

Table 23 Summary of Short-Term Field Measurements

Receiver ID	Location	Land Use	Date	Start Time	Duration (Minutes)	Measured Leq (dBA)
R1	18 La Sara Ct.	Residential	11-14-07	12:07 PM	15	60.1
R2	6 Lasara Ct.	Residential	11-14-07	12:07 PM	15	52.9
R3	Anava Court	Residential	11-14-07	12:39 PM	15	58.4
R4	2888 Barouet Way	Residential	11-14-07	12:39 PM	15	49.2
R5	Ciervo Court	Residential	11-14-07	1:05 PM	15	53.2
R6	2197 Glenrio Way	Residential	11-14-07	1:05 PM	15	50.4
R7	2228 Coroval Dr.	Residential	11-14-07	1:30 PM	15	56.1
R8	2216 Arisco Cir.	Residential	11-14-07	1:30 PM	15	52.9
R9	Maricopa Way	Residential	11-14-07	3:28 PM	15	58.9
R10	2179 Maricopa Way	Residential	11-14-07	3:28 PM	15	54.4
R11	3167 Osuna Way	Residential	11-14-07	3:53 PM	15	54.8
R12	3163 Doroteo Way	Residential	11-14-07	3:53 PM	15	54.4
R13	3199 Osuna Way	Residential	11-15-07	10:40 PM	15	64.4
R14	3179 Doroteo Way	Residential	11-15-07	11:01 PM	15	56.1
R15	19 El Conde Ct.	Residential	11-15-07	11:26 AM	15	66.3
R16	265 Long Branch Ct.	Apartment	11-15-07	1:52 PM	15	61.8
R17	309 Long Branch Ct	Apartment	11-15-07	2:14 PM	15	53.5
R18	343 Long Branch Ct	Apartment	11-15-07	2:42 PM	15	57.5
R18A	310 San Juan Ave.	Apartment	6-10-08	11:30 A.M	10	59.6
R18B	77 Serapi Ct.	Residential	6-10-08	11:50 A.M	10	57.9
R19	2850 Gateway Oaks Dr.	Commercial	6-04-08	2:30 PM	10	66.8
R20	2870 Gateway Oaks Dr.	Commercial	6-04-08	2:55 PM	10	66.3
R21	2890 Gateway Oaks Dr.	Commercial	6-04-08	3:15 PM	10	69.2
R21A	2489 Gateway Oaks Dr.	Residential	6-04-08	3:35 PM	10	49.6
R21B	2810 Gateway Oaks Dr.	Apartment	6-04-08	4:05 PM	10	50.5
R22	3020 Tice Creek Way	Residential	6-06-08	2:10 PM	10	56.8
R23	2600 Klayko Way	Residential	6-06-08	1:40 PM	10	57.3
R24	2500 Tourbrook Way	Residential	6-06-08	1:25 PM	10	58.3
R25	2566 Tice Creek Way	Residential	6-06-08	2:30 PM	10	57.7
R26	3156 Brunnet Lane	Residential	6-06-08	2:50 PM	10	52.1
R27	3052 Brunnet Lane	Residential	6-06-08	3:10 PM	10	50.8
R28	3000 Brunnet Lane	Residential	6-06-08	3:30 PM	10	51.9
R29	2979 Spoonwood Dr.	Residential	6-06-08	3:45 PM	10	49.7

Receiver ID	Location	Land Use	Date	Start Time	Duration (Minutes)	Measured Leq (dBA)
R30	2000 Tourbrook Way	Residential	6-06-08	4:20 PM	10	46.8
R31	Pumping Station	Commercial	6-15-08	2:30 PM	10	60.3

Table 24 Summary of Long-Term Field Measurements

Receiver ID	Area ID	Date	Duration(hrs)	Loudest Leq (dBA)
LT-1	1	November 2007	48	66.2
LT-2	1	November 2007	48	70.4

The existing noise environment throughout the project limit varies by location, depending on site characteristics such as proximity to I-5/I-80 and local elevations. There are single-family homes, apartment complexes, and industrial land uses situated in project area.

2.20.3 Environmental Consequences Under NEPA

Traffic noise levels during the loudest time of the day were computed for design-year with project being built. Table 25 summarizes the results of the traffic noise modeling for existing project conditions and future design-year conditions. Increases of 12 dBA or greater are considered by Caltrans to be substantial and therefore result in a traffic noise impact. However, no receivers for this project will experience increase of 12 dBA or more.

Eighteen out of twenty receivers located in Area 1 of the project do not approach or exceed noise abatement criteria (See Figure 14 Noise Study Areas, Sheets 1-5 and Table 25). Two receivers (R13, R15) approached the noise abatement criteria, however, replacing the existing soundwall of 10 feet high with a new soundwall at the maximum height of 16 feet allowed by Caltrans, will not reduce noise by 5 dBA. A five dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Therefore, replacing the existing soundwall is not considered feasible and no further noise abatement measures are considered.

Even though the predicted noise levels exceed the noise abatement criteria for Activity Category C in Area 2, there are no land uses that are considered to have outdoor activity areas with frequent human usages that would benefit from a lower noise level.

Table 25 Existing and Predicted Traffic Noise Impact

Receiver ID	Existing Noise Level Leq (h), dBA	Design-Year With Project, Traffic Noise Level, Leq (h), dBA	Noise Abatement Category Leq (h), dBA	Traffic Noise Impact	Existing Shielding
R1	60	61	B (67)	None	10 ft sound wall
R2	53	55	B (67)	None	10 ft sound wall
R3	57	58	B (67)	None	10 ft sound wall
R4	54	55	B (67)	None	10 ft sound wall

Receiver ID	Existing Noise Level Leq (h), dBA	Design-Year With Project, Traffic Noise Level, Leq (h), dBA	Noise Abatement Category Leq (h), dBA	Traffic Noise Impact	Existing Shielding
R5	57	58	B (67)	None	10 ft sound wall
R6	55	57	B (67)	None	10 ft sound wall
R7	57	58	B (67)	None	10 ft sound wall
R8	56	57	B (67)	None	10 ft sound wall
R9	61	63	B (67)	None	10 ft sound wall
R10	57	58	B (67)	None	10 ft sound wall
R11	57	59	B (67)	None	10 ft sound wall
R12	58	60	B (67)	None	10 ft sound wall
R13	64	66	B (67)	A/E	10 ft sound wall
R14	60	61	B (67)	None	10 ft sound wall
R15	66	67	B (67)	A/E	10 ft sound wall
R16	62	63	B (67)	None	10 ft sound wall
R17	55	56	B (67)	None	10 ft sound wall
R18	61	62	B (67)	None	10 ft sound wall
R18A	61	62	B (67)	None	10 ft sound wall
R18B	60	61	B (67)	None	10 ft sound wall
R19	68	69	C (72)	None	No wall
R20	66	68	C (72)	None	No wall
R21	71	72	C (72)	A/E	No wall
R21A	52	52	B (67)	None	No wall
R21B	52	52	B (67)	None	No wall
R22	57	58	B (67)	None	No wall
R23	62	63	B (67)	None	No wall
R24	61	61	B (67)	None	No wall
R25	62	63	B (67)	None	No wall
R26	58	59	B (67)	None	No wall
R27	55	56	B (67)	None	No wall
R28	56	57	B (67)	None	No wall
R29	52	54	B (67)	None	No wall
R30	49	51	B (67)	None	No wall
R31	62	63	C (72)	None	No wall

2.20.4 Avoidance, Minimization, and/or Noise Abatement Under NEPA

A five dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Therefore, replacing the existing soundwall is not considered feasible and no further noise abatement measures are considered.

2.20.5 Construction Noise

2.20.6 Affected Environment

During the construction phases of the proposed project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction.

Table 2-13.3 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. As indicated, equipment involved in construction is expected to generate noise levels ranging from 70 dB to 90 dB at a distance of 50 ft. Noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. No substantial noise impacts from construction are anticipated because construction activity would be conducted in accordance with Caltrans Standard Specifications and would be short-term, intermittent, limited in physical extent, and in most cases dominated by local traffic noise.

Table 26 Construction Equipment Noise

<i>Type of Equipment</i>	<i>Maximum Level, dBA at 50 ft</i>
<i>Scrapers</i>	<i>89</i>
<i>Bulldozers</i>	<i>85</i>
<i>Heavy trucks</i>	<i>88</i>
<i>Backhoe</i>	<i>80</i>
<i>Pneumatic tools</i>	<i>85</i>
<i>Concrete pump</i>	<i>82</i>
<i>Source: Federal Highway Administration 1995.</i>	

2.20.7 Environmental Consequences

Table 25 lists the results of noise modeling for existing levels and design year noise levels. No receivers in the project vicinity will experience an increase of 12 dB or more

2.20.8 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required.

2.21 Energy

2.21.1 Regulatory Setting

CEQA Guidelines, Appendix F, Energy Conservation, state that Environmental Impact Reports are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

NEPA requires the identification of all potentially significant impacts to the environment, including energy impacts.

2.21.2 Affected Environment

I-5 and I-80 play a critical role in California's economy by supporting a high volume of commuter and interregional traffic as well as trucks moving goods to destinations in and outside the state.

2.21.3 Environmental Consequences

The Build Alternatives would result in a temporary increase in energy consumption during construction of the project, including fuel necessary for the movement of equipment, materials, and personnel to the project site, fuel for the operation of equipment, and lighting for night work.

However, the Build Alternatives would ultimately reduce energy demand by easing congestion and improving traffic flow within the I-5/I-80 interchange, which would in turn increase fuel efficiency and reduce energy demand. The HOV element of the project would also encourage ridesharing, further reducing energy demand. Therefore, the Build Alternatives will not have any direct, indirect, short-term, long-term, or unavoidable impacts on energy demand or resources. When balancing energy used during construction and operation against energy saved by relieving congestion and other transportation inefficiencies, the project would not result in substantial energy impacts.

Alternative 2—No Build Alternative

Alternative 2 would not encourage ridesharing, increase fuel efficiency, or reduce energy demand.

2.21.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required.

2.22 Biological Environment

2.22.1 Natural communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. 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. Due to the urban location of the project area, wildlife corridors and habitat fragmentation are not an issue, thus no further discussion of that is required.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in the Threatened and Endangered Species Section 2.26. Wetlands and other waters are discussed in Section 2.23.

The CNDDDB identified four natural communities of special concern that could occur in the project vicinity: Great Valley Cottonwood Riparian Forest, Northern Claypan Vernal Pool, Northern Hardpan Vernal Pool, and Coastal and Valley Freshwater Marsh. Only Great Valley Cottonwood Riparian Forest and Coastal and Valley Freshwater Marsh occur within the project area.

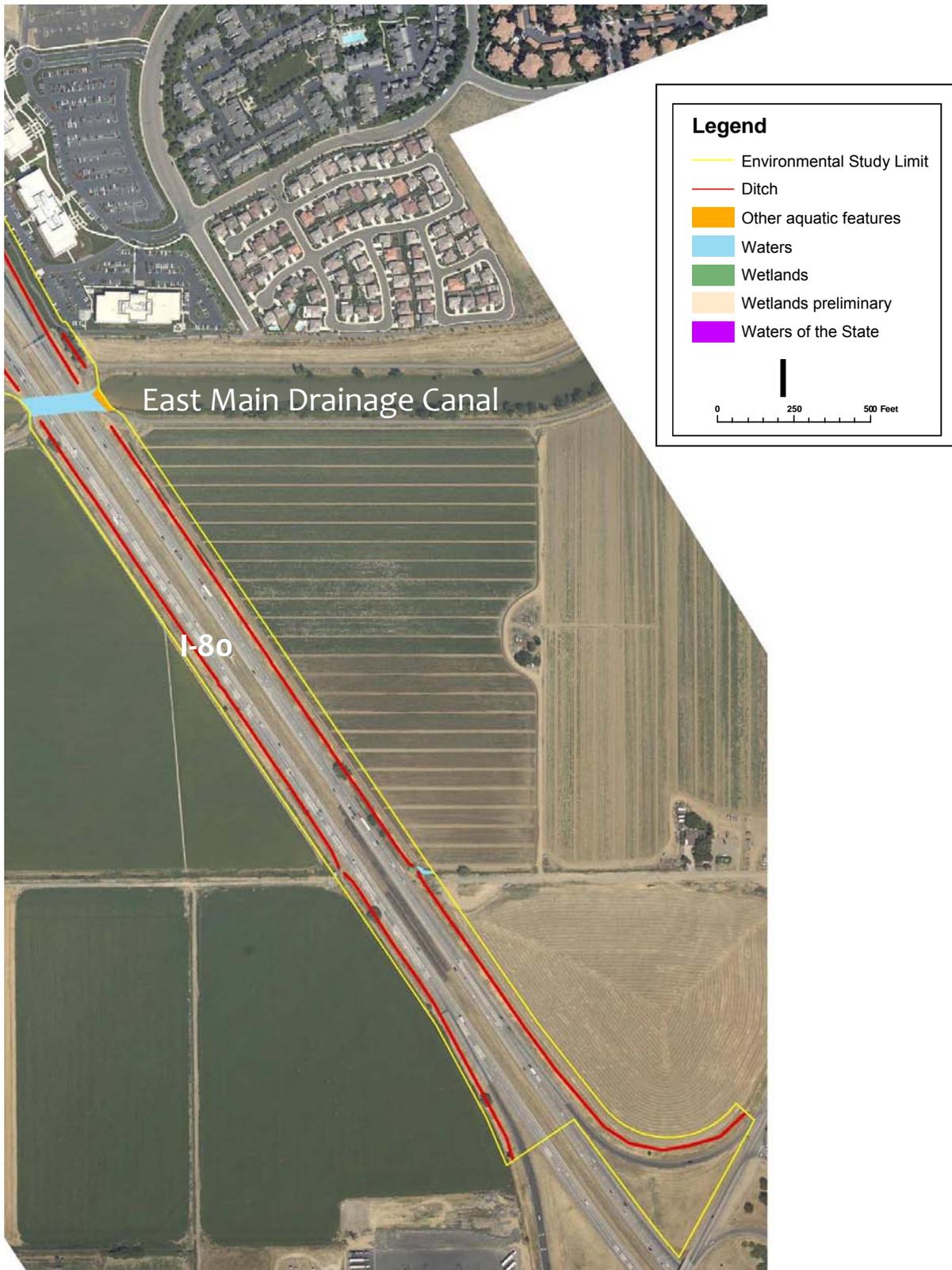
2.22.2 Affected Environment

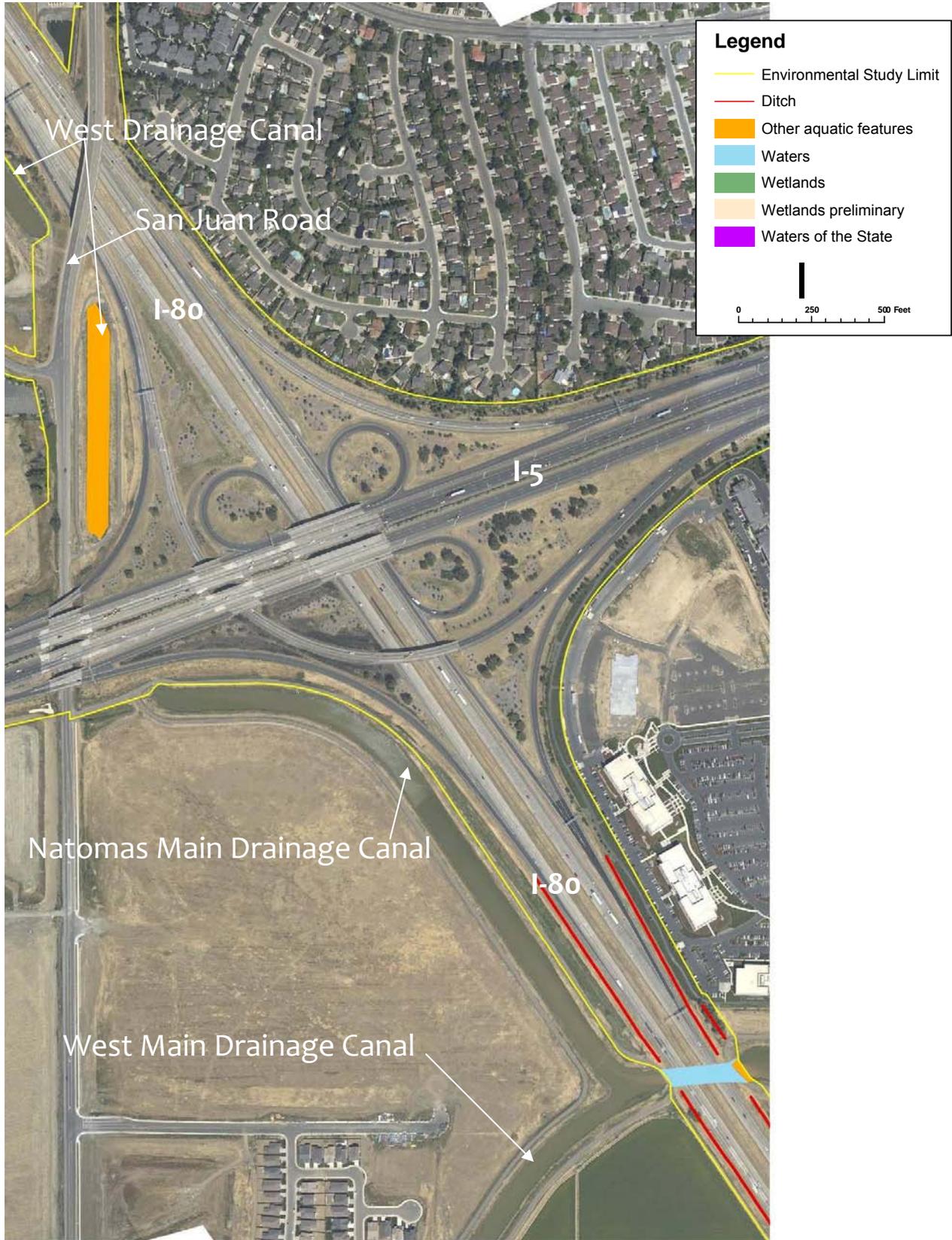
The climate in the project vicinity is characterized as Mediterranean with average temperatures ranging from lows in the 30's (Fahrenheit) in January to highs in the 90's in July. The average annual precipitation for the area is from 17 to 19 inches. The rainy season is defined as October 15th to April 15th.

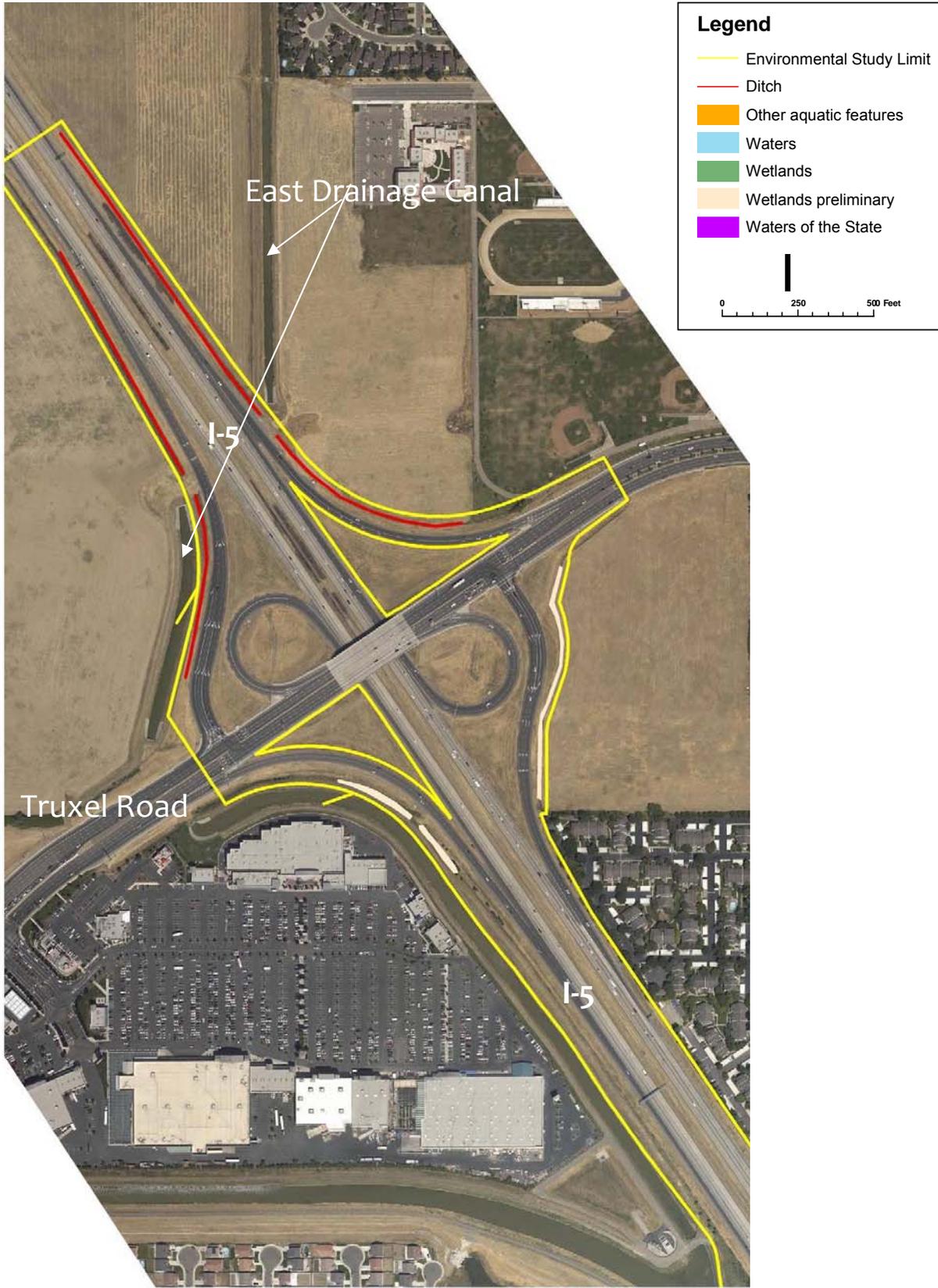
The topography within the project area is generally flat to rolling hills. Elevation is four to 24 feet above mean sea level. South of the project, land use is primarily urban and to the north is farmland transitioning to urban land uses. The dominant plant community within the environmental study limit (ESL) is non-native annual grassland. The environmental study limits are shown in Figure 15.

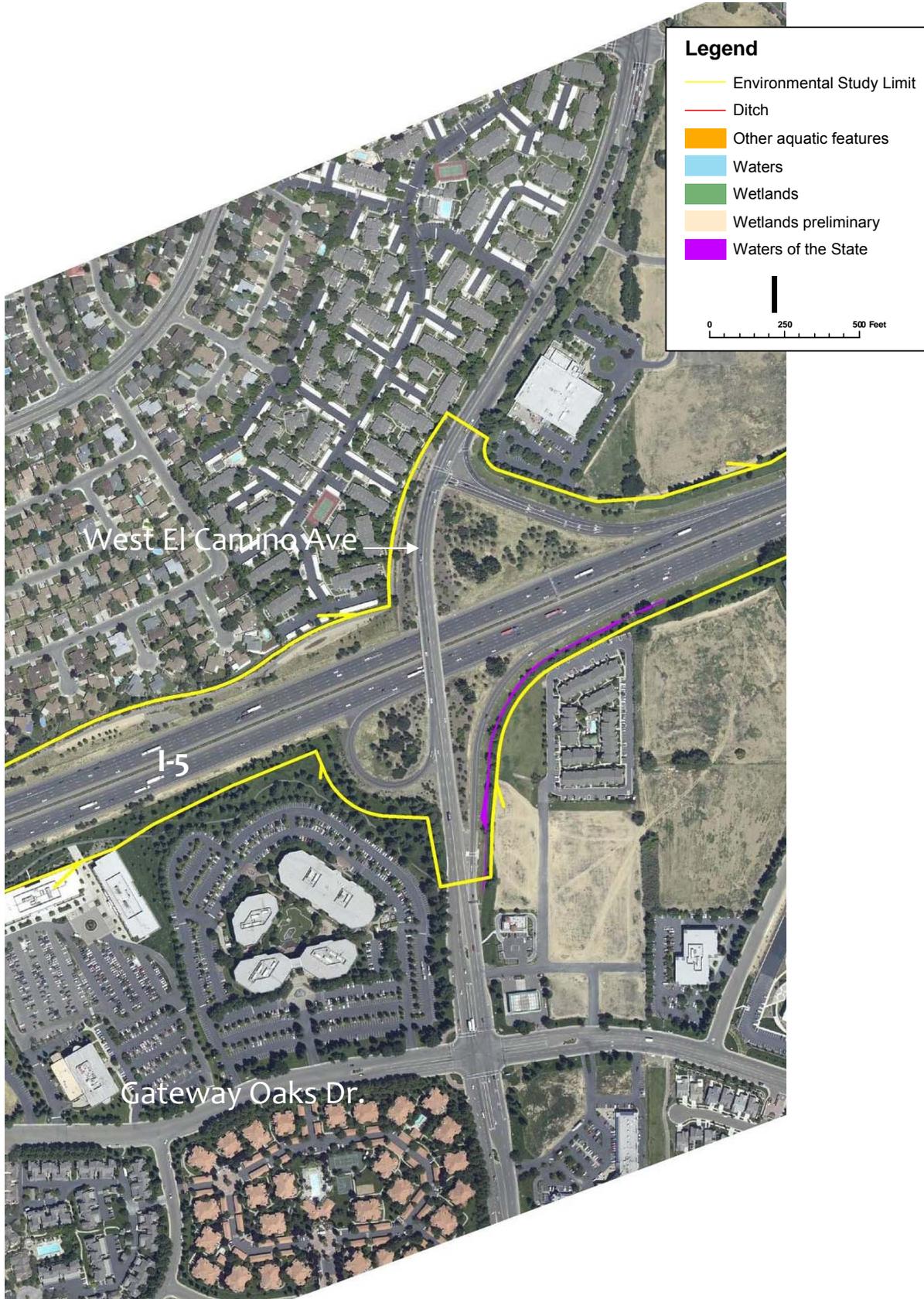
The existing highway crosses three man-made watercourses; the Natomas East Main Drainage Canal (DC) classified as a freshwater forested/shrub wetland; the East Natomas DC, classified as freshwater emergent wetland, riverine, and freshwater pond, and the West Natomas DC, classified as a riverine wetland. The Natomas East Main DC is tributary to the Sacramento River, emptying into the river just upstream of the confluence with the American River. All three drainage canals within the environmental study limits (ESL) are contained within earthen levees. There are no natural streams within the project area.

Figure 15 Environmental Study Limits









2.22.2.1 Great Valley Cottonwood Riparian Forest

Great Valley Cottonwood Riparian Forest is a mature riparian forest with 20 to 80 percent canopy cover. The dominant tree species in this habitat type is the Fremont cottonwood with associate species such as California sycamore, valley oak, white alder, boxelder, and Oregon Ash. This habitat type occurs at the southernmost end of the project under the I-5 bridge over Discovery Park.

2.22.2.2 Coastal and Valley Freshwater Marsh

Coastal and Valley Freshwater Marshes are a permanently flooded, regularly flooded, semi-permanently flooded, seasonally flooded, irregularly flooded, or irregularly exposed habitat with emergent wetland vegetation and freshwater. A valley freshwater emergent wetland is located in the ESL on the south side of the Truxel off-ramp. Potential impacts to this habitat type are discussed along with the impacts to other wetland types below.

2.22.3 Environmental Consequences

The project work in this area is limited to changing the lane lines on the bridge deck and there will be no ground disturbing activities in this area of the project, thus Great Valley Cottonwood Riparian Forest habitat will not be affected.

Potential impacts to Coastal and Valley Freshwater Marsh habitat type are discussed along with the impacts to other wetland types below.

2.22.4 Avoidance, Minimization, and/or Mitigation Measures

No impacts to Great Valley Cottonwood riparian forest are expected, thus no avoidance, minimization, or mitigation measures are required. Impacts to Coastal and Valley Freshwater Marsh are discussed in the Wetland Section below.

2.23 Wetlands and Other Waters of the United States

2.23.1 Regulatory Setting

Wetlands and other waters of the United States are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into Waters of the United States (US), including wetlands. Waters of the US include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of water loving vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can 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 Environmental Protection Agency (EPA).

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration, 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.

The term "Waters of the State" captures all the various aquatic resources regulated by numerous state agencies including the Department of Fish and Game (CDFG) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. "Waters of the State" includes rivers, streams, lakes, wetlands, mudflats, vernal pools, and other aquatic sites. At the state level, wetlands and waters are regulated primarily by the Sections 1600-1607 of the 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 CDFG before beginning construction. If DFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG 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 CDFG.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section for additional details.

2.23.2 Affected Environment

The portion of the project along I-80 from West El Camino Road to the I-5/I-80 interchange and from the interchange to Truxel Road received an Approved Jurisdictional Determination on September 18, 2007 (USACE# 200700309). A delineation of potential Wetlands and Other Waters of the US within the remaining portion of the ESL was conducted on July 10, 2007, September 25, 2007, and September 9, 2008 by Caltrans biologists. The delineation was conducted in accordance with the routine on-site methods described in the USACE *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2006). Seasonal wetlands, a perennial wetland, and Other Waters of the US were delineated within the ESL.

There are four areas of seasonal wetlands within the ESL. Two intermittent ditches with seasonal wetland vegetation, each approximately 3,400 feet long, are located within the ESL. These consist of the unlined ditches adjacent to the eastbound and westbound shoulders of I-80 between West El Camino Avenue and the

I-5 interchange. The channel bottom is approximately 2 feet wide. These ditches receive water from highway and agricultural runoff. Vegetation is dominated by non-native grassland species including wild oats, Harding grass, Johnson grass, dallis grass, chicory, wild radish, bindweed, and alkali-mallow. Small stands and individuals of bristly ox-tongue and curly dock occur in and near the bottom of the ditch. One small stand of cattails occurs at one location in the ditch adjacent to the eastbound shoulder that receives runoff from an adjacent agricultural field. Two willows, one Fremont cottonwood, and a peach tree occur in these ditches.

There is a seasonal wetland area in a roadside ditch adjacent to southbound I-5 between the West El Camino on-ramp and the Garden Highway off-ramp. This area collects water from highway runoff as well as from adjacent landscape watering. The vegetation is dominated by barnyard grass. There is no outlet from this wetland; it is an isolated feature.

The final seasonal wetland is located along SB I-5 immediately north of the I-5/I-80 interchange. This area collects rainwater and runoff from the freeway and drains to the West Natomas DC. The seasonal wetlands within the ESL occur along the road shoulder. The three canals within the ESL: the East Natomas DC, West Natomas DC, and the Natomas East Main DC are operated and maintained by the Reclamation District 1000 and are assumed to provide habitat for the federally threatened giant garter snake. There is a freshwater emergent wetland south of the offramp of EB I-80 at Truxel. An isolated seasonal wetland is present adjacent to the WB on-ramp to I-5 at West El Camino. This feature is a Water of the State but is not a Waters of the US (See Figure 15).

2.23.3 Environmental Consequences

The I-80 HOV (E.A. 03-37970) project is a separate project constructing HOV lanes along I-80 within, and extending beyond the boundaries of this project. All wetlands that could be impacted by this project will be impacted by the proposed I-80 HOV project, if it is constructed first. Because of this overlap in impacts of proposed projects, impact acreages and mitigation will be finalized when the application for the Clean Water Act Section 404 permit is submitted. Below are the estimated impacts for this project:

Common Impacts of Build Alternatives

All build alternatives include the following impacts to sensitive resources:

- 0.004 acres permanent impacts to seasonal wetlands along I-80 between the West El Camino on-ramp and the I-5/I-80 interchange.
- 0.223 acres of permanent impacts to jurisdictional roadside ditches along I-80 between West El Camino and the I-5/I-80 interchange.

Alternative 1A

Alternative 1A includes all common impacts listed above. There are no additional impacts to sensitive resources from this Alternative.

Alternative 1B

Alternative 1B includes all common impacts listed above. There are no additional impacts to sensitive resources from this Alternative.

Alternative 1C

The footprint of this alternative is identical to that of 1A but some elements of the project will be postponed. This will postpone impacts to 0.004 acres of seasonal wetlands and 0.168 acres of jurisdictional roadside ditches.

Alternative 2- No Build

This alternative would not impact Wetlands or Other Waters of the United States.

2.23.4 Avoidance and Minimization Measures

The proposed project footprint was designed to minimize the addition of paved and disturbed areas where possible. The proposed interchange modification includes flyover connectors which have a much smaller footprint than standard ramp connectors, decreasing potential impacts to wetlands. Work within bridge areas, with the exception of the San Juan Bridge, has been designed within the limits of the existing structures.

In order to avoid permanent impacts to the East Natomas DC, the replacement of the San Juan Bridge was redesigned to follow the existing alignment. This design change avoided 0.006 acres of impacts to the East Natomas DC which is classified as ‘Other Waters of the US and under the jurisdiction of the USACE.

Roadside ditches that are affected by this project will be re-graded at the toe of slope of the widened structure.

Environmentally Sensitive Areas (ESAs) will be identified around Wetlands and Other Waters of the US that will not be affected by the project. ESA fencing will be installed to prevent unintentional impacts to these areas.

2.23.5 Mitigation Measures

Impacts to jurisdictional Wetlands and Other Waters of the US will be mitigated for at a 1:1 ratio at an USACE approved mitigation bank. An estimated 0.227 acres or mitigation credits will be required to mitigate for project impacts.

2.24 Plant Species

2.24.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) share 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 afforded 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 Threatened and Endangered Species, Section 2.26 in this document for detailed information regarding these species.

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

The regulatory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and CEQA, Public Resources Code, Sections 2100-21177.

2.24.2 Affected Environment

Caltrans prepared a Natural Environment Study Report in October 2009. A copy is available for review at 2800 Gateway Oaks Dr., Sacramento, CA, 95833 during normal business hours.

A list of species and habitats potentially occurring within the project vicinity was developed based on information compiled from the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game's Natural Diversity Data Base (CNDDB), and the California Native Plant Society (CNPS).

Caltrans biologists conducted field surveys of the project site between April 2006 and May 2009 to assess existing natural resources and potential impacts. The project site was reviewed to identify habitat types and potential wetlands, identify factors indicating the potential for rare species or the presence of rare species, and identify potential problems for the study.

2.24.2.1 Special Status Plant Species

No special status plants were observed during field visits. Based on the habitats present within the ESL, no special status plants are anticipated to occur within the ESL or be affected by the proposed project.

2.24.3 Environmental Consequences

No special status plants were observed during field visits.

2.24.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, or minimization, and/or mitigation measures are necessary.

2.25 Animal Species

2.25.1 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 (NOAA) Fisheries and the California Department of Fish and Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.26. All other special-status animal species are discussed here, including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- NEPA.
- Migratory Bird Treaty Act.
- Fish and Wildlife Coordination Act.

State laws and regulations pertaining to wildlife include the following:

- CEQA.
- Sections 1600 – 1603 of the Fish and Game Code.
- Section 4150 and 4152 of the Fish and Game Code.

2.25.2 Burrowing Owls (*Athene cunicularia*)

Burrowing owls are a State Species of Concern and have shown decreasing populations over the last 60 years with an increase in the rate of decline over the last 20 years (CDFG 2005). This species is a yearlong resident of open, dry grassland habitats. They hunt from perches, hover, hawk, dive, and hop after prey on ground. Roosting and nesting occurs in existing rodent or other animal burrows. Their population decline is attributed to loss of habitat due to residential and commercial developments, conversion of grasslands to agriculture, and ground squirrel poisoning.



2.25.3 Affected Environment

Burrowing owls were observed within the ESL in the northeastern loop ramp of the Truxel and I-80 interchange on July 12, 2007 and May 13, 2009. Though the owls were not directly observed in any other portion of the ESL, there is suitable habitat present and it is likely that they are present in other areas of the ESL. There is a possibility that burrowing owls, Swainson's hawks, and giant garter snakes are present within the ESL and may be affected by this project. The status and potential impact to burrowing owls are discussed below. Swainson's hawks is a State listed species and the giant garter snake is a Federal and State listed species, thus are discussed in Section 2.26.

2.25.4 Environmental Consequences

This project will not directly affect the area where burrowing owls have been observed but will impact approximately 9.85 acres of habitat along the road shoulders due to the roadway widening. This acreage is comprised of twelve foot wide sections adjacent to the freeway. Though these areas provide potential habitat, they are not ideal habitat for the owl due to the proximity to the freeway travel lanes and lack of cover, and may not be inhabited. The loss of this habitat will not greatly impact this species. Preconstruction surveys for burrowing owls will greatly decrease the likelihood that this project will cause any direct mortality of this species.

2.25.5 Avoidance and Minimization Measures

A qualified biologist shall survey suitable habitat in the ESL and adjacent areas for burrowing owls no more than 30 days prior to the start of construction. If burrowing owls or signs of burrowing owls are detected, CDFG shall be contacted to determine the best course of action.

2.25.6 Mitigation Measures

No mitigation measures are required.

2.26 Threatened and Endangered Species

2.26.1 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 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological

Opinion or an incidental take permit. 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 Game (CDFG) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

2.26.2 Swainson’s Hawk (*Buteo swainsoni*)

The Swainson’s hawk is a State threatened species, but has no federal status. Swainson's hawks were once found throughout lowland California and were absent only from the Sierra Nevada, north Coast Ranges and Klamath Mountains, and portions of the desert regions of the state. Today, Swainson's hawks are restricted to portions of the Central Valley and Great Basin regions where suitable nesting and foraging habitat is still available. Central Valley populations are centered in Sacramento, San Joaquin, and Yolo counties.



Swainson's hawks require large, open grasslands with abundant prey in association with suitable nest trees. The diet of the Swainson's hawk is varied with the California vole being the staple in the Central Valley. Suitable foraging areas include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Unsuitable foraging habitat includes any crop where prey are not available due to the high density of vegetation, or where there is a low abundance of prey such as vineyards, orchards, certain row crops, rice, corn and cotton crops. Under natural conditions, Swainson's hawks likely foraged in upland and seasonally flooded perennial grasslands. These habitats are largely extirpated from the Central Valley today, replaced by annual grasslands with low prey populations, and agricultural crops. These changes have resulted in Swainson's hawks being dependent on landscape elements almost entirely controlled by human activities, with frequent shifts in agricultural practices and habitat quality.

Swainson's hawks often nest at the edge of riparian ecosystems in the valley as well as in lone trees or groves of trees in agricultural fields and mature roadside trees. Valley oak, Fremont cottonwood, walnut, and large willow with an average height of about 58 feet, and ranging from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. Nesting Swainson's hawks are somewhat tolerant of human activity, particularly in areas where activity is regular and individual pairs are able to habituate to it. Nest sites are

sometimes located near roads and houses, and frequently near field edges where crop cultivation activities regularly occur. However, changes in activity regime (e.g., construction in previously open areas, human intrusion at nest site) frequently cause nest abandonment, particularly during the pre-nesting, egg-laying, and incubation stages of the reproductive cycle.

Within California, Swainson's hawks begin nesting in late March and the young usually leave the nest (fledge) by July. Two to four eggs are laid at 2-day intervals and incubation lasts between 25 and 36 days. The young will leave the nest between 33 and 37 days after hatching and begin to kill insects and snakes on their own.

Threats to this species include loss of nesting habitat, loss of prey due to some farming practices, and insecticide poisoning. Swainson's hawks are also a covered species under the Natomas Basin Habitat Conservation Plan (NBHCP). The loss of agricultural lands to various residential and commercial developments is a serious threat to Swainson's hawks throughout California.

2.26.3 Affected Environment

No Swainson's hawk's nests were observed within the ESL though there are two known nest trees within a quarter mile of the ESL. Caltrans biologists observed Swainson's hawks foraging north of I-80 within the ESL during the months of March through August. The vegetated highway shoulders along I-80 west of the I-5/I-80 interchange and to the north of I-80 east of the I-5/I-80 interchange and those along I-5 north of the I-5/I-80 interchange are considered foraging habitat for this species. The foraging habitat within the ESL is comprised of ruderal habitat which is managed for fire suppression by regular mowing. Though Swainson's hawks forage on the road shoulders, these areas do not provide optimal foraging habitat.

2.26.4 Environmental Consequences

There are approximately 89.93 acres of Swainson's hawk foraging habitat in the Study Area, of which, this project will permanently impact approximately 9.85 acres. CESA consultation with the CDFG will be required.

The foraging habitat that would be impacted is comprised of ruderal grassland habitat in the road shoulders of I-80 and I-5 and small areas of oak savanna habitat within the I-5/I-80 interchange.

2.26.5 Avoidance and Minimization Measures

The project design avoids impacts to nesting habitat of this species. The proposed interchange modification includes flyover connectors which have a much smaller footprint than standard ramp connectors which decreased the impact to Swainson's hawk foraging habitat. Due to the extended period of time between the circulation of this document and construction of the project, surveys will be conducted by a qualified biologist with sufficient time prior to construction to consult with CDFG regarding a 2080.1 Incidental Take Permit if any Swainson's hawks have begun nesting within the ESL and the nest tree will be affected by the project.

2.26.6 Mitigation Measures

Compensatory mitigation for impacts to Swainson’s hawk foraging habitat will follow the “Staff Report Regarding Mitigation for Impacts to Swainson’s Hawks in the Central Valley of California (DFG, 1994).” As outlined in this document, impacts to foraging habitat shall be mitigated for at a 1:1 ratio for impacts within one mile of an active nest. Impacts are currently estimated at 9.85 acres within one mile of an active nest. Based on these amounts, 9.85 acres of Swainson’s hawk foraging habitat mitigation will be needed.



2.26.7 Giant Garter Snake (*Thamnophis gigas*)

The giant garter snake is a federal and state threatened species inhabiting marshes, sloughs, ponds, small lakes, low gradient streams, and other waterways. This species also frequents agricultural wetlands such as irrigation and drainage canals and rice fields, and the adjacent uplands. Essential habitat consists of the following components: 1) adequate water during the snake’s active period (i.e., early spring through mid-fall) to provide a prey base and cover; 2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat; 3) upland habitat within 200 feet of aquatic habitat for basking, cover, and retreat sites; and 4) higher elevation uplands for cover and refuge from flood waters. Giant garter snakes feed primarily on small fishes, tadpoles, and frogs.

Current threats that contribute to the decline of giant garter snake throughout its range are habitat loss, habitat fragmentation, predation by introduced species, parasites, and water pollution. Habitat loss and fragmentation are commonly caused by flood control activities and changes in agricultural and other land management practices. No critical habitat has been designated for this species. The giant garter snake is also covered in the NBHCP.

2.26.8 Affected Environment

No surveys were conducted to confirm the presence of giant garter snake within the ESL. Potential aquatic habitat for this species was identified during initial site visits. Presence of this species is assumed based on the presence of aquatic habitat and the close vicinity of multiple known occurrences in waterways which continue into the ESL. As this species is known to travel more than eight miles of linear habitat over the course of a few months (Wylie and Martin 2004) it is prudent to assume that the giant garter snake are present within the ESL.

A total of 1.53 acres of giant garter snake aquatic habitat is present in the ESL. This acreage is comprised of drainage ditches with perennial flow. A total of 22.58 acres of giant garter snake upland habitat are present in the ESL. This acreage is comprised of ruderal grasslands within 200 feet of giant garter snake aquatic habitat. Paved areas within 200 feet of aquatic habitat are not considered giant garter snake habitat.

All giant garter snake upland habitat within the ESL is located between the Natomas drainage canals and the I-5 and I-80 freeways and provides marginal habitat value. While it is likely that giant garter snake travel

through this area and may use the banks as basking or upland refugia habitat, they tend to be a reclusive snake and the high traffic volumes present on these roads make these areas less desirable to the snake.

2.26.9 Environmental Consequences

The proposed project will temporarily impact 3.83 acres and permanently impact 1.76 acres of giant garter snake upland habitat. The project will not impact any giant garter snake aquatic habitat. The areas of upland habitat that the proposed project will impact are ruderal grasslands between the Natomas drainage canals and I-5 and I-80.

2.26.10 Avoidance and Minimization Measures

Environmental study areas (ESAs) will be established and marked by highly visible ESA fencing prior to the start of construction within giant garter snake potential habitat areas. These areas will separate the work area from the remaining giant garter snake upland habitat and the giant garter snake aquatic habitat. Contractor encroachment, including the staging/operation of heavy equipment or casting of excavation materials, into ESAs will be prohibited. ESA provisions shall be implemented as a first order of work, and remain in place until all construction activities are complete. Due to the extended period of time between the circulation of this document and construction of the project, surveys will be conducted by a qualified biologist with sufficient time prior to construction to consult with CDFG regarding a 2080.1 Incidental Take Permit.

The following measures listed in the “Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake (*Thamnophis gigas*) Habitat” (USFWS 2005a) outlined below.

- 1) When feasible, avoid construction activities within 200 feet from the banks of giant garter snake aquatic habitat. Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
- 2) Construction activity within habitat should be conducted between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the Service’s Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.
- 3) Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project area as ESAs, as outlined above. These areas should be avoided by all construction personnel.
- 4) Construction personnel should receive Service-approved worker environmental awareness training. This training instructs workers to recognize giant garter snakes and their habitat(s).
- 5) 24-hours prior to construction activities, the ESL will be surveyed for giant garter snake. Surveys of the ESL will be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the Service immediately by telephone at (916) 414-6600.

- 6) Any dewatered habitat should remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.
- 7) After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel.
- 8) Follow the conservation measures in Table 27 to minimize the effects of loss and disturbance of habitat on giant garter snakes. Replacement ratios are based on the acreage and on the duration of disturbance.

Table 27 Summary of Giant Garter Snake Conservation Measures

EFFECTS:	EFFECTS:	CONSERVATION MEASURE:
Temporary (1 season)	Temporary impacts will not exceed 20 acres and no permanent impacts.	Restoration
Temporary (2 seasons)	Temporary impacts will not exceed 20 acres and no permanent impacts.	Restoration plus 1:1 replacement
Temporary (More than 2 seasons)	Temporary impacts will not exceed 20 acres and no permanent impacts.	3:1 Replacement (or restoration plus 2:1 replacement)
Permanent loss	The project will not exceed three acres of giant garter snake habitat and will impact less than one acre of aquatic habitat.	3:1 Replacement

Giant garter snake habitat includes two acres of surrounding upland habitat for every one acre of aquatic habitat. The two acres of upland habitat also may be defined as 218 linear feet of bankside habitat that incorporates adjacent uplands to a width of 200 feet from the edge of each bank. Each acre of created aquatic habitat should be supported by two acres of surrounding upland habitat. Compensation may include creating upland refuges and locations for the snake to hibernate for the giant garter snake that are above the 100-year floodplain. A season is defined as the calendar year period between May 1 and October 1, the active period for giant garter snake when mortality is less likely to occur.

Giant Garter Snake Habitat Restoration: Following project completion, all areas temporarily disturbed during construction will be restored following the “Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat”, outlined below.

- 1) Re-grade the area to pre-project contour, or a contour that would improve restoration potential of the site.
- 2) Replant and hydroseed the restoration area. Recommended plantings consist of a) wetland emergents, b) low-growing cover on or adjacent to banks, and c) upland plantings/hydroseeding mix to encourage use by other wildlife. Riparian plantings are not appropriate because shading may result in lack of basking sites. Native plantings are encouraged except where non-natives will provide additional values to wildlife habitat and will not become invasive in native communities.

- 3) Emergent wetland plants recommended for giant garter snake habitat are California bulrush, cattail, and water primrose. Additional wetland plantings may include common tule, Baltic rush or duckweed.
- 4) Cover species on or adjacent to the bank may include California blackberry or California wild grape along with the hydroseeding mix recommended below.
- 5) Upland plantings/hydroseeding mix: Disturbed soil surfaces such as levee slopes should be hydroseeded to prevent erosion. The Service recommends a mix of at least 20-40 percent native grass seeds such as annual fescue, California brome, blue wild rye, and needle grass; 2-10 percent native forb seeds, five percent rose clover and five percent alfalfa. Approximately 40-68 percent of the mixture may be non-aggressive European annual grasses such as wild oats, wheat and barley. Aggressive non-native grasses will not be included in the hydroseed mix. Mixes of one hundred percent native grasses and forbs may also be used, and are encouraged.

2.26.11 Mitigation Measures

Compensatory mitigation shall be determined according to the “Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake (*Thamnophis gigas*) Habitat” (USFWS 2005a) as outlined in Table 27.

Temporary impacts are expected to last for one season and the disturbed area will be revegetated following the measures outlined above.

Permanent impacts will be compensated for at a 3:1 ratio. A total of 5.28 acres of giant garter snake upland habitat mitigation will be required to fully compensate for project impacts. All mitigation will be completed within the Sacramento River watershed and will be approved by USFWS.

2.27 Migratory Bird Treaty Act

2.27.1 Regulatory Setting

The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). If impacts to active nests or individual birds are expected, Caltrans shall consult with USFWS regarding appropriate action to comply with the Migratory Bird Treaty Act of 1918.

2.27.2 Affected Environment

Potential nesting habitat for migratory birds includes the Great Valley Cottonwood Riparian Forest communities that occur at the southernmost end of the project under the I-5 bridge over Discovery Park. In addition, nineteen acres of ornamental vegetation planted in the median of the on and off-ramps serve as nesting, perching and foraging for migratory birds.

2.27.3 Environmental Consequences

No impacts to the Great Valley Cottonwood Riparian Forest are expected. Nineteen acres of ornamental vegetation, including trees, will be removed for construction.

The project will not result in permanent impacts to migratory birds with the implementation of the avoidance and minimization measures outlined below.

2.27.4 Avoidance and Minimization Measures

The following avoidance and minimization measures will be implemented to minimize potential effects to special-status animal species:

- 01 – Establish Environmentally Sensitive Areas*
- 02 – Limit Vegetation Removal*
- 03 – Containment Measures/Construction Site Best Management Practices*
- 04 – Minimize Disturbance to Jurisdictional Waters*
- 05 – Restore Wetland, Riparian, and Stream Habitat Disturbed by Construction*
- 06 – Dewatering Activities*
- 07 – Restrict Timing of In-Stream Activities*
- 09 – Restrict Timing of Woody Vegetation Removal*
- 10 – Nesting Bird Surveys*
- 11 – Pre-construction Pond Turtle Surveys*
- 12 – Pre-construction Burrowing Owl Surveys*
- 15 – Pre-construction Roosting Bat Surveys*
- 16 – Bird and Bat Exclusion Measures*

2.27.5 Mitigation Measures

No mitigation measures are required.

2.28 Invasive Species

2.28.1 Regulatory Setting

On February 3, 1999, President Clinton signed 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 guidance issued August 10, 1999 directs the use of the state’s noxious weed list to define the invasive plants that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

2.28.2 Affected Environment

Yellow star-thistle is present within the ESL and is the California Invasive Plants Council (Cal-IPC) highest removal priority. Black mustard, field mustard, and Italian thistle are also present within the ESL and have a moderate priority for removal.

2.28.3 Environmental Consequences

There is the potential to spread these noxious weeds, however, with the avoidance and minimization efforts, the spread of these invasive species will be minimal.

2.28.4 Avoidance and Minimization Measures

In compliance with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

2.28.5 Mitigation Measures

No Mitigation measures are required.

2.29 Cumulative Impacts

2.29.1 Regulatory Setting

Cumulative impacts are impacts resulting from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative impact assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative

impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the NEPA can be found in 40 CFR, Section 1508.7 of the CEQ regulations.

2.29.2 Affected Environment

The cumulative impact study area includes the corridor around I-5 and I-80 along the project limits and “related project” areas determined from the recent past or foreseeable future that have been constructed or programmed. This analysis considers the overall cumulative effects of the proposed project when taken together with past, present, and reasonably foreseeable projects within the resource study area defined for each resource. For resources that are not affected by the proposed project, no cumulative impact analysis was performed, as the project could not contribute to a cumulative impact. The following resources are not included in this cumulative impacts analysis, because no impacts resulting from the proposed project were identified:

- Community Impacts.
- Cultural Resources.
- Geology/Soils/Seismic/Topography.
- Energy.

2.29.2.1 Transportation and Development Projects in Cumulative Impact Study Area

This section includes a summary of transportation and development projects that are most relevant to an analysis of potential cumulative impacts. The projects included here are those that are either located within or adjacent to the proposed project limits, or could be considered “related” projects—including those projects which together form the existing and planned regional network of high occupancy vehicle lanes for the Sacramento region. Table 28 lists projects that are or will be funded which are located within the vicinity of the proposed project.

Table 28 Completed or Planned Transportation and Development Projects within the Study Area

Project Name	Project Description	Year Completed or proposed construction
Transit Projects		
Downtown Sac to West Sac Streetcar	Streetcar Capital to provide starter line service	2014
Downtown Light Rail Station Enhancements	Design and construct light rail station enhancements, including better signage, lighting, pedestrian access, and ADA access to encourage greater transit usage.	2009
Northeast Corridor Enhancements	Improve alignment of Northeast Corridor LRT, upgrade the traction power system and signaling to provide limited-stop service, make enhancements to yard track and maintenance facility, and installation of communications infrastructure.	2010
Downtown-Natomas Rail Extension	This extends light rail via a single track from Downtown Sacramento to Richards Boulevard, a distance of just over 1.1 miles, but stopping short of a crossing of the American River.	2010

Project Name	Project Description	Year Completed or proposed construction
DNA Light Rail – Overall Study	Provide for additional advanced planning, value engineering, project delivery strategies, advanced conceptual engineering, and update the alternatives analysis. Project includes potential hardship right-of-way acquisition activities	2017
Downtown-Natomas-Airport Rail Extension	Extend rail from Richards Boulevard to Natomas Town Center	2017
Downtown-Natomas-Airport Rail Extension	Extend rail from Natomas Town Center to Sacramento International Airport.	2020
State Highway Projects		
I-5	HOV and auxiliary lanes from Elk Grove Boulevard to downtown Sacramento	2015
I-80	HOV lanes from RT Station (Longview) to the Yolo County line / Sacramento River (western terminus).	2015
I-5 / I-80	Reconstruct I-5/I-80 Interchange, including HOV lane connectors, and construction of HOV lanes from the I-5/I-80 Interchange to downtown Sacramento	2018
I-5	Widen: add HOV lanes from I-80 to Hwy.70 / Hwy. 99. Add HOV lanes between I-80 and downtown Sacramento (CAL18410).	2020
I-5/Hwy 99	I-5 / Hwy. 99 interchange	2023
U.S. 50/Hwy 99	Oak Park Interchange, including HOV lane connectors	2027
I-5 / U.S.50	I-5 / U.S. 50 Riverfront Interchange	2029
U.S. 50 HOV	HOV lanes from Watt Ave. to Downtown Sacramento.	2020
Local Streets Projects		
Del Paso Rd.	Widen 6 lanes from El Centro Rd. to SB I-5 off-ramp.	2008
Del Paso Rd.	Widen 6 lanes from 500 feet east of Truxel Rd. to Town Center. (Complete frontage improvements and construct a raised/landscaped median).	2008
El Centro Rd.	Widen 4 lanes from Del Paso Rd. to Arena Boulevard	2008
El Centro Rd.	Widen 4 lanes from Arena Boulevard to San Juan Rd.	2008
Main Ave.	Bridge Replacement: Main Ave. Bridge over Natomas east Main Drain: replace existing 2-lane bridge with a 4-lane bridge.	2008
Ninos Pkwy.	Develop a pedestrian bike trail within the Ninos Pkwy. between San Juan Rd. and Edmonton Dr.	2008
Sacramento River Bike Trail	Construct bike trail from R St. to Miller Park and from Garcia Bend Park to south city limits along the east levee of the Sacramento River:	2008
I-80	Bike/pedestrian bridge across I-80 at the West Canal, as well as across the West Canal.	2011
Del Paso Rd.	Widen from I-5 NB off-ramp to East Commerce (north side only).	2016
I-5	Add NB auxiliary lane from Del Paso Rd. to Hwy. 99.	2016
I-5	Construct connection over I-5 between approximately Capitol Ave. to "O" St.	2016
Sacramento River Crossing	All-modal river crossing (Auto, Transit, Bike& Pedestrian) from Sacramento across the Sacramento River to West Sacramento. The crossing was modeled between Broadway in Sacramento & 15th Street in West Sacramento, but final alignment options will be studied in subsequent planning efforts. Additional 50% of estimated cost identified as a City of West Sacramento project.	2019
Lower American River Crossing	All-modal river crossing (Transit, Auto, Bike& Pedestrian) across the Lower American River between downtown Sacramento and South Natomas	2019
Northgate Boulevard	Extend Northgate Boulevard / I-80 Interchange: Extend existing I-5 WB off-ramp onto Northgate Boulevard; add auxiliary lane to WB on-ramp	2020
W. El Camino Ave./ I-80	West El Camino Interchange on I-80: Widen 4 lanes and modify ramps	2020
W. El Camino Ave.	West El Camino Interchange on I-5: new NB entrance ramp and SB exit ramp. Modify: NB I-5to I-80 ramp to accommodate the proposed interchange ramps.	2030
Metro Air Pkwy.	The County of Sacramento is planning to construct an interchange on I-5 at Metro Air Parkway, a new arterial that will serve the planned Metro Air Park development. The proposed interchange would be located about halfway between the Airport Boulevard and SR 99 interchanges.	2011
Planned Development in the Cumulative Impact Study Area		
Green Briar	Greenbriar is a 577-acre, mixed-used, transit-oriented development located at the	No date

Project Name	Project Description	Year Completed or proposed construction
	northwest corner of the junction of Interstate 5 and SR 99. 3500 residential units, 50 acres of commercial development, elementary school, 50 acres of neighborhood parks and a 40-acre lake for storm water retention. The project will have two connections with SR 99—the existing Elkhorn Boulevard and a new east west thoroughfare that will require creation of a new interchange just north of the I-5 exit.	given
Sacramento Rail Yards	The Sacramento Rail yards is a 240-acre master-planned, mixed-use development proposed for the former site of the Union Pacific rail yards in downtown Sacramento	No date given
Sacramento Intermodal Transportation Facility	The City of Sacramento is in the early planning stages to design and develop the Sacramento Intermodal Transportation Facility, to be located on the site of the Sacramento Rail yards. The facility will be located in downtown Sacramento and serve as a regional hub, transfer point, and portal.	No date given
Township 9	The Township 9 project is a mixed-use development project bounded roughly by Richards Boulevard to the south, the American River to the north, North 5th Street to the west, and North 7th Street to the east. The project will include approximately 2,700 homes along with office and retail space	No date given
Docks Area Specific Plan	The Docks Area Specific Plan would provide for a range of mixed-use development densities, including: 1,000 to 1,155 dwelling units; 200,000 to 500,000 sq ft of office space; 40,500 to 43,300 sq ft of retail space; and 1,870 to 2,920 off-street parking spaces.	No date given
North Natomas	9,000-acre mixed-use development; approximately 33,000 units.	In process

Source: Appendix A1 and A2 from the MTP 2035,

<http://sacog.org/mtp/2035/finaldocs/mtp/Appendices%20A-%20Project%20Lists/Appendix%20A1%20&%20A2%2010-15-08.pdf>

2.29.3 Environmental Consequences

2.29.3.1 Temporary and Constructed-Related Cumulative Impacts

Traffic and Transportation

The proposed project may contribute to temporary, construction-related cumulative impacts to traffic and transportation. While project construction is not anticipated to have any substantial adverse impacts to traffic, if it is scheduled at the same time as other road and highway improvement projects or development projects, traffic could be cumulatively impacted.

Cumulative impacts related to the construction of these projects could include temporary road and lane closures, which could lead to traffic delays and impaired access to local businesses, commercial and tourist destinations, public recreational areas, and private residences. Impacts may occur throughout the Sacramento region, including the project corridor and downtown Sacramento. These impacts could adversely impact the provision of emergency services, public transportation, school buses, and other services dependent on the road and highway network.

A series of Transportation Management Plans (TMPs) should be developed to address the cumulative impacts from the multiple transportation projects listed in the SACOG MTP and other plans. Caltrans requires TMPs for all major construction activities that are expected to impact traffic on the state highway system. However, where several consecutive or linked projects within a region create a cumulative need for a TMP, Caltrans can coordinate individual TMPs. TMPs result in minimized project related traffic delay and accidents by the effective combination of public and motorist information, demand management, incident management, system management, alternate route strategies, construction strategies, and other strategies. Other strategies

may become available such as, a construction season map published to inform the public, local businesses, and local agencies of project locations and activities.

Utilities and Emergency Services

Access routes for emergency vehicles would not be affected by the proposed project. The proposed project would provide a benefit in terms of travel time on the freeway.

There is the potential for delay during the construction of the project. A TMP to address congestion will be implemented during construction that will reduce the traffic impacts during construction. The freeway and ramps will remain open during construction. TMP's developed for other projects being constructed at the same time should reduce cumulative impacts to emergency services.

Visual/Aesthetics

Construction could take as long as three years. Viewers would see materials, equipment, workers, and the operations of construction during the construction process. Impacts of construction are unavoidable but would be temporary. Motorists would be exposed briefly to construction activities while passing through the construction zone. However, residents of adjacent homes would be exposed to these activities on a more continuous basis.

The proposed project, in combination with other projects listed in Table 28 is not expected to contribute to cumulative construction-related impacts to the visual environment. Consequently, there will be no construction-related cumulative effects to visual resources.

Water Quality

The proposed project may contribute to temporary, construction-related impacts to water quality. Each of the projects included in Table 28 has the potential to result in at least minor construction-related impacts to water quality.

Sediment is the main pollutant of concern during Caltrans construction projects. During construction, there is the potential for increased erosion. Storm water runoff carrying sediments or other pollutants could potentially enter drainages. The potential for increased erosion may persist until completion of construction activities and implementation of landscaping and other long-term erosion control measures.

Accidental spills of petroleum hydrocarbons such as fuels and lubricating oils, concrete wastewater, or other potentially toxic materials are also a concern during construction activities. The magnitude of the impact from an accidental release would depend on the amount and type of material spilled.

The avoidance and minimization measures included in Section 2.15.4 of this document will minimize the project's potential contribution to a cumulative impact. Additionally, each of the projects included in Table 28 will be subject to permit conditions and other regulatory controls to minimize impacts to water quality both during and after construction.

Hazardous Waste

The proposed project is not expected to result in construction-related cumulative effects to the environment due to hazardous waste or materials. It is anticipated that ADL, lead-based paint, asbestos-containing materials, and yellow traffic stripe containing lead and other heavy metals such as chromium may be encountered during construction of the project. Additionally, a number of materials will be used during construction including gasoline, diesel fuel, oil, and lubricants for operation of construction equipment. These materials are typically used, handled, and stored by contractors on all roadway construction projects. No acutely hazardous materials would be used or stored on-site during construction. Construction of the proposed build alternatives could potentially result in small fuel spills from construction or vehicles.

However, as discussed in Section 2.18.4 of this document, the proposed project will implement a number of avoidance and minimization measures to ensure that the project has no environmental effects due to hazardous waste/materials. Other transportation projects would likely have similar measures, and all projects are subject to laws and regulations that govern the handling, storage, and disposal of these materials. Thus, there is little to no potential for cumulative impacts to occur.

Air Quality

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and various other activities. Emissions from construction equipment also are anticipated and would include CO, nitrogen oxides (NOX), volatile organic compounds (VOCs), directly-emitted particulate matter (PM10 and PM2.5), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from NOX and VOCs in the presence of sunlight and heat.

Site preparation and roadway construction could involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. If not properly controlled, these activities would temporarily generate PM10, PM2.5, and small amounts of CO, SO2, NOX, and VOCs. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM10 emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM10 emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Construction-related impacts to air quality are expected to be minimal with the implementation of the avoidance and minimization measures included in Section 2.19.4 of this document and would therefore not substantially contribute a cumulative impact. Each of the transportation projects included in Table 28 would implement similar measures, as applicable, and the development projects included in Table 28 would be

subject to air quality permitting requirements, which include specific mitigation requirements for construction-related impacts to air quality.

Biological Resources

The proposed project will result in temporary impacts to approximately 3.83 acre of Giant Garter Snake habitat. The avoidance and minimization measures described in Section 2.26.10 of this document will minimize potential temporary and construction-related impacts to biological resources. Further, all areas of temporary disturbance will be restored to pre-project conditions; therefore, no adverse effects are anticipated and the project will not contribute to cumulative impacts to the giant garter snake.

Alternative 2—No Build Alternative

The No Build Alternative would not involve construction and therefore would not result in any temporary, construction-related, cumulative impacts.

2.29.3.2 Permanent Cumulative Impacts

Traffic and Transportation

The proposed project would provide greater connectivity and accessibility to the existing and planned HOV lane system in the Sacramento region. The project would conform to Caltrans' effort to encourage the use of public transit and multi-passenger occupied vehicles. Overall, the cumulative impact of this project as well as the development and transportation projects listed in Table 28 would be beneficial to circulation and access in the Sacramento region. There are several projects that would lead to greater connectivity of the road and highway network and increase road capacity. These projects would reduce congestion and decrease travel times for vehicular traffic and emergency services.

The proposed project would construct an essential portion of the regional network of existing and planned high occupancy vehicle lane projects in El Dorado, Placer, and Sacramento counties. Cumulatively, these HOV projects would have a positive effect upon the vehicle occupancy rate. The projects will encourage bus and carpool usage. Traffic studies by Caltrans on other HOV lane projects have shown that vehicle occupancy rates can be raised from the state average of 1.3 occupants per vehicle to as much as 2.8 occupants per vehicle with the implementation of a HOV lane. There are several projects listed in Table 28 that would lead to greater connectivity of the road and highway network and increase road capacity. Many of these projects are expected to reduce congestion and decrease travel times for vehicular traffic and emergency services.

Water Quality

The proposed project is expected to have only minor impacts to water quality. Many, if not most, of the projects included in Table 28 can be expected to have at least minor effects to water quality, although most of these effects cannot be quantified at this time.

The increased volume of storm water runoff from the added impervious surface to the hydrologic sub areas will be negligible and should not have a substantial impact on the overall water quality of the receiving waters. Rather, the implementation of permanent storm water treatment measures as applicable, such as biofiltration strips and/or swales, will slow down the flow of runoff and allow sediments and other pollutants

to settle out and be removed prior to reaching receiving waters. The avoidance and minimization measures included in Section 2.15.4 of this document will minimize the project's potential contribution to a cumulative impact. Additionally, each of the transportation and development projects included in Table 28 will be subject to permit conditions and other regulatory controls to minimize impacts to water quality both during and after construction.

Air Quality

The proposed project is located within the Sacramento Valley Air Basin. Sacramento County is designated by the USEPA as a "non-attainment" area for fine particulate matter; PM_{2.5} and PM₁₀ and ozone (O₃). The Sacramento urbanized area (including portions of Placer, Sacramento, and Yolo counties) is classified as "moderate maintenance area" for CO.

Regional level conformity in California is concerned with how well the region is meeting the standards set for carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), and particulate matter (PM). California is in attainment for the other criteria pollutants. At the regional level, the MTP includes all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the MTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful SACOG and Federal Highway Administration make the determination that the MTP is in conformity with the State Implementation Plan (SIP) for achieving the goals of the Clean Air Act. Otherwise, the projects in the MTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the MTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

The transportation projects listed in Table 28, including the proposed project, are included in the SACOG MTP and Metropolitan Transportation Improvement Plan (MTIP), both of which conform to the SIP. Before adopting the MTP and MTIP, SACOG performed a quantitative analysis to determine if implementation of the set of projects included in these documents would result in violations of the ozone and PM₁₀ air quality standard. Based on this analysis, SACOG has concluded that the set of projects included in the MTP and MTIP would not result in a violation of the ozone standard and would result in reduction of PM₁₀ emission.

As the SACOG analysis considered all planned and programmed transportation projects included in the MTP and MTIP, the transportation projects listed in Table 28 have been analyzed and found not to contribute to a substantial impact to air quality.

In addition, the development projects in Table 28 are also subject to air quality permitting requirements. Projects that are in conformance with the regional air quality plan and that meet regional air pollutant budgets (based on air quality models and analyses) would not be expected to have a negative cumulative impact.

Noise

Traffic on the freeway is the predominant source of noise in the surrounding landscape. Minor noise sources include traffic from local roads, power tools including lawnmowers and leaf blowers, car alarms, rooftop

heating and cooling equipment, construction tools and activities, and flights from the Sacramento Metropolitan Airport.

Under the Build Alternatives, design year (2040) noise levels are predicted to be between 1 and 2 dBA higher than existing noise levels for all receivers. This 1-2 dBA increase between existing noise levels and predicted noise levels would be barely perceptible to the human ear and would not be substantial. Cumulative noise impacts resulting from the proposed project when combined with other projects are not expected.

Biological Environment

When combined with the projects included in Table 28, the proposed project will result in cumulative impacts to the biological environment, including giant garter snake upland habitat and Swainson's hawk foraging habitat.

Wetlands and Other Waters of the U.S. and California Waters of the State

Because impacts from the proposed project are expected to be minor and the wetlands affected are not of good quality, the proposed project will not likely contribute to a cumulative effect to Wetlands and Other Waters of the U.S. under the jurisdiction of the United States Army Corps of Engineers (USACE), as well as Waters of the State under the jurisdiction of the CDFG.

Special-Status Plant and Animal Species

The proposed project is not expected to result in impacts to special-status plant or animal species and therefore cannot contribute to a cumulative impact.

Threatened and Endangered Species

The proposed project will contribute to a cumulative effect to Swainson's hawk and giant garter snake habitat. The project will permanently impact 1.76 acres of giant garter snake upland habitat. The areas of upland habitat impacted are ruderal grasslands between the Natomas drainage canals and I-5 and I-80. The proposed project may impact approximately 9.85 acres of Swainson's hawk foraging habitat comprised of ruderal grassland habitat in the road shoulders of I-80 and I-5 and small areas of oak savanna habitat within the I-5/I-80 interchange within one mile of a known active nest; all impacts to foraging habitat are within one mile of a recorded nest site.

Alternative 2—No Build Alternative

The No Build Alternative would not involve construction and therefore would not result in any cumulative impacts.

2.29.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures for cumulative impacts are proposed.