepared on October 25, 2019 for the proposed project.

Eleven State or Federally listed species were identified as species potentially occurring within the project area. Suitable habitat within the project area is not available for the following species: vernal pool fairy shrimp (Branchinecta lynchi), western yellow-billed cuckoo (Coccyzus americanus occidentalis), valley elderberry longhorn beetle (Desmocerus californicus dimorphus), vernal pool tadpole shrimp (Lepidurus packardi), Central Valley distinct population of steelhead (Oncorhynchus mykiss irideus pop 11), bank swallow (Riparia riparia), and longfin smelt (Spirinchus thaleichthys).

The following state or federally listed species have the potential to occur within the project ESL: giant garter snake (Thamnophis gigas), Swainson's hawk (Buteo swainsoni), tricolored blackbird (Agelaius tricolor), and greater sandhill crane (Antigone canadensis tabida).

Giant Garter Snake

Giant garter snakes are a Federal and State listed threatened species and are known to be present in the Dolan Ranch Mitigation Bank. They inhabit seasonal and emergent wetlands where they forage for prey and retreat to underground refuge when disturbed. They are an elusive species so individual detection is difficult while positive identification between it and its cousin the common garter snake can only be achieved by close inspection of scales. There are a total of 7.461 acres of suitable wetland habitat within the project limits including the 4.136 acres of emergent wetlands and 3.325 acres of seasonal wetlands. Giant garter snakes are likely to utilize the surrounding irrigation canals as well.

Swainson's Hawk

Swainson's hawk is a State-listed threatened species that forages in the grasslands, grazed pastures, hay crops, and row crop lands. Rice cultivations do not generally offer suitable habitat due to the dense vegetation which impairs the hawks foraging. Swainson's hawk are frequently observed in the

area around the project site and have the potential to nest near the project ESL.

Tricolored Blackbird

Tricolored blackbird is a candidate for listing under CESA and a SSC. It is a highly colonial species that is largely endemic to California. Breeding colony sites typically occur in freshwater marshes dominated by tule and cattails and riparian areas dominated by blackberries or grain fields. These sites require open; accessible water; protected nesting substrate including flooded, thorny, or spiny vegetation; and suitable foraging space where insects are abundant near the nesting site. Suitable nesting sites are not available however, tricolored blackbirds could potentially forage within the ESL.

Greater Sandhill Crane

Greater sandhill crane only breed during the summer near wet meadows, shallow lacustrine, and freshwater emergent wetlands in Siskiyou, Modoc, Lassen, Plumas and Sierra Counties. They winter primarily in the Sacramento and San Joaquin Valley, preferring relatively treeless areas of annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open emergent wetlands.

Environmental Consequences

Giant Garter Snake

Giant garter snake habitat will be impacted by the permanent loss of 3.020 acres and temporary loss of 1.930 acres of seasonal and emergent wetlands. Construction activities in suitable habitat also have the potential to result in injury, mortality, or disturbance of natural giant garters snake behavior.

Swainson's Hawk

Construction activities will occur during Swainson's hawk nesting period and could result in the disturbance of nesting or chick rearing behavior. However, nesting sites approximately two miles from the project area are present so a decrease in reproduction is not anticipated

Tricolored blackbird

Construction activities will occur during tricolored blackbird nesting period however, there are not any suitable nesting sites available within or near the project area so construction activities are not anticipated to impact the blackbird's nesting behavior. Construction could however, temporarily reduce the available foraging locations.

Greater Sandhill Crane

Greater sandhill crane spend winter in the Central Valley and spend the breeding season at higher elevations. Impacts to greater sandhill crane are not anticipated to occur since the construction season will occur while they are in their breeding habitat.

Avoidance and Minimization Efforts

- Limit ground disturbance to the minimum required to complete project.
- Limit the construction footprint to the minimum area possible to complete the project.
- Construction work windows will be established for in water work. This period is estimated to be May 1 to October 1.
- Install fencing to protect sensitive biological resources.
- Install exclusion fencing to prevent wildlife from entering the ESL.
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats.
- An aquatic organism rescue plan will be developed and utilized during dewatering to minimize the effects of dewatering and prevent mortality of existing aquatic organisms. This plan will require the capture and relocation of organisms from dewatered areas to a preselected relocation in the adjacent to the ESL.
- Worker awareness training will be performed to educate personnel, explaining protective measures, species identification, life history, habitat requirements during all life stages, and species' protective status. It will also include instructions that if any worker encounters a hardhead within or near the worksite, work shall halt, and biological representative will be informed.
- A qualified biologist will be present during in-water work, dewatering activities and will record all observations and detections of other sensitive species during surveys.
- Tree removal will occur during the non-nesting season. The non-nesting season is from February 2 through October 31, 2019, if it is not possible, trees will be surveyed for birds and their nests prior to tree removal.

Mitigation Measures

To compensate for permanent impacts to GGS aquatic and upland habitat, Caltrans will perform habitat restoration or purchase of mitigation credits from a USFWS and CDFW approved mitigation bank is proposed. With mitigation, project impacts will be less than significant.

Invasive Species

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

Affected Environment

Six state-listed noxious weeds were encountered during field surveys. One of the noxious weeds is considered "B-rated species." B-rated species have limited distribution. Five noxious weeds are considered "C-rated species." C-rated species are widely spread throughout northern California with no current possibility of control.

Environmental Consequences

None of these species on the California list of invasive species is used by the department for erosion control or landscaping. All equipment and materials will be inspected for the presence of invasive species.

Avoidance and Minimization Efforts

In compliance with the Executive Order on Invasive Species, EO 13112, and guidance from the Federal Highway Administration (FHWA), the landscaping and erosion control included in the project will not use species listed as invasive. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or next to the construction areas

Mitigation Measures

No compensatory mitigation is necessary.

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 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), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

Regulatory Setting

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

Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental

conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.[1] This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability."[2] Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the CAFE program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The U.S. EPA[3] in conjunction with the National Highway Traffic Safety Administration (NHTSA) is responsible for setting GHG emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. The current standards require vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. EPA and NHTSA are currently considering

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1 https://www.fhwa.dot.gov/environment/sustainability/resilience/

2 https://www.sustainablehighways.dot.gov/overview.aspx

3 U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

appropriate mileage and GHG emissions standards for 2022–2025 light-duty vehicles for future rulemaking.

NHTSA and EPA issued a Final Rule for “Phase 2” for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO_2 emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California’s GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (ARB) create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code [H&SC] Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

EO S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

SB 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under AB 32.

EO B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

EO B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$).[4] Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

SB 1386, Chapter 545, 2016, declared "it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

AB 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

Senate Bill 743**,** Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on

[4] GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO_2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.

automobile delay to alternative methods focused on vehicle miles travelled, to promote the state's goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

Senate Bill 150**,** Chapter 150, 2017, Regional Transportation Plans: This bill requires ARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

Executive Order B-55-18, (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

ENVIRONMENTAL SETTING

The proposed project is located east of the City of Colusa in a rural area surrounded by agricultural fields, a storage business on the northwestern end of the ESL, and the county airport along with other businesses to the northwest. The Dolan Ranch Conservation Bank is on the northeastern end of the project.

SR 20 is a major route in the North-Central Region, providing a west to east connection that extends over 211 miles. The route starts in Mendocino and crosses Lake, Sutter, Colusa, and Nevada County. It ends at the junction of SR 20 and Interstate 80 in Nevada County.

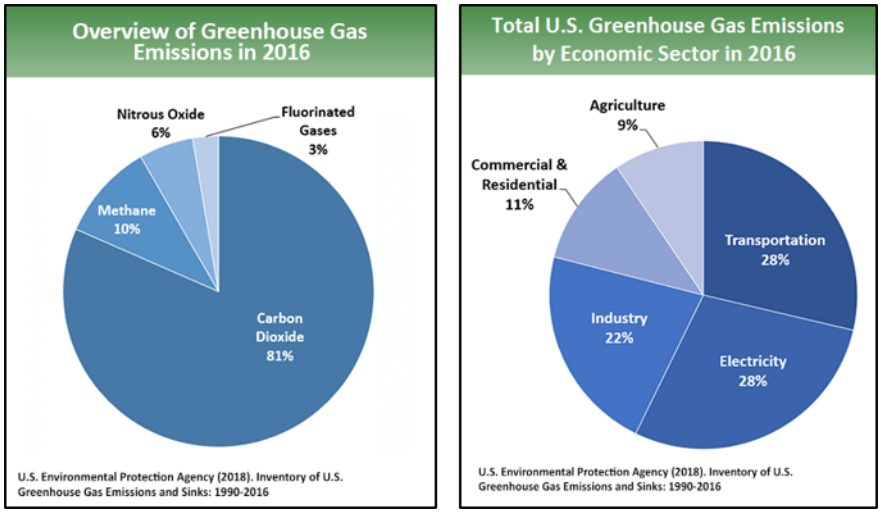
A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. U.S. EPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4.

National GHG Inventory

The U.S. EPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO_2, CH_4, N_2O, HFCs, perfluorocarbons, SF_6, and nitrogen trifluoride. It also accounts for emissions of CO_2 that are removed from the atmosphere by "sinks" such as forests, vegetation, and soils that uptake and store CO_2 (carbon sequestration). The 1990–2016 inventory found that of 6,511 $MMTCO_2e$ GHG emissions in 2016, 81% consist of CO_2, 10% are CH_4, and

6% are N_2O; the balance consists of fluorinated gases (EPA 2018a).[5] In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

Figure 3.1 Overview of Greenhouse Gases and Sources of Emissions



State GHG Inventory

ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2018 edition of the GHG emissions inventory found total California emissions of 429 MMTCO2e for 2016, with the transportation sector responsible for 41% of total GHGs. It also found that GHG emissions have declined from 2000 to 2016 despite growth in population and state economic output.6

[5] U.S. Environmental Protection Agency. 2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

[6] 2018 Edition of the GHG Emission Inventory (July 2018). https://www.arb.ca.gov/cc/inventory/data/data.htm

FIGURE 3.2 CALIFORNIA 2016 GREENHOUSE GAS EMISSIONS

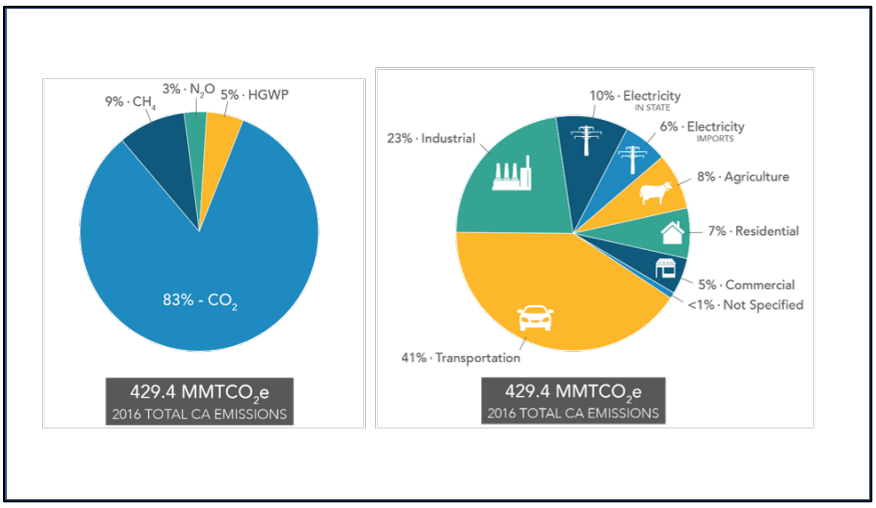
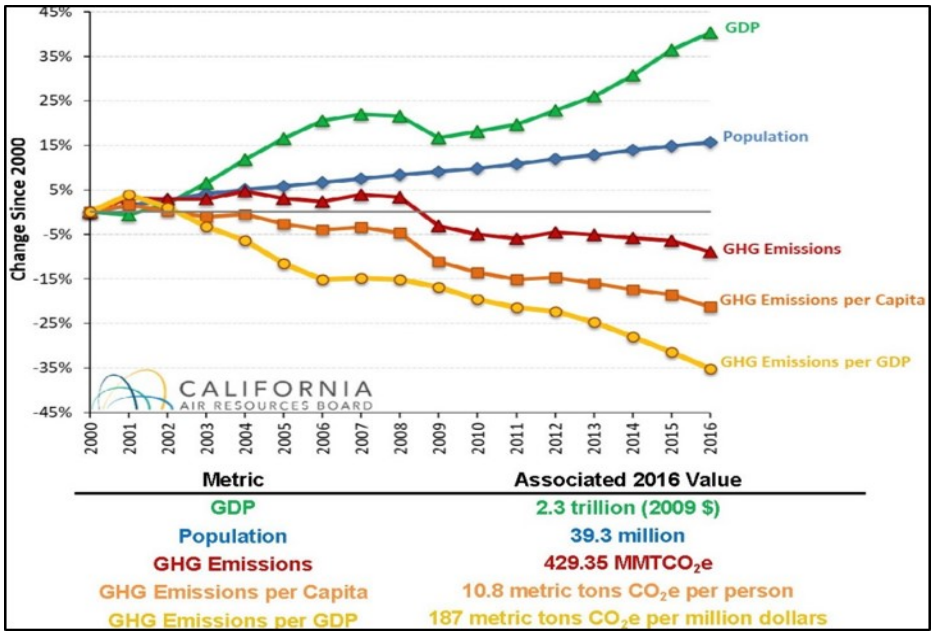


FIGURE 3.3 CHANGE IN CALIFORNIA GDP, POPULATION, AND GHG EMISSIONS SINCE 2000



AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. ARB adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions.

Regional Plans

The 2018 Colusa County Regional Transportation Plan Update includes goals on climate change and the environment. The RTP offers a comprehensive transportation strategy that, among other things, is intended to reduce GHG by reducing vehicle miles traveled. The proposed project is listed in the RTP, similar Caltrans projects identified for the 2018 SHOPP are included in the RTP Action Plan list of proposed short-range projects.

PROJECT ANALYSIS

GHG emissions from transportation projects can be divided into those produced during operation of the SHS and those produced during construction. The primary GHGs produced by the transportation sector are CO2, CH4, N2O, and HFCs. CO2 emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH4 and N2O are emitted during fuel combustion. In addition, a small amount of HFC emissions are included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 21083(b)(2)). As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself." (Cleveland National Forest Foundation v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.) 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. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The proposed project is a shoulder widening and CRZ project. The project would not increase capacity and would not change travel demands or traffic patterns when compared to existing conditions and the no-build alternative. Therefore, an increase in operational GHG emissions is not anticipated.

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and 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 offset to some degree by longer intervals between maintenance and rehabilitation activities.

The Caltrans Construction Emissions Tool (CAL-CET2018 version 1.2) was used to estimate carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and Hydrofluorocarbons (HFCs) emissions from construction activities. Construction is expected to begin in 2021 and last approximately 570 working days. Table 3.3 summarizes estimated GHG emissions generated by on-site equipment for the project. The carbon dioxide equivalent (CO_2e), produced during construction is estimated to be approximately 211 metric tons.

Table 3.3 Estimates of GHG emissions during construction (US tons)

Construction Year	CO_2	CH_4	N_2O	HFCs	CO_2e^*
2022	118	0.004	0.006	0.004	179
2023	24	0.001	0.002	0.002	54
Total	**142**	**0.005**	**0.008**	**0.006**	**233**

Implementation of the following measures, some of which may also be required for other purposes such as air pollution control, would reduce GHG emissions resulting from construction activities. Please note that although these measures are anticipated to reduce construction-related emissions, these reductions cannot be quantified at this time.

The construction contractor must comply with the Caltrans Standard Specifications Section 14-9. Section 14-9.02 specifically requires compliance

by the contractor with all applicable laws and regulations related to air quality. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

- Compliance with Title 13 of the California Code of Regulations, which includes restricting idling of construction vehicles and equipment to no more than 5 minutes.

