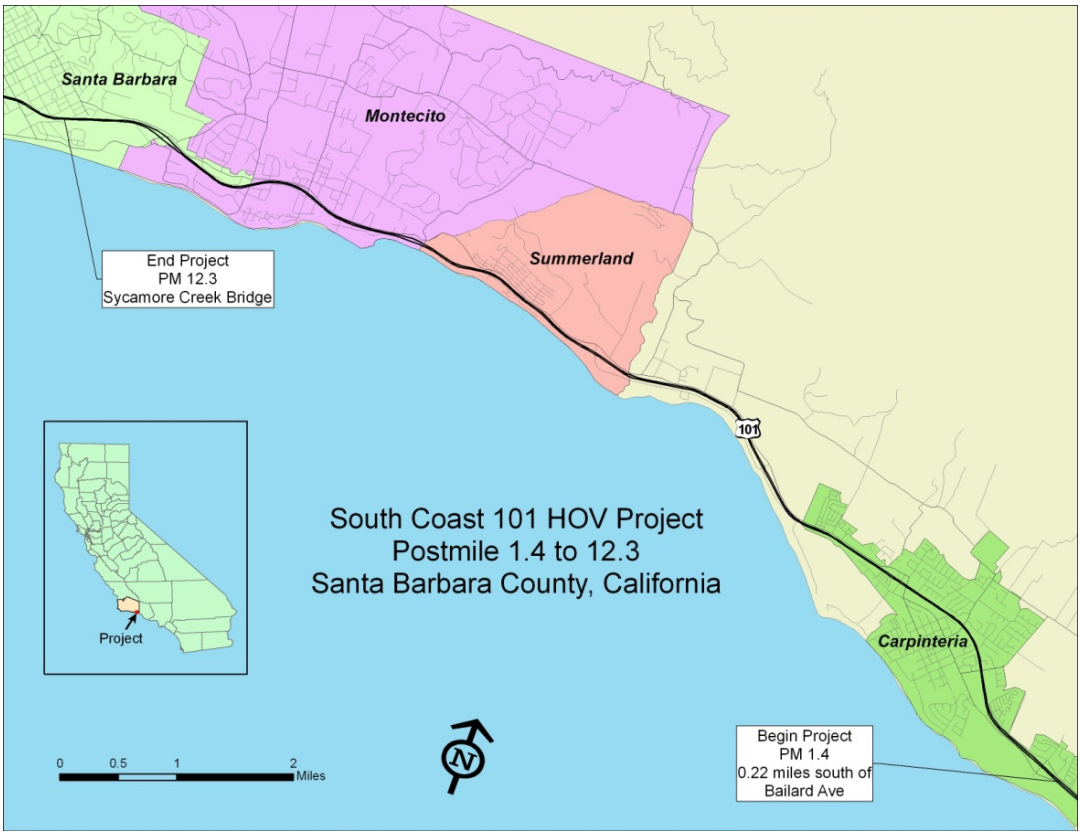

Addendum

to the "Natural Environment Study" dated January 2012

South Coast 101 High Occupancy Vehicle (HOV) Project

Route 101 between the City of Carpinteria and the City of Santa Barbara

District 5- SB-101-1.4/12.3

05-0N7000

July 2, 2014

CALIFORNIA DEPARTMENT OF TRANSPORTATION

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05-0N7000

STATE OF CALIFORNIA

Department of Transportation

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Executive Summary

This document is an addendum to the January 2012 "Natural Environment Study" (NES) for the South Coast 101 HOV Lanes Project in Santa Barbara County. This report documents updated evaluation and effects determinations following project updates that have occurred since the release of the NES dated January 2012. This document works with the assumption that the F-Modified design is the preferred configuration for the Cabrillo Boulevard Interchange.

This document incorporates by reference all contents of the executive summary from the January 2012 "Natural Environment Study" with the following updates:

Wetland Impacts

Table 1 was updated to account for revised impacts calculations for other waters of the U.S and wetlands following an Approved Jurisdictional Determination by the U.S. Army Corps of Engineers (ACOE), and updates to drainage plans for two roadside ditches in Carpinteria in response to local agency and public comments.

[This table replaces Table 1 on page vi. in the NES]

Table 1: Impacts to Wetlands and Other Waters (acres)

Wetland Type	Alternative 1		Alternative 2		Alternative 3	
	Temp	Perm	Temp	Perm	Temp	Perm
U.S. Army Corps & Coastal Zone Wetlands	0.082	0.001	0.077	0.012	0.082	0.001
Other Waters of the U.S.	0.449	0.249	0.470	0.345	0.449	0.249
Additional Coastal Zone Wetlands	0.369	0.229	0.383	0.403	0.369	0.229

Coast Live Oak Trees

[This paragraph replaces paragraph 1 under "Coast Live Oak Trees" on page vii of the NES]

Up to 253 coast live oak trees, including riparian trees, would be removed from along the Highway Right of Way. Impacts to native oak trees would be offset by replacement planting within the project limits.

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List of Abbreviated Terms

ACOE	Army Corps of Engineers
ACOE	Army Corps of Engineers
ADI	Area of Direct Impact
BMP	Best Management Practice
BSA	Biological Study Area
Caltrans	California Department of Transportation
CCC	California Coastal Commission
CDFG	California Department of Fish and Game
dbh	Diameter at breast height (~4 ft)
FHWA	Federal Highway Administration
ft	foot/feet
FWS	Fish and Wildlife Service
HOV	High Occupancy Vehicle
km	kilometer(s)
m	meter(s)
mi	mile(s)
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Marine Fisheries Service
PM	post mile
ROW	Right of Way
SBCFC	Santa Barbara County Flood Control
NB	Northbound
SB	Southbound
UPRR	Union Pacific Railroad
USFWS	United States Fish and Wildlife Service

Chapter 1. Introduction

This document is an addendum to the January 2012 "Natural Environment Study" (NES) for the South Coast 101 HOV Lanes Project in Santa Barbara County. This report documents updated evaluation and effects determinations following project updates that have occurred since the release of the NES dated January 2012.

[Add Section 1.6 to the NES]

1.6 Project updates since January 2012

Several project updates have occurred since the release of the NES dated January 2012 that require environmental evaluation. Reasons for updates include revised design features, jurisdictional updates, changes to the natural environment within the BSA, and public comments provided during the comment period for the Draft Environmental Document (April – July 2012).

1.6.1 Additions or extensions of soundwalls

In August 2012, addition or extension of soundwalls was proposed at various locations along State Route 101. Soundwall mapping is attached as Appendix G.

Caltrans proposed the following updates to soundwall structures in August 2012:

Soundwall#	additional length
S151	200 ft
S210	500 ft
S452	450 ft
S464	600 ft
S464	160 ft
S498	519 ft
S519	544 ft
S520	719 ft
S549	1705 ft

The rationale for these updates is as follows: a portion of soundwall S210 is now recommended for construction as it was identified as a subsection with high density development and also had additional identified benefitted receptors. As a result of additional benefitted receptors and wall segment analysis, five soundwalls (S151, S464, S498, S519, & S520) were extended. A segment of soundwall S452 was found

to be financially reasonable when additional benefitted receptors were identified, and acts as an acoustical extension of S464. A 160' extended section of soundwall S464 was recommended for construction after the floodway location was revised by FEMA mapping and that soundwall portion is no longer in a floodway. Lastly, the soundwall at Butterfly Lane (S549) was found to have a private soundwall protecting the most northerly private property. As a result of the re-evaluation, soundwall S549 was found to be acoustically effective at a shorter length and height, thereby reducing the construction cost to a point that it is now financially reasonable and recommended for construction.

1.6.2 Cabrillo Boulevard Interchange

This document works with the assumption that the F-Modified design is the preferred configuration for the Cabrillo Boulevard Interchange.

1.6.3 Arroyo Paredon Creek Bridge Design Modification

Bridge plans for the Arroyo Paredon Creek Bridge were modified subsequent to January 2012. While the design for the new structure will remain the same, one of the two bridge spans located in the creek channel will be temporarily bulkheaded off to maintain the existing hydraulic capacity.

The revised bridge description for Arroyo Paredon Creek is as follows: The existing bridges for the northbound and southbound lanes of Route 101 at Arroyo Paredon Creek will be replaced with one bridge that carries the creek under the highway. The bridge will have two spans (bays) which will be separated by a concrete pier. Each span will be approximately 25 feet wide. The bridge will have the ability to convey 25-year flood flow requirements agreed to by Santa Barbara County Flood Control; however, the full capacity of the bridge cannot be utilized until constraints upstream and downstream of the Caltrans right of way are upgraded by Santa Barbara County and the UPRR railroad. Until these future improvements are made, one of the two bridge spans will be temporarily bulkheaded off to maintain the existing hydraulic capacity. Bulkheading one of the bridge spans represents a change from conditions proposed in January 2012. The open bridge span will follow the existing channel. The new span will be 3 feet wider than the current conditions, so the proposed project would result in a minor widening of the channel. Vertical concrete walls (abutments) currently line the channel banks, and the creek bed consists of cobble and silt. The new bridge will also have vertical concrete walls and the streambed will continue to consist of cobble and silt substrate. The wider channel will result in a gain of

approximately 0.012 acre of natural creek bed.

1.6.4 Army Corps of Engineers Approved Jurisdictional Determination

On August 29, 2012 Caltrans received a formal Approved Jurisdictional Determination from the U.S. Army Corps of Engineers (attached as Appendix H). Following a review of all proposed jurisdictional waters of the U.S described in the NES, the Army Corps of Engineers determined that there were jurisdictional waters of the United States on the project site, as well as non-jurisdictional aquatic resources in the locations described on the map sheets. Tables and text relating to impacts to other waters have been updated to reflect this determination.

1.6.5 Drainage Improvements in Carpinteria at PM 3.78 - 4.0

At PM 4.0, Caltrans will replace the Route 101 culvert and the ditch upstream of it on the northbound side will be replaced with a pipe to match the capacity of the City drainage system upstream. The City system is larger and the Route 101 facilities are currently a constriction point. The City has recommended this work to help alleviate drainage problems on Via Real.

At PM 3.78 a swale will be graded from Santa Monica Creek to about 200' west of Plum Street on the southbound side to collect roadway runoff in front of the proposed soundwall, and direct it to the existing swale that leads to the culvert at PM 4.0. The swale would be unlined except for a short segment near Plum Street where it will need to be lined or put underground in a pipe in order to avoid utilities. The flow must be captured in front of the wall in order to avoid potential scour and flooding damage to the wall foundations and adjacent properties.

All tables and text relating to wetlands impacts have been revised to reflect these design updates.

1.6.6 Tidewater Goby critical habitat designated on February 6, 2013

On February 6, 2013, the U.S. Fish and Wildlife Service announced it had designated revised critical habitat for the tidewater goby. The latest designation of critical habitat includes a portion of Arroyo Paredon Creek within the project area. The U.S Fish and Wildlife Service biological and conference opinion for this project (August 6, 2012) includes a formal conference opinion for proposed critical habitat at Arroyo Paredon Creek. Per U.S. Fish and Wildlife Service guidelines, Caltrans will submit a written

request to the Service for confirmation of the conference opinion as formal consultation.

1.6.7 Double-crested cormorants

In summer 2012, Caltrans biologists observed double-crested cormorants nesting in three eucalyptus trees at PM 8.85 in the Caltrans ROW. Approximately 52 nests were observed in September 2012. A review of local records indicated that cormorants had begun nesting at this location in 2011, subsequent to field studies. Cormorants are colonial nesters and this location qualifies as a maternal colony under CEQA. A discussion of this resource and an effects analysis has been added to Chapter 4.

Chapter 2. Study Methods

This document incorporates by reference the study methods from the January 2012 "Natural Environment Study" for the South Coast 101 HOV Lanes Project with the following updates:

2.1.2 Special-Status Wildlife Surveys

[This paragraph replaces paragraph 3 on page 10 of the NES]
General wildlife surveys of the BSA were conducted between March 1, 2009 and February 15, 2010, utilizing binoculars and identification of tracks, sign, nests and dens. Overhead structures were surveyed for roosting bats and nesting birds in May, June and July 2009. Structures were inspected for evidence of roosting bats, including bat sign, such as urine stains and guano. Surveys for raptor nests and monarch butterflies in the BSA were performed in January and February, 2010. Raptor nests are often used from year to year, and remain as established structures. Focused surveys for raptor nests were conducted in January and February 2010 prior to leafing out of trees to ensure maximum visibility. Several raptor species found in the study area exhibit courtship and nesting behavior in late January or early February, so the BSA was also surveyed for raptor presence and for courting or pair bonding behavior at this time. No raptors were observed utilizing the highway corridor in the BSA. At additional site visits during the nesting season (April and May) in 2009 and 2010, the BSA was reviewed for raptor presence and nesting behavior.

2.3 Agency Coordination and Professional Contacts

NOAA's National Marine Fisheries Service (contacts subsequent to January 2012)

On March 28, 2012, Morgan Robertson and Lyn Wickham met with NOAA Fisheries staff Kristin Mull, Matthew McGoogan and David Crowder in Carpinteria, CA to familiarize Kristin Mull with the proposed action areas at Arroyo Paredon, Romero and San Ysidro Creeks.

On April 16, 2012, Caltrans received a letter from Kristin Mull requesting additional information for Caltrans South Coast Highway 101 HOV Lanes Project dated 4/5/12.

On February 21, 2013, Caltrans submitted a revised Biological Assessment to NOAA which included additional information requested in the letter dated 4/5/12.

U.S. Fish and Wildlife Service (contacts subsequent to January 2012)

Between March 15 and July 7, 2012, Ms. Robertson coordinated with USFWS Biologist Mark Elvin to answer questions and provide supplemental information needed to complete formal consultation for tidewater goby and provide a conference opinion for proposed critical habitat at Arroyo Paredon Creek.

On August 6, 2012 the USFWS issued Caltrans a biological and conference opinion for the project.

3 Results: Environmental Setting

This document incorporates by reference the environmental setting from the January 2012 “Natural Environment Study” for the South Coast 101 HOV Lanes Project.

4 Biological Resources, Discussion of Impacts and Mitigation

This chapter addresses impacts to natural communities of special concern, special-status species and critical habitat occurring or having the potential to occur within the BSA. This document incorporates by reference the discussion of impacts and mitigation from the January 2012 "Natural Environment Study" for the South Coast 101 HOV Lanes Project.

4.1.1 Other Waters of the United States

4.1.1.1 SURVEY RESULTS

[This paragraph replaces paragraph 1 under "Survey Results" on page 32 of the NES]
Individual "other waters" features that would be affected by construction are presented in Table 11 (Appendix E), and shown in Project Mapping (Appendix C). On August 29, 2012 Caltrans received a formal Approved Jurisdictional Determination from the U.S. Army Corps of Engineers (attached as Appendix I). Following review of all proposed jurisdictional waters of the U.S described in the NES, the Corps determined that there were jurisdictional waters of the United States on the project site, as well as non-jurisdictional aquatic resources in the locations described on the map sheets. Based on the Corps' determination, multiple sites shown on NES mapping and in Table 11 of the January 2012 NES were determined to be non-jurisdictional waters.

Highly Altered Channels

Franklin Creek
[This paragraph replaces paragraph 2 under "Franklin Creek" on page 33 of the NES]
The existing bridge deck will be extended either 22 linear feet (Alternative 1 and 3) or 40 linear feet (Alternative 2) to the north, and will extend 26 linear feet in the center to enclose the currently open area between the two bridge decks. The southbound existing edge of deck will be widened 2 feet to the south to carry the additional load of the soundwall. No permanent structures would be placed in the channel. Additional shading from the extended bridge deck will not impact riparian or wildlife habitat since the bottom and sides of the channel consists entirely of concrete. No permanent impacts on the creek channel shape or substrate would occur.

Santa Monica Creek

[This paragraph replaces paragraph 2 under "Santa Monica Creek" on page 33 of the NES]

The existing bridge deck will be extended 16 linear feet to the north and 28 linear feet to the south and will extend 26 linear feet in the center to enclose the currently open area between the two bridge decks. No permanent structures would be placed in the channel. Additional shading from the extended bridge deck will not impact riparian or wildlife habitat since the bottom and sides of the channel consists entirely of concrete. No permanent impacts on the creek channel shape or substrate would occur.

Partially Altered Channels

Arroyo Paredon Creek

[This paragraph replaces paragraph 4 under "Arroyo Paredon Creek" on page 35 of the NES]

The existing bridges for the northbound and southbound lanes of Route 101 at Arroyo Parida Creek will be replaced with one bridge that carries the creek under the highway. The bridge will have two spans (bays) which will be separated by a concrete pier. Each span will be approximately 25 feet wide. The bridge will have the ability to convey 25-year flood flow requirements agreed to by Santa Barbara County Flood Control; however, the full capacity of the bridge cannot be utilized until constraints upstream and downstream of the Caltrans right of way are upgraded by Santa Barbara County and the UPRR railroad. Until these future improvements are made, one of the two bridge spans will be temporarily bulkheaded off to maintain the existing hydraulic capacity. Bulkheading one of the bridge spans represents a change from conditions proposed in January 2012. The open bridge span will follow the existing channel. The new span will be 3 feet wider than the current conditions, so the proposed project would result in a minor widening of the channel. Vertical concrete walls (abutments) currently line the channel banks, and the creek bed consists of cobble and silt. The new bridge will also have vertical concrete walls and the streambed will continue to consist of cobble and silt substrate. The wider channel will result in a gain of approximately 0.012 acre of natural creek bed.

Toro Canyon Creek

Up to 0.105 acre of concrete bed lining would be removed within the state right-of-way to allow restoration of the creek bottom. Rock slope protection may be proposed along bridge abutments in location where bedlining is removed.

4.1.1.3 PROJECT IMPACTS

Design changes and an Approved Jurisdictional Determination from the U.S. Army Corps of Engineers resulted in updated impacts for other waters of the U.S. Table 4 and Table 5 have been revised to reflect these changes.

[This table replaces Table 4 on page 40 in the NES]

Table 4: Summary of Impacts to Other Waters of the U.S. (acres)

Wetland Type	Alternative 1 impacts		Alternative 2 impacts		Alternative 3 impacts	
	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Other Waters of the U.S.						
Manmade drainage features	0.069	0.207	0.090	0.303	0.069	0.207
Creeks	0.380	0.042	0.380	0.042	0.380	0.042
TOTAL	**0.449**	**0.249**	**0.470**	**0.345**	**0.449**	**0.249**

* Creeks: Franklin, Santa Monica, Arroyo Paredon, Toro Canyon , Greenwell, Romero, San Ysidro and Oak creeks.

[This table replaces Table 5 on page 41 in the NES]

Table 5: Impacts to Other Waters of the U.S. at Creeks (acres) for all Alternatives

	Mapsheet (Appendix C)	Temporary Impacts	Permanent Impacts
Franklin	Mapsheet C: 5	0.074	0.0
Santa Monica	Mapsheet C: 6	0.108	0.0
Arroyo Paredon [a]	Mapsheet C: 10	0.078	0.0
Toro Canyon [b]	Mapsheet C: 12	0.039 [b]	0.0
Greenwell [a]	Mapsheet C: 14	0.006	0.042
Romero/ Picay [a]	Mapsheet C: 18	0.021	0.0
San Ysidro [a]	Mapsheet C: 18	0.037	0.0
Oak [a]	Mapsheet C: 18	0.016	0.0

[a] Unlined creek reaches in the BSA are considered both “other waters” and Coastal Zone wetlands.

[b] At Toro Canyon Creek, the channel is partially lined. In addition to temporary impacts to “other waters”

in the lined portion of the channel, temporary impacts will occur in 0.023 acres of unlined channel delineated as seasonal wetlands (ACOE & Coastal Zone).

4.1.1.5 CUMULATIVE IMPACTS

[This paragraph replaces paragraph 1 under "Cumulative Impacts" on page 43 of the NES]

Cumulative impacts include the impacts of future State, Federal, tribal, local, or private actions that are reasonably certain to affect "other waters" in the project area. Caltrans is in the process of studying the Linden Casitas Highway Improvements Project, a project which includes interchange reconstruction, new bridge and soundwall construction and frontage road extensions starting 0.2 miles south of the Carpinteria Creek bridges and ending 0.4 miles north of Linden Avenue. The Linden Casitas Project would impact approximately 0.22 acres of other waters of the U.S. which will be fully mitigated as part of that project. It is anticipated that other projects listed in Table 2.51 of the EIR with potential to impact other waters of the U.S. will also be mitigated appropriately. Impacts to "other waters" with this project would be fully mitigated. Therefore, the project does not have the potential to contribute to a cumulative effect.

4.1.2 Jurisdictional Wetlands

4.1.2.3 PROJECT IMPACTS

Design changes subsequent to January 2012 resulted in updated impacts for wetlands. Table 6 and Table 7 have been revised to reflect these changes.

[This table replaces Table 6 on page 46 in the NES]

Table 6: Impacts to Jurisdictional Wetlands (acres)

Wetland Type	Alternative 1 impacts		Alternative 2 impacts		Alternative 3 impacts	
	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Army Corps & Coastal Zone	0.082	0.001	0.077	0.012	0.082	0.001
Additional Coastal Zone Wetlands	0.369	0.229	0.383	0.403	0.369	0.229

*Impacts to individual creeks are presented in Table 5. *Impacts to Other Waters of the U.S. at Creeks*

(acres).

[This table replaces Table 7 on page 47 in the NES]

Table 7. Compensatory Mitigation for Permanent Wetland Impacts (acres)

Wetland Type	Alternative 1	Alternative 2	Alternative 3
U.S. Army Corps & Coastal Zone Wetlands	0.003	0.036	0.003
Additional Coastal Zone Wetlands	0.687	1.209	0.687

Acreage based on a mitigation ratio of 3:1

4.1.2.5 CUMULATIVE IMPACTS

[This paragraph replaces paragraph 1 under "Cumulative Impacts" on page 49 of the NES]

Cumulative impacts include the impacts of future State, Federal, tribal, local, or private actions that are reasonably certain to affect wetlands in the project area. Caltrans is in the process of studying the Linden Casitas Highway Improvements Project, a project which includes interchange reconstruction, new bridge and soundwall construction and frontage road extensions starting 0.2 miles south of the Carpinteria Creek bridges and ending 0.4 miles north of Linden Avenue. The Linden Casitas Project would impact approximately 0.33 acres of wetlands which will be fully mitigated as part of that project. It is anticipated that other projects listed in Table 2.51 of the EIR with potential to impact wetlands will also be mitigated appropriately. Impacts to wetlands with this project would be fully mitigated. Therefore, the project does not have the potential to contribute to a cumulative effect.

4.1.3 Riparian Community

4.1.3.3 PROJECT IMPACTS

[This paragraph replaces paragraph 1 under "Project Impacts" on page 50 of the NES]

Nineteen arroyo willows (*Salix lasiolepis*) ranging in size from 3 to 10 inch dbh will be removed from riparian areas. All build alternatives will avoid the large sycamore tree that provides shade to the south end of San Ysidro Creek and the four coast live oak trees that shade the culvert outlet at Garrapata Greek. See Table 8 for a summary

of riparian impacts.

Design changes subsequent to January 2012 and field reconnaissance for canopy acreage resulted in revised riparian impacts. Table 8 and Table 9 have been updated to reflect these changes.

[This table replaces Table 8 on page 51 in the NES]

Table 8: Riparian Impacts

Number of Species	DBH & (# of Trees)	Locations	Acreage
Arroyo Paredon Creek			
11- arroyo willows (*Salix lasiolepis)*	4 in (5), 5 in (2), 6 in (1), 7 in (2), 8 in (1)	6 –south bank 5- north bank	0.05 acre temporary
Toro Canyon Creek			
4- arroyo willows (*Salix lasiolepis)*	7 in (1), 8 in (1), 9 in (1), 10 in (1)	4- north bank	0.01 acre temporary
Greenwell Creek			
4- arroyo willows (*Salix lasiolepis)*	3 in (3), 5 in (1)	4- south bank	0.10 acre temporary, 0.03 acre permanent
San Ysidro Creek			
2- Monterey pine (*Pinus radiata*)	24 in (1) , 28 in (1)	2- south bank	0.01 acre temporary

[This table replaces Table 9 on page 52 in the NES]

Table 9: Riparian Mitigation

Species	Total Trees Removed	Mitigation Ratio	Total Trees to be Replanted
Arroyo willows (*Salix lasiolepis*)	19	3:1	57
Monterey Pine (*Pinus radiata*)	2	1:1	2

4.1.3.4. COMPENSATORY MITIGATION

[Add this paragraph after paragraph 2 in "Compensatory Mitigation" on page 52 of the NES]

At Greenwell Creek, permanent impacts to riparian vegetation would be offset by enhancement of 0.145 acres of the creek located south of Route 101. Non-native plants (iceplant, arrundo and castor bean) will be removed from banks in the work area. Bioengineering techniques incorporating arroyo willows and other native plants will be applied in and above RSP along creek banks, to reduce erosion and enhance riparian habitat available for wildlife. Invasive plants castor bean and arrundo occur in the proposed work area and are listed on the California Invasive Plant council's Invasive Plant Inventory. Non-native invasive plants that are removed from the work area and creek banks during construction would be re-planted with native riparian species, including willow and sycamore.

4.1.3.5 CUMULATIVE IMPACTS

[This paragraph replaces paragraph 1 under "Cumulative Impacts" on page 53 of the NES]

Cumulative impacts include the impacts of future State, Federal, tribal, local, or private actions that are reasonably certain to affect riparian habitat in the project area. Caltrans is in the process of studying the Linden Casitas Highway Improvements Project, a project which includes interchange reconstruction, new bridge and soundwall construction and frontage road extensions starting 0.2 miles south of the Carpinteria Creek bridges and ending 0.4 miles north of Linden Avenue. The Linden Casitas Project would impact approximately 0.95 acres of riparian habitat which will be fully mitigated as part of that project. It is anticipated that other projects listed in Table 2.51 of the EIR with potential

to impact other waters of the U.S. will also be mitigated appropriately. Impacts to riparian habitat with this project would be fully mitigated. Therefore, the project does not have the potential to contribute to a cumulative effect.

4.1.4 Coast Live Oaks

4.1.4.1 Survey Results

[These sentences replace the first three sentences in "Survey Results" on page 54 of the NES]

Approximately 253 individual coast live oaks or rows of oak trees occur within the maximum cut and fill limits of the project ADI. Between PM 6.3 and 6.7 approximately 32 of the original 71 Memorial Oaks remain.

4.1.4.2 Avoidance and Minimization Efforts

[This bullet replaces bullet 2 in "Avoidance and Minimization Efforts" on page 54 of the NES]

- To avoid impacting nesting birds that might use the landscaped portions of the right of way, tree removal would occur between September 1 and February 15. If tree removal is required during the nesting season, a qualified biologist would need to conduct a focused survey for active bird nests in the trees to be removed. If any active migratory bird nests are found, Caltrans would coordinate with California Department of Fish and Wildlife to determine an appropriate buffer based on the habits and needs of the species.

4.1.4.3 Project Impacts

[Add this paragraph after paragraph 1 in "Project Impacts" on page 54 of the NES]

Soundwall additional and extensions added to the project after August 1, 2012 will result in the removal of an additional 33 coast live oak trees (*Quercus agrifolia*). Coast live oak trees will be removed at the following locations: Soundwall S498 extension (PM 9.93-10.0) (-4 *Q. agrifolia*); Soundwall S520 extension along N. Jameson Way @ the Olive Mill exit (PM 10.37- 10.5) (-28 *Q. agrifolia*); Soundwall S549 (PM 10.7) (-1 *Q. agrifolia*). When added to the 220 coast live oak trees identified in the NES, this results in a total of 253 coast live oak trees to be removed along the length of the project. Additions or extensions of soundwall structures are not anticipated to significantly affect other biological resources.

4.4 Special Status Animal Species Occurrences

4.4.2 Southern Steelhead

4.4.2.4 PROJECT IMPACTS

[Replace "Project Impacts" Section in NES on pages 62-63 with the following discussion]

[In DEIR- Replace "Environmental Consequences-*Steehead Trout*" Section on pages 390-392 with the following discussion]

Proposed work within the Arroyo Paredon, Romero (Picay) and San Ysidro creeks is the same for all three build alternatives. The build alternatives would result in both permanent and temporary impacts to migration habitat within the project limits.
The build alternatives are not likely to adversely effect, but may affect and may result in incidental take of steelhead trout. Incidental take could be a result of harassment, harm, or mortality of steelhead during water diversion, demolition and construction, or relocation actions. Formal consultation under Section 7 of the Endangered Species Act was initiated with the National Oceanic and Atmospheric Administration National Marine Fisheries Service for potential incidental take of the steelhead trout in Arroyo Paredon Creek, Romero (Picay) Creek and San Ysidro Creek.

Temporary impacts could occur with the water diversion and dewatering during project construction. Given that the window for work in the creek is outside of the time frame for steelhead trout migration, it is anticipated that any incidental take that might occur would be juvenile steelhead trout during the water diversion and dewatering of Arroyo Paredon and Romero (Picay) creeks. San Ysidro Creek typically dries up in May and remains dry until the winter rains in November. Following the water diversion, remaining fish within the area to be dewatered would be removed by seine and dip nets. Steelhead trout captured during seining would be relocated to a suitable location within that creek.

Permanent impacts to Arroyo Paredon and Romero creeks would result from replacement bridge structures that extend beyond the footprint of the existing structures. At Romero Creek, bridge decks would be extended 10 linear feet to the north and south, resulting in additional shading at either end of the bridge deck. At

Arroyo Paredon Creek, a distance of 26 linear feet is currently open between the two bridge decks that would be covered by the larger new bridge structure. Vertical concrete walls (abutments) currently line the channel banks and the creek beds consist of cobble and silt. No emergent vegetation or potential cover was observed at these locations during surveys. New bridge structures at these locations would result in increased shading through these creek reaches. Banks of the creek will continue to consist of concrete walls. The creek bed will continue to consist of natural substrates. Additional shading of creek beds may result in slightly cooler water temperatures preferred by steelhead trout. At Arroyo Paredon the completed project will result in a net gain of approximately 0.012 acre of natural creek bed. New bridge structures would result in expanded areas of natural creek bed at Arroyo Paredon Creek (immediately), and at Romero (Picay) Creek once downstream conditions allow.

Approximately 0.35 acre of steelhead critical habitat within the state ROW will be temporarily impacted by bridge construction. The new highway bridges would have longer spans across the creek channels. Highway bridges at Romero Creek and San Ysidro Creek will have the ability to convey 100 year flood flow requirements, and the new highway bridge at Arroyo Paredon Creek will be able to convey 25-year flood flow requirements, resulting in lower velocities and improved conditions for fish passage. However, the full capacity of the bridges cannot be utilized until channel constraints upstream and downstream of the Caltrans right of way are upgraded. The current channel widths would be maintained until improvements are made to adjacent facilities immediately downstream as part of the *Santa Barbara County Flood Control Conceptual Plan for Creeks* (see section 2.3.2, Wetlands and Other Waters).

At present, the capacities of downstream facilities are not large enough to accommodate additional flow. Substantial infrastructure occurs in the immediate vicinity of each of the bridges, which includes county frontage roads, the Union Pacific Railroad and private property. Caltrans has determined that widening these bridges at the present time with existing downstream constrictions would result in hydrologic and geomorphic disruption that could threaten adjacent facilities, including bridges on either end with limited capacity, private homes, and county roads. To avoid the hydraulic and geomorphic disruption caused by severe contraction and expansion, the new highway bridges would be partially blocked to maintain their previous capacities until downstream conditions are improved to the point that the new bridges do not jeopardize existing facilities, including railroad bridges.

At Romero Creek and San Ysidro Creek, the larger bridge structures will be bulkheaded off at the same locations as the current walls. At Arroyo Paredon Creek, the second bay will be bulkheaded (closed) off, and the open bay will match the flow line of the existing channel, but will be three feet wider. With the new bridges bulkheaded off, water velocities at these bridges will remain the same as existing, or slightly improved in the case of Arroyo Paredon Creek, until other facilities in the area are upgraded and bulkheads can be removed. Channel conditions will match existing, with vertical concrete walls lining the channel at the same locations and natural streambeds consisting of cobble and silt substrate.

Senate Bill 857 requires Caltrans to rectify any fish-passage impediments or obstacles for anadromous (swimming upstream from the ocean) fish when modifying a structure. Aside from one identified impediment at Carpinteria Creek, no physical obstructions to fish passage (in-stream structures, lining, bed, and significant grade changes) were identified in steelhead creeks in the state right-of-way.[1] The impediment to fish passage at Carpinteria Creek (the current bike path) would be removed by the Linden-Casitas Highway improvement project before the start of this project.

Caltrans began early consultation with the National Oceanic and Atmospheric Administration National Marine Fisheries Service in May 2009 to identify and conduct various hydraulic analyses of steelhead creeks where work is proposed, such as Arroyo Paredon Creek, Romero (Picay) Creek and San Ysidro Creek. Fish flows for the creeks were analyzed for existing and proposed conditions within the developed reach of the creek. Although significant grade changes do not occur within in the biological study area, channelization (constructed channels) upstream and downstream at San Ysidro and Romero (Picay) creeks creates peak flood flows that currently exceed recommended velocities for fish passage.

Velocities at the highway bridges are better than or equivalent to those at adjacent locations up and downstream. Channel widening at Arroyo Paredon Creek improves conditions by lowering velocities at peak flows and improving conditions for migrating steelhead. Caltrans has considered adding features such as boulders or weirs to provide additional velocity shelters and flow complexity in the creeks. These

[1] Stoeker 2002, NOAA 2005

features would also increase roughness and raise water surface elevations. Romero and San Ysidro Creeks are prone to severe flooding and FEMA regulations prohibit any increase to their water surface elevations. The creeks can not be widened only at Route 101 to counter roughness increases due to the hydraulic and geomorphic disturbances that would result and could threaten adjacent facilities.

Because these creeks are modified throughout their lower reaches, fixing velocities in these reaches requires addressing the broader channel. Santa Barbara County Flood Control has a long range conceptual plan to widen the lower channel reaches at these creeks to increase capacity, although no timeline is currently identified. Within the state right of way, Caltrans is planning to replace the highway bridges with larger structures at an additional cost of 6.5 million dollars. This commitment provides the best practicable solution to velocity issues at these locations at the current time, given all the existing constraints up and downstream which include critical transportation infrastructure and private property. The new highway structures will allow future creek widening that will be compatible with Santa Barbara County's long range conceptual plan to widen the lower channel reaches to allow increased capacity and decreased velocities. By investing in larger highway bridges, Caltrans is actively supporting and contributing to the regional goal of improving these lower creek reaches when the downstream conditions allow. When Santa Barbara County achieves its goals of improving creek capacities throughout these reaches of concern, bulkheads can be removed and highway bridges can be fully utilized. Caltrans will assist and cooperate with the County in this effort to help ensure the success of future alignments. In addition to building larger bridge structures as part of a long-term solution for velocity issues in these creeks, Caltrans is working with state and federal agencies to provide enhancements within the corridor that would promote species recovery in the near-term.

With the implementation of proposed grading plans, replanting of riparian areas, and other measures included in this document, temporarily impacted portions of critical habitat are anticipated to recover to pre-project condition, and it is unlikely that the proposed project will have any long-term or substantial effects on critical habitat within the project area. Permanent, beneficial effects of the project at Arroyo Paredon Creek will result from a gain of approximately 0.012 acre of unlined creek bed. Widening of the creek channel by three feet under the highway will result in decreased velocities at peak flows, improving conditions for migrating steelhead.

4.4.3 Tidewater Goby

4.4.3.2 CRITICAL HABITAT

[This paragraph replaces paragraph 1 on page 65 of the NES]
On February 6, 2013, the U.S. Fish and Wildlife Service announced it had designated revised critical habitat for the tidewater goby. The latest designation of critical habitat includes a portion of Arroyo Paredon Creek within the project area. The U.S Fish and Wildlife Service biological and conference opinion for this project (August 6, 2012) includes a formal conference opinion for proposed critical habitat at Arroyo Paredon Creek. Per U.S. Fish and Wildlife Service guidelines, Caltrans will submit a written request to the Service for confirmation of the conference opinion as formal consultation.

4.4.3.4 PROJECT IMPACTS

[In DEIR- Replace "Environmental Consequences- *Tidewater Goby*" Section on pages 392-393 with the following discussion]
The build alternatives are not likely to adversely effect, but may affect and may result in incidental take of tidewater gobies in Arroyo Paredon Creek. Incidental take of tidewater gobies is not anticipated although it has the potential to occur. Incidental take could be a result of harassment, harm, or mortality of tidewater gobies during water diversion, demolition, construction, or relocation actions if they become necessary.

The project would affect critical habitat for tidewater goby where U.S. 101 crosses Arroyo Paredon Creek. The existing bridges for the northbound and southbound lanes of Route 101 at Arroyo Paredon Creek will be replaced with one bridge that carries the creek under the highway. The bridge will have two spans (bays) which will be separated by a concrete pier. Each span will be approximately 25 feet wide. The bridge will have the ability to convey 25-year flood flow requirements agreed to by Santa Barbara County Flood Control; however, the full capacity of the bridge cannot be utilized until constraints upstream and downstream of the Caltrans right of way are upgraded by Santa Barbara County and the UPRR railroad. Until these future improvements are made, one of the two bridge spans will be temporarily bulkheaded off to maintain the existing hydraulic capacity. Bulkheading one of the bridge spans represents a change from conditions proposed in January 2012. The open bridge span will follow the existing channel. The new span will be 3 feet wider than the current conditions, so the proposed project would result in a minor widening of the channel.

Vertical concrete walls (abutments) currently line the channel banks, and the creek bed consists of cobble and silt. The wider channel will result in a net gain of approximately 0.012 acre of natural creek bed. Creek banks would remain concrete walls. The creek bed would remain natural substrates. Permanent, beneficial impacts would include an expanded area of natural creek bed at Arroyo Paredon Creek that could provide additional habitat for tidewater gobies at this location.

4.4.6 Monarch Butterfly

[Replace Section 4.4.6 on pages 69-70 of the NES with the following discussion]

Monarch butterflies aggregate in California coastal woodlands between October and March. Monarchs typically aggregate in eucalyptus groves, Monterey cypress, Monterey pines, and coast live oaks. They first collect in smaller numbers in autumn, then in much larger aggregations when cold weather and storms begin. The large aggregations are typically in groves that offer wind protection, slightly warmer temperatures, and basking sites. Large aggregations are fairly predictable as monarchs typically use the same sites each year.

Based on records from local community plans for Montecito, Summerland and Toro Canyon, eight mapped butterfly roosts occur within ¼ mile of the project area: Music Academy of the West in Santa Barbara; Butterfly Lane and High Road in Montecito; Crane Country Day School in Montecito; Ortega Hill in Montecito; Via Real and Padaro Road in Summerland; Lambert Road in Summerland; and two locations along Padaro Road in Toro Canyon.

4.4.6.1 Survey Results

The California Natural Diversity Database (CNDDB) does not contain any records of monarch butterfly roosts within the Biological Study Area (BSA). Three Environmentally Sensitive Habitat (ESH) sites for monarch butterfly occur within 200 feet of the work limits; one at Ortega Hill between US 101, Sheffield Drive and Ortega Hill Road, and two along Padaro Lane, outside the western boundary of the BSA. Surveys were conducted in areas of the Biological Study Area (BSA) adjacent to these locations to determine if monarch butterflies were overwintering in trees within or immediately adjacent to the work area. On January 26, 2010, six monarch butterflies were observed flying in the study area at Ortega Hill. On February 2, 2010, five monarch butterflies were observed flying in the study area adjacent to 3777 Padaro Lane. During surveys conducted between November 2010 and February 2011, no butterflies were observed in trees adjacent to 3777 or 3001 Padaro Lane, and no

aggregations were observed. Surveys were conducted in the morning when temperatures were cool and monarchs would be expected to aggregate.

At the Ortega Hill site, the southern end of the tree row identified as ESH for monarch butterflies is located approximately 50 feet north of Highway 101. Project work in the vicinity of this location will be limited to the paved roadway and the highway median. No trees or roadside vegetation will be affected between the highway and the ESH. This project is not expected to affect monarch butterfly roosting at this location. At Padaro Lane, the two tree rows identified as ESH in the Toro Canyon Plan are positioned perpendicular to Highway 101. The tree row at 3001 Padaro Lane begins approximately 80 feet south of Highway 101 at Padaro Lane and continues south towards the Pacific Ocean. The tree row at 3777 Padaro Lane begins approximately 65 feet south of Highway 101 at Padaro Lane and continues south towards the Pacific Ocean. At each location, the UPRR railroad corridor separates the highway from Padaro Lane and includes rows of mature landscaping trees that serve as a visual block between the highway and the ESH. Project work in each of these areas will be limited to the paved roadway and the highway median. No trees or vegetation will be affected between the highway and the ESH. This project is not expected to affect monarch butterfly roosting sites. Minimization or avoidance measures are not warranted for this project.

4.4.14 Double-crested cormorants

[Add Section to the NES]

Double-crested cormorants (*Phalacrocorax auritus*) are one of the most widespread cormorants in North America, breeding on the coast and inland lakes. They occur along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. Birds are presumed to make seasonal movements migrating west and south to lowlands, especially along the coast, where the population increases in winter. Individuals feed mainly on fish and marine invertebrates, diving from the water surface and pursuing prey underwater. Birds rest in the daytime and roost overnight beside water on offshore rocks, islands, steep cliffs, dead branches of trees, and wharfs (CDFG 1990).

Double-crested cormorants prefer undisturbed nest-sites beside water, on islands or the mainland. Birds nest in colonies, building stick nests in trees or on the ground of rocky cliffs and islands. Cormorants impact vegetation at nesting sites through deposition of guano that kills underlying vegetation and eventually trees, and through

nest building behavior when they strip leaves. Once accumulated fecal matter below nests kills nest trees cormorants may move to a new area or may shift to nesting on the ground. Double-crested cormorants breed primarily between April and July or August, with most egg-laying occurring from April to June. They are single-brooded with altricial young tended by both parents. Young birds first fly at 5-6 weeks and are fully independent at 10 weeks. Since the late-1970s, numbers of Double-crested cormorants have increased significantly in many regions of North America, including California (UWFWS 2001).

4.4.14.1 SURVEY RESULTS

In August 2012, Caltrans biologists observed double-crested cormorants nesting in four eucalyptus trees in the Caltrans ROW in the vicinity of the Sheffield Road Interchange at PM 7.0. Approximately 52 nests were observed on 25 September 2012. The eucalyptus trees are located adjacent to Highway 101 south bound lanes within 30 feet of the edge of pavement. A review of local records indicated that cormorants had begun nesting at this location in 2011, subsequent to field studies. Additional research indicated that the cormorants appear to have moved to this location from the Santa Barbara Zoo, where they had nested previously. Cormorants are colonial nesters and this location qualifies as a maternal colony under CEQA.

Field reconnaissance visits to this site began in September 2012 and are currently ongoing. The purpose of the site visits is to monitor the local breeding population and refine the proposed work window as needed to avoid impacts to nesting cormorants at this location.

4.4.14.2 AVOIDANCE AND MINIMIZATION EFFORTS

An environmentally sensitive area (ESA) would be established around the stand of eucalyptus trees that support active cormorant nests. The ESA will be delineated on project plans and demarcated in the field with ESA fencing prior to the start of work at this location. No equipment or personnel would be allowed within the ESA. Construction activities within 300 feet of the ESA, including clearing and grubbing, would be limited to September 15 through March 1 to avoid impacting active nests during the critical maternity season and to ensure survival of first-year birds. If Caltrans proposes any work within 500 feet of the ESA during this period, a qualified biological monitor(s) will be required to monitor active nests during work.

4.4.14.3 PROJECT IMPACTS

The interchange at Sheffield Drive will be reconstructed to remove the existing left side off ramps. The existing two northbound lanes will remain in place, and a third northbound lane for HOV use will be constructed. Three new southbound lanes will be constructed adjacent to the northbound lanes. The area vacated by the existing southbound lanes will be used to construct new southbound ramps that will connect to the right of the southbound lanes. The new southbound ramps at Sheffield Drive will require retaining walls to assure slope stability and to prevent impacting railroad right of way. To reduce the amount of construction disturbance to the vegetation along the outside edge of the southbound ramps where the nesting trees are located, a retaining wall will be constructed near the existing edge of shoulder.

The project has been designed to avoid trees and minimize disturbance to vegetation along the outside edge of the southbound ramps. With the proposed avoidance and minimization measures in place this project is not expected to impact double-crested cormorants or the trees that support their nests.

4.4.14.4 COMPENSATORY MITIGATION

With the avoidance and minimization measures in place this project is not expected to affect double-crested cormorants or their nests. Therefore no compensatory mitigation measures are included for this species.

4.4.14.5 CUMULATIVE IMPACTS

Cumulative effects include the effects of past, present, and reasonably foreseeable future State, tribal, local, or private actions that are reasonably certain to occur in the project area. Caltrans is unaware of any federal or non-federal actions that are reasonably certain to affect double-crested cormorants.

5 Permits and Technical Studies for Special Laws or Conditions

5.6 Wildlife Connectivity

[Add Section to the NES page 80]

Several creeks in the project area are used by urban wildlife including raccoons, skunks, tree frogs and various fish species, as well as introduced species such as feral cats, red-eared slider turtles and rats. Proposed new bridges will not affect the function of these creeks as movement corridors for local wildlife.

California, along with other states and nations, is becoming more aware of the importance of connected habitats to ensure the persistence of wildlife and biodiversity. In 2009 Caltrans and DFG sponsored the creation of statewide wildlife habitat connectivity map as part of the *California Essential Habitat Connectivity Project*, to identify high priority wildlife corridors and landscape linkages for use in transportation planning. This project does not occur within a linear linkage or least-cost corridor modeled by the Essential Habitat Connectivity Database (2011). The nearest identified landscape linkage begins four miles north of the project limits in the Sulfur Mountain-Sierra Madre Mountains Essential Connectivity Area.

Chapter 6. References

Wires, L.R., F.J. Cuthbert, D.R. Trexel and A.R. Joshi. 2001. Status of the Double-crested Cormorant (*Phalacrocorax auritus*) in North America. Final Report to USFWS.

Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Department of Fish and Game, Sacramento, California.

Appendix A U.S Fish and Wildlife Service Species List

** See Attachment

Hoffmann, Yvonne M@DOT

From: Robertson, Morgan A@DOT
Sent: Thursday, June 26, 2014 2:52 PM
To: Hoffmann, Yvonne M@DOT
Subject: Request for concurrence with official Species List for Caltrans South Coast Highway 101 HOV Lanes Project

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From: Phillips, Jeff [mailto:jeff_phillips@fws.gov]
Sent: Thursday, June 26, 2014 9:36 AM
To: Robertson, Morgan A@DOT
Cc: Aoese Oto; Rick Farris; Mark Elvin
Subject: Re: Request for concurrence with official Species List for Caltrans South Coast Highway 101 HOV Lanes Project

Hello Morgan,

We are responding to your request, dated June 25, 2014, and received in our office on the same day via electronic mail, for information on endangered and threatened species that may occur at or near the subject construction site. We last verified our May 2010 species list for the project on December 4, 2013. We issued a biological opinion for the project on
August 6, 2012 (8-8-12-F-13).

Based on a reanalysis off the project site and species distributions, we reaffirm our initial May 2010 species list. As a result, no further consultation pursuant to the Act is required.

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 also contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

Should you have any questions regarding this matter, please contact Mark Elvin of my staff at (805) 644-1766.

Sincerely,
Jeff Phillips
Deputy Assistant Field Supervisor, South Coast Division
U.S. Fish and Wildlife Service, Ventura Field Office
2493 Portola Road, Suite B
Ventura, CA 93003
(805) 644-1766 x 285

The U.S. Fish and Wildlife Service's mission is, working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
81440-2010-CPA-0280

May 21, 2010

Morgan Robertson
Associate Environmental Planner
California Department of Transportation
50 Higuera Street
San Luis Obispo, California 93401-5415

Subject: Species List for Highway 101 HOV Lane Project Between the Cities of Santa Barbara and Carpinteria, Santa Barbara County, California

Dear Mr. Robertson:

We are responding to your request, dated April 29, 2010, and received in our office on May 3, 2010, for a list of endangered, threatened, and other special status species that may occur in the vicinity of the subject project. The California Department of Transportation (CalTrans) is considering implementing a project to widen Highway 101 in between Sycamore Creek in the city of Santa Barbara and 0.44 mile south of Carpinteria Creek in the city of Carpinteria. The proposed project would add a high occupancy vehicle lane on both the northbound and southbound sides of the highway. The CalTrans is the designated non-Federal representative of the Federal Highway Administration in California.

The enclosed list of species fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act of 1973, as amended (Act). CalTrans, as the lead Federal agency for the project, has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a construction project which may require an environmental impact statement[1], CalTrans 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 CalTrans 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 written request for formal consultation. During this review

[1] Construction project" means any major Federal action which significantly affects the quality of the human environment designed primarily to result in the building of structures such as dams, buildings, roads, pipelines, and channels. This includes Federal actions such as permits, grants, licenses, or other forms of Federal authorizations or approval which may result in construction.

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process, CalTrans 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.

The enclosed list includes only those species listed by the Service; however, other species protected by the State of California may occur in the project area. We recommend that you review information in the California Department of Fish and Game's Natural Diversity Data Base. You can contact the California Department of Fish and Game at (916) 324-3812 for information on other sensitive species that may occur in this area.

If you have any questions regarding this matter, please contact David Simmons of our staff at (805) 644-1766, extension 368.

Sincerely,

Chris Dellith
Senior Biologist

Enclosure

ENDANGERED AND THREATENED SPECIES THAT MAY OCCUR NEAR HIGHWAY 101 BETWEEN THE CITIES OF SANTA BARBARA AND CARPENTERIA, SANTA BARBARA COUNTY, CALIFORNIA

Birds		
Brown pelican	*Pelecanus occidentalis*	E
California least tern	*Sterna antillarum browni*	E
Least Bell's vireo	*Vireo bellii pusillus*	E, CH
Light-footed clapper rail	*Rallus longirostris levipes*	E
Southwestern willow flycatcher	*Empidonax traillii extimus*	E
Western snowy plover	*Charadrius alexandrinus nivosus*	T, CH
Amphibians		
California red-legged frog	*Rana draytonii*	T, CH
Fish		
Tidewater goby	*Eucyclogobius newberryi*	E, CH
Steelhead trout	*Oncorhynchus mykiss*	*
Plants		
Salt marsh bird's-beak	*Cordylanthus maritimus* ssp. *maritimus*	E
Gambel's watercress	*Rorippa gambellii*	E
Marsh sandwort	*Arenaria paludicola*	E
Contra Costa goldfields	*Lasthenia conjugens*	E
Ventura marsh milk-vetch	*Astragalus pycnostachyus lanosissimus*	E, CH

Key:

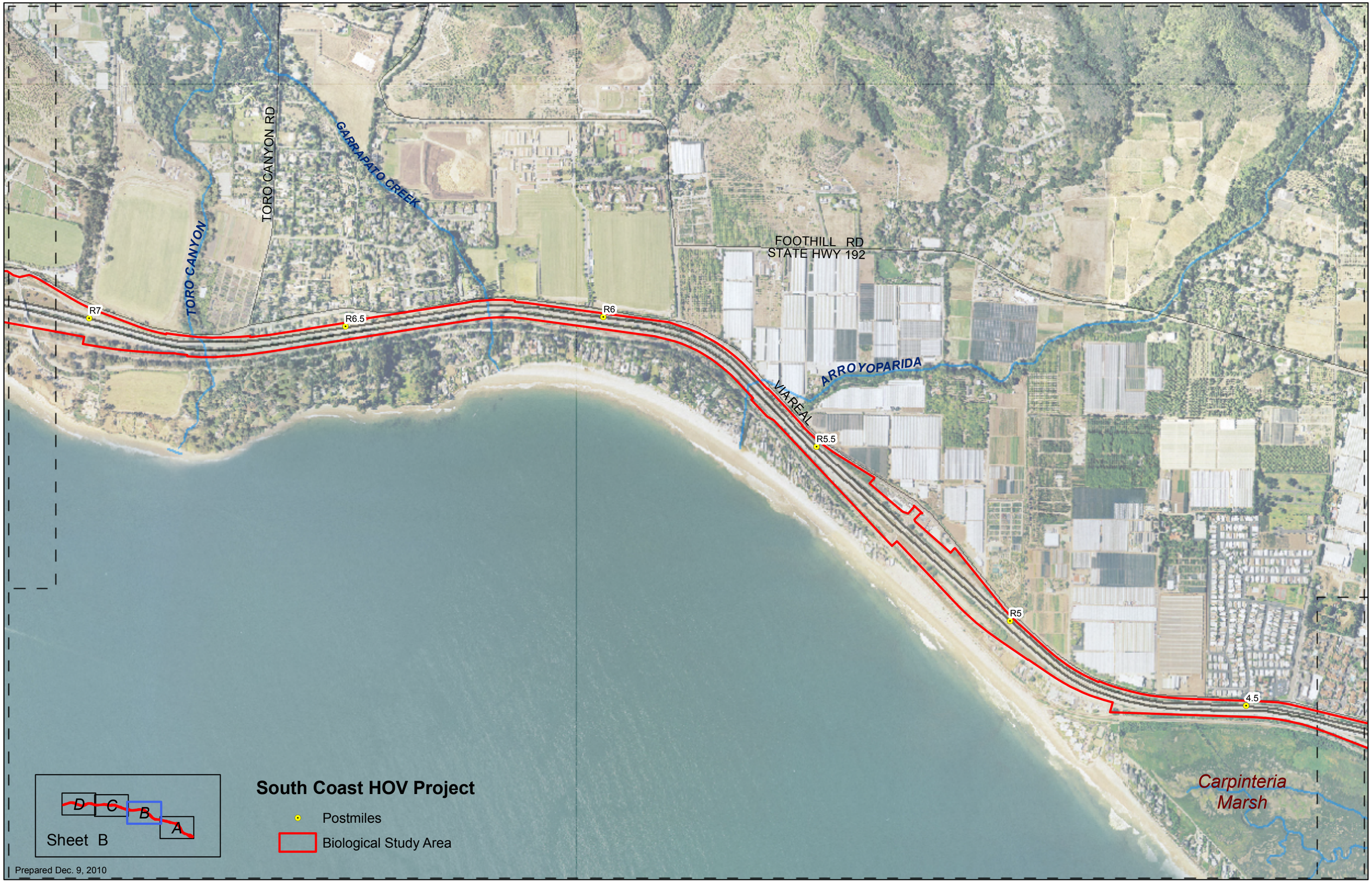
E Endangered
T Threatened
CH Critical habitat

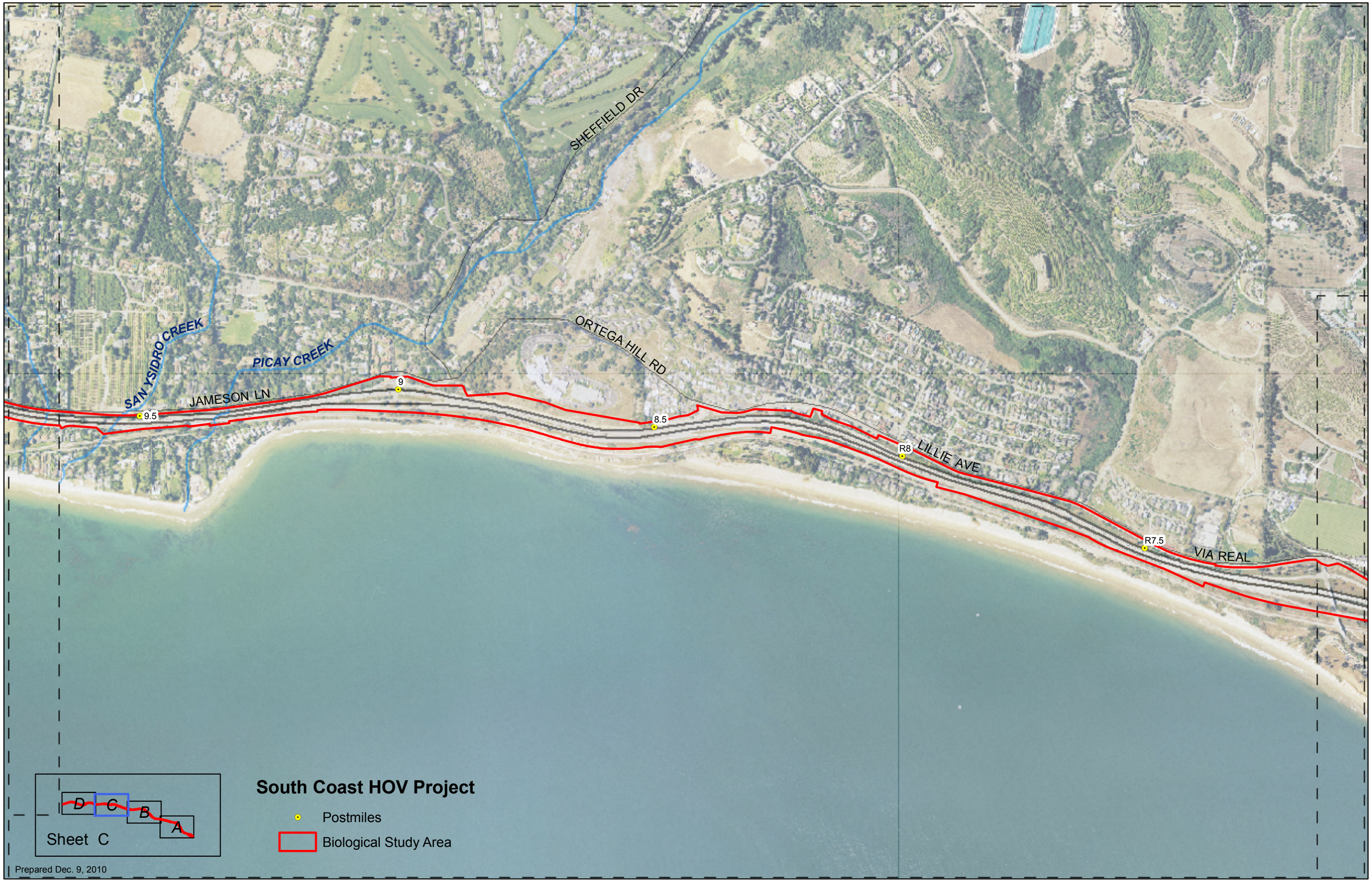
* Species for which the National Marine Fisheries Service has responsibility. For more information, call the Santa Rosa Field Office at 707-575-6050 or go to http://swr.ucsd.edu/

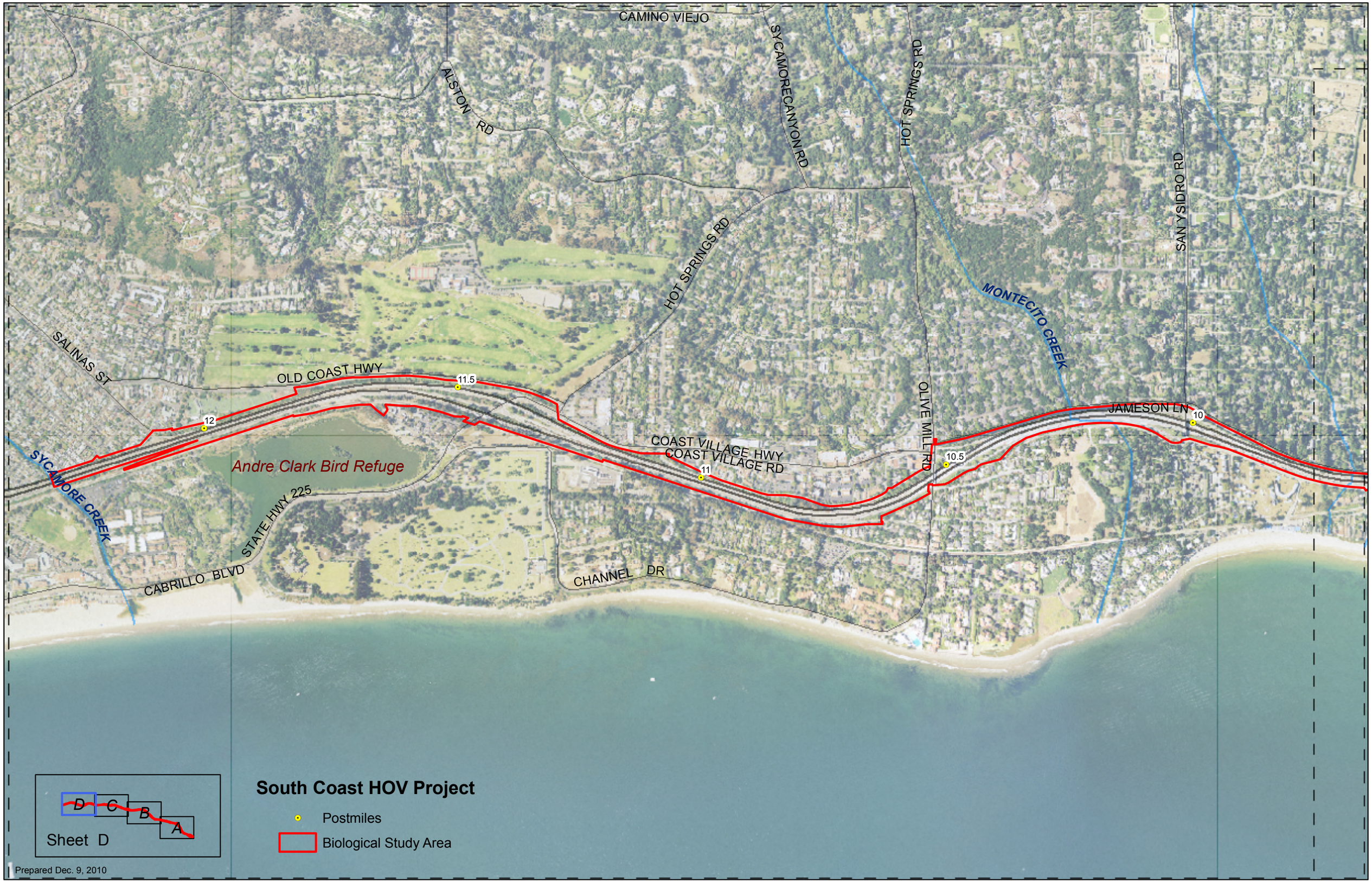
Appendix B Project BSA Map

** See Attachment

VIA REAL
SANTA MONICA RD
SANTA INEZ AVE
FOOTHILL RD
STATE HWY 192
CASITAS PASS RD
LINDEN AVE
Carpinteria Marsh
SANTA MONICA CREEK
FRANKLIN CREEK
7TH ST
CARPINTERIA CREEK
CARPINTERIA AVE
BALLARD AVE
4
3.5
3
2.5
2
1.5
Sheet A
D
C
B
A
South Coast HOV Project
Postmiles
Biological Study Area
Prepared Dec. 9, 2010


TORO CANYON RD
GARRAPATO CREEK
TORO CANYON
FOOTHILL RD
STATE HWY 192
R7
R6.5
R6
ARROYOPARIDA
VIA REAL
R5.5
R5
4.5
Carpinteria Marsh
D
C
B
A
Sheet B
South Coast HOV Project
Postmiles
Biological Study Area
Prepared Dec. 9, 2010


SHEFFIELD DR
ORTEGA HILL RD
SAN YSIDRO CREEK
PICAY CREEK
JAMESON LN
9.5
9
8.5
R8
LILLIE AVE
R7.5
VIA REAL
D
C
B
A
Sheet C
South Coast HOV Project
Postmiles
Biological Study Area
Prepared Dec. 9, 2010


CAMINO VIEJO
ALSTON RD
SYCAMORECANYON RD
HOT SPRINGS RD
HOT SPRINGS RD
SAN YSIDRO RD
MONTECITO CREEK
SALINAS ST
OLD COAST HWY
11.5
12
Andre Clark Bird Refuge
SYCAMORE CREEK
STATE HWY 225
CABRILLO BLVD
COAST VILLAGE HWY
COAST VILLAGE RD
11
OLIVE MILL RD
10.5
JAMESON LN
10
CHANNEL DR
D
C
B
A
Sheet D
South Coast HOV Project
Postmiles
Biological Study Area
Prepared Dec. 9, 2010

Appendix C Project Map Sheets

** See Attachment

Appendix D Watershed Mapping

Reference January 2012 “Natural Environment Study”

Appendix E Areas of Impacts to Individual Wetlands and Other Waters

** Refer to the maps in Appendix C for locations of wetlands and “other waters“

Table 11: Temporary and Permanent Impacts to Wetlands and Waters of the U.S.

Impact Areas Within Wetlands and Other Waters of the United States*

Square feet within Area of Direct Impacts

Waters and wetlands NOT affected are not listed in table.

Other Waters (OW)	ACOE Wetlands (AC)	Coastal Wetlands (CC)	Map Sheet Appendix C	Feature: (ditch, creek, etc)	Lined / Unlined	Alternative 1 impacts		Alternative 2 impacts		Alternative 3 impacts	
						Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
-	-	CC1	C:5	roadside ditch	U	0.0	42.8	0.0	817.4	0.0	42.8
OW14	-	-	C:5	Franklin Ck	L	0.0	1356.2	0	1356.2	0	1356.2
OW15	-	-	C:5	Franklin Ck	L	0.0	764.8	0	764.8	0	764.8
OW16	-	-	C:5	Franklin Ck	L	0.0	1087.8	0	1087.8	0	1087.8
OW17	-	-	C:5	roadside ditch	L	9027.9	1711.3	10192.5	1027.0	9027.9	1711.3
-	AC2	CC2	C:5	roadside ditch	U	0.0	1166.4	0.0	1166.4	0.0	1166.4
OW18	-	-	C:5	roadside ditch	U	0.0	0.0	0.0	2228.5	0.0	0.0
OW21	-	-	C:6	S. Monica Ck	L	0.0	1980.93	0.0	1980.93	0.0	1980.93
OW22	-	-	C:6	S. Monica Ck	L	0.0	714.0	0.0	714.0	0.0	714.0
OW23	--	-	C:6	S. Monica Ck	L	0.0	2011.1	0.0	2011.1	0.0	2011.1
-	-	CC6	C:6	culvert outlet	U	0	0	222.1	242.8	0	0
-	-	CC7	C:6	roadside ditch	U	1894.0	4142.5	1894.0	4142.5	1894.0	4142.5
-	-	CC8	C:6	roadside ditch	U	4412	0	4412	0	4412	0

Other Waters (OW)	ACOE Wetlands (AC)	Coastal Wetlands (CC)	Map Sheet Appendix C	Feature: (ditch, creek, etc)	Lined / Unlined	Alternative 1 impacts		Alternative 2impacts		Alternative 3 impacts	
						Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
-	-	CC9	C:6	roadside ditch	U	617.6	4069.2	4364.9	2662.3	617.6	4069.2
-	AC5	-	C:6	roadside ditch	U	43.5	1416.2	320.5	1139.1	43.5	1416.2
	AC6	-	C:6	roadside ditch	U	0	0	28.8	22.2	0	0
OW27	-	-	C:6	roadside ditch	U	0	0	103.2	176.8	0	0
-	-	CC10	C:6	roadside ditch	U	0	0	141.1	288.5	0	0
-	AC10	-	C:7	roadside ditch	U	0	0	109.1	17.0	0	0
-	-	CC15	C:7	roadside ditch	U	0	0	1795.9	448.4	0	0
-	-	CC17	C:7	roadside ditch	U	0	0	1853.4	217.0	0	0
-	AC11	CC18	C:7	roadside ditch	U	0	0	80.5	16.0	0	0
OW29	-	-	C:8	roadside ditch	U	0.0	188.7	2321.2	0.0	0.0	188.7
-	-	CC27	C:9	roadside swale	U	65.2	759.6	65.2	759.6	65.2	759.6
-	-	CC28	C:10	roadside swale	U	1222.0	1558.8	1421.5	1359.3	1222.0	1558.8
OW34	-	-	C:10	A. Paredon Ck	U	0.0	1249.5	588.9	666.1	0.0	1249.5
-	-	CC29	C:10	A. Paredon Ck	U	0.0	628.1	0	628.1	0.0	628.1
OW35	-	-	C:10	A. Paredon Ck	L	0.0	478.9	0.0	478.9	0.0	478.9
OW36	-	CC30	C:10	A. Paredon Ck	U	0.0	2770.0	0.0	2770.0	0.0	2770.0
-	AC16	CC35	C:12	Toro Cyn Ck	U	0.0	1011.0	0.0	1011.0	0.0	1011.0
OW43	-	-	C:12	Toro Cyn Ck	L	0.0	1205.1	0.0	1205.1	0.0	1205.1

Other Waters (OW)	ACOE Wetlands (AC)	Coastal Wetlands (CC)	Map Sheet Appendix C	Feature: (ditch, creek, etc)	Lined / Unlined	Alternative 1 impacts		Alternative 2 impacts		Alternative 3 impacts	
						Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
OW44	-	-	C:12	Toro Cyn Ck	L	0.0	514.8	0.0	514.8	0.0	514.8
OW52	-	CC37	C:14	Greenwell Ck	U	0.0	200.0	0.0	200.0	0.0	200.0
OW54	-	CC38	C:14	Greenwell Ck	U	1827.0	82.3	1827.0	82.3	1827.0	82.3
OW69	-	CC39	C:18	Romero Ck	U	0.0	386.4	0.0	386.4	0.0	386.4
OW70	-	CC40	C:18	Romero Ck	U	0.0	517.9	0.0	517.9	0.0	517.9
OW71	-	CC41	C:18	San Ysidro Ck	U	0.0	427.1	0.0	427.1	0.0	427.1
OW72	-	CC42	C:18	San Ysidro Ck	U	0.0	1183.7	0.0	1183.7	0.0	1183.7
OW73	-	CC43	C:18	Oak Ck	U	0.0	326.8	0.0	326.8	0.0	326.8
OW74	-	CC44	C:18	Oak Ck	U	0.0	386.7	0.0	386.7	0.0	386.7

Appendix F List of Plants Observed in the Biological Study Area

List of Plants Observed in the South Coast HOV Project BSA during 2008 and 2009 Botanic Surveys

Genus	Specific Epitat	Common Name	NATIVE or EXOTIC
Acacia	dealbata	Silver wattle	Exotic Pest Plant
Agave	americana	Century plant	exotic
Alnus	Rhombifolia	White alder	native
Aloe	arborea	Bush Aloe	exotic
Anagallis	arvensis	scarlet pimpernel	exotic
Artemisia	californica	California or Coastal Sagebrush	native
Artemisia	douglasiana	Douglas mugwort	native
Arundo	donax	Giant reed, arrundo	Exotic Pest Plant
Aster	chilensis	California ater	native
Astragalus	sp	Vetch	
Atriplex	lentiformis	Brewers saltbrush	Native
Atriplex	rosea	Redscale	exotic
Atriplex	semibaccata	Austrailian saltbrush	Exotic Pest Plant
Atriplex	triangularis	Spearscale	exotic
Avena	fatua	Wild oat	Exotic Pest Plant
Baccharis	douglasii	Marsh baccharis	native
Baccharis	pilularis	Coyote bush	native
Bambusa	sp.	Bamboo	exotic
Bougainvillea	sp.	Bougainvillea	exotic
Brassica	nigra	Black mustard	Exotic Pest Plant
Bromus	diandrus	Ripgut brome	Exotic Pest Plant
Bromus	hordeaceus	Soft chess brome	exotic
Bromus	madritensis ssp. rubens	Red brome	Exotic Pest Plant
Calendula	arvensis	Field Marigold	exotic
Callistemon	citrinus	Brilliant bottle-brush	exotic
Camissonia	Cheiranthifolia ssp. suffruticosa	Beach Evening Primrose	native
Carduus	pycnocephalus	Italian thistle	Exotic Pest Plant
Carpobrotus	edulis	hottentot fig	Exotic Pest Plant
Ceanothus	sp.	lilac	native
Centaurea	melitensis	tocolote	Exotic Pest Plant
Cercis	occidentalis	Western redbud	native
Clarkia	unguiculata	elegant clarkia	native
Conium	maculatum	Poison hemlock	Exotic Pest Plant
Convolvulus	arvensis	Field bindweed	Exotic Pest Plant
Cortaderia	jubata	Andean pampass	Exotic Pest Plant
Cotula	coronopifolia	Common brass butons	Exotic Pest Plant
Crassula	ovata	Jade plant	exotic
Cupaniopsis	anacardioides	carrot wood	exotic
Cupressus	macrocarpa	Monterey Cypress	native
Cuscuta	salina	California dodder	native

Cynodon	dactylon	Bermuda grass	exotic
Cynosurus	echinatus	Dog-tail grass	exotic
Cyperus	eragrostis	Tall flatsedge	exotic
Datura	wrightii	jimson weed	native
Dimorphotheca	sinuata	African daisy	Exotic Pest Plant
Echium	candicans	Pininana	Exotic Pest Plant
Ehrharta	calycina	Veldt grass	Exotic Pest Plant
Epilobium	parviflorum	Willow herb	native
Equisetum	hyemale	Giant Scouring rush	native
Equisetum	telmateia	Giant Horsetail	native
Ericameria	latifolia	Sawtooth goldenbush	native
Eriogonum	cinereum	Ashy leafed buckweat	native
Eriogonum	fasciculatum	California Buckwheat	native
Eriogonum	giganteum	St. Catherine's Lace	native
Eriogonum	parvifolium	Seacliff Buckwheat	native
Erodium	botrys	long-beaked fillaree	Exotic Pest Plant
Erodium	cicutarium	red-stemmed filaree	Exotic Pest Plant
Eriophyllum	confertifollium	Golden yarrow	native
Escallonia	sp.	Escallonia	exotic
Eschscholzia	californica	California poppy	native
Eucalyptus	globulus	Tasmanian blue gum	Exotic Pest Plant
Eucalyptus	sp.	Eucalyptus	Exotic Pest Plant
Euphorbia	crenulata	Chinese caps	native
Foeniculum	vulgare	Fennel, Annis	Exotic Pest Plant
Fremontodendron	californicum ssp. californicum	Fremontia, flannelbush	native
Galium	aparine	Bedstraw, Goose grass	exotic
Genista	monspessulana	French broom	Exotic Pest Plant
Geranium	dissectum	cut-leaved Geranium	exotic
Gnaphalium	californicum	green everlasting	native
Gnaphalium	luteo-album	weedy cudweed	exotic
Gnaphalium	stramineum	cotton-batting plant	native
Hedera	helix	English ivy	Exotic Pest Plant
Heliotropium	curassavicum	heliotrope	native
Hemizonia	fasciculata	Fascicled tarweed	native
Heteromeles	arbutifolia	Toyon	native
Heterotheca	grandiflora	Telegraph Weed	native
Hordeum	murinum ssp. glaucum	foxtail barley	exotic
Ipomoea	sp.	Morning glory	exotic
Jacaranda	mimosifolia	Sharpleaf Jacaranda , Blue Jacaranda	exotic
Jaumea	carnosa	fleashy Jaumea	native
Juncus	phaeocephalus	Brownheaded rush	native
Lactuca	serriola	prickly lettuce	exotic
Lemna	minor	Duckweed	native
Leymus	condensatus	Giant rye	native
Lobularia	maritima	Sweet Alyssum	exotic
Lolium	multiflorum	Italian ryegrass	Exotic Pest Plant
Lonicera	japonica	Japanese honeysuckle	exotic
Lotus	scoparius	Deerweed, Calif. broom	native
Lupinus	albifrons	Silver bush lupine	native
Malacothamnus	fasciculatus	Chaparral, Mesa Bush	native
Malosma	laurina	Laurel Sumac	native
Malva	parviflora	Cheeseweed	Exotic Pest Plant
Marah	fabaceus	Wild cucumber, manroot	native
Medicago	polymorpha	California bur-clover	Exotic Pest Plant

Melaleuca	sp.	Paper bark Tree	exotic
Melilotus	alba	White sweet clover	exotic
Mesembryanthemum	crystallinum	Crystalline iceplant	Exotic Pest Plant
Myoporum	laetum	Myoporum, ngaio tree	Exotic Pest Plant
Nasella	pulchra	Purple needlegrass	native
Nerium	oleander	oleander	Exotic Pest Plant
Nicotiana	glauca	Tree tobacco	Exotic Pest Plant
Oenothera	elata ssp. hirsutissima	Hookers evening primrose	native
Olea	europaea	Common or Mission Olive	Exotic Pest Plant
Optunia	sp.	Prickly pear cactus	Exotic
Oxalis	pes-caprae	Bermuda buttercup	exotic
Pennisetum	setaceum	fountain grass	Exotic Pest Plant
Persea	americana	Avocado	exotic
Phoenix	sp.	Date Palm	exotic
Picris	echioides	Bristly ox-tongue	Exotic Pest Plant
Pinus	torreyana	Torrey Pine	exotic
Pinus	radiata	Monterey Pine	native
Piptotherum	Miliaceum	Smilo grass	exotic
Pittosporum	undulatum	Orange Pittosporum	exotic
Plantago	lanceolata	English Plantain	exotic
Platanus	racemosa	Western or California Sycamore	native
Podocarpus	macrophyllus	Yew Podocarpus	exotic
Polypogon	monspelliensis	Rabbitsfoot grass	exotic
Potamogeton	pectinatus	Fennel leaved pondweed	native
Quercus	agrifolia	Coast Live Oak	native
Raphanus	sativus	Wild Radish	Exotic Pest Plant
Rhus	integrifolia	Lemonade Berry	native
Rhus	laurina	Laurel-sumac	native
Rhus	ovata	Sugarbush	native
Ricinus	communis	Castor Bean	Exotic Pest Plant
Romneya	coulteri	Matilija Poppy	native
Rorippa	nasturtium-aquaticum	Watercress	native
Rubus	ursinus	California blackberry	native
Rumex	acetosella	Sheep Sorrel	exotic
Rumex	crispus	Curly dock	exotic
Salicornia	virginica	Pickleweed	native
Salix	babylonica	Weeping Willow	exotic
Salix	sp.	willow	native
Salsola	tragus	Russian thistle, tumbleweed	Exotic Pest Plant
Salvia	mellifera	Black sage	native
Sambucus	mexicana	Blue or Mexican Elderberry	native
Senecio	vulgaris	common groundsel	exotic
Senecio	mikanioides	Cape ivy, German ivy	Exotic Pest Plant
Schinus	molle	Peruvian pepper tree	Exotic Pest Plant
Scirpus	americanus	American three-square	native
Scirpus	microcarpus	Small-fruited bulrush	native
Scirpus	pugens	common three-square	native
Sequoia	sempervirens	Redwood	native
Sysyrinchium	elmeri	Western blue eyed grass	native
Solanum	douglasii	White nightshade	native
Sonchus	oleraceus	sowthistle	exotic
Stachys	bullata	Hedge Nettle	native
Stellaria	media	Common Chickweed	exotic
Stephanomeria	exigua	wire lettuce	native

Suaeda	calceoliformis	Horned sea blight	native
Syagrus	romanzoffiana	Queen Palm	exotic
Toxicodendron	diversilobium	Poison oak	native
Tropaeolum	majus	Garden Nasturtium	exotic
Typha	latifolia	Cattail	native
Urtica	dioica	Stinging nettle	exotic
Verbena	lasiostachys	Western verbena	native
Vicia	sativa	Spring vetch	exotic
Vinca	major	Vinca, periwinkle	Exotic Pest Plant
Vitis	vinifera	Wine Grape	exotic
Vulpia	myuros	mouse-tail fescue	exotic
Washingtonia	filifera	California Fan Palm	Exotic
Yucca	sp.	Yucca	exotic

Appendix G Soundwall Mapping

** See Attachment

Appendix H U.S. Army Corps of Engineers Approved Jurisdictional Determination, dated August 29, 2012

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
VENTURA FIELD OFFICE
2151 ALESSANDRO DRIVE, SUITE 110
VENTURA, CALIFORNIA 93001

August 29, 2012

REPLY TO
ATTENTION OF

Regulatory Division

Morgan Robertson
Department of Transportation
District 5
50 Higuera Street
San Luis Obispo, California 93401-5415

SUBJECT: Approved Jurisdictional Determination

Dear Ms. Robertson:

Reference is made to your request (File No. SPL-2012-00557-TS) dated July 19, 2012, for an approved Department of the Army jurisdictional determination (AJD) for the Caltrans South Coast Highway 101 HOV Project, located in the cities of Carpinteria and Santa Barbara, Santa Barbara County, California.

As you may know, the Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, then a permit is required. The first test determines whether or not the proposed project is located in a water of the United States (i.e., it is within the Corps' geographic jurisdiction). The second test determines whether or not the proposed project is a regulated activity under section 10 of the River and Harbor Act or section 404 of the Clean Water Act. As part of the evaluation process, pertaining to the first test only, we have made the jurisdictional determination below.

Based on available information, we have determined there are jurisdictional waters of the United States on the project site, as well as non-jurisdictional aquatic resources in the locations described on the map sheets submitted with your original request. The basis for our determination for each location can be found within the enclosed JD form(s). Specifically we have determined the following:

Non-Jurisdictional Waters: OW1, 9, 12, 32, 33, 39, 41, 42, 45, 47, 48, 51, 57, 59, 60, 62, 67, 68;

Jurisdictional Relatively Permanent Waters (RPW): lower Franklin Creek watershed (OW14, 15, 16, 17 and AC2); lower Santa Monica Creek watershed (OW18, 21, 22, 23); OW29; lower Arroyo Parida Creek watershed - Carpinteria (OW34, 35, 36), lower Toro Creek watershed (OW43, 44 and AC16), lower Greenwell Creek (OW 52, 54), lower Romero Creek watershed (OW69, 70), lower San Ysidro Creek watershed (OW71, 72), lower Oak Creek watershed (OW73, 74);

Jurisdictional Traditional Navigable Waters (TNW) subject to the ebb and flow of the tide: lower Santa Monica Creek watershed (OW27 and AC5, 6, 10 and 11).

This letter contains an approved jurisdictional determination for the Caltrans South Coast Highway 101 HOV Project. If you object to this decision, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet (Appendix A) and Request for Appeal (RFA) form. If you request to appeal this decision you must submit a completed RFA form to the Corps South Pacific Division Office address shown on the RFA enclosure.

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. Part 331.5, and that it has been received by the Division Office within 60 days of the date on the NAP. Should you decide to submit an RFA form, it must be received at the above address by **October 29, 2012**. It is not necessary to submit an RFA form to the Division office if you do not object to the decision in this letter.

This jurisdictional determination is valid for five (5) years from the date of this letter, unless new information warrants revision of the determination before the expiration date. If you wish to submit new information regarding the approved jurisdictional determination for this site, please submit this information to Theresa Stevens, Ph.D. at the letterhead address by **October 29, 2012.** The Corps will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. A revised or reissued jurisdictional determination can be appealed as described above.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the particular project site identified in your request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

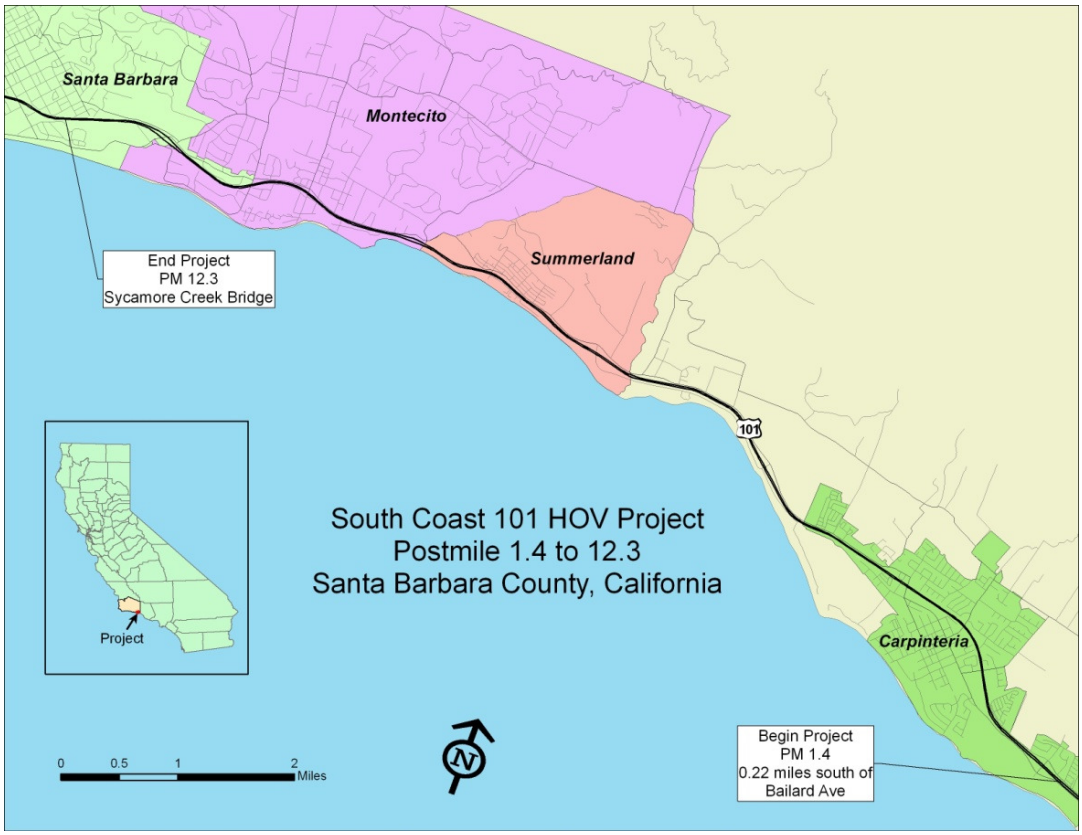
If you have any questions, please contact Theresa Stevens, Ph.D. of my staff at 805-585-2146 or via e-mail at theresa.stevens@usace.army.mil.

Please comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

David J. Castanon
Chief, Regulatory Division

Enclosures



Natural Environment Study

South Coast 101 High Occupancy Vehicle (HOV) Project

Route 101 between the City of Carpinteria and the City of Santa Barbara

District 5- SB-101-1.4/12.3

05-0N7000

January 2012

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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Natural Environment Study

South Coast 101 High Occupancy Vehicle (HOV) Project

Route 101 between the City of Carpinteria and the City of Santa Barbara

District 5- SB-101-1.4/12.3

05-0N7000

January 2012

STATE OF CALIFORNIA
Department of Transportation

Prepared By: _____ Date: 1-26-12

Morgan Robertson
Associate Environmental Planner (Natural Sciences)
(805) 542-4684
California Department of Transportation
San Luis Obispo

Approved by: _____ Date: 1-26-12

Larry Bonner
Senior Environmental Planner
(805) 549-3337
California Department of Transportation
San Luis Obispo

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Summary

Project Description

The proposed project involves safety and operational improvements along Route 101 in Santa Barbara County. The proposed improvements would begin at Bailard Road at the south end of the City of Carpinteria and end in the City of Santa Barbara just south of Sycamore Creek. Improvements would include the addition of a single High Occupancy Vehicle (HOV) lane in both the northbound and southbound directions and reconstructed interchanges at Sheffield Drive and Cabrillo Boulevard.

Purpose and Need

The purpose of this project is to reduce congestion and delay, provide capacity for future travel demand, encourage modal shift to transit and carpooling, and improve travel time on U.S. 101 within the project limits.

Summary of Alternatives Comparison

Three build alternatives -- Alternatives 1, 2, and 3 -- and a No-Build Alternative are proposed for this project. All build alternatives add an additional lane in each direction to provide for a part time High Occupancy Vehicle (HOV) facility within the project limits, but have different ramp arrangements. All would have wetland impacts and mitigation requirements. Alternative 2 would have the largest footprint and thus would result in the greatest impacts to wetlands and waters of the U.S. and to roadside vegetation, including trees.

Special-Status Species

The project would not affect any listed plant species.

Special-status animal species with the potential to be impacted by this project include the steelhead trout (*Oncorhynchus mykiss;* federally endangered) and the tidewater goby (*Eucyclogobius newberryi;* federally endangered).

For all alternatives, five bridge structures would be replaced at creek crossings (Arroyo Paredon Creek, Toro Canyon Creek, Romero (Picay) Creek, San Ysidro Creek, and Oak Creek). Listed species occur at three of these creeks: Arroyo Paredon Creek (steelhead trout and tidewater goby), Romero Creek (steelhead trout) and San Ysidro Creek (steelhead trout).

Steelhead trout in southern California comprise a "distinct population segment" (DPS) of the species that is ecologically and reproductively discrete from the remainder of populations along the West Coast. Critical habitat was designated for the Southern California Steelhead DPS on September 2, 2005. Bridge-replacement is proposed at two creeks that are designated critical habitat for steelhead trout within the highway right of way (Romero and San Ysidro), and at Arroyo Paredon Creek which supports critical habitat for steelhead 350 feet upstream of the project area. Formal Section 7 Consultation with the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) will be initiated for potential incidental take of steelhead trout and critical habitat.

Tidewater gobies are known to occur in Arroyo Paredon Creek. Revised critical habitat was proposed for tidewater goby on October 19, 2011 which includes Arroyo Paredon Creek. Formal Section 7 consultation under the Endangered Species Act will be initiated with the U.S. Fish and Wildlife Service (USFWS) for potential incidental take of tidewater gobies and proposed critical habitat at Arroyo Paredon Creek.

Wetland Impacts

All build alternatives would affect U.S. Army Corps of Engineers (ACOE) wetlands and Coastal Zone wetlands (wetlands not subject to U.S. Army Corps of Engineers/Environmental Protection Agency regulation), as well as other waters of the United States. Table 1 compares wetlands impacts for each alternative. Alternative 2 would have the greatest impacts. Differences between Alternatives 1 and 3 are minimal. The majority of impacts would result from bridge construction and soundwall installation. With the exception of the Arroyo Paredon Bridge, new bridges would not place piers within jurisdictional waters. Most bridge-related impacts would result from temporary construction access. With mitigation, no cumulative effect is expected.

Table 1: Impacts to Wetlands and Other Waters (acres)

Wetland Type	Alternative 1		Alternative 2		Alternative 3	
	Temp	Perm	Temp	Perm	Temp	Perm
U.S. Army Corps & Coastal Zone Wetlands	0.078	0.005	0.073	0.016	0.078	0.005
Other Waters of the U.S.	0.781	0.752	0.845	0.969	0.777	0.732
Additional Coastal Zone Wetlands	0.487	0.146	0.430	0.506	0.487	0.146

Riparian Habitat Areas

For all alternatives, five bridge structures would be replaced at creek crossings. Temporary and permanent impacts to riparian vegetation will occur at Arroyo Paredon Creek, Toro Canyon Creek, Greenwell Creek and San Ysidro Creek. Twenty-two native hardwood trees (oak, sycamore, cypress and pine) and nineteen arroyo willows will be removed from riparian areas. Invasive plant species will be targeted for removal in riparian zones and replacement planting will be implemented within the state Right of Way.

Coast Live Oak Trees

Up to 220 coast live oak trees, including riparian trees, would be removed from along the Highway Right of Way. Impacts to native oak trees would be offset by replacement planting within the project limits.

Permits Required

A streambed alteration agreement will be required from the California Department of Fish and Game for work at all creek crossings. Permits will be required from the U.S. Army Corps of Engineers and the Regional Water Quality Control Board for all culvert extensions, fill placement and bridge construction in jurisdictional areas. Two Biological Opinions will be required, one from the U.S. Fish and Wildlife Service for tidewater goby and one from NOAA's National Marine Fisheries Service for steelhead and critical habitat. The project is located within the coastal zone and will require coastal development permits from the City of Carpinteria, the City of Santa Barbara and the County of Santa Barbara prior to construction.

Avoidance and Minimization Measures

Avoidance and minimization measures that have been incorporated into the project design include placement of retaining walls and soundwalls to avoid or minimize impacts to sensitive natural resources. To minimize construction-related impacts to wetlands and riparian areas, Environmentally Sensitive Areas (ESAs) will be established at creeks and wetlands at 12 ft from cut/fill limits. Coast live oaks and other native trees $\geq$ 6" dbh that are located outside of the Area of Direct Impact (ADI) will be delineated on project plans and demarcated in the field with ESA fencing to protect them during construction.

Manmade roadside ditches and drainage features will be replaced in-kind within the project limits. Temporary effects to water quality from increased erosion on new cut and fill slopes will be avoided by implementing the best management practices

(BMPs) from Caltrans' National Pollution Discharge Elimination System statewide permit. Caltrans will hydroseed ditch banks with native seed where practicable to benefit water quality by decreasing run-off and sedimentation into waterways.

Avoidance and minimization measures for steelhead trout and tidewater goby would include limiting work in habitat creeks to the low flow period (June - October), implementing dewatering and water diversion plans for in-channel work, designating appropriately-sited staging and refueling sites, conducting pre-construction educational meetings for construction personnel, and replanting riparian areas with native vegetation within the ROW.

The contractor would be required to hire a biological monitor to complete measures required for protection of steelhead trout and tidewater goby. The biological monitor would also be required to help the Resident Engineer ensure that ESAs are established and adhered to.

Compensatory Mitigation

Compensatory mitigation would be required for riparian impacts because these affected plant communities are associated with jurisdictional streambeds. All riparian trees will be replaced within the state ROW. Chapter 4 identifies proposed mitigation ratios.

Impacts to oak trees planted along State Route 101 would be offset by replacement planting within the project limits.

Removing concrete channel lining at Toro Canyon Creek would restore up to 0.105 acre of channel bed. New bridge structures at Arroyo Paredon, Romero, San Ysidro and Oak creeks would have longer spans, expanding the area of natural creek beds 0.16 acres, 0.13 acres, 0.11 acres and 0.03 acres respectively. Following construction, the undersides of bridges at Romero, San Ysidro and Oak creeks would be temporarily blocked off to maintain their current channel widths until downstream facilities have been upgraded.

The U.S. Army Corps of Engineers and the California Coastal Commission require no net loss of wetlands and would require compensatory mitigation for wetland impacts. Impacts would be minimized at all jurisdictional areas. Wetlands impacts would be offset by constructing seasonal wetlands onsite to the extent practicable. Offsite mitigation is proposed in the Carpinteria Salt Marsh. The Carpinteria Marsh is the largest remnant of the native ecosystem in the region, and has the highest occurrence

of special-status species in the area (CNDDB). It is a critically important southern California coastal estuary, but impacts from agricultural runoff, sedimentation, and invasive species threaten its productivity. Restoration or habitat creation in the marsh should focus on enhancing the function and habitat value of this important natural resource.

Invasive Species

To prevent new invasive species from being imported to the site, Caltrans requires that the project contractor implement the following control measures:

1. Only certified noxious weed free erosion control materials will be used. All straw and seed material shall be certified weed free by the County Agricultural Commissioner prior to being used at the project site. The California Department of Food and Agriculture maintains a current listing of noxious weeds.

2. Imported fill material shall be weed-free.

Limitations

This impact analysis is based on the cut/fill limits for each alterative shown in Appendix C: *Project Map Sheets*. Features such as temporary detours, retention basins or staging areas may be designed in areas beyond the currently proposed cut/fill limits. This may incur impacts not addressed in this report. Also, the ACOE has not verified the wetland delineation. The Corps may take jurisdiction over areas that are not currently delineated or may decline to take jurisdiction over some areas.

The Milpas to Hot Springs Highway Improvements Project (Caltrans EA#: 05-44780) is proposing a modified design that would accommodate HOV lanes in the City of Santa Barbara in the northbound lanes between PM 11.9 and PM 12.3. If the design is not incorporated into the Milpas to Hot Springs Project in 2011, work will be conducted by this project and will be evaluated for potential impacts to natural resources.

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List of Abbreviated Terms

ACOE	Army Corps of Engineers
ACOE	Army Corps of Engineers
ADI	Area of Direct Impact
BMP	Best Management Practice
BSA	Biological Study Area
Caltrans	California Department of Transportation
CCC	California Coastal Commission
CDFG	California Department of Fish and Game
dbh	Diameter at breast height (~4 ft)
FHWA	Federal Highway Administration
ft	foot/feet
FWS	Fish and Wildlife Service
HOV	High Occupancy Vehicle
km	kilometer(s)
m	meter(s)
mi	mile(s)
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Marine Fisheries Service
PM	post mile
ROW	Right of Way
SBCFC	Santa Barbara County Flood Control
NB	Northbound
SB	Southbound
UPRR	Union Pacific Railroad
USFWS	United States Fish and Wildlife Service

Chapter 1. Introduction

The California Department of Transportation (Caltrans) in cooperation with the Federal Highway Administration and the Santa Barbara County Association of Governments proposes the South Coast High Occupancy Vehicle Lane Project (South Coast HOV). The proposed project would construct a series of safety and operational improvements along Route 101 in Santa Barbara County beginning at Bailard Road at the south end of the City of Carpinteria and ending in the City of Santa Barbara just south of Sycamore Creek (Figure 1). The project would be 10.9 miles in length. Proposed improvements include the addition of a single High Occupancy Vehicle (HOV) lane in both the northbound and southbound directions and reconstructed interchanges at Sheffield Drive and Cabrillo Boulevard.

1.1. Project History

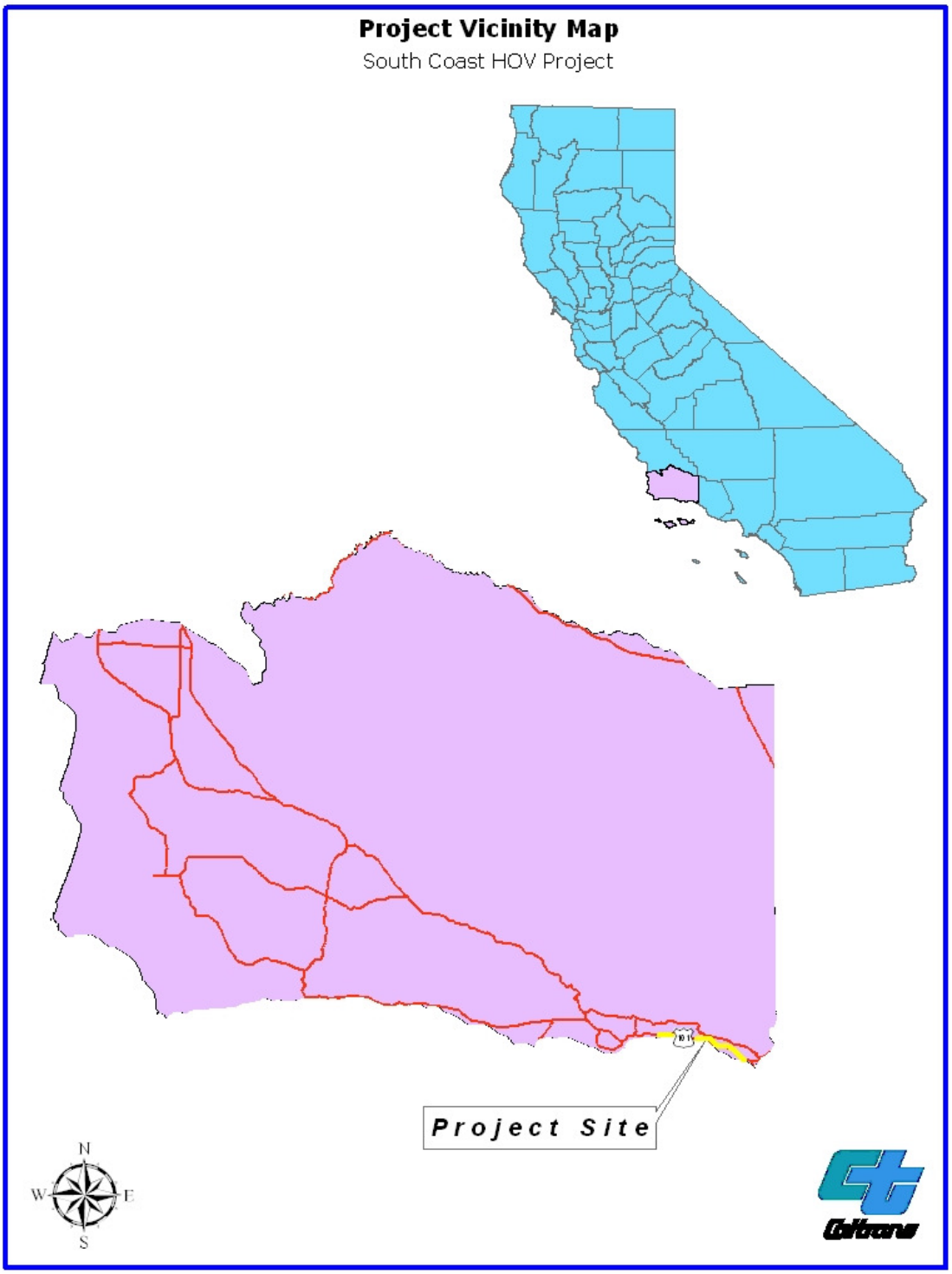
1.1.1. Purpose and Need

The purpose of this project is to reduce congestion and delay, provide capacity for future travel demand, encourage modal shift to transit and carpooling, and improve travel time on U.S. 101 within the project limits. This project is also anticipated to facilitate the flow of goods and services through the corridor and minimize diversion of freeway trips onto the local road system.

To achieve this stated purpose, this project should reduce corridor delay within the project limits by at least 7,000 person-hours daily. In addition the project should reduce peak-period travel time on Route 101 for carpoolers and express bus riders by at least 30% on average during typical weekdays, with travel speeds that are generally faster than single occupancy vehicle travel.

This project was initiated to implement one of the key elements from the *101 In Motion* consensus recommended package of projects; namely, an HOV lane on Route 101 from Milpas south to the county line. This proposed project is one of six elements that are being implemented through *101 In Motion*. Together this package will implement a multi-modal strategy to accommodate future travel demand while facilitating a modal shift to carpooling, transit, and passenger rail.

Figure 1. Project Vicinity Map



1.2. Project Description

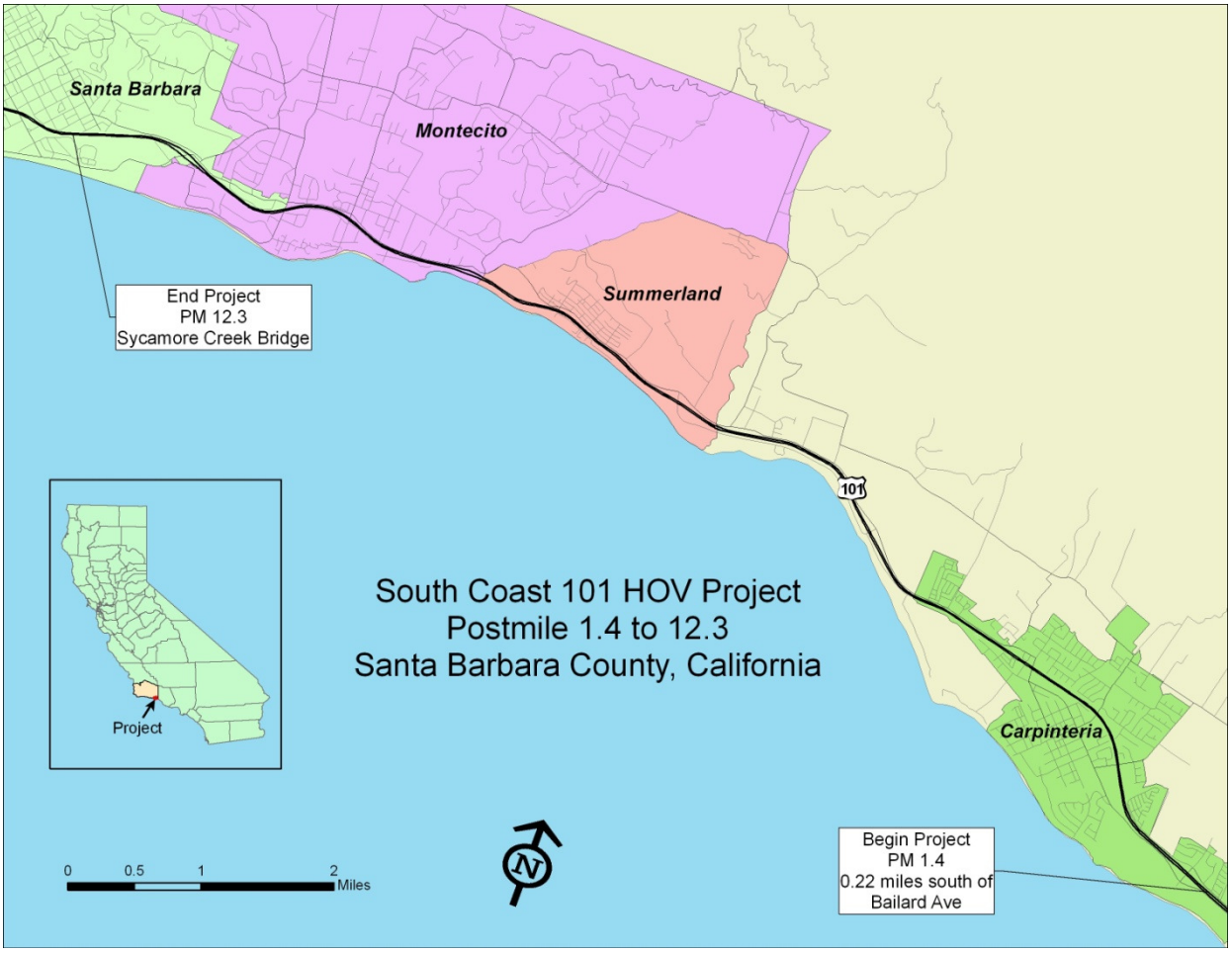
Proposed Action

Caltrans proposes to widen State Route 101 to three lanes in each direction between 0.22 miles south of the Bailard Avenue overcrossing in the City of Carpinteria and Sycamore Creek in the City of Santa Barbara (Figure 2, Appendix D). Three build alternatives and a no-build alternative are proposed for this project. Each build alternative would add a single High Occupancy Vehicle (HOV) lane in both the northbound and southbound directions and reconstruct interchanges at Sheffield Drive and Cabrillo Boulevard.

Build Alternatives

Three build alternatives -- Alternatives 1, 2, and 3 -- and a No-Build Alternative are proposed for this project. All build alternatives provide add an additional lane in each direction to provide for a part time High Occupancy Vehicle (HOV) facility within the project limits. Alternative 1 proposes to balance competing resource interests such as scenic views, wetlands, and median/outside landscaping. Alternative 2 proposes to maximize landscaping in the median. Alternative 3 proposes to construct all new paved lanes within the existing available median and maximizes the retention of outside planting. All build alternative improvements would be constructed primarily within the existing public right of way.

Figure 2. Project Location Map



1.2.1. Common Design Features of Build Alternatives 1, 2 and 3

Alternatives 1, 2 and 3 would include the following:

1.1.1 Basic Common Design Features

- Add an additional lane in each direction on Route 101 to provide for a part time, continuous access High Occupancy Vehicle (HOV) facility within the project limits.
- Replace bridge structures at: Arroyo Paredon, Toro Canyon, Romero (Picay), Oak, and San Ysidro Creeks.
- Widen bridge structures at Franklin and Santa Monica creeks.
- Widen traffic undercrossing structures at South Padaro Lane and Evans

Avenue.

- Construct a southbound auxiliary lane between the Sheffield Drive on ramp and the Evans Avenue off ramp.
- Reconstruct the interchanges at Sheffield Drive and Cabrillo Boulevard.
- Consideration, as design options, seven mutually exclusive Cabrillo Blvd. interchange configurations (F, H, I, J, L, M, and Q). Interchange configurations under consideration include:

  F) SB 1/2 DIAMOND -Close both median off ramps at Cabrillo Blvd.; improve the northbound Hermosillo Drive off ramp and the northbound Cabrillo Blvd. on ramp. Construct new on and off ramps to intersect at Cabrillo Blvd., northbound and southbound, immediately adjacent and to the right of the freeway lane.

  H) TIGHT DIAMOND- Close all existing off ramps, including the Los Patos Way and Hermosillo Drive ramps. Construct new on and off ramps to intersect at Cabrillo Blvd., northbound and southbound, immediately adjacent and to the right of the freeway lanes.

  I) EXISTING MAINLINES / IMPROVE LOS PATOS - Close both median off ramps at Cabrillo Blvd.; improve the northbound Hermosillo Drive off ramp, the southbound Los Patos Way off ramp, and the northbound Cabrillo Blvd. on ramp.

  J) EXISTING MAINLINES / IMPROVE LOS PATOS - Identical to Configuration "I" with the addition of a southbound Los Patos Way on ramp.

  L) NB 1/2 DIAMOND / IMPROVE LOS PATOS -Close northbound and southbound median off ramps at Cabrillo Blvd. and close the northbound Hermosillo Drive off ramp; add a southbound Cabrillo Blvd. off ramp; improve the southbound Los Patos Way off ramp and the northbound Cabrillo Blvd. on ramps.

  M) NB 1/2 DIAMOND / IMPROVE LOS PATOS -Identical to Configuration "L" with the addition of a southbound Los Patos Way onramp.

  Q) HALF SINGLE POINT -Close the Los Patos southbound off ramp, the northbound and southbound median off ramps at Cabrillo Blvd, and the northbound on ramp at Cabrillo; construct a new Cabrillo Blvd southbound right side off ramp that will undercross three southbound freeway lanes and a new northbound right side on ramp that will undercross three northbound freeway lanes - both will join at the existing median ramp intersections at Cabrilllo Blvd.; also improve the northbound Hermosillo Drive off ramp.

1.1.2 Additional Common Design Features

- Construct retaining walls at two locations: On the southbound outside shoulder at the right of way line along the southbound off ramp at Sheffield Drive (430 feet in length) and on the outside shoulder of the proposed southbound auxiliary lane from Sheffield Drive to Evans Avenue (1550 feet in length).
- Provide median landscaping in the first 0.2 mile at the southern limits of the project, and the last 0.5 mile of the project.
- Install replacement planting.
- Construct soundwalls for noise abatement where appropriate.
- Provide noise attenuating pavement surface on all travel lanes.
- Relocate underground and aboveground utilities as needed.
- Lengthen cross culverts to accommodate additional pavement width.
- Construct maintenance vehicle pullout areas.
- Construct stormwater treatment facilities within the project limits and on publicly owned property near the Bailard Interchange (PM 1.6).

1.2.2. Unique Design Features of the Build Alternatives

<u>Alternative 1 - Balanced Resources</u>

- This alternative proposes to balance competing resource interests such as scenic views, wetlands, and median/outside landscaping.
- Provide median landscaping, where appropriate, at several additional locations: from 0.2 mile from the southern limits of the project to Linden Avenue; the South Padaro Lane Interchange; and at the North Padaro Lane Interchange.
- The freeway outside edge of pavement requires widening in all locations where additional median landscaping is proposed.

<u>Alternative 2 – Maximize Median Planting</u>

- This alternative proposes to maximize landscaping in the median, and recognizes that some identified scenic resources may be partially blocked and some wetland areas impacted.

- Provide median landscaping, where appropriate, at several additional locations: from 0.2 mile from the southern limits of the project to Reynolds Avenue; and from Santa Monica Road to the Evans Avenue Interchange.
- The freeway outside edge of pavement requires widening in all locations where additional median landscaping is proposed.
- Construct additional southbound auxiliary lanes between 1) the Santa Claus Lane on ramp and the Carpinteria Avenue off ramp and 2) the Reynolds Avenue on ramp and the Linden Avenue off ramp.
- Construct 3 additional retaining walls. One on the southbound shoulder at the right of way line ending at the Santa Claus Lane southbound on ramp (500 feet in length), one on the northbound shoulder near Greenwell Creek (700 feet in length) and one on the northbound shoulder near the northbound offramp to Summerland (300 feet in length.)

Alternative 3 – Maximize Outside Planting

- This alternative proposes to construct all new paved lanes within the existing available median and maximizes the retention of outside planting.
- A single barrier separating the two inside paved shoulders will be provided in the median between Carpinteria Creek and Olive Mill Road, which largely retains the existing outside edge of pavement within these areas.

1.2.3 No Build Alternative

The existing conditions along Route 101 would remain as they are now. Traffic on Route 101 and local roads would continue to become more congested. The No-Build Alternative would not address the long term traffic on Route 101 and would fail to meet the purpose and need of the project.

1.3 Construction Work Schedule

The proposed project is expected to be constructed in four phases due to funding limitations. Construction activities on the first phase are expected to begin between 2015 and 2017, based on funding availability. During phases that include structures work in creeks, work would take place over three or four construction seasons, depending on the extent of work required. Unless directed otherwise by the resource agencies, work in and around Arroyo Paredon, San Ysidro and Romero Creeks will occur between June 1 and October 31, annually, to minimize potential impacts to

migrating steelhead trout and tidewater gobies. Tree removal would occur between September 1 and February 15 to avoid impacts to nesting birds.

1.4 Construction Staging and Storage Areas

Some potential staging areas within the BSA were identified on project design plans in August 2008. Borrow/disposal sites and utility relocations have not yet been identified.

1.5 ESA (Environmentally Sensitive Area) Fence

ESA fencing will be installed throughout areas of the project to limit construction activities and protect habitats of concern. ESA fencing will be delineated on the project plans and established in the field prior to beginning any construction activities. Special Provisions for the installation of ESA fencing and silt fencing will be included in the construction contract for this project.

Chapter 2. Study Methods

2.1. Studies Required

Prior to field studies, the project area was reviewed using the Caltrans photolog, USFWS species lists, and in-house inventories of the California Natural Diversity Database (CNDDB) and the California Native Plant Society's (CNPS) Electronic Inventory to identify special-status species occurrences within a 10 mile radius of the proposed project. The project occurs within the Carpinteria and Santa Barbara 7.5 minute U.S. Geological Service topographic quadrangles. Database searches included the Carpinteria, Santa Barbara, White Ledge Peak, Old Man Mountain, Hildreth Peak, Little Pine Mountain, San Marcos Pass, and Goleta topographic quadrangles.

A USFWS special-status species list for the project area was obtained from the Ventura Office of the U.S. Fish and Wildlife Service on May 21, 2010. The list is presented in Appendix A.

Agency staff and websites of the U.S. Fish and Wildlife Service, National Marine Fisheries Services and Santa Barbara County Flood Control were also consulted for information about sensitive species in the area. Published floral and faunal inventories were consulted, along with reports from past projects in the area. This information was used to develop Table 3 which lists the rare plants and wildlife that may potentially occur in the BSA.

Field studies conducted for this project included botanical surveys for sensitive plant species, jurisdictional delineations for wetlands and other waters of the U.S., USFWS protocol-level surveys for California red-legged frogs (*Rana aurora draