

Natural Environment Study Addendum

State Route 1 HOV Lanes
Tier I Corridor Analysis of
High Occupancy Vehicle (HOV) Lanes and Transportation System
Management (TSM) Alternatives
(05 SCR-1-PM 7.24-16.13)
and
Tier II Build Project Analysis
41st Avenue to Soquel Avenue/Drive
Auxiliary Lanes and Chanticleer Avenue Pedestrian-Bicycle
Overcrossing
(05 SCR-1-PM 13.5-14.9)

EA 0C7300



April 2018



U.S. Department
of Transportation

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**Natural Environment Study
Addendum**

**TIER I - CORRIDOR ANALYSIS OF
HIGH OCCUPANCY VEHICLE (HOV) LANES
AND TRANSPORTATION SYSTEM MANAGEMENT ALTERNATIVES
AND**

**TIER II - BUILD PROJECT ANALYSIS OF
41ST AVENUE TO SOQUEL AVENUE AUXILIARY LANES AND CHANTICLEER AVENUE
PEDESTRIAN-BICYCLE OVERCROSSING**

San Andreas-Larkin Valley Road Interchange to Morrissey Boulevard
Interchange in Santa Cruz County

05-SCR-1- PM R7.24/16.13 (KP R11.64/25.96)
EA 05-0C7300

Prepared for

STATE OF CALIFORNIA
Department of Transportation
District 5

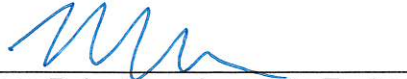
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1 INTRODUCTION

The purpose of this Natural Environment Study Addendum (Addendum) is to provide additional technical information regarding sensitive species that have been described within the January 2015 Natural Environment Study (NES) prepared for the State Route 1 High Occupancy Vehicle (HOV) Lanes Project (project). The intent of this Addendum is to also revise the proposed determinations that were made in the 2015 NES regarding the following sensitive species: Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) and least Bell's vireo (*Vireo bellii pusillus*). The revisions to the impact analysis of these species are a result of public comment received during public review of the Draft Environmental Document and additional studies conducted per the request of the California Department of Transportation (Caltrans). The original NES was approved by Caltrans on January 29, 2015. Information in this Addendum updates the original NES and this Addendum is part of the original NES. All other information not updated by this Addendum, in the original NES, remains current and valid.

1.1 Natural Environment Study Addendum Methods

The evaluation that is included within this Addendum is based on an updated query of the United States Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPaC) datasets and California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) (see Appendix A), additional floristic surveys conducted in 2015 to determine presence/absence of special-status plant species (see Appendix B), a habitat assessment for least Bell's vireo conducted by SWCA Biologist Jackie Hancock in March 2016, and a California tiger salamander (*Ambystoma californiense*) and Santa Cruz long-toed salamander habitat assessment conducted by species expert Mr. Bryan Mori in May 2016 (see Appendix C). The USFWS species list included in Appendix A is not an official species list. The official species list that marks the beginning of Section 7 Endangered Species Act consultation will be obtained by Caltrans at the time that consultation occurs.

2 RESOURCES AND IMPACTS EVALUATION

The 2015 NES evaluated potential impacts to habitats, natural communities of concern, special-status plant species, and special-status animal species. Below is a discussion of those resources for which additional information has been acquired since the NES was considered final in 2015. For those resources that are not included below, there are no changes to the information that is included in the 2015 NES.

2.1 Special-status Plant Species

The 2015 NES evaluated 63 special-status (federally listed, state listed, and/or California Native Plant Society [CNPS] List 1B or 2) plant species as occurring within the United States Geological Survey (USGS) 7.5-minute Santa Cruz, Soquel, and Watsonville West quadrangles and the eight surrounding quadrangles. This list was generated by a query of the USFWS IPaC species list and the CNDDDB. Within the 2015 NES, Table 6 provided a general description of the habitat requirements for each species, and whether suitable habitat is present (P) or absent (A) in the biological study area (BSA). No sensitive plant species were identified during survey efforts conducted for the 2015 NES.

As part of this Addendum, the USFWS IPaC and the CNDDDB were queried again in June 2017 for a list of species to consider as part of the evaluation. The updated USFWS IPaC list did not include any additional species that were not already previously evaluated within the NES.

The CNDDDB query resulted in 61 sensitive plant species. The updated CNDDDB query resulted in the addition of the following four plant species not previously evaluated in the 2015 NES. The analysis of these

four species below is based on previous surveys conducted for the 2015 NES and the additional survey conducted in Spring 2015 after the NES was finalized (see Appendix C):

- Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*) – Hoover's button-celery is an annual/perennial herb that is considered a CNPS Rank 1B.1 species and occurs within vernal pools located between the elevation of 3 and 45 meters above sea level. This species typically blooms between June and August. No suitable habitat for this species occurs within the project impact area as there are no vernal pools present within the project impact area. The species is not expected to occur in the project area, nor was this species identified during appropriately timed surveys.
- minute pocket moss (*Fissidens pauperculus*) – Minute pocket moss is a moss that is considered a CNPS Rank 1B.2 species and occurs within coniferous forests with damp coastal soil. This species typically occurs between 10 and 1,024 meters above sea level. No suitable habitat for this species occurs within the project impact area as there is no coniferous forests within the project impact area. The species is not expected to occur in the project area, nor was this species identified during appropriately timed surveys.
- perennial goldfields (*Lasthenia californica* ssp. *macrantha*) – Perennial goldfields is a perennial herb that is considered a CNPS Rank 1B.2 species and occurs within coastal bluff scrub, coastal dunes, and coastal scrub between the elevations of 5 and 520 meters above sea level. This species typically blooms between January and November. No suitable habitat for this species occurs within the project impact area as there is no coastal bluff scrub, coastal dunes, and coastal scrub within the project impact area. The species is not expected to occur in the project area, nor was this species identified during appropriately timed surveys.
- northern curly-leaved monardella (*Mondardella sinuata* ssp. *nigrescens*) – Northern curly-leaved monardella is an annual herb that is considered a CNPS Rank 1B.2 species and occurs within sandy soils within chaparral, coastal dunes, coastal scrub, and lower montane coniferous forest. This species typically occurs between 0 and 300 meters above sea level. This species typically blooms between April and September. No suitable habitat for this species occurs within the project impact area as there is no chaparral, coastal dunes, coastal scrub, or lower montane coniferous forest within the project impact area. The species is not expected to occur in the project area, nor was this species identified during appropriately timed surveys.

It should be noted that the recent query of the CNDDDB in June 2017 no longer included occurrences for the following six species that were previously discussed in the 2015 NES:

- Kings Mountain manzanita (*Arctostaphylos regismontana*)
- Norris beard moss (*Didymodon norrisii*)
- San Mateo woolly sunflower (*Eriophyllum latilobum*)
- Tidestrom's lupine (*Lupinus tidestromii*)
- Hall's bush mallow (*Malacothamnus hallii*)
- Metcalf Canyon jewelflower (*Streptanthus albidus* ssp. *albidus*)

Based on the updated analysis described above, the avoidance measures for special-status plants that are provided in the 2015 NES are sufficient to address potential impacts to these species. This applies to both the Tier I Corridor and the Tier II Auxiliary Lanes Alternatives. No additional avoidance measures or compensatory mitigation are necessary.

2.2 Special Status Animal Species

The 2015 NES evaluated a total of 53 special-status animal species and two animal groups (nesting birds, roosting bats). As part of this Addendum, the USFWS IPaC and CNDDDB were queried again in June 2017 for a list of species to consider as part of the evaluation. The USFWS IPaC query resulted in only one additional species — southwestern willow flycatcher (*Empidonax traillii extimus*) — that was not previously evaluated in the 2015 NES. Copies of the updated database queries are included as Appendix C. The CNDDDB resulted in an additional 13 animal species that were not previously evaluated in the 2015 NES.

Table 1 provides an evaluation of species that were not previously evaluated in the 2015 NES. Additional discussion is provided only for species that may have suitable habitat within the BSA. For species that are considered to have no habitat within the BSA, no further discussion is provided.

It should be noted that the table below also includes least Bell's vireo and Santa Cruz long-toed salamander, which were previously evaluated in the 2015 NES. A habitat assessment for least Bell's vireo was conducted by SWCA Biologist Jackie Hancock in March 2016 (see Appendix B). A California tiger salamander and Santa Cruz long-toed salamander habitat assessment was conducted by species expert Mr. Bryan Mori in May 2016 (see Appendix C). Based on these additional habitat assessment studies the potential impacts to these species have been reconsidered.

Table 1. Updated Evaluation of Special-Status Animal Species Potentially Occurring in the BSA

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description	Habitat Present/Absent in BSA	Rationale
American peregrine falcon	<i>Falco peregrinus anatum</i>	Delisted/Delisted/FP	<ul style="list-style-type: none"> In migration and winter, found in nearly any open habitat, but with a greater likelihood along barrier islands, mudflats, coastlines, lake edges, and mountain chains. 	A	<ul style="list-style-type: none"> No Potential to Occur: The BSA does not support suitable for this species; however, species may transect the project area in search of prey. No suitable nesting locations occur within the BSA.
Anitoch specid wasp	<i>Philanthus nasalis</i>	--/--/G1S1	<ul style="list-style-type: none"> Interior dunes 	A	<ul style="list-style-type: none"> No Potential to Occur: The BSA does not support suitable for this species. The BSA has no dune habitat within it.
California giant salamander	<i>Dicamptodon ensatus</i>	--/--/SSC	<ul style="list-style-type: none"> Endemic to northern California and resides within damp, coastal forests in montane, and valley foothill riparian habitats. 	HP	<ul style="list-style-type: none"> Low Potential to Occur: While riparian habitat does occur within the BSA, California giant salamanders occur in, or near, clear, cold permanent streams. The water quality of drainages within the BSA (e.g., Rodeo Gulch) does not appear to be ideal habitat for this species, as it is influenced by urban runoff from surrounding land uses. However, it is assumed that potentially suitable habitat would likely occur outside of the BSA within the upper reaches of Rodeo Gulch, for example, and therefore the presence of this species cannot be discounted as individuals may transect the BSA while foraging.

Table 1. Updated Evaluation of Special-Status Animal Species Potentially Occurring in the BSA

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description	Habitat Present/Absent in BSA	Rationale
California Ridgway's rail (formerly California clapper rail)	<i>Rallus obsoletus obsoletus</i>	FE/SE/FP	<ul style="list-style-type: none"> Saltwater and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds on mud-bottomed sloughs. 	A	<ul style="list-style-type: none"> No Potential to Occur: Not known to occur within the BSA. No suitable nesting or foraging habitat occurs within the BSA. Nearest known nesting occurrence is approximately 11.5 miles southeast of the BSA at Elkhorn Slough. The project is expected to result in a no effect determination for this species.
eulachon	<i>Thaleichthys pacificus</i>	FT/--/--	<ul style="list-style-type: none"> Anadromous ocean fish found along the Pacific coast of North America from northern California to Alaska. The species range below the US-Canada border is largely found within the Columbia River Basin. Spawning rivers are all thought to have spring freshets, characteristic of rivers draining large snow packs or glaciers. 	A	<ul style="list-style-type: none"> No Potential to Occur: The BSA does not support the river ecosystem that it typically associated with this species freshwater spawning habitat. The documented distribution of this species is outside of the BSA, within major rivers and tributaries of Northern California, Oregon, Washington, and Alaska. Although, the CNDDB documents an occurrence of this species at the mouth of Soquel Creek, the tributaries within Santa Cruz County are not identified as known spawning rivers for this species. It is expected that this species would not occur within the BSA. The project is expected to result in a no effect determination for this species.
longfin smelt	<i>Sprinchus Thaleichthys</i>	FC/ST/SSC	<ul style="list-style-type: none"> Found in estuarines and lakes along the northern Pacific coast of North America. 	A	<ul style="list-style-type: none"> No Potential to Occur: The BSA does not support estuaries or lakes needed for this species. The project is expected to result in a no effect determination for this species.

Table 1. Updated Evaluation of Special-Status Animal Species Potentially Occurring in the BSA

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description	Habitat Present/Absent in BSA	Rationale
obscure bumble bee	<i>Bombus caliginosus</i>	--/--/G1S1	<ul style="list-style-type: none"> Occurs in open, grassy coastal prairies and Coast Range meadows. Nesting occurs underground as well as above ground in abandoned bird nests 	A	<ul style="list-style-type: none"> No Potential to Occur: The BSA does not support open, grassy coastal prairies or Coast Range meadows suitable for this species. Species was not observed during field surveys and is not expected to occur due to the lack of suitable habitat.
San Francisco dusky-footed woodrat	<i>Neotoma fuscipes annectens</i>	--/--/SSC	<ul style="list-style-type: none"> Densely vegetated riparian and scrub habitats. 	HP	<ul style="list-style-type: none"> Habitat Present. Potential to Occur Unlikely: The nearest known occurrence is within Scotts Valley, approximately 10 miles to the north; however, riparian habitat may provide suitable habitat within the BSA.
Santa Cruz black salamander	<i>Aneides niger</i>	--/--/SSC	<ul style="list-style-type: none"> Occurs in mixed deciduous woodland, coniferous forests, coastal grasslands. Found under rocks near streams, in talus, under damp logs, and other objects. 	HP	<ul style="list-style-type: none"> Habitat Present/ Potential to Occur Unlikely: The BSA does provide some deciduous woodland, and coniferous forests for this species. The nearest known occurrence is 1.5 miles to the west. The species has also been identified within Hester Creek, a tributary to Soquel Creek, approximately 5 miles to the north. The likelihood of this species occurring within the BSA is considered unlikely due to the availability of higher quality habitat outside of the BSA and lack of any documented occurrences within the BSA or immediately surrounding the BSA.

Table 1. Updated Evaluation of Special-Status Animal Species Potentially Occurring in the BSA

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description	Habitat Present/Absent in BSA	Rationale
Townsend's big-eared bat	<i>Corynorhinus townsendi</i>	--/--/SSC	<ul style="list-style-type: none"> Occurs in a wide variety of habitats; most common in mesic (wet) sites. May use trees for day and night roosts; however, requires caves, mines, rock faces, bridges or buildings for maternity roosts. Maternity roosts are in relatively warm sites. 	HP	<ul style="list-style-type: none"> Habitat Present/Potential to Occur Unlikely: The BSA supports potentially suitable roosting habitat within adjacent trees and foraging habitat within the surrounding areas for this species. No sign of bats was observed during field surveys.
western bumble bee	<i>Bombus occidentalis</i>	--/--/G2G3 S1	<ul style="list-style-type: none"> Flowering plants. 	HP	<ul style="list-style-type: none"> Habitat Present. Potential to Occur Unlikely: Species has not been identified in the area in over 40 years.
western pearlshell	<i>Margaritifera falcata</i>	--/--/G4G5 S1S2	<ul style="list-style-type: none"> Freshwater river habitats 	A	<ul style="list-style-type: none"> No Potential to Occur: The BSA does not support suitable riverine habitat for this species as the streambed lacks stable sand/gravel substrates and is subject fluctuations in water flow or absence of water. Species has not been identified in Santa Cruz County since 1942. Last occurrence was within San Lorenzo River.

Table 1. Updated Evaluation of Special-Status Animal Species Potentially Occurring in the BSA

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description	Habitat Present/Absent in BSA	Rationale
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE/SE/--	<ul style="list-style-type: none"> Riparian woodlands in southern California 	HP	<ul style="list-style-type: none"> Habitat Present/Potential to Occur Unlikely: The BSA is not located within the current documented range of this species. However, this species has been documented migrating through San Luis Obispo County to the south of the BSA. Suitable riparian woodland habitat is present within the BSA, therefore, the presence of infrequent foraging individuals cannot be dismissed The project is expected to result in a may affect, but not likely to adversely affect determination for this species.
least Bell's vireo	<i>Vireo bellii pusillus</i>	FE / SE /--	<ul style="list-style-type: none"> Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, coyote brush and mesquite. 	HP	<ul style="list-style-type: none"> Habitat Present/Potential to Occur Unlikely: Arroyo willow thicket habitat in the BSA could provide suitable habitat for range expanding individuals. The project is expected to result in a may affect, but not likely to adversely affect determination for this species.

Table 1. Updated Evaluation of Special-Status Animal Species Potentially Occurring in the BSA

Common Name	Scientific Name	Federal / State / CNPS Status & Threat Code	General Habitat Description	Habitat Present/Absent in BSA	Rationale
Santa Cruz long-toed salamander	<i>Ambystoma macrodactylum croceum</i>	FE/SE, FP / --	<ul style="list-style-type: none"> Wet meadows near sea level in restricted locales in Santa Cruz and Monterey counties. Inhabits temporary ponds for breeding (Nov–Mar) and adjacent upland scrub and woodland areas during non-breeding season, including upland chaparral and woodland areas of coast live oak, Monterey pine, and riparian vegetation 	HP, P	<ul style="list-style-type: none"> Habitat Present/Potential to Occur Likely: There are four documented occurrences near the BSA. Nearest occurrence at Valencia Lagoon, adjacent to Route 1, between Del Mar and Freedom. Other occurrences within the BSA are 0.8 mile east, 0.5 mile southwest, and 1.2 miles northeast of the San Andreas Road/Route 1 intersection. A habitat site assessment was conducted by Mr. Mori in May 2016. The project is expected to result in a no effect determination for this species, as the project design will avoid this species and its habitat.

Status Codes:

Federal:

- FE = Federal Endangered
- FT = Federal Threatened
- FC = Federal Candidate
- FD = Federal Delisted
- CH = Critical Habitat Designated in BSA
- MBTA = Protected by Federal Migratory Bird Treaty Act

State:

- SE = State Endangered
- ST = State Threatened
- FP = Fully Protected

California Department of Fish and Game:

- CSC = California Special Concern species
- CDFG Section 3503 = Protected by Section 3503 of CDFG code
- SA = CNDDDB Special Animal
- WL = Watch List

2.2.1 California Giant Salamander and Santa Cruz Black Salamander

For the purposes of this addendum, the discussion of California giant salamander and Santa Cruz black salamander have been combined, as well as the avoidance and minimization efforts described below.

2.2.1.1 CALIFORNIA GIANT SALAMANDER

The 2015 NES did not consider potential impacts to the California giant salamander as this species was not documented in the CNDDDB at the time the document was prepared. California giant salamander is a CDFW Species of Special Concern (SSC) that is found in wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages. One population has been found inhabiting flowing water in a network of caves near University of Santa Cruz. The BSA is at the southernmost extent of this species' range. The nearest known occurrence is 0.7 miles to the north within a portion of the Rodeo Gulch drainage, outside of urban development. A population also occurs within the upper reaches of Aptos Creek, approximately 2 miles north of the BSA. The species has not been documented or observed within the BSA. However, habitat is present within the riparian areas of the BSA. Potential impacts may occur to this species during the removal of any riparian vegetation.

2.2.1.2 SANTA CRUZ BLACK SALAMANDER

The 2015 NES did not consider potential impacts to the Santa Cruz salamander as this species was not documented in the CNDDDB at the time the document was prepared. Like the California giant salamander described above, the Santa Cruz black salamander is a CDFW Species of Special Concern (SSC). This species is found in in mixed deciduous woodland, coniferous forests, and coastal grasslands. They can be found under rocks near streams, in talus, under damp logs, and other objects. The nearest known occurrence is 1.5 miles to the west of the BSA. Migration of individuals from this documented location is extremely unlikely due to the urban interface. However, Santa Cruz black salamander has also been documented approximately 5 miles to the north within a tributary to Soquel Creek. Although unlikely, the species could occur within the riparian areas of the BSA. Potential impacts may occur to this species during the removal of any riparian vegetation.

Implementation of avoidance and minimization measures described in Section 4.3.7.2 of the 2015 NES will be sufficient to avoid and minimize any impacts to these species. No additional avoidance and minimization measures are proposed as part of this Addendum.

2.2.2 San Francisco Dusky-Footed Woodrat

The 2015 NES did not consider potential impacts to the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) as this species was not documented in the CNDDDB at the time the document was prepared. The San Francisco dusky-footed woodrat, one of the 11 subspecies of the dusky-footed woodrat, is a CDFW Species of Special Concern (SSC) that is found in densely vegetated riparian and scrub habitats. The nearest known occurrence of this species is approximately 10 miles to the north. The species has not been documented or observed within the BSA. However, suitable habitat is present within the riparian habitat for this species. Potential impacts may occur to this species during the removal of any riparian vegetation. The proposed avoidance and minimization measure has been provided to reduce any adverse effects to this species, or other woodrat species that may be present:

- Avoidance and Minimization Measure (San Francisco Dusky- footed Woodrat): Prior to project construction, a qualified biologist shall conduct a survey of the project site to determine the location of existing woodrat dens, and the location of suitable woodrat habitat within the project site. Woodrat dens within 30 feet of any construction activities shall be avoided. If construction

activities occur within 30 feet of the active/inactive woodrat den or result in a direct impact to the woodrat den, the den shall be removed and relocated to the closest suitable habitat as determined by the qualified biologist. If the den is active, trapping of the woodrat shall be conducted by a qualified biologist with the appropriate permit/approval.

2.2.3 Townsend's Big-Eared Bat

The 2015 NES did not consider potential impacts to Townsend's big-eared bat (*Corynorhinus townsendi*) directly. However, the 2015 NES did consider roosting bats as an Order (*Chiroptera*). It is expected that with the implementation of the proposed avoidance and minimization measures in the 2015 NES (Section 4.3.12.2) the potential adverse impacts from Tier I Corridor Alternatives and the Tier II Auxiliary Lanes Alternative would be avoided or minimized. No additional measures are proposed as part of this Addendum.

2.2.4 Western Bumble Bee

The 2015 NES did not consider potential impacts to western bumble bee (*Bombus occidentalis*) as it was not documented in the CNDDDB at the time the document was prepared. This species is not considered to be federal or state listed, but it does have a conservation status rank that suggests it is critically imperiled on a state level and vulnerable on a global level. Due to the potential foraging habitat within the BSA, there is a potential that this species may be present. However, it is expected that the Tier I and Tier II alternatives would have very little to no adverse effects on this species, due to the limited areas of disturbance and the availability of suitable foraging in the vicinity of the project. No avoidance and minimization measures are proposed as part of this Addendum.

2.2.5 Least Bell's Vireo and Southwestern Willow Flycatcher

For the purposes of this addendum, the discussion of least Bell's vireo and Southwestern willow flycatcher have been combined, as well as the revised avoidance and minimization efforts described below.

2.2.5.1 LEAST BELL'S VIREO

The 2015 NES provided a description of least Bell's vireo and a summary of existing data supporting known occurrences of this species within the vicinity of the BSA. The 2015 NES also proposed that the Tier I Corridor Alternatives and the Tier II Auxiliary Lanes Alternative would have *no effect* to least Bell's vireo. Due to the expanding range of this species, and recent consultations between Caltrans and USFWS on other projects, Caltrans staff advised that a Habitat Assessment of both Tier I and Tier II project areas be conducted by a qualified biologist. Per Caltrans request, SWCA Biologist Jackie Hancock evaluated the riparian features within the BSA in March 2016. The results of this survey are included as Appendix C.

As a result of the Habitat Assessment, it was the professional opinion of Ms. Hancock that the stratified canopy found in Rodeo Creek Gulch provides suitable foraging habitat for the species, and the dense foliage of the understory would provide sufficient nesting opportunities for the species. With implementation of the following avoidance and minimization measures listed in Section 2.2.5.2, it is expected that the proposed impacts within Tier II (Rodeo Creek Gulch) would result in a *may effect, not likely to adversely affect* determination rather than the *no effect* determination that was included within the 2015 NES. Because the Tier II (Rodeo Creek Gulch) is located within the Tier I Corridor Alternatives, then the impact determination of least Bell's vireo in the Tier I Corridor Alternatives would also be *may effect, not likely to adversely affect*.

2.2.5.2 SOUTHWESTERN WILLOW FLYCATCHER

The 2015 NES did not take southwestern willow flycatcher into consideration as it was not documented within the USFWS IPaC or CNDDDB at the time the document was prepared. Based on the 2017 query of

the USFW IPaC and CNDDDB, this species is being considered within this Addendum. As described in Table 1, southwestern willow flycatcher has not been identified within the BSA. However, due to the potential foraging and nesting habitat within the BSA, this species is considered to have a potential to occur within the BSA.

Southwestern willow flycatcher is considered a federal and state endangered species. Similar to least Bell's vireo (described above), the southwestern willow flycatcher requires dense riparian habitat. Southwestern willow flycatcher requires microclimatic conditions dictated by local surroundings such as saturated soils, standing water, or nearby streams, pools, or other bodies of fresh water. Riparian habitat that is suitable for least Bell's vireo would be expected to also be suitable for southwestern willow flycatcher. With the implementation of those avoidance and minimization measures that are included below, it is expected that the proposed impacts within Tier II (Rodeo Creek Gulch) would result in a *may effect, not likely to adversely affect* determination. It is also expected that the Tier I Corridor Alternatives would result in a *may affect, not likely to adversely affect* determination since the Tier II (Rodeo Creek Gulch) is within the Tier I Corridor Alternatives.

Avoidance and Minimization Efforts

The following measures will be implemented to avoid or minimize any potential effects to LBV and SWWF:

- 1** Focused surveys following United States Fish and Wildlife Service survey guidelines for least Bell's vireo and southwestern willow flycatcher shall be completed to determine the presence/absence of least Bell's vireo and southwestern willow flycatcher wherever suitable habitat is present within 500 feet of the limits of construction. Surveys shall be conducted within 1 year prior to the on-set of construction activities. If least Bell's vireo or southwestern willow flycatcher are detected during these surveys, formal Section 7 consultation will be reinitiated.
- 2** Caltrans will provide the United States Fish and Wildlife Service with a report detailing least Bell's vireo and southwestern willow flycatcher survey efforts for the breeding season preceding construction.
- 3** Worker awareness trainings and educational materials will include information about least Bell's vireo and southwestern willow flycatcher and their habitat.

In addition to those measures above, the following measures would be implemented to avoid and minimize potential effects to nesting migratory birds, including LBV and SWWF, if present:

- 4** If feasible, removal of trees shall be scheduled to occur in the fall and winter (between September 15 and February 15), outside of the typical nesting season.
- 5** If any construction activities are proposed to occur during the typical nesting season (February 15 to September 15), a nesting bird survey of the area of disturbance shall be conducted by qualified biologists no more than two weeks prior to construction to determine presence/absence of nesting birds within the project area.
- 6** If evidence of migratory bird nesting that may be impacted by construction activities is discovered, or when birds are injured or killed as a result of construction activities, the contractor shall immediately notify the engineer or biological monitor. At a minimum, a 500-foot radius of the nest shall be designated an Environmentally Sensitive Area for nesting raptors, and a 250-foot radius shall be designated an Environmentally Sensitive Area for other nesting avian species, unless otherwise directed by the United States Fish and Wildlife Service or California Department of Fish

and Wildlife. Nests, eggs, or young of birds covered by the Migratory Bird Treaty Act and California Fish and Game Code would not be moved or disturbed until the end of the nesting season or until young fledge, whichever is later, nor would adult birds be killed, injured, or harassed at any time. The Environmentally Sensitive Area shall remain in place until such time that the nest is no longer considered active by the qualified biologist. Written notification shall be provided to the California Department of Transportation, the Santa Cruz County Regional Transportation Commission, and the resource agencies by the qualified biologist.

- 7 If least Bell's vireo is identified within the Biological Study Area at any time during the proposed project, the biological monitor shall thoroughly document the species activity and ensure that immediate project activities avoid any impacts to the species. If there is a potential for take, the United States Fish and Wildlife Service shall be contacted immediately to ensure that avoidance of take is maintained throughout the duration of project activities.
- 8 Vegetation removal in potential nesting habitats shall be monitored and documented by the biological monitor(s) regardless of time of year.

2.2.6 Santa Cruz Long-Toed Salamander

The 2015 NES provided a description of Santa Cruz long-toed salamander and a summary of existing data supporting known occurrences of this species within the vicinity of the BSA. The 2015 NES also concluded that the Tier I Corridor Alternatives *may affect, and is likely to adversely affect* Santa Cruz long-toed salamander. However, this determination is not correct, since Santa Cruz long-toed salamander is a Fully Protected species and there is no allowed 'take' of this species, including the species' habitat. To better understand the extent of this species habitat, a focused Habitat Assessment was conducted by species expert Mr. Mori in May 2016 after the NES had been approved. The results of this survey are included as Appendix C.

As a result of the Habitat Assessment conducted by Mr. Mori, the project design team has agreed that the project design would be modified as necessary to completely avoid those areas of potential habitat shown in the Habitat Assessment provided by Mr. Mori. The project would comply with full avoidance of this species and its habitat. This includes no dewatering of potential habitat areas and no grading activities within upland habitat that may be used by this species. The Tier I Corridor Alternatives project is expected to result in *no effect* to this species with this modification. No changes to the Tier II Auxiliary Lanes Alternative is needed, since this species does not occur within this portion of the BSA. The proposed determination of *no effect* for the Tier II Auxiliary Lanes Alternative is not changed as a result of this Addendum.

2.2.7 California Red-Legged Frog

The 2015 NES proposed that the Tier I and II alternatives would both result in a *may affect, but not likely to adversely affect* determination. However, the avoidance and minimization efforts that were described within Section 4.3.6.2 follow the measures included within the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program, 8-8-10-F-58. The Programmatic Biological Opinion includes measures that would result in the capture, handling, and relocation of CRLF. Such an action would be considered 'take' and would require a *may affect, likely to adversely affect* determination. Therefore, this addendum is intended to revise this Section 7 determination from *may affect, but not likely to adversely affect* to *may affect, likely to adversely affect*. No other changes are proposed.

2.3 Conclusions and Regulatory Determinations

2.3.1 Federal Endangered Species Act Consultation Summary

As part of this NES addendum, the following six federally listed animal species have been evaluated for the potential to occur within the BSA. Or, in the case of Santa Cruz long-toed salamander and California red-legged frog, the evaluation is a reconsideration of those determinations previously provided in the 2015 NES for the project. The following table summarizes the Section 7 determination for these species.

Table 2: Federal Endangered Species Act Effects Determination - USFWS.

Common Name	Scientific Name	Legal Status	Rationale
Amphibians			
Santa Cruz long-toed salamander	<i>Ambystoma macrodactylum croceum</i>	Federally Endangered	No effect
California red-legged frog	<i>Rana draytonii</i>	Federally Threatened	May affect, likely to adversely affect
Birds			
least Bell's vireo	<i>Vireo bellii pusillus</i>	Federally Endangered	May affect, not likely to adversely affect
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Federally Endangered	May affect, not likely to adversely affect
Anadromous Fish			
eulachon	<i>Thaleichthys pacificus</i>	Threatened	No effect
Longfin smelt	<i>Spirinchus thaleichthys</i>	Candidate	No effect

2.3.2 California Endangered Species Act Consultation Summary

CDFW has not been consulted at this time in regard to compliance with the CESA. The following state-listed species were evaluated as part of this NES addendum: California Ridgway's rail (*Rallus obsoletus obsoletus*), longfin smelt (*Sprinchus thaleichthys*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), and Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*). Project-related impacts are not expected to result in 'take' of any state listed species. Therefore, no additional permits (e.g., Incidental Take Permit, or consistency determination) are needed.

2.3.3 Other

California Species of Special Concern is a protective legal designation assigned by the California Department of Fish and Wildlife to wildlife species that are at risk. Four California Species of Special Concern were evaluated as a result of the updated CNDDDB query results for this NES Addendum. These species include: California giant salamander (*Dicamptodon ensatus*), Santa Cruz black salamander (*Aneides niger*), Townsend's big-eared bat (*Corynorhinus townsendi*) and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). Project related impacts are not expected to impact these sensitive species with implementation of avoidance and minimization measures included within the 2015 NES and this NES Addendum.

One State fully-protected species was evaluated as part of this NES Addendum – Santa Cruz long-toed salamander. This species is protected under California Fish and Game Code 5050, and is also protected by the federal and state endangered species acts (as discussed above). No impacts to this species would occur as a result of the project.

The CNDDDB maintains a global and state sensitivity ranking for species. Four of these species were evaluated as part of this NES Addendum, including: Anitoch specid wasp (*Philanthus nasalis*), obscure bumble bee (*Bombus caliginosus*), western bumble bee (*Bombus occidentalis*), and western pearlshell (*Margaritifera falcata*). None of these species are expected to be adversely impacted as a result of the project.

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**Appendix A.
Updated CNDDDB and USFWS IPaC Species Lists**

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Selected Elements by Common Name
 California Department of Fish and Wildlife
 California Natural Diversity Database



Query Criteria: Quad IS (Santa Cruz (3612281) OR Soquel (3612188) OR Watsonville West (3612187) OR Davenport (3712212) OR Felton (3712211) OR Laurel (3712118) OR Loma Prieta (3712117) OR Mt. Madonna (3712116) OR Watsonville East (3612186) OR Prunedale (3612176) OR Moss Landing (3612177))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American badger <i>Taxidea taxus</i>	AMAJF04010	None	None	G5	S3	SSC
American peregrine falcon <i>Falco peregrinus anatum</i>	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Antioch spicid wasp <i>Philanthus nasalis</i>	IIHYM20010	None	None	G1	S1	
bank swallow <i>Riparia riparia</i>	ABPAU08010	None	Threatened	G5	S2	
Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	IILEPK4055	Threatened	None	G5T1	S1	
black legless lizard <i>Anniella pulchra nigra</i>	ARACC01011	None	None	G3G4T2T3Q	S2	SSC
black swift <i>Cypseloides niger</i>	ABNUA01010	None	None	G4	S2	SSC
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S3	SSC
California giant salamander <i>Dicamptodon ensatus</i>	AAAAH01020	None	None	G3	S2S3	SSC
California linderiella <i>Linderiella occidentalis</i>	ICBRA06010	None	None	G2G3	S2S3	
California red-legged frog <i>Rana draytonii</i>	AAABH01022	Threatened	None	G2G3	S2S3	SSC
California Ridgway's rail <i>Rallus obsoletus obsoletus</i>	ABNME05016	Endangered	Endangered	G5T1	S1	FP
California tiger salamander <i>Ambystoma californiense</i>	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
coho salmon - central California coast ESU <i>Oncorhynchus kisutch</i>	AFCHA02034	Endangered	Endangered	G4	S2?	
Cooper's hawk <i>Accipiter cooperii</i>	ABNKC12040	None	None	G5	S4	WL
Dolloff Cave spider <i>Meta dolloff</i>	ILARA17010	None	None	G1	S1	
Empire Cave pseudoscorpion <i>Fissilicreagris imperialis</i>	ILARAE5010	None	None	G1	S1	



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Empire Cave pseudoscorpion <i>Neochthonius imperialis</i>	ILARAD1010	None	None	G1	S1	
eulachon <i>Thaleichthys pacificus</i>	AFCHB04010	Threatened	None	G5	S3	
foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050	None	None	G3	S3	SSC
globose dune beetle <i>Coelus globosus</i>	IICOL4A010	None	None	G1G2	S1S2	
great blue heron <i>Ardea herodias</i>	ABNGA04010	None	None	G5	S4	
hoary bat <i>Lasiurus cinereus</i>	AMACC05030	None	None	G5	S4	
longfin smelt <i>Spirinchus thaleichthys</i>	AFCHB03010	Candidate	Threatened	G5	S1	SSC
Mackenzie's Cave amphipod <i>Stygobromus mackenziei</i>	ICMAL05530	None	None	G1	S1	
marbled murrelet <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
mimic tryonia (=California brackishwater snail) <i>Tryonia imitator</i>	IMGASJ7040	None	None	G2	S2	
moestan blister beetle <i>Lytta moesta</i>	IICOL4C020	None	None	G2	S2	
monarch - California overwintering population <i>Danaus plexippus pop. 1</i>	IILEPP2012	None	None	G4T2T3	S2S3	
Mount Hermon (=barbate) June beetle <i>Polyphylla barbata</i>	IICOL68030	Endangered	None	G1	S1	
obscure bumble bee <i>Bombus caliginosus</i>	IHYM24380	None	None	G4?	S1S2	
Ohlone tiger beetle <i>Cicindela ohlone</i>	IICOL026L0	Endangered	None	G1	S1	
Opler's longhorn moth <i>Adela oplerella</i>	IILEE0G040	None	None	G2	S2	
osprey <i>Pandion haliaetus</i>	ABNKC01010	None	None	G5	S4	WL
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G5	S3	SSC
Salinas harvest mouse <i>Reithrodontomys megalotis distichlis</i>	AMAFF02032	None	None	G5T1	S1	
saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	ABPBX1201A	None	None	G5T3	S3	SSC
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	AMAFF08082	None	None	G5T2T3	S2S3	SSC



Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
sandy beach tiger beetle <i>Cicindela hirticollis gravida</i>	IICOL02101	None	None	G5T2	S2	
Santa Cruz black salamander <i>Aneides niger</i>	AAAAD01070	None	None	G3	S3	SSC
Santa Cruz kangaroo rat <i>Dipodomys venustus venustus</i>	AMAFD03042	None	None	G4T1	S1	
Santa Cruz long-toed salamander <i>Ambystoma macrodactylum croceum</i>	AAAAA01082	Endangered	Endangered	G5T1T2	S1S2	FP
short-eared owl <i>Asio flammeus</i>	ABNSB13040	None	None	G5	S3	SSC
silvery legless lizard <i>Anniella pulchra pulchra</i>	ARACC01012	None	None	G3G4T3T4Q	S3	SSC
Smith's blue butterfly <i>Euphilotes enoptes smithi</i>	IILEPG2026	Endangered	None	G5T1T2	S1S2	
steelhead - central California coast DPS <i>Oncorhynchus mykiss irideus</i>	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
steelhead - south-central California coast DPS <i>Oncorhynchus mykiss irideus</i>	AFCHA0209H	Threatened	None	G5T2Q	S2	
tidewater goby <i>Lucania goblus newberryi</i>	AFCQN04010	Endangered	None	G3	S3	SSC
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	AMACC08010	None	None	G3G4	S2	SSC
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
western bumble bee <i>Bombus occidentalis</i>	IHYM24250	None	None	G2G3	S1	
western pearlshell <i>Margaritifera falcata</i>	IMBIV27020	None	None	G4G5	S1S2	
western pond turtle <i>Emys marmorata</i>	ARAAD02030	None	None	G3G4	S3	SSC
western snowy plover <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
white-tailed kite <i>Elanus leucurus</i>	ABNKC06010	None	None	G5	S3S4	FP
Zayante band-winged grasshopper <i>Trimerotropis infantilis</i>	IORT36030	Endangered	None	G1	S1	

Record Count: 56



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: Quad IS (Santa Cruz (3612281) OR Soquel (3612188) OR Watsonville West (3612187) OR Davenport (3712212) OR Felton (3712211) OR Laurel (3712118) OR Loma Prieta (3712117) OR Mt. Madonna (3712116) OR Watsonville East (3612186) OR Prunedale (3612176) OR Moss Landing (3612177)
 AND Taxonomic Group IS Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

State Route 1 HOV

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agrostis blasdalei</i> Blasdale's bent grass	PMPOA04060	None	None	G2	S2	1B.2
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	PDBOR01070	None	None	G2G3	S2S3	1B.2
<i>Anomobryum julaceum</i> slender silver moss	NBMUS80010	None	None	G5?	S2	4.2
<i>Arctostaphylos andersonii</i> Anderson's manzanita	PDERI04030	None	None	G2	S2	1B.2
<i>Arctostaphylos glutinosa</i> Schreiber's manzanita	PDERI040G0	None	None	G1	S1	1B.2
<i>Arctostaphylos hookeri ssp. hookeri</i> Hooker's manzanita	PDERI040J1	None	None	G3T2	S2	1B.2
<i>Arctostaphylos ohloneana</i> Ohlone manzanita	PDERI042Y0	None	None	G1	S1	1B.1
<i>Arctostaphylos pajaroensis</i> Pajaro manzanita	PDERI04100	None	None	G1	S1	1B.1
<i>Arctostaphylos silvicola</i> Bonny Doon manzanita	PDERI041F0	None	None	G1	S1	1B.2
<i>Arenaria paludicola</i> marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
<i>Calyptridium parryi var. hesseae</i> Santa Cruz Mountains pussypaws	PDPOR09052	None	None	G3G4T2	S2	1B.1
<i>Campanula californica</i> swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
<i>Carex comosa</i> bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
<i>Carex saliniformis</i> deceiving sedge	PMCYP03BY0	None	None	G2	S2	1B.2
<i>Ceanothus ferrisiae</i> Coyote ceanothus	PDRHA041N0	Endangered	None	G1	S1	1B.1
<i>Centromadia parryi ssp. congdonii</i> Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
<i>Chorizanthe pungens var. hartwegiana</i> Ben Lomond spineflower	PDPGN040M1	Endangered	None	G2T1	S1	1B.1
<i>Chorizanthe pungens var. pungens</i> Monterey spineflower	PDPGN040M2	Threatened	None	G2T2	S2	1B.2

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Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Chorizanthe robusta</i> var. <i>hartwegii</i> Scotts Valley spineflower	PDPGN040Q1	Endangered	None	G2T1	S1	1B.1
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
<i>Clarkia concinna</i> ssp. <i>automixa</i> Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3	4.3
<i>Collinsia multicolor</i> San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
<i>Cordylanthus rigidus</i> ssp. <i>littoralis</i> seaside bird's-beak	PDSCR0J0P2	None	Endangered	G5T2	S2	1B.1
<i>Dacryophyllum falcatifolium</i> tear drop moss	NBMUS8Z010	None	None	G2	S2	1B.3
<i>Dudleya abramsii</i> ssp. <i>setchellii</i> Santa Clara Valley dudleya	PDCRA040Z0	Endangered	None	G4T2	S2	1B.1
<i>Ericameria fasciculata</i> Eastwood's goldenbush	PDAST3L080	None	None	G2	S2	1B.1
<i>Eriogonum nudum</i> var. <i>decurrens</i> Ben Lomond buckwheat	PDPGN08492	None	None	G5T1	S1	1B.1
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery	PDAP10Z043	None	None	G5T1	S1	1B.1
<i>Erysimum ammophilum</i> sand-loving wallflower	PDBRA16010	None	None	G2	S2	1B.2
<i>Erysimum teretifolium</i> Santa Cruz wallflower	PDBRA160N0	Endangered	Endangered	G1	S1	1B.1
<i>Fissidens pauperculus</i> minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
<i>Fritillaria liliacea</i> fragrant fritillary	PML10V0C0	None	None	G2	S2	1B.2
<i>Gilia tenuiflora</i> ssp. <i>arenaria</i> Monterey gilia	PDPLM041P2	Endangered	Threatened	G3G4T2	S2	1B.2
<i>Hesperocyparis abramsiana</i> var. <i>abramsiana</i> Santa Cruz cypress	PGCUP04081	Threatened	Endangered	G1T1	S1	1B.2
<i>Hoita strobilina</i> Loma Prieta hoita	PDFAB5Z030	None	None	G2	S2	1B.1
<i>Holocarpha macradenia</i> Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
<i>Horkelia cuneata</i> var. <i>sericea</i> Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1
<i>Horkelia marinensis</i> Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
<i>Lasthenia californica</i> ssp. <i>macrantha</i> perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Lessingia micradenia</i> var. <i>glabrata</i> smooth lessingia	PDAST5S062	None	None	G2T2	S2	1B.2
<i>Malacothamnus arcuatus</i> arcuate bush-mallow	PDMAL0Q0E0	None	None	G2Q	S2	1B.2
<i>Microseris paludosa</i> marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
<i>Mielichhoferia elongata</i> elongate copper moss	NBMUS4Q022	None	None	G5	S4	4.3
<i>Monardella sinuata</i> ssp. <i>nigrescens</i> northern curly-leaved monardella	PDLAM18162	None	None	G3T2	S2	1B.2
<i>Monolopia gracilens</i> woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
<i>Pedicularis dudleyi</i> Dudley's lousewort	PDSCR1K0D0	None	Rare	G2	S2	1B.2
<i>Penstemon rattanii</i> var. <i>kleei</i> Santa Cruz Mountains beardtongue	PDSCR1L5B1	None	None	G4T2	S2	1B.2
<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
<i>Pinus radiata</i> Monterey pine	PGPIN040V0	None	None	G1	S1	1B.1
<i>Piperia candida</i> white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
<i>Piperia yadonii</i> Yadon's rein orchid	PMORC1X070	Endangered	None	G1	S1	1B.1
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcornflower	PDBOR0V061	None	None	G3T2Q	S2	1B.2
<i>Plagiobothrys diffusus</i> San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
<i>Polygonum hickmanii</i> Scotts Valley polygonum	PDPGN0L310	Endangered	Endangered	G1	S1	1B.1
<i>Rosa pinetorum</i> pine rose	PDRCS1J0W0	None	None	G2	S2	1B.2
<i>Senecio aphanactis</i> chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
<i>Sidalcea malachroides</i> maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris	PDAST6E050	None	None	G2	S2	1B.2
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
<i>Trifolium buckwestiorum</i> Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1



Selected Elements by Scientific Name
 California Department of Fish and Wildlife
 California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2

Record Count: 61

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish And Wildlife Office
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In Reply Refer To:
Consultation Code: 08EVEN00-2018-SLI-0082
Event Code: 08EVEN00-2018-E-00172
Project Name: State Route 1 HOV Lane Project

November 15, 2017

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a

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written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*A Biological Assessment is required for construction projects (or other undertakings having

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similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.]

Attachment(s):

- Official Species List

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Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

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Project Summary

Consultation Code: 08EVEN00-2018-SLI-0082

Event Code: 08EVEN00-2018-E-00172

Project Name: State Route 1 HOV Lane Project

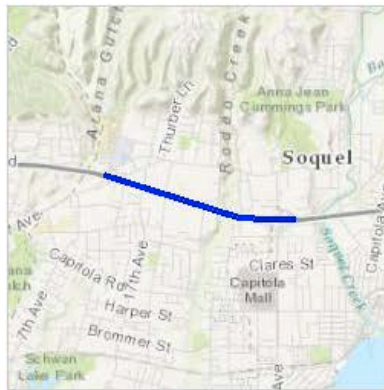
Project Type: TRANSPORTATION

Project Description: Widening for safety and to reduce congestion.

Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/36.984932465248804N121.97750371892079W>



Counties: Santa Cruz, CA

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Endangered Species Act Species

There is a total of 17 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME

STATUS

Southern Sea Otter *Enhydra lutris nereis*

Threatened

No critical habitat has been designated for this species.

This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.

Species profile: <https://ecos.fws.gov/ecp/species/8560>

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Birds

NAME	STATUS
<p>California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104</p>	Endangered
<p>Least Bell's Vireo <i>Vireo bellii pusillus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945</p>	Endangered
<p>Marbled Murrelet <i>Brachyramphus marmoratus</i> Population: U.S.A. (CA, OR, WA) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467</p>	Threatened
<p>Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749</p>	Endangered
<p>Western Snowy Plover <i>Charadrius alexandrinus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035</p>	Threatened

Reptiles

NAME	STATUS
<p>San Francisco Garter Snake <i>Thamnophis sirtalis tetrataenia</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5956</p>	Endangered

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Amphibians

NAME	STATUS
<p>California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891</p>	Threatened
<p>California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076</p>	Threatened
<p>Santa Cruz Long-toed Salamander <i>Ambystoma macrodactylum croceum</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7405</p>	Endangered

Fishes

NAME	STATUS
<p>Tidewater Goby <i>Eucyclogobius newberryi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57</p>	Endangered

Insects

NAME	STATUS
<p>Ohlone Tiger Beetle <i>Cicindela ohlone</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8271</p>	Endangered
<p>Zayante Band-winged Grasshopper <i>Trimerotropis infantilis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1036</p>	Endangered

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Flowering Plants

NAME	STATUS
Marsh Sandwort <i>Arenaria paludicola</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229	Endangered
Santa Cruz Tarplant <i>Holocarpha macradenia</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6832	Threatened
Scotts Valley Polygonum <i>Polygonum hickmanii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3222	Endangered
Scotts Valley Spineflower <i>Chorizanthe robusta</i> var. <i>hartwegii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7108	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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**Appendix B.
2015 Botanical Survey**

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ENVIRONMENTAL CONSULTANTS

Sound Science. Creative Solutions.

San Luis Obispo Office
1422 Monterey Street, Suite C200
San Luis Obispo, CA 93401
Tel 805.543.7095 Fax 805.543.2367
www.swca.com

July 9, 2015

Parag Mehta
Transportation Practice Leader
Kimley-Horn
6150 Stoneridge Mall Road, Suite 200
Pleasanton, California 94588

**Re: Botanical Survey Letter Report for State Route 1 High Occupancy Vehicle Lane Project,
Santa Cruz County, California / SWCA Project No. 28018**

Dear Mr. Mehta:

Thank you for having SWCA Environmental Consultants (SWCA) conduct a 2015 botanical survey for the State Route 1 High Occupancy Vehicle (HOV) Lane Project (project) in Santa Cruz County, California. The botanical survey was conducted to document if any of the special-status plant species were present within proposed impact area (PIA). This survey will provide the required information to update the Natural Environmental Study (NES) for the project (California Department of Transportation/SWCA 2015) and satisfy the measures included in the Environmental Impact Report for the project.

Surveys were conducted on April 30–31 and June 18, 2015, by SWCA biologists Barrett Holland, Michaela Koenig, and Kristen Outten. Surveys were conducted in riverine/freshwater marsh, riparian forest, coast live oak woodland, mixed conifer woodland, eucalyptus woodland, coastal scrub, annual grassland, ruderal disturbed, and landscaped/developed habitats in the PIA from the San Andreas-Larkin Valley Interchange to Morrissey Boulevard (refer to Attachment A, Photos 1-6). Surveys were conducted per the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Wildlife 2009).

Special-status species with potential to occur in the work area have been previously identified within the NES. SWCA focused our survey efforts in determining the presence/absence of these species, which include: bent flowered fiddleneck (*Amsinckia lunaris*), Anderson's manzanita (*Arctostaphylos andersonii*), Pajaro manzanita (*Arctostaphylos pajaroensis*), marsh sandwort (*Arenaria paludicola*), swamp harebell (*Campanula californica*), bristly sedge (*Carex saliniformis*), Monterey spineflower (*Chorizanthe pungens* var. *pungens*), robust spineflower (*Chorizanthe robusta* var. *robusta*), San Francisco collinsia (*Collinsia multicolor*), seaside's bird-beak (*Cordylanthus rigidus* ssp. *littoralis*), Ben Lomond buckwheat (*Eriogonum nudum* var. *decurrens*), Santa Cruz tarplant (*Arenaria paludicola*), arcuate bush mallow (*Malacothamnus arcuatus*), Hall's bush mallow (*Malacothamnus hallii*), marsh microseris (*Microseris paludosa*), Dudley's lousewort (*Pedicularis dudleyi*), Choris's popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*), San Francisco popcorn flower (*Plagiobothrys diffusus*), pine rose (*Rosa pinetorum*), chaparral ragwort (*Senecio aphanactis*), maple-leaved checkerbloom (*Sidalcea malachroides*), Santa Cruz microseris (*Stebbinsoseris decipiens*), and Saline clover (*Trifolium depauperatum* var. *hydrophilum*).

As a result of the 2015 surveys, no special-status plant species were observed during the April 30–31 or June 18, 2015, surveys of the PIA. Plant species observed during the 2015 survey effort are included as Attachment B.

Sincerely,



Barrett Holland
Biologist/Certified Arborist (WE-10287A)

**Attachment A.
Photo Documentation**



PHOTO 1:

View of riverine/riparian forest habitat observed at the confluence of Aptos and Valencia Creeks.

Note banks and trees covered in English ivy (*Hedera helix*).

Photo taken on April 30, 2015.



PHOTO 2:

View of riparian forest (yellow arrow), coast live oak woodland (red arrow), and riverine habitat observed west of the La Fonda Avenue overpass.

Photo taken on April 30, 2015.



PHOTO 3:
View of riparian forest and riverine habitat observed within Arana Gulch and west of the Soquel Drive overpass.

Photo taken on April 30, 2015.



PHOTO 4:
View of freshwater marsh habitat observed within Arana Gulch and west of the Soquel Drive overpass.

Photo taken on April 30, 2015.



PHOTO 5:

View of coast live oak woodland, annual grassland and coastal scrub habitat being surveyed at Larkin Valley Road at Highway 1.

Photo taken on April 31, 2015.



PHOTO 6:

View of annual grassland habitat within the PIA near the intersection of San Andreas Road and Highway 1.

Note grassland areas recently mowed.

Photo taken on June 18, 2015.

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**Attachment B.
Plant Species Observed**

Plant Species Observed

Scientific Name	Common Name	Native	Species Status / Notes
Vascular Plants nomenclature follows "The Jepson Manual" and http://ucjeps.berkeley.edu/interchange.html .			
FERNS			
Dryopteridaceae		Wood fern Family	
<i>Dryopteris arguta</i>	wood fern	Yes	
GYMNOSPERMS			
Cupressaceae		Cypress Family	
<i>Hesperocyparis macrocarpa</i>	Italian cypress	Yes	Ornamental
<i>Sequoia sempervirens</i>	redwood	Yes	
Pinaceae		Pine Family	
<i>Pinus sabiniana</i>	gray pine	Yes	
<i>Pinus pinea</i>	Italian stone pine	No	Ornamental
MAGNOLIDS			
Lauraceae		Laurel Family	
<i>Umbellularia californica</i>	California bay	Yes	
ANGIOSPERMS (EUDICOTS)			
Aizoaceae		Fig-Marigold Family	
<i>Carpobrotus edulis</i>	iceplant	No	
Anacardiaceae		Sumac Family	
<i>Toxicodendron diversilobum</i>	poison oak	Yes	
<i>Schinus molle</i>	Peruvian pepper tree	No	
Apiaceae		Carrot Family	
<i>Anthriscus caucalis</i>	bur-chervil	No	
<i>Apium graveolens</i>			
<i>Conium maculatum</i>	poison hemlock	No	
<i>Daucus pusillus</i>	rattle snake weed	Yes	
<i>Foeniculum vulgare</i>	sweet fennel	No	
<i>Sanicula crassicaulis</i>	sanicle	Yes	
Araliaceae		Ginseng Family	
<i>Hedera helix</i>	English ivy	No	
Asteraceae		Sunflower Family	
<i>Achillea millefolium</i>	yarrow	Yes	
<i>Artemisia californica</i>	California sagebrush	Yes	

Scientific Name	Common Name	Native	Species Status / Notes
<i>Baccharis pilularis</i>	coyote brush	Yes	
<i>Carduus pycnocephalus</i>	Italian thistle	No	
<i>Centaurea melitensis</i>	totalote	No	
<i>Centaurea solstitialis</i>	yellow star thistle	No	
<i>Cirsium occidentale</i>	western thistle	Yes	
<i>Cirsium vulgare</i>	bull thistle	No	
<i>Pseudognaphalium californica</i>	California everlasting	Yes	
<i>Heterotheca grandiflora</i>	telegraph weed	Yes	
<i>Helminthotheca echioides</i>	bristly ox-tongue	No	
<i>Hypochaeris glabra</i>	smooth cat's ear	No	
<i>Hypochaeris radicata</i>	rough cat's ear	No	
<i>Matricaria discoidea</i>	pineapple weed	No	
<i>Pseudognaphalium biolettii</i>	two-color rabbit-tobacco	Yes	
<i>Pseudognaphalium luteoalbum</i>	cudweed aster	No	
<i>Sonchus asper</i>	sow thistle	No	
<i>Sonchus oleraceus</i>	sow thistle	No	
<i>Silybum marianum</i>	milk thistle	No	
<i>Taraxacum officinale</i>	dandelion	No	
Brassicaceae	Mustard Family		
<i>Brassica nigra</i>	black mustard	No	
<i>Hirschfeldia incana</i>	short-pod mustard	No	
<i>Raphanus sativus</i>	wild radish	No	
<i>Rorippa nasturtium-aquaticum</i>	water cress	Yes	
Boraginaceae	Forget-me-not Family		
<i>Myosotis discolor</i>	forget me not	No	
Caprifoliaceae	Honeysuckle Family		
<i>Sambucus nigra</i>	elderberry	Yes	
Convolvulaceae	Morning-glory Family		
<i>Calystegia macrostegia</i> ssp. <i>cyclostegia</i>	coast morning glory	Yes	
Cornaceae	Dogwood Family		
<i>Cornus sericea</i>	American dogwood	Yes	
Cucurbitaceae	Gourd Family		
<i>Marah fabaceus</i> var. <i>fabaceus</i>	wild cucumber	Yes	

Scientific Name	Common Name	Native	Species Status / Notes
Euphorbiaceae		Spurge Family	
<i>Croton californicus</i>	croton	Yes	
<i>Euphorbia peplus</i>	petty spurge	No	
<i>Ricinus communis</i>	castor bean	No	
Fabaceae		Pea Family	
<i>Acacia baileyana</i>	Bailey acacia	No	
<i>Acacia longifolia</i>	golden wattle	No	
<i>Acmispon americanus</i>	American lotus	Yes	
<i>Acmispon glaber</i>	deerweed	Yes	
<i>Cytisus scoparius</i>	Scotch broom	No	
<i>Genista monspessulana</i>	French broom	No	
<i>Lathyrus vestitus</i>	common pacific pea	Yes	
<i>Lotus corniculatus</i>	bird's foot trefoil	No	
<i>Lupinus bicolor</i>	lupine	Yes	
<i>Lupinus nanus</i>	sky lupine	Yes	
<i>Medicago polymorpha</i>	bur clover	No	
<i>Melilotus indica</i>	sour clover	No	
<i>Trifolium albopurpureum</i>	Indian clover	Yes	
<i>Trifolium hirtum</i>	rose clover	No	
<i>Vicia americana</i>	American vetch	Yes	
Fagaceae		Oak Family	
<i>Quercus agrifolia</i>	coast live oak	Yes	
Geraniaceae		Geranium Family	
<i>Erodium botrys</i>	filaree	No	
<i>Erodium cicutarium</i>	red-stemmed filaree	No	
<i>Geranium dissectum</i>	geranium	No	
Juglandaceae		Walnut Family	
<i>Juglans californica</i>	black walnut	Yes	
Lamiaceae		Mint Family	
<i>Marrubium vulgare</i>	horehound	No	
<i>Rosmarinus officinalis</i>	rosemary	No	
<i>Salvia mellifera</i>	black sage	Yes	
<i>Salvia spathacea</i>	hummingbird sage	Yes	

Scientific Name	Common Name	Native	Species Status / Notes
Malvaceae	Mallow Family		
<i>Malva parviflora</i>	cheeseweed	No	
<i>Malva arborea</i>	tree mallow	No	
Myricaceae	Wax Myrtle Family		
<i>Morella californica</i>	California wax myrtle	Yes	
Myrtaceae	Myrtle Family		
<i>Eucalyptus globulus</i>	blue-gum eucalyptus	No	
Oxalidaceae	Oxalis Family		
<i>Oxalis pes-caprae</i>	Bermuda buttercup	No	
Papaveraceae	Poppy Family		
<i>Eschscholzia californica</i>	California poppy	Yes	
Phrymaceae	Lopseed Family		
<i>Mimulus cardinalis</i>	scarlet monkeyflower	Yes	
Plantaginaceae	Plantain Family		
<i>Plantago lanceolata</i>	English plantain	No	
<i>Plantago major</i>	plantain	No	
Polygonaceae	Buckwheat Family		
<i>Rumex acetosella</i>	sheep sorrel	No	
<i>Rumex crispus</i>	curly dock	No	
Primulaceae	Primrose Family		
<i>Anagallis arvensis</i>	scarlet pimpernel	No	
Rosaceae	Rose Family		
<i>Heteromeles arbutifolia</i>	toyon	Yes	
<i>Prunus salicina</i>	Santa Rosa plum	No	cultivar
<i>Rubus armeniacus</i>	Himalayan blackberry	No	
<i>Rubus ulmifolius</i>	Elmleaf blackberry	No	
<i>Rubus ursinus</i>	California blackberry	Yes	
Rhamnaceae	Buckthorn Family		
<i>Frangula californica</i>	coffeeberry	Yes	
<i>Rhamnus crocea</i>	redberry	Yes	
Rubiaceae	Madder Family		
<i>Galium aparine</i>	cleavers	Yes	
Salicaceae	Willow Family		
<i>Salix lasiolepis</i>	arroyo willow	Yes	

Scientific Name	Common Name	Native	Species Status / Notes
Sapindaceae	Soapberry Family		
<i>Acer macrophyllum</i>	bigleaf maple	Yes	
<i>Acer negundo</i>	box elder	Yes	
<i>Aesculus californica</i>	California buckeye	Yes	
Scrophulariaceae	Figwort Family		
<i>Scrophularia californica</i>	California figwort	Yes	
Solanaceae	Nightshade Family		
<i>Solanum douglasii</i>	purple nightshade	Yes	
<i>Nicotiana glauca</i>	tree tobacco	No	
Tropaeolaceae	Nasturtium Family		
<i>Tropaeolum majus</i>	garden nasturtium	No	
Typhaceae	Cattail Family		
<i>Typha latifolia</i>	cattail	Yes	
Urticaceae	Nettle Family		
<i>Urtica dioica</i>	stinging nettle	Yes	
Verbenaceae	Vervain Family		
<i>Verbena lasiostachys</i>	western vervain		
ANGIOSPERMS (MONOCOTS)			
Agavaceae	Agave Family		
<i>Chloragalum pomeridianum</i>	soap plant	Yes	
Cyperaceae	Sedge Family		
<i>Eleocharis macrostachya</i>	spike rush	Yes	
<i>Cyperus eragrostis</i>	tall-flat sedge	Yes	
<i>Schoenoplectus acutus</i>	common tule	Yes	
<i>Schoenoplectus californicus</i>	bulrush	Yes	
Juncaceae	Rush Family		
<i>Juncus patens</i>	rush	Yes	
Poaceae	Grass Family		
<i>Avena barbata</i>	slender wild oats	No	
<i>Avena fatua</i>	wild oats	No	
<i>Briza maxima</i>	Rattlesnake grass	No	
<i>Bromus carinatus</i>	California brome	Yes	
<i>Bromus diandrus</i>	ripgut brome	No	
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome	No	

Scientific Name	Common Name	Native	Species Status / Notes
<i>Cortaderia selloana</i>	pampas grass	No	
<i>Danthonia californica</i>	California oatgrass	Yes	
<i>Ehrharta calycina</i>	veldt grass	No	
<i>Elymus glaucus</i>	blue wild-rye	Yes	
<i>Festuca microstachys</i>	small fescue	Yes	
<i>Festuca myuros</i>	rattail fescue	No	
<i>Festuca perennis</i>	rye grass	No	
<i>Melica californica</i>	California melic		
<i>Pennisetum clandestinum</i>	kikuyu grass	No	
<i>Phalaris aquatica</i>	Harding grass	No	
<i>Poa annua</i>	annual blue grass	No	
<i>Polypogon monspeliensis</i>	rabbit's foot grass	No	
<i>Stipa pulchra</i>	purple needlegrass	Yes	

Appendix C. Habitat Assessments

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BRYAN MORI BIOLOGICAL CONSULTING SERVICES

1016 Brewington Avenue, Watsonville, CA 95076

831.728.1043 (O) 310.408.6690

moris4wildlife@earthlink.net

May 31, 2016

Jon Claxton
SWCA Environmental Consultants
1422 Monterey St, C-200
San Luis Obispo, CA 93401-5415

RE: CALTRANS STATE ROUTE 1 HOV PROJECT - CALIFORNIA TIGER SALAMANDER AND SANTA CRUZ LONG-TOED SALAMANDER SITE ASSESSMENT

Dear Jon:

The purpose of this letter-report is to provide Caltrans, the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) the current understanding of known and potential habitat for California tiger salamander (CTS) (*Ambystoma californiense*) and Santa Cruz long-toed salamander (SCLTS) (*A. macrodactylum croceum*) within and adjacent to the proposed Caltrans State Route 1 HOV Project in Santa Cruz County, CA (Figure 1). This site assessment does not include focused aquatic or upland surveys for these species.

METHODS

The habitat assessment was performed using the protocol Interim Guidance on Site Assessment for Determining the Presence or a Negative Finding of the California Tiger Salamander, October 2003 (USFWS and CDFG 2003) and Guidance on Site Assessment and Field Surveys to Detect Presence or Report a Negative Finding of the Santa Cruz Long-toed Salamander December 2012 (USFWS and CDFW 2012) as guides and includes upland and aquatic habitat descriptions within the project alignment R/W and surrounding landscape and relevant CTS/SCLTS records.

The description of existing habitat conditions of the project alignment and surrounding landscape is based on a reconnaissance-level survey performed on 9 May 2016. Due to limited access along SR 1, the project alignment and surrounding landscape were cursorily assessed by driving public roadways, interpretation of the project aerial maps and, in limited instances, by foot. The principal habitats were identified and recorded on aerial maps of the study area. Habitats within and adjacent to the project alignment were photographed in areas of concern

for the target species. The California Natural Diversity Data base (CNDDDB), Strategic Plan for Recovery of the Santa Cruz Long-toed Salamander (*Ambystoma macrodactylum croceum*) and California Red-legged Frog (*Rana draytoni*) in the Larkin Valley Area, Santa Cruz County, California (Resource Conservation District of Santa Cruz County 2013) and local studies were reviewed and consultations with local biologists conducted to document relevant observations of CTS and SCLTS in the study area.

EXISTING HABITAT CONDITIONS

Project Site

The project alignment extends from just east of the N. Branciforte Avenue overpass in Santa Cruz to between the San Andreas Road and Mar Monte Avenue exits northwest of Watsonville (Figure 1). The alignment is divided into two segments, Tiers 1 and 2, with Tier 1 further divided into two disjunct sections - a short section from east of N. Branciforte Avenue to Soquel Drive and a longer section from 41st Avenue to beyond San Andreas Road. Tier 2 occupies the section between the two sections of Tier 1.

Throughout much of the length of the combined Tiers, from Santa Cruz to at least until the Rio Del Mar Boulevard exit, the project alignment passes through primarily urban landscapes consisting of high density residential and commercial land uses. An exception to this is the area south of SR 1 occupied by New Brighton State Beach Park and an adjacent open space area, east of the Park Avenue exit. South of Rio Del Mar Boulevard, housing and commercial uses thin out and the landscape becomes primarily rural south of the Freedom Boulevard exit, for the remainder of the alignment.

For the purposes of this assessment, the discussion of aquatic and upland habitats, below, will focus on the section of the project alignment south of Rio Del Mar Boulevard to the southern end of the project alignment, since the distributional range of either species does not extend northward and habitat for both species is lacking due to urbanization.

Aquatic Habitats. Based on review of aerial photography and relevant local studies, at least thirteen seasonal and semi-perennial ponds are present in the study area (project alignment plus 1.2 miles of the surrounding landscape). Of these, ten are known SCLTS breeding sites, one of which occurs within the project alignment envelope –Valencia Lagoon. The remaining three are potential breeding ponds that have not been surveyed for CTS or SCLTS. Figure 2 depicts the pond locations in relation to the project alignment.

Uplands. From Rio Del Mar Boulevard to just south of Freedom Boulevard, native vegetation (e.g., Douglas fir, coast redwood, live oaks, willows, etc.) and landscape trees are more prominent features within the alignment and in the adjacent uplands. Unlike in the highly

developed, urbanized northern section of the project alignment, here residential housing is less dense and designed into the hardwood-conifer forests. Moving southward beyond this tree dominated section, the landscape along both sides of the alignment is rural, with broad, open areas and sparse development, except for the Seascape and La Selva areas along the immediate coastline. The habitat mosaic surrounding and within the project alignment consists of ruderal and grassland patches interspersed within coast live oak woodland and coastal scrub.

CALIFORNIA TIGER SALAMANDER AND SANTA CRUZ LONG-TOED SALAMANDER STATUS AND NATURAL HISTORY

California Tiger Salamander

The California tiger salamander is a Federal threatened species and State species of special concern (USFWS 2004; CDFG 2009). The population consists of three Distinct Population Segments (DPS) – the Santa Rosa DPS, Santa Barbara DPS and Central California DPS, all of which are federally listed as threatened or endangered (USFWS 2004; USFWS 2003). The California tiger salamander has disappeared from 55% of its historic range (Jennings and Hayes 1994). Presently, this species is distributed in the Central Valley from Yolo County south to Tulare County, and in the Coast Range valleys and lower foothills from Sonoma County south to Santa Barbara County (Shaffer 1991).

CTS primarily inhabit valley floor and foothill grasslands, open oak woodlands and scrub habitats encompassing vernal pools and seasonal ponds (Trenham 2001; USFWS 2000). Post-metamorphic individuals (i.e., adults and juveniles) live in rodent burrows in uplands for most of their lives (Trenham 2001; Trenham *et al* 2000; Loredó *et al* 1996). During the rainy season, typically November through March, adults migrate at night to aquatic breeding sites (Loredó and Van Vuren 1996), which include quiet waters of seasonal ponds, reservoirs, lakes and occasionally stream pools (Stebbins 2003). Based on a recent study (Searcy 2013), median migration distances were 49 m, 615 m, and 667 m for metamorphs, juveniles, and adults, respectively, and distances greater than 1 km are not considered rare (P. Trenham, California Tiger Salamander Workshop 2011). Studies have estimated that 90% of the adult population occurs within 400m of the pond, whereas 90% of subadults are found within 600m of the breeding pond (Trenham and Shaffer 2005). In habitats encompassing several ponds, experienced adults may breed at more than one pond during their lifetime (Trenham *et al* 2001). The adults remain at the breeding pond from one day to several weeks, then return to upland refugia (Loredó and Van Vuren 1996). Males tend to arrive at breeding sites before females and stay at breeding sites longer (e.g., 6 – 8 weeks for males and 1 – 2 weeks for females)(Trenham *et al* 2000; Loredó and Van Vuren 1996; Shaffer 1993). Eggs are laid singly, or in small groups of up to four, on stalks of submerged vegetation or other objects (e.g., rocks woody material, etc.), typically along the shoreline. The eggs hatch in 10 days to approximately three weeks (USFWS 2000; Jennings and Hayes 1994; Storer 1925). The number of eggs

deposited per female per breeding season ranges from around 400 – 1,300 (USFWS 2000). Larvae typically metamorphose in two to three months, from late spring to summer, when ponds begin to dry (USFWS 2000). Metamorphs emerge from ponds and seek shelter mostly in the immediate vicinity in burrows, cracks in the ground or under debris, but sometimes as far as 200m away, even in the absence of rain (Trenham 2001; Trenham and Shaffer 2005; Loredó *et al* 1996). During the rainy-season, the juveniles continue to disperse farther to seek refuge in upland areas within 640 m of the breeding pond. Adults live up to at least 10 years, but may take up to 4 – 5 years to reach sexual maturity (Trenham *et al* 2000). Females may not breed every year and some may only may breed once or twice during their lifetime (Trenham *et al* 2000).

Threats and reasons for the decline of this species include loss of breeding and upland habitat and habitat fragmentation due to agricultural and urban development; the introduction of bullfrogs (*Rana catesbeiana*) and predatory non-native fishes; use of larval forms as fishing bait; and hybridization with introduced non-native tiger salamanders (USFWS 2000; Stebbins 2003).

Santa Cruz Long-toed Salamander

The SCLTS was listed as endangered by the U.S. Fish and Wildlife Service in 1967 (USFWS 2004b), and subsequently in 1970 by the State of California under the California Species Preservation Act (Ruth 1989). The SCLTS is the southernmost subspecies of *Ambystoma macrodactylum* (Russell and Anderson 1956), and geographically isolated from the southern long-toed salamander (*Ambystoma macrodactylum sigillatum*) population, which is located 150 miles to the northeast in the Sierra Nevada (Russell and Anderson 1956). This species was first discovered in 1954 at Valencia Lagoon, near Aptos, in Santa Cruz County, California (Russell and Anderson 1956). The current known distribution of SCLTS is restricted to only southern Santa Cruz and northern Monterey Counties, within the coastal belt, and consists of six metapopulations (FWS 2009).

Adult and sub-adult SCLTS spend most of the year in upland refugia, including rodent burrows, leaf litter, underneath surface objects, and in rotting logs within dense oak woodlands, riparian vegetation and mesic coastal scrub (Ruth 1989). Adults migrate from upland habitats to seasonal/semi-perennial breeding ponds at night, during late fall and winter rains, generally from November through March. In contrast, juvenile dispersal is mostly confined to the first substantial fall rains, sometimes as early as August (M. Allaback, pers. comm.). SCLTS appear to travel in nearly straight lines, with marked individuals documented to migrate 0.6 mile from breeding ponds to upland habitat (USFWS 2004b; M. Allaback, pers. comm.). However, unmarked long-toed salamanders have been observed 1 mile from the nearest breeding pond (USFWS 2004b). Males usually precede females to the breeding site by one to two weeks, remain at the pond longer than females, and may mate with more than one female each season (Ruth and Tollestrup 1973; USFWS 2004b). Mating and egg-laying generally peak in January and

February (USFWS 2004b). The female deposits 200 - 400 eggs singly on stems of emergent vegetation (Anderson 1967). After mating, the adults return to upland habitat within 6 - 12 weeks, typically by March or April (Ruth 1989; USFWS 2004b). Eggs hatch within 15 - 30 days and metamorphose into juveniles between May and September, depending on aquatic conditions. In drought years, larvae may perish prior to transformation due to insufficient water levels (Ruth 1989). Recently metamorphosed salamanders (metamorphs) typically seek terrestrial refuge immediately adjacent to the breeding pond, and remain until dispersing during the first fall rains, however, early rains may induce metamorphs to move up to 200 feet from the breeding pond (Ruth 1989; USFWS 2004b). Adults are estimated to live up to twenty years (Ruth 1989). A long life span and high reproductive output are believed to be adaptations which allow for populations to persist at seasonal breeding sites during prolonged periods of drought (Reed 1979; Ruth 1989).

Climatic changes over geologic time have restricted the distribution of the Santa Cruz long-toed salamander, making the species especially vulnerable to habitat loss resulting from agricultural and urban developments, predation from bullfrogs and non-native predatory fishes, as well as natural catastrophes related to climate and infestations (Ruth 1989; USFWS 2004b).

Local California Tiger Salamander and Santa Cruz Long-toed Salamander Locations

Thirty-three SCLTS and one CTS records were identified in the study area, based on review of the CNDDDB and relevant literature. These records are of breeding sites, as well as upland observations. Also, in addition to the confirmed observations, three potential SCLTS breeding ponds are included in the table, due to their proximity to the project. These records are summarized in Table 1 of the Appendix and depicted on Figure 3.

DISCUSSION OF POTENTIAL IMPACTS

California Tiger Salamander

The nearest known CTS breeding site is located approximately 2.50 miles southeast of the southern end of the project and marks the northern distribution of CTS in the project region. No CTS upland habitat is present between the Buena Vista breeding pond and the project site and the project site is located well beyond the documented distance of upland movement for this species. Therefore, CTS are not expected to be impacted by the proposed project and no further discussion is warranted.

Santa Cruz Long-toed Salamander

Tier 1: Rio Del Mar Boulevard to Freedom Boulevard. Of high concern is the proximity of the project to the SCLTS Valencia Lagoon Reserve breeding site, which is encompassed within the

project boundary, together with a narrow band of upland habitat adjacent to the southwestern shoulder of the highway (Figure 4). Breeding habitat at Valencia Lagoon includes the main pond within the reserve, as well as the highway drainage channel that parallels the highway, and juveniles dispersing from breeding sites at the main pond and the drainage channel can access marginal upland habitats along the highway. An exclusion fence runs along the outside margin of the highway drainage channel and helps to minimize the movement of SCLTS from Valencia Lagoon to the highway shoulder. This barrier, however, does not run the complete length of the highway between the Rio Del Mar Boulevard and Freedom Boulevard interchanges, thus, dispersing SCLTS are likely diverted to opposite ends of the exclusion fence and, from these points, SCLTS can move into upland habitats near both interchanges (Figures 5 and 6). Therefore, depending on construction activities, breeding habitat in the highway drainage channel can be negatively impacted, through changes in the hydrologic regime, and SCLTS inhabiting uplands along the highway interchanges can be injured or killed.

SR 1 is a complete barrier to SCLTS movement northeastward across the highway. Thus, no impacts to SCLTS are expected within construction zones along the northeast side of the highway.

Tier 1: Freedom Boulevard to San Andreas Road

From Freedom Boulevard to the end of Tier 1, just beyond San Andreas Road, the project boundary contains potential SCLTS upland habitat on both sides of the highway, but no breeding habitat (Figure 7). In this section, vegetation within the project boundary consists mostly of oak woodlands, scrub, landscape trees and ruderal habitats. SCLTS dispersing from nearby ponds, such as, Seascape Ponds 1-3, Racehorse Pond and Calabazas Pond, may inhabit areas within the project site boundary, either as temporary dispersal or permanent habitat, as the ponds are located within the movement capabilities of this species. As no barriers to movement across the highway are known, likely a few individuals attempt to cross.

While construction activities in this reach will not impact breeding habitats, it is reasonable to assume that injuries or mortalities to some individuals may occur as a result of project activities in upland vegetation.

In summary, the project site boundary south of Rio Del Mar Boulevard contains two breeding sites - Valencia Lagoon and the adjacent highway drainage channel - and most of the uplands south to past San Andreas Road falls into the category of potential SCLTS upland habitat, except for the section opposite Valencia Lagoon.

RECOMMENDATIONS

A presence/absence drift fence study should be performed in all project areas that support potential SCLTS upland habitat, following the guidelines of the SCLTS protocol. In general, the study would be performed in fall/winter, from 15 October through 15 March. Drift fence arrays would consist of fence segments of undetermined length with paired traps installed a minimum of every 30'. A gap is placed between each fence segment to allow for passage on days when the traps remain closed. Traps consist of 2-gallon plastic pails a minimum of 8" in height and with fitted covers. Each trap would include drainage holes no greater than 1/8" diameter and contain a piece of moistened, non-cellulose sponge. Plywood coverboards and weights (e.g., bricks) are used at each trap, following guideline recommendations. Quarter-inch dowels are added to allow the escape of small rodents and shrews. The trap lines are to have "Do Not Disturb" placards attached with a brief description of the study, and permit and telephone numbers in both English and Spanish. Drift fences should be installed by 15 October.

Once installed, traps are to be monitored through the rainy season, opening traps in the afternoon under appropriate weather conditions, and checked and closed the following morning; traps would remain open if additional rain is predicted. Adults and sub-adults are to be measured, sexed (if possible) and photographed for identification to determine if specific individuals are recaptured. Individuals may be marked for capture-recapture analyses. All individuals captured along the fence would be placed in appropriate cover (e.g., burrow entrances, thick vegetation, etc...) on the opposite side of the fence. During the staking and installation of the drift fence, but prior to the operation of the pitfall traps, areas suitable as release sites would be identified. At the end of the study period, all fences and traps would be removed.

Implementation of the study would require FWS and CDFW consultations and approval. Due to the State Fully-protected status of SCLTS, studies would need to show significance as research, such as determining where corridors across the highway could be created to facilitate gene flow between populations.

Please call me if you have any comments or questions regarding this report.

Sincerely,

Bryan Mori
Consulting Wildlife Biologist

Attachments: References; Figures 1 and 2; Appendix.

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Dana Bland, Dana Bland and Associates, Aptos, CA.

Chris Caris, US Fish and Wildlife Service, Ventura Field Office

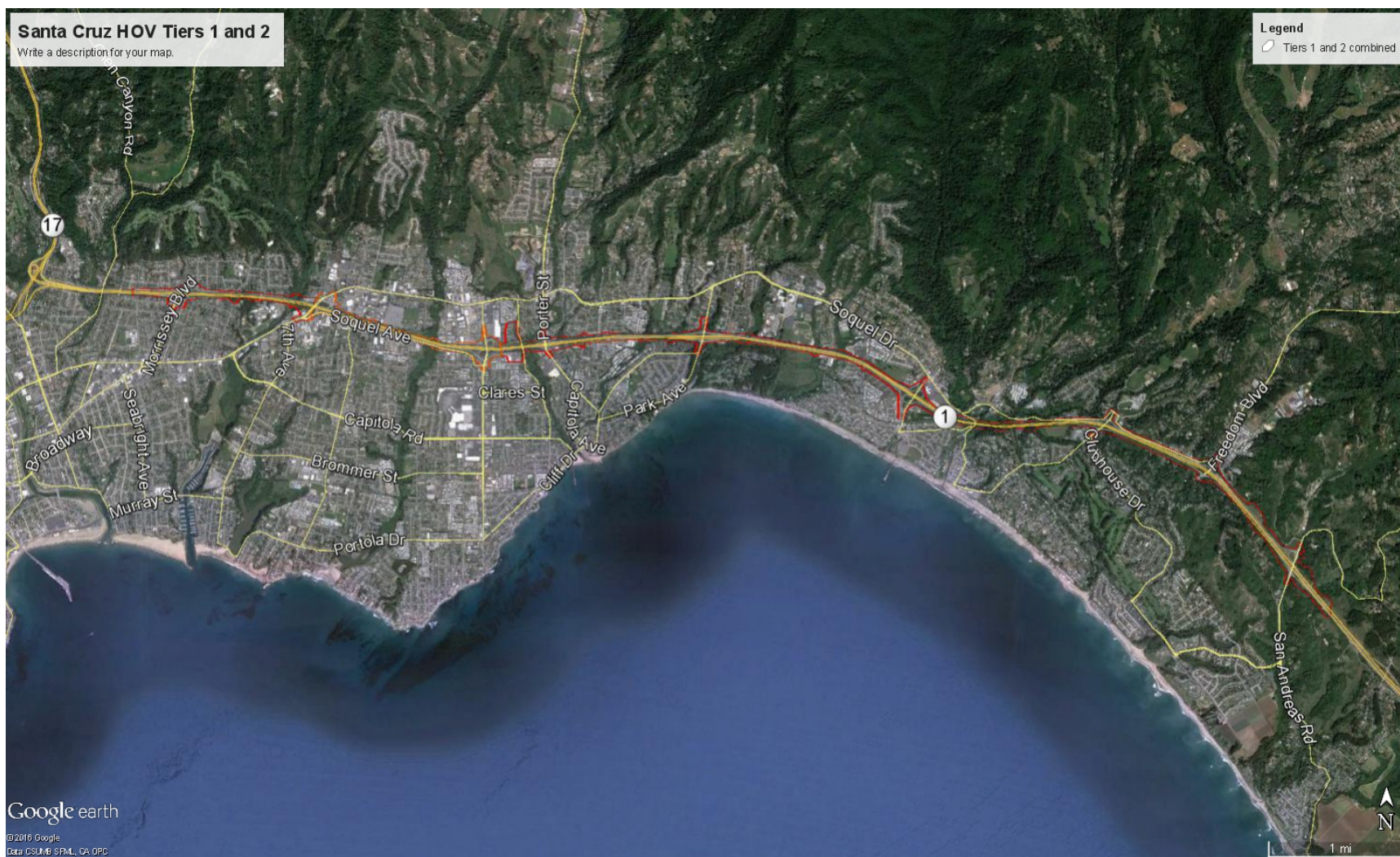
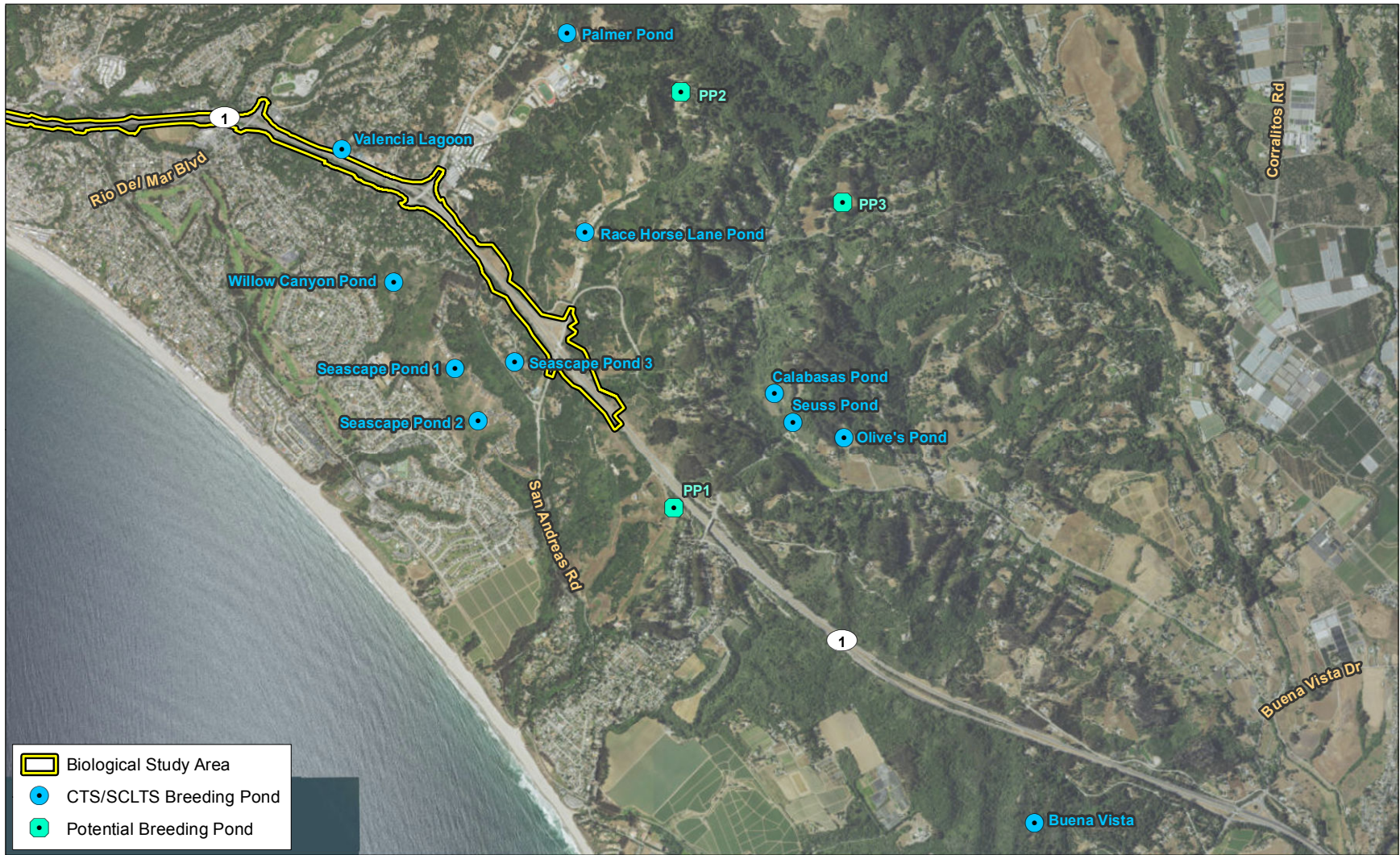
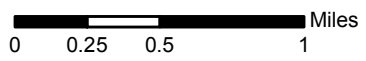


Figure 1. Caltrans SR 1 HOV project alignment



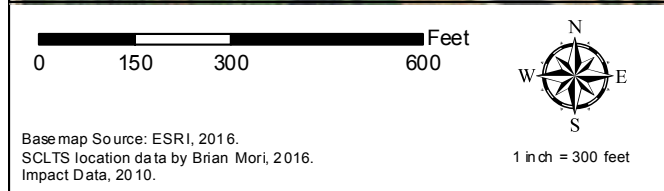
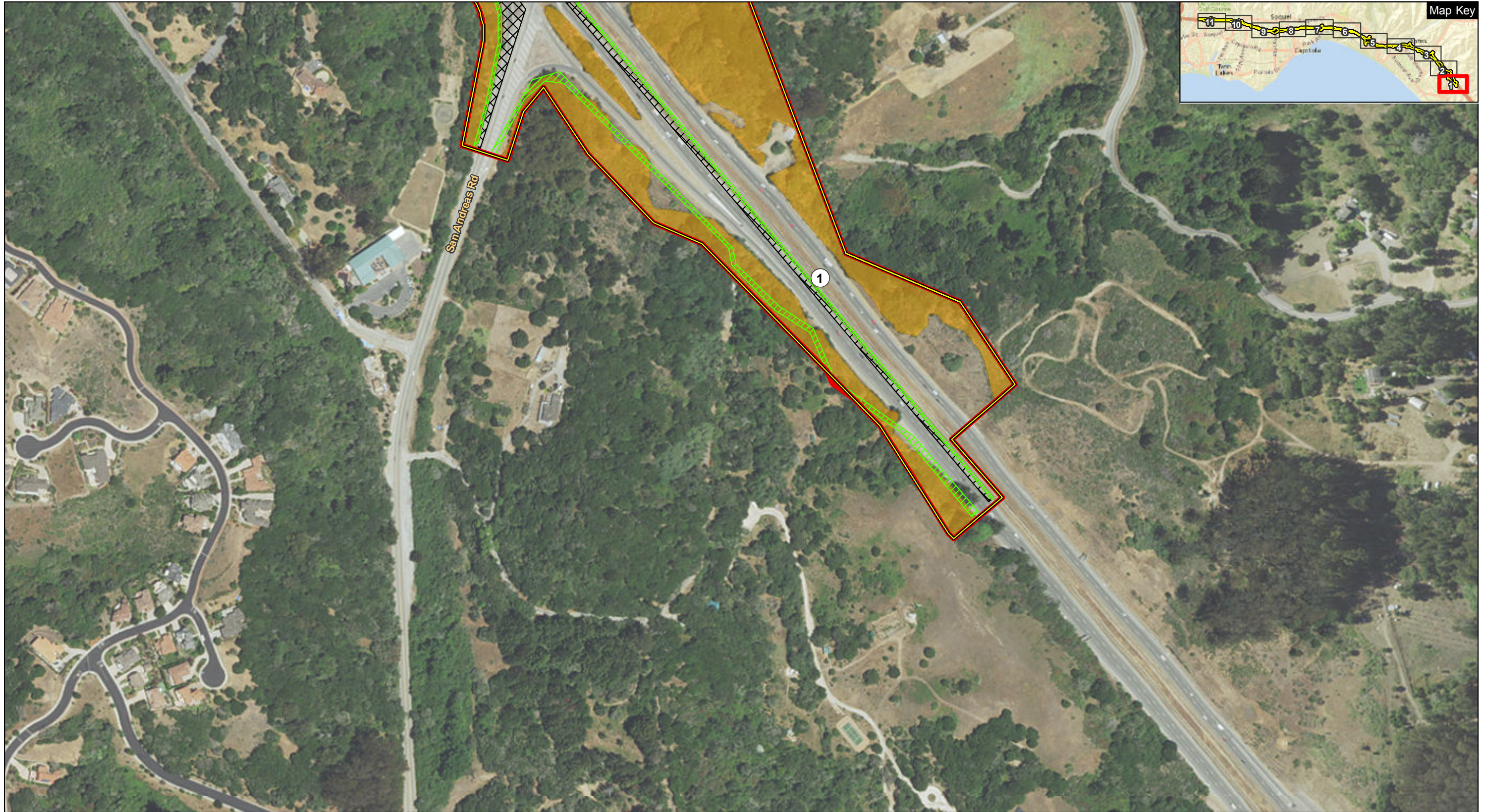
- Biological Study Area
- CTS/SCLTS Breeding Pond
- Potential Breeding Pond



Aerial Imagery: County of San Luis Obispo, 2011.



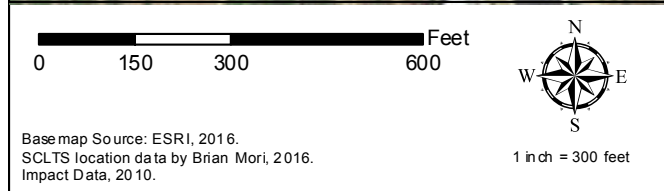
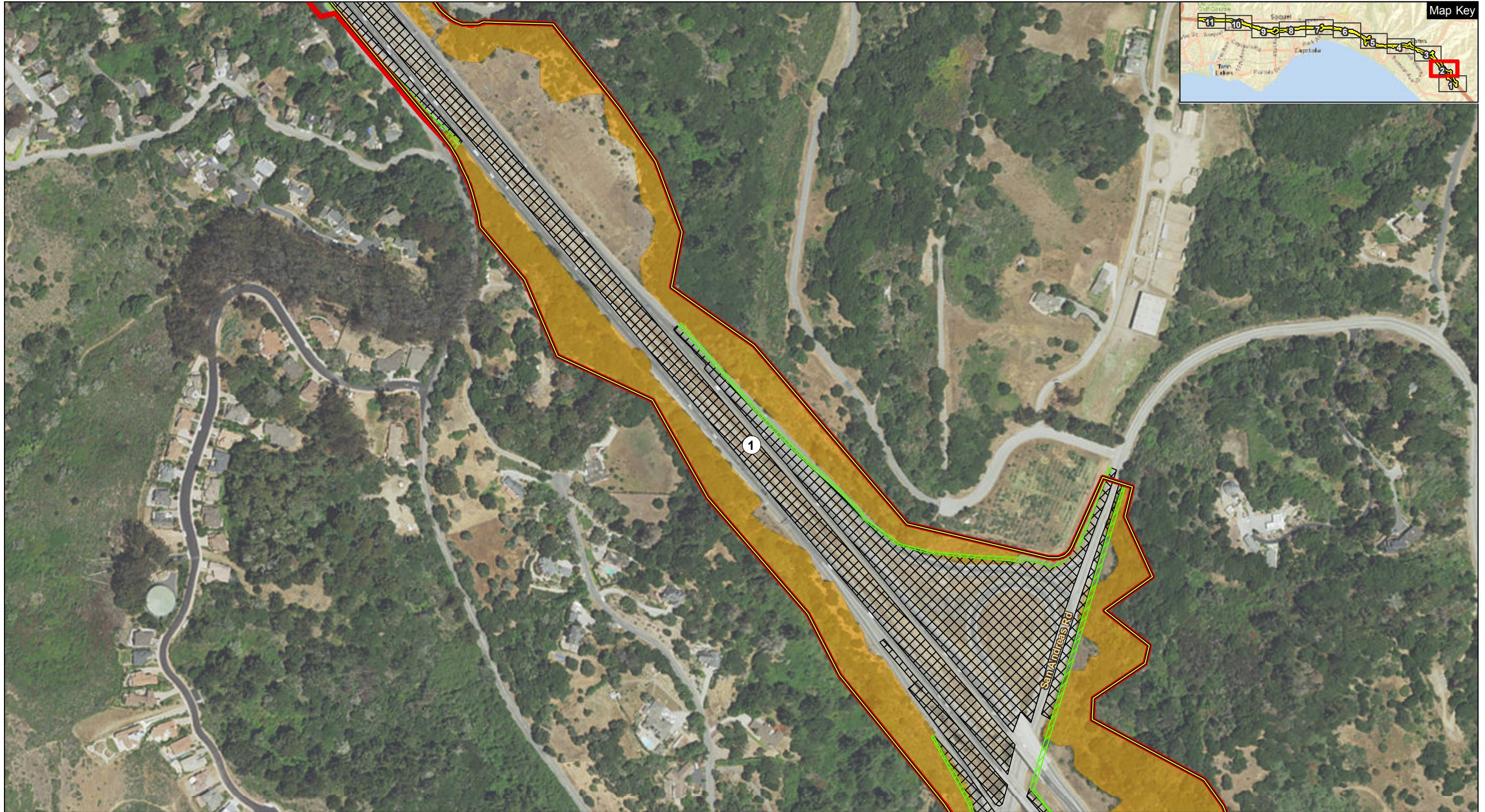
Santa Cruz Long-Toad Salamander and California Tiger Salamander Habitat Assessment
 CTS and SCLTS Known and Potential Breeding Ponds



Base map Source: ESRI, 2016.
 SCLTS location data by Brian Mori, 2016.
 Impact Data, 2010.

Legend		HOV Impacts	
	SCLTS Potential Upland Habitat		Permanent Impact
			Temporary Impact



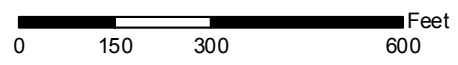
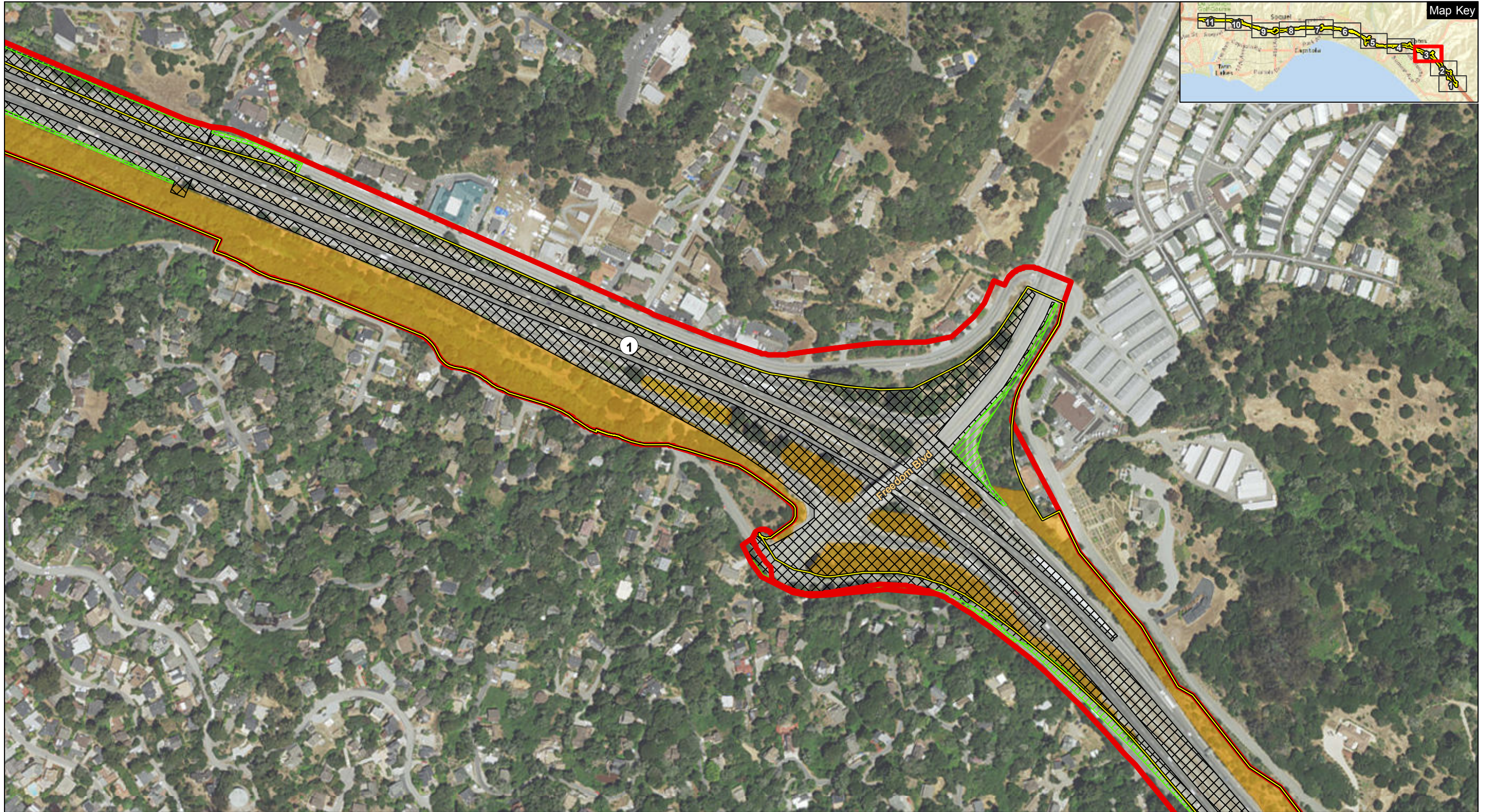


Legend

SCLTS Potential Upland Habitat	HOV Impacts
Temporary Impact	Permanent Impact

SWCA
 ENVIRONMENTAL CONSULTANTS

Base map Source: ESRI, 2016.
 SCLTS location data by Brian Mori, 2016.
 Impact Data, 2010.



1 inch = 300 feet

Base map Source: ESRI, 2016.
SCLTS location data by Brian Mori, 2016.
Impact Data, 2010.

Legend

- SCLTS Potential Upland Habitat
- Permanent Impact
- Temporary Impact

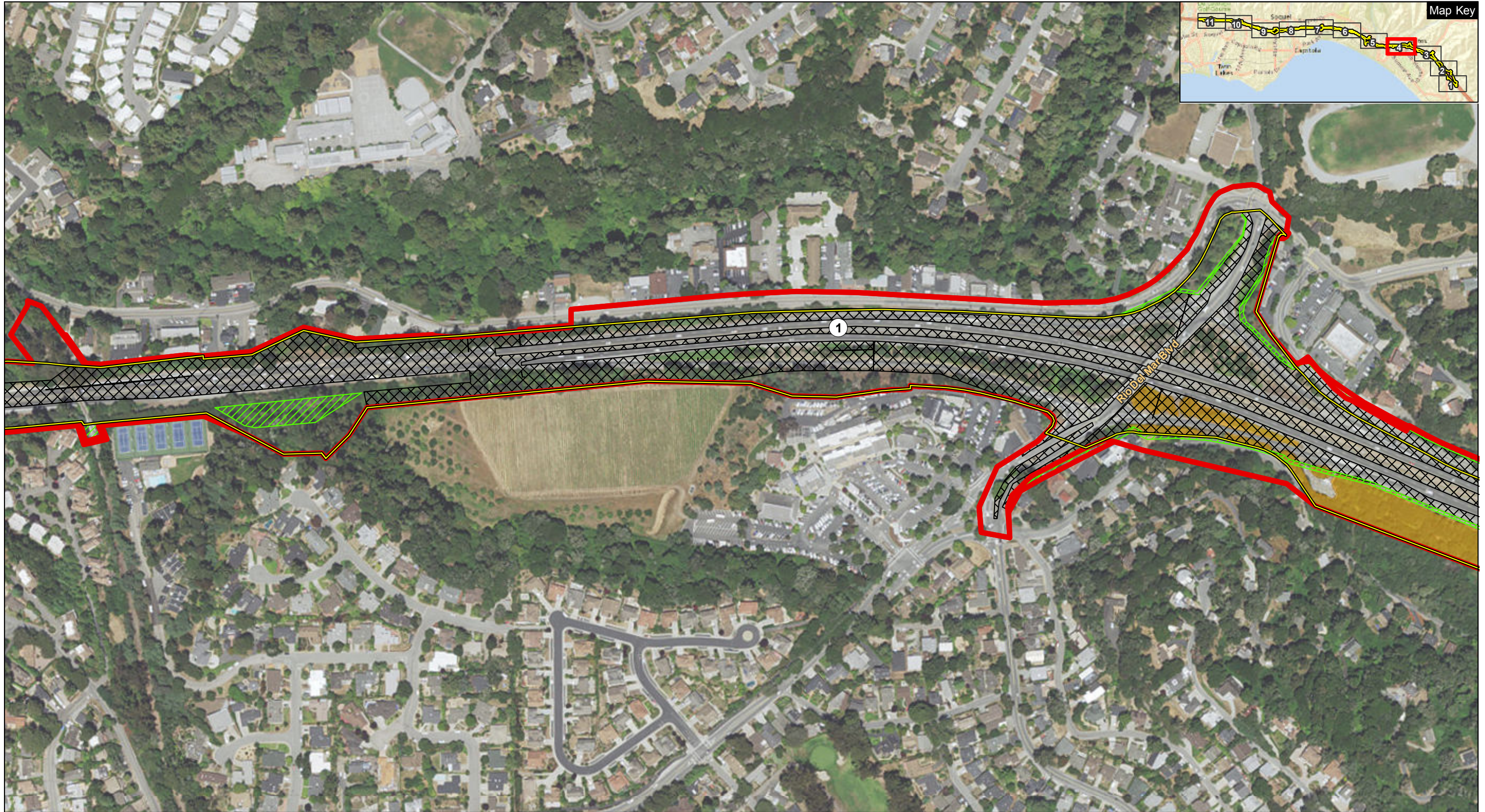
HOV Impacts

- Permanent Impact
- Temporary Impact



Santa Cruz Long-Toad Salamander and California Tiger Salamander Habitat Assessment

HOV Alternative



0 150 300 600 Feet

1 inch = 300 feet

Base map Source: ESRI, 2016.
SCLTS location data by Brian Mori, 2016.
Impact Data, 2010.

Legend

SCLTS Potential Upland Habitat

HOV Impacts

Permanent Impact

Temporary Impact

SWCA
ENVIRONMENTAL CONSULTANTS

Santa Cruz Long-Toad Salamander and California Tiger Salamander Habitat Assessment

HOV Alternative

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0 150 300 600 Feet



1 inch = 300 feet

Legend

- SCLTS Potential Upland Habitat
- Temporary Impact
- Permanent Impact

HOV Impacts

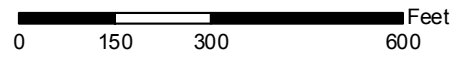
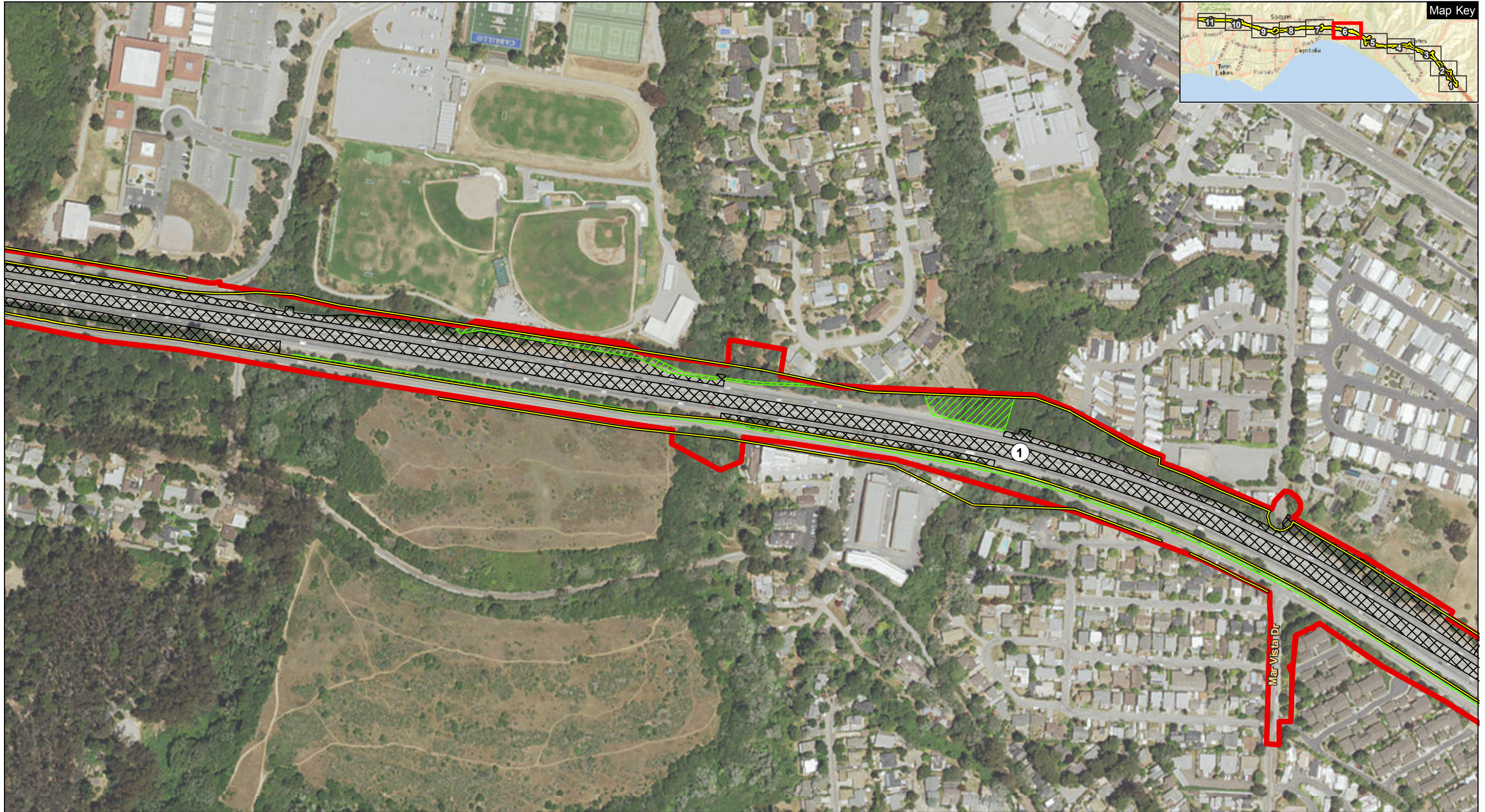
- Permanent Impact
- Temporary Impact



Santa Cruz Long-Toad Salamander and California Tiger Salamander Habitat Assessment

HOV Alternative

Base map Source: ESRI, 2016.
SCLTS location data by Brian Mori, 2016.
Impact Data, 2010.



1 inch = 300 feet

Base map Source: ESRI, 2016.
SCLTS location data by Brian Mori, 2016.
Impact Data, 2010.

Legend

- SCLTS Potential Upland Habitat
- Temporary Impact
- Permanent Impact

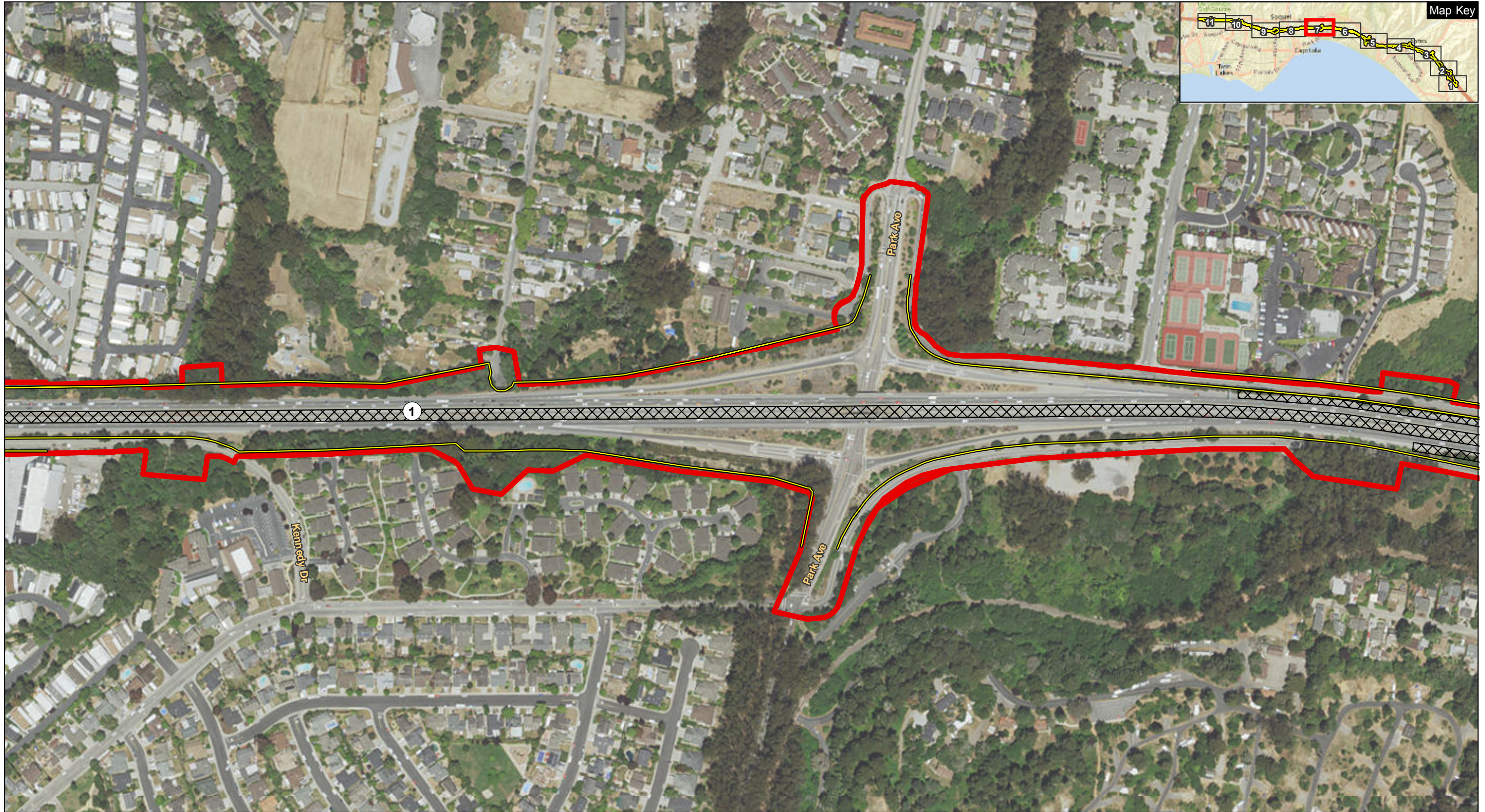
HOV Impacts

- Permanent Impact
- Temporary Impact



Santa Cruz Long-Toad Salamander and California Tiger Salamander Habitat Assessment

HOV Alternative



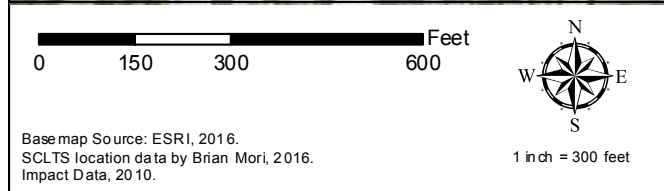
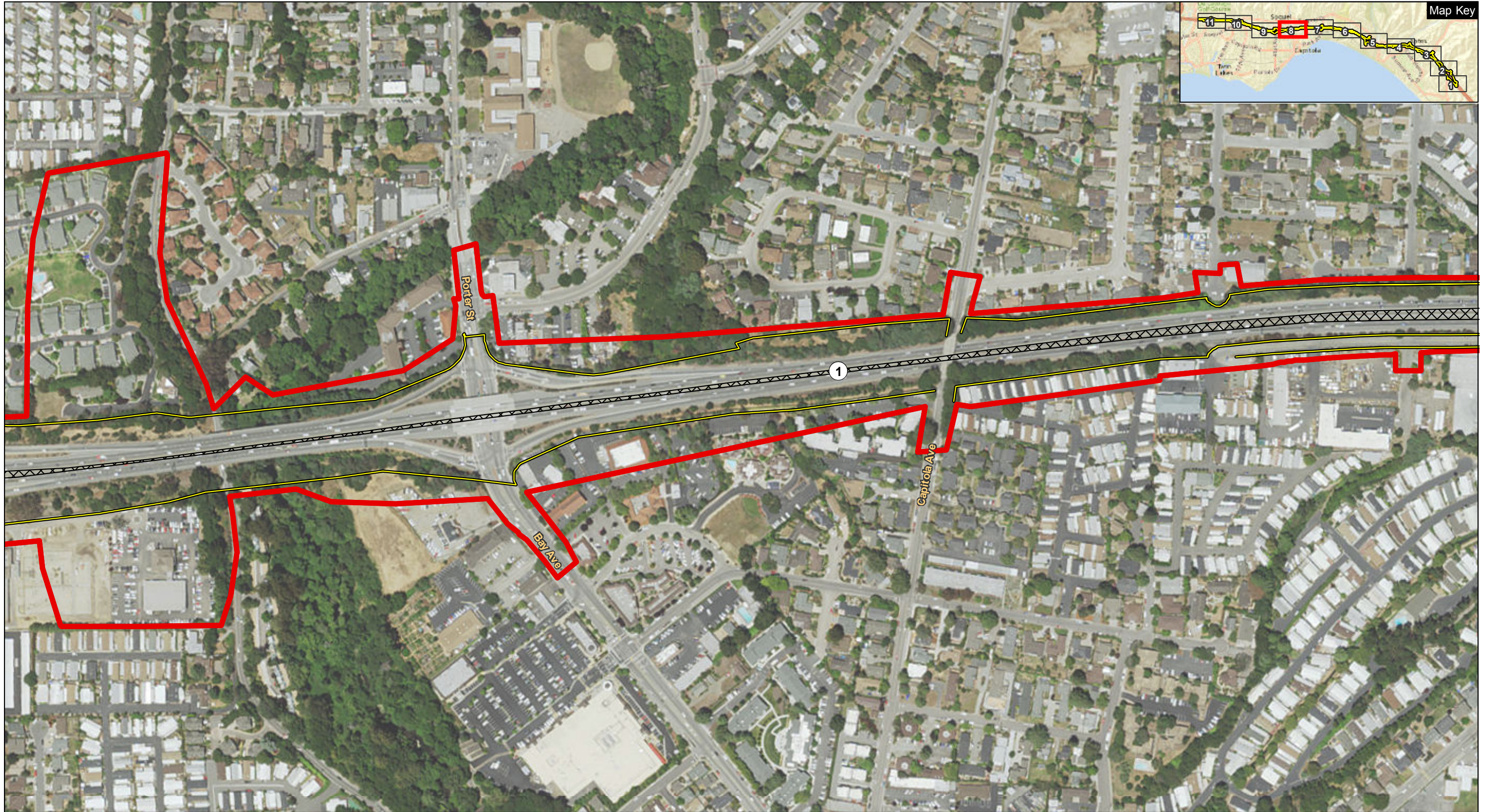
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Legend

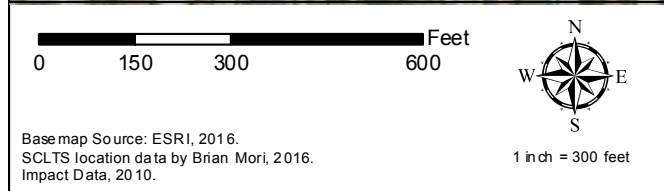
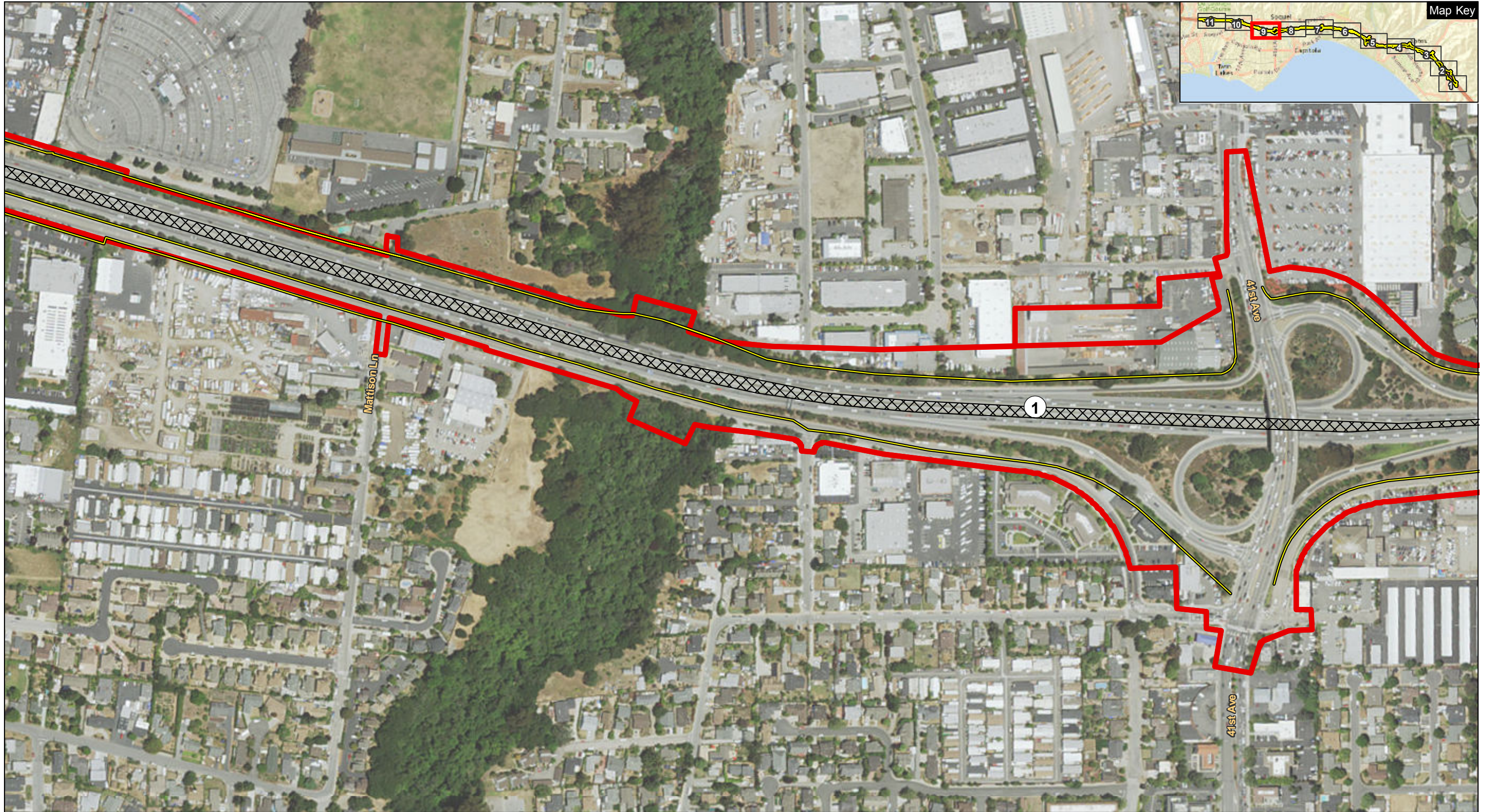
SCLTS Potential Upland Habitat	HOV Impacts Permanent Impact
Temporary Impact	



Base map Source: ESRI, 2016.
 SCLTS location data by Brian Mori, 2016.
 Impact Data, 2010.




Legend		HOV Impacts	
	SCLTS Potential Upland Habitat		Permanent Impact
	Temporary Impact		



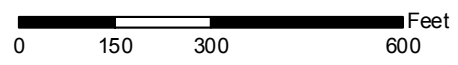


Base map Source: ESRI, 2016.
 SCLTS location data by Brian Mori, 2016.
 Impact Data, 2010.

Legend

 SCLTS Potential Upland Habitat	 HOV Impacts Permanent Impact
	 Temporary Impact





1 inch = 300 feet

Base map Source: ESRI, 2016.
SCLTS location data by Brian Mori, 2016.
Impact Data, 2010.

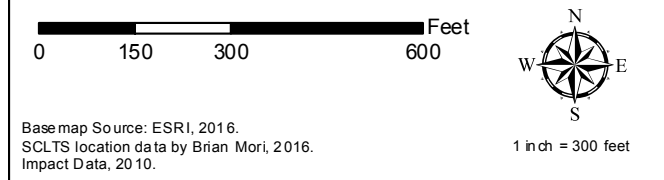
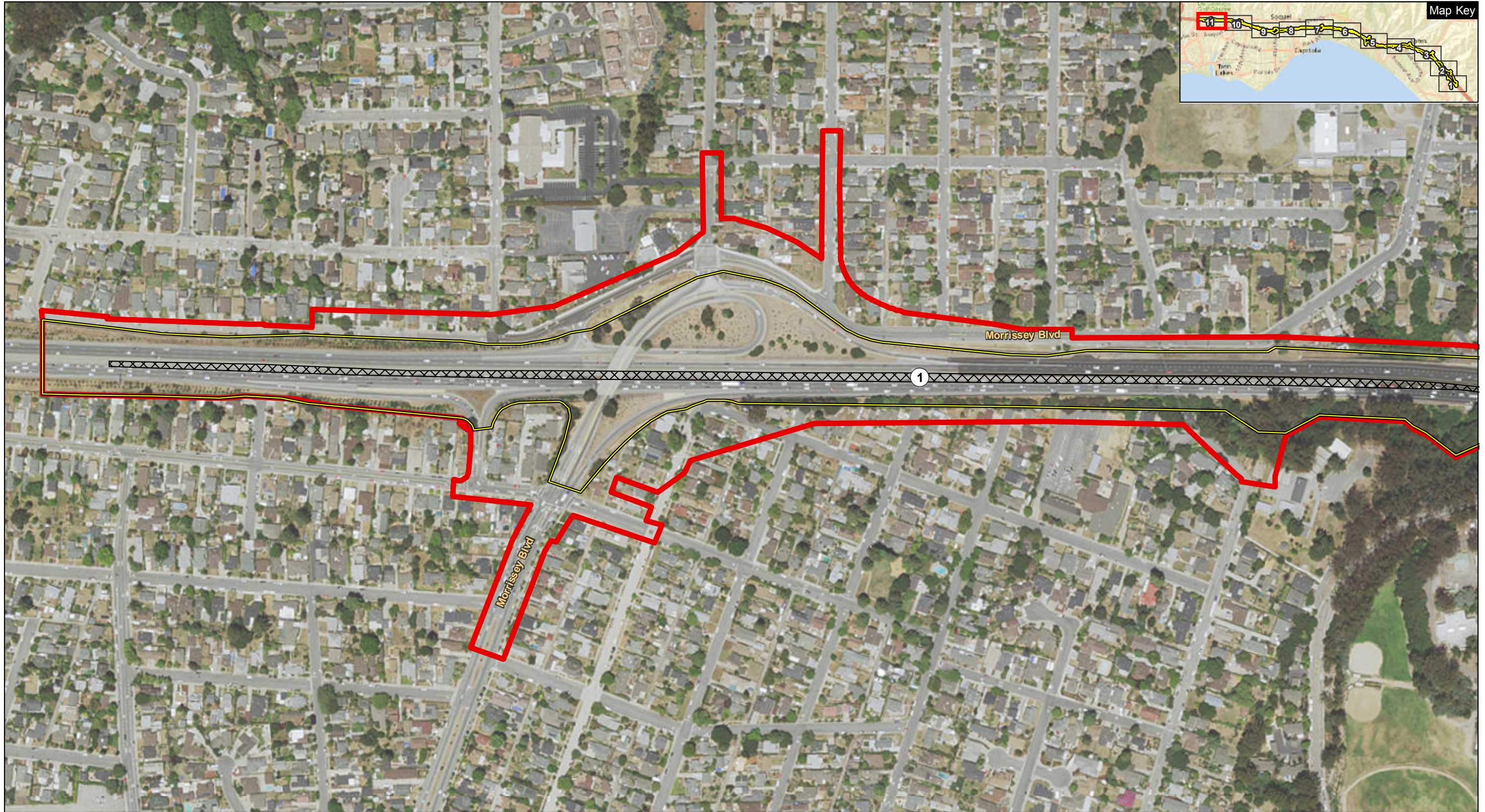
Legend

- SCLTS Potential Upland Habitat
- HOV Impacts Permanent Impact
- HOV Impacts Temporary Impact



Santa Cruz Long-Toad Salamander and California Tiger Salamander Habitat Assessment

HOV Alternative



Base map Source: ESRI, 2016.
 SCLTS location data by Brian Mori, 2016.
 Impact Data, 2010.

Legend	HOV Impacts
SCLTS Potential Upland Habitat	Permanent Impact
	Temporary Impact





Figure 5. Photo showing the northern end of the exclusion fence near Rio Del Mar Boulevard. Note the open access to the shoulder.



Figure 6. Photo showing the southern end of the exclusion fence near Freedom Boulevard. Note the open access to the shoulder.

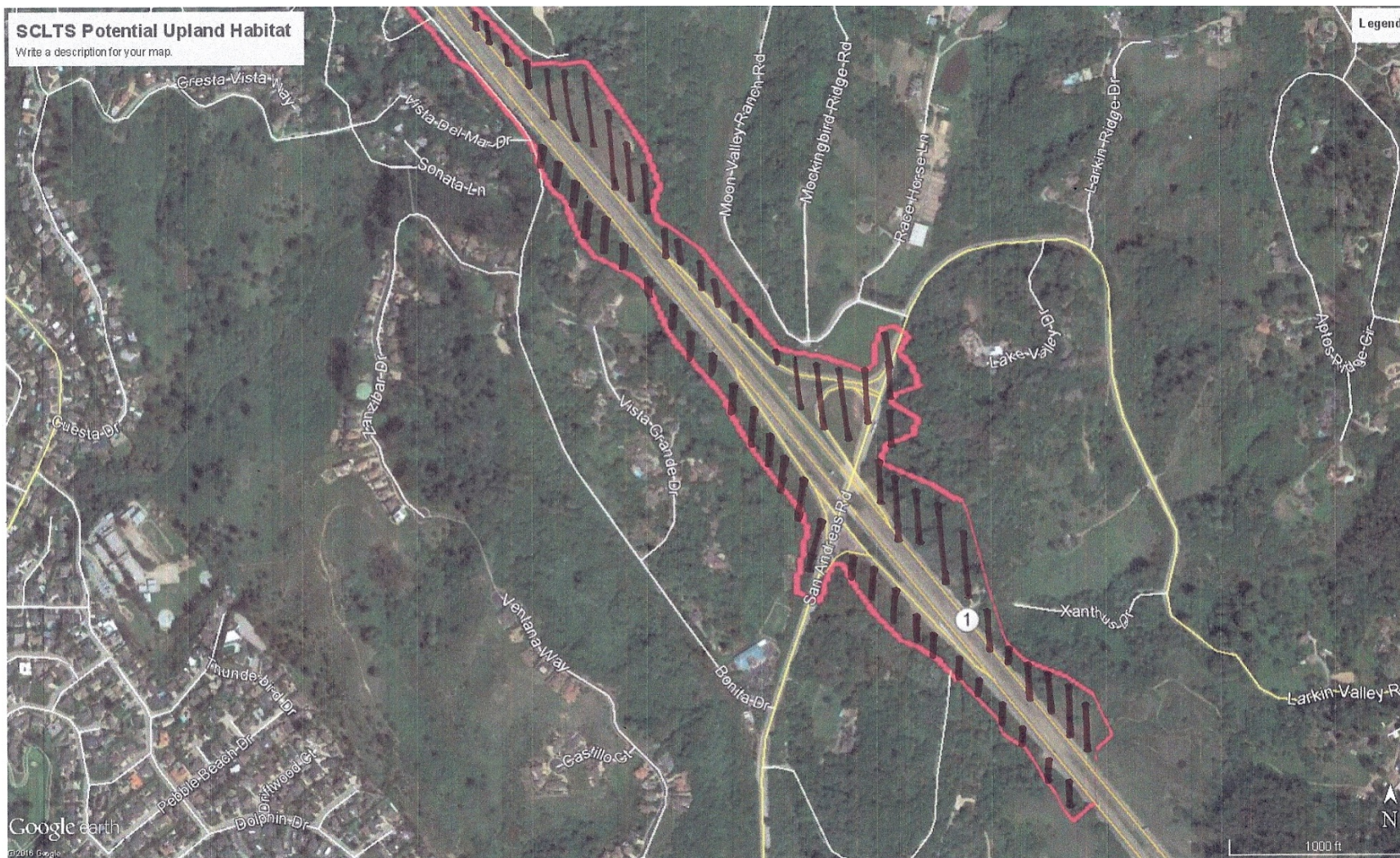


Figure 7. Potential SCLTS upland habitat within the SR 1 HOV project boundary south of Freedom Boulevard to beyond San Andreas Road

Appendix: SCLTS and CTS Observations and Potential Breeding Ponds within the Caltrans State Route 1 Hov Study Area, Santa Cruz County, California

MAP ID	SPECIES	OBSERVATION TYPE	DISTANCE FROM PROJECT (Miles)	COMMENTS
Valencia Lagoon	SCLTS	Breeding pond	0.00	This site is the type locality for SCLTS and was discovered in 1954. Valencia Lagoon is owned by the CDFW. The site was last studied in 2008 by Biosearch Associates.
Valencia Lagoon	SCLTS	Upland	0.00	Thousands of SCLTS captured in pitfall traps along Bonita Dr. and the Hwy 1 side of the breeding pond during the Biosearch 2008 study.
Zanzibar Dr.	SCLTS	Upland	0.07	Juvenile SCLTS observed on a rainy night survey at the intersection of Zanzibar Dr. and Bonita Rd. by Mark Allaback. Date uncertain.
Encino Drive	SCLTS	Upland	0.12	Adult observed on Encino Drive during rainy nights surveys in 1978 (Reed 1978).
Vista Del Mar Drive 1	SCLTS	Upland	0.14	Adult observed on Vista Del Mar Drive during rainy nights surveys in 1978 (Reed 1978).
Seascape Pond 3	SCLTS	Breeding pond	0.15	Mitigation pond for the Seascape Uplands HCP. The HCP conservation area studies have been performed by Biosearch Associates through 2014.
Loma Prieta Drive	SCLTS	Upland	0.15	Adult observed on Loma Prieta Drive during rainy nights surveys in 1978 (Reed 1978).
Katz	SCLTS	Upland	0.16	SCLTS captured in upland pitfall traps on the Katz property. Study performed by Dana Bland Associates in 2007-08.
Bonita Dr.	SCLTS	Upland	0.17	SCLTS roadkill observed on Bonita Dr. near the intersection with Vista Grande Dr. by Mark Allaback in February 2014. The location is near Seascape 3 (see below).
Vista Del Mar Drive	SCLTS	Upland	0.20	Adult observed on Vista Del Mar Drive during rainy nights surveys in 1978 (Reed 1978).
Menge 1	SCLTS	Upland	0.29	Three SCLTS observed in uplands off of Race Horse Lane by Fred Menge in 2004 (M. Allaback, pers. comm.).
Race Horse Lane Pond	SCLTS	Breeding pond	0.32	Larvae captured and juveniles observed under woody debris near pond in 2006 (Resource Conservation District of Santa Cruz County 2013).
HRG 1	SCLTS	Upland	0.35	SCLTS observed near the intersection of Larkin Valley Rd. and White Rd. during rainy night surveys in 1993-94 (Habitat Restoration Group 1994).

MAP ID	SPECIES	OBSERVATION TYPE	DISTANCE FROM PROJECT (Miles)	COMMENTS
Willow Canyon	SCLTS	Breeding Pond	0.36	This site is a SCLTS habitat enhancement pond created in 2012. SCLTS eggs were observed in 2012 by Chad Mitchum, FWS (Chris Caris, FWS, pers. comm.).
Seascape Pond 2	SCLTS	Breeding pond	0.40	SCLTS breeding pond on the Seascape Uplands HCP conservation area. The HCP conservation area studies have been performed by Biosearch Associates through 2014.
Seascape Pond 1	SCLTS	Breeding pond	0.41	Source SCLTS breeding pond at the Seascape Uplands HCP conservation area. The HCP conservation area studies have been performed by Biosearch Associates through 2014.
PP 1	SCLTS	Potential breeding pond	0.41	A large perennial pond located southeast of the Tier 1 project site, off of Barret Dr., just west of HWY 1. This pond has not been formally studied.
HRG 2	SCLTS	Upland	0.42	SCLTS observed on White Rd. during rainy night surveys in 1993-94 (Habitat Restoration Group 1994).
Calabassas Pond	SCLTS	Breeding pond	0.61	Surveys have confirmed SCLTS breeding beginning in 1989. SCLTS breeding last confirmed in 2013 (Resource Conservation District of Santa Cruz County 2013).
Menge 2	SCLTS	Upland	0.67	Observation of two SCLTS in upland habitat, one in 1999 and one in 2001, by Fred Menge (M. Allaback, pers. comm.).
King	SCLTS	Upland	0.70	Eight adults and one juvenile SCLTS captured in upland pitfall traps in 2008 by Dana Bland (Resource Conservation District of Santa Cruz County 2013).
Suess Pond	SCLTS	Breeding pond	0.73	SCLTS larvae were observed in a pond downstream of the Calabassas Pond in 2010 by Dana Bland (Resource Conservation District of Santa Cruz County 2013).
Palmer Pond	SCLTS	Breeding pond	0.87	SCLTS larvae were observed in a shallow pool in a roadside ditch along Shadowmere Way, Aptos. The site may be too seasonal for successful SCLTS reproduction (Resource Conservation District of Santa Cruz County 2013).
HRG 3	SCLTS	Upland	0.93	SCLTS observed on Larkin Valley Rd. during rainy night surveys in 1993-94 (Habitat Restoration Group 1994).
Olive's Pond	SCLTS	Breeding pond	0.97	SCLTS larvae were captured in 2004, and reproductive adults were observed ~450 from the pond in 2013 (Resource Conservation District of Santa Cruz County 2013).

MAP ID	SPECIES	OBSERVATION TYPE	DISTANCE FROM PROJECT (Miles)	COMMENTS
PP2	SCLTS	Potential breeding pond	0.98	This site is located near the terminus of Halton Lane, NE of the Hwy 1 Freedom Blvd interchange. The pond has not been formally studied.
PG&E 1	SCLTS	Upland	0.99	11 adults captured in upland traps off of Larkin Valley Rd., SE of the project site, by Biosearch Associates in 2012-13 (Resource Conservation District of Santa Cruz County 2013).
PG&E 2	SCLTS	Upland	1.06	28 adults and 1 juvenile captured in upland traps off of Larkin Valley Rd., SE of the project site, by Biosearch Associates in 2012-13 (Resource Conservation District of Santa Cruz County 2013).
Nunes Road	SCLTS	Upland	1.10	CAS specimen of a roadkill found on Nunes Road in 2004 (Resource Conservation District of Santa Cruz County 2013).
PG&E 3	SCLTS	Upland	1.11	19 adults and 1 subadult captured in upland traps off of Larkin Valley Rd., SE of the project site, by Biosearch Associates in 2012-13 (Resource Conservation District of Santa Cruz County 2013).
PG&E 4	SCLTS	Upland	1.14	62 adults and 3 subadults captured in upland traps off of Larkin Valley Rd., SE of the project site, by Biosearch Associates in 2012-13 (Resource Conservation District of Santa Cruz County 2013).
White Road	SCLTS	Upland	1.23	One roadkill on White Road and one adult unearthed by a tractor operator in 1988 (CNDDDB).
PP3	SCLTS	Potential breeding pond	1.24	San Hernandez Reservoir is located east of the project site, off of White Rd and east of Emerald City Way. This site has not been formally studied.
Buena Vista	CTS	Breeding pond	2.50	This pond is seasonal and supports both CTS and SCLTS breeding populations. This site was last studied during the 2014-15 winter (M. Allaback, pers. comm.).



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STATE ROUTE 1 HIGH OCCUPANCY VEHICLE LANE PROJECT LEAST BELL'S VIREO HABITAT ASSESSMENT, SANTA CRUZ COUNTY, CALIFORNIA / SWCA PROJECT NO. 28018

May 3, 2016

INTRODUCTION

SWCA Environmental Consultants (SWCA) conducted a Least Bell's Vireo Habitat Assessment for the State Route 1 High Occupancy Vehicle (HOV) Lane Project (project) in Santa Cruz County, California. The habitat assessment was conducted on March 18, 2016, at approximately 10:15 a.m. at the Tier II project area to assess the potential for least Bell's vireo (*Vireo bellii pusillus*) habitat within the project area.

Least Bell's vireo is a federally endangered bird that breeds in North America and overwinters along the Pacific Ocean in Mexico. Although most breeding populations occur in southwest California into Baja California, breeding has been documented as far north as Santa Clara County, California, approximately 30 miles north of the project area.

The Tier II project area encompasses approximately 3.6 miles of State Route 1 and crosses Rodeo Creek Gulch. The proposed project includes construction of new retaining walls for the southbound and northbound lanes of State Route 1 and Soquel Avenue within Rodeo Creek Gulch where there is currently a 9-foot-wide closed culvert. Rodeo Creek Gulch is approximately 4 miles long and 200–400 feet wide. The creek supplies some of the municipal water, but often runs dry during the summer. The gulch is accessible south of Soquel Avenue but is fenced north of State Route 1 and is bordered by private residences.

SURVEY RESULTS

Rodeo Creek Gulch south of Soquel Avenue and the highway contains very steep banks and is heavily vegetated. The banks are largely covered by California blackberry (*Rubus ursinus*) and poison oak (*Toxicodendron diversilobum*) and are spotted with dogwood (*Cornus canadensis*). Coast live oaks (*Quercus agrifolia*) create a dense canopy, which also includes arroyo willow (*Salix lasiolepis*) and California bay laurel (*Umbellularia californica*). The bank perpendicular to Soquel Avenue is highly disturbed and littered with cut vegetation and refuse. Water was present at the time of the survey and bird activity was abundant up to approximately 10 feet of the road shoulder. Nine species of birds were detected in the immediate vicinity, but least Bell's vireo was not detected (refer to Table 1).

Table 1. List of Avian Species Detected in Rodeo Creek Gulch

Common name	Scientific Name
chestnut-backed chickadee	<i>Poecile rufescens</i>
American crow	<i>Corvus brachyrhynchos</i>
Pacific Slope flycatcher	<i>Empidonax difficilis</i>
Stellar's jay	<i>Cyanocitta stelleri</i>
Oregon junco	<i>Junco hyemalis oregonus</i>
golden-crowned sparrow	<i>Zonotrichia atricapilla</i>
song sparrow	<i>Melospiza melodia</i>
yellow-rumped warbler	<i>Setophaga coronata</i>
Bewick's wren	<i>Thryomanes bewickii</i>

The stratified canopy that Rodeo Creek Gulch provides would support the foraging strategy of least Bell's vireo and the dense foliage of the understory vegetation is sufficient to support nesting activity of the species (Kus 2002). Although sightings of least Bell's vireo are rare in northern California, there is potential for the species to occur in Rodeo Creek Gulch. Project impact to the species can be minimized by limiting disturbance to the existing Soquel Avenue bank where vegetation is degraded from road maintenance.

REFERENCES

Kus, B. 2002. Least Bell's Vireo (*Vireo bellii pusillus*). *The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California*. California Partners in Flight. Available at: http://www.prbo.org/calpif/htmldocs/riparian_v-2.html. Accessed March 2016.

**Attachment A:
Photo Documentation**



PHOTO 1:

Steep eastern bank of Rodeo Creek Gulch on the south side of the gulch.

Photo taken on March 18, 2016.



PHOTO 2:

Dense vegetation of Rodeo Creek Gulch on the south side of the gulch.

Photo taken on March 18, 2016.



PHOTO 3:

Stratified vegetation layers of Rodeo Creek Gulch on the south side of the gulch.

Photo taken on March 18, 2016.