- Caltrans Standard Specification 7-1.02C “Emissions Reduction” ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource Board.

- Utilize a traffic management plan to minimize vehicle delays and idling emissions.

- To the extent feasible, construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

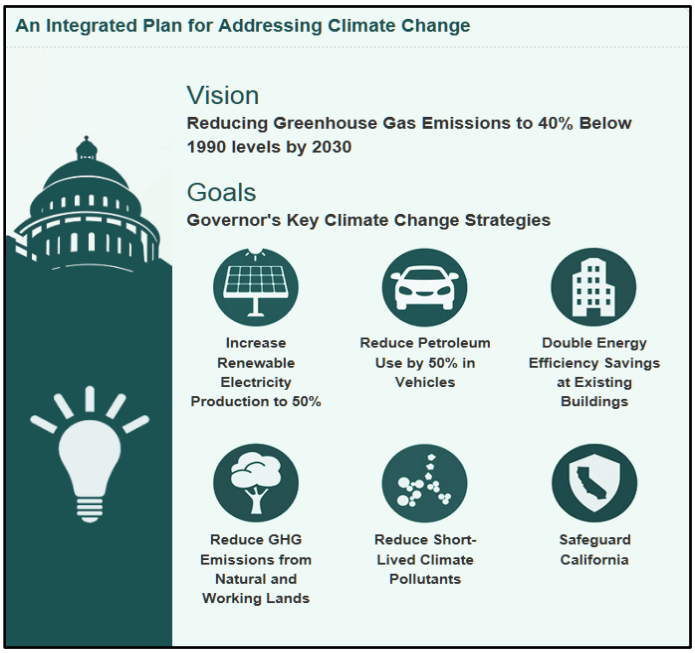
CEQA CONCLUSION

GREENHOUSE GAS REDUCTION STRATEGIES

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (1) reducing today’s petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.

Figure 3.4 California Climate Strategy



The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). A key state goal for reducing greenhouse gas emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030.

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set an interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. In 2016, Caltrans completed the California Transportation Plan 2040, which establishes a new model for developing ground transportation systems, consistent with CO2 reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

CALTRANS STRATEGIC MANAGEMENT PLAN

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

FUNDING AND TECHNICAL ASSISTANCE PROGRAMS

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

CALTRANS POLICY DIRECTIVES AND OTHER INITIATIVES

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

The following measures will also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project.

- The construction contractor must comply with the Caltrans Standard Specifications Section 14-9. Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

- Compliance with Title 13 of the California Code of Regulations, which includes restricting idling of construction vehicles and equipment to no more than 5 minutes.

- During k-rail placement and tie-in construction operations, public traffic may be stopped in both directions for periods not to exceed 5 minutes. After each closure, all accumulated traffic must be allowed to pass through the work zone before another closure is made.

- Caltrans Standard Specification 7-1.02C "Emissions Reduction" ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource Board.

- Utilize a traffic management plan to minimize vehicle delays and idling emissions.

- Construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

ADAPTATION

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must 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 their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program (USGRCP) delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 U.S.C. ch. 56A § 2921 et seq). The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime."

U.S. DOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions."7

FHWA order 5520 (Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events, December 15, 2014)8 established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems.

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7 https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm

8 https://www.fhwa.dot.gov/legsregs/directives/orders/5520.cfm

FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels.9

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. California's Fourth Climate Change Assessment (2018) is the state's latest effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- Resilience is the "capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience". Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality.2 Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

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9 https://www.fhwa.dot.gov/environment/sustainability/resilience/

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate "sea-level rise (SLR) projections into planning and decision making for projects in California" in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.[10]

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of EO B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

CALTRANS VULNERABILITY ASSESSMENTS

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects

[10] http://www.opc.ca.gov/updating-californias-sea-level-rise-guidance/

including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- Exposure – Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.

- Consequence – Determine what might occur to system assets in terms of loss of use or costs of repair.

- Prioritization – Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

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Chapter 5 Title VI Policy Statement

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures “No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.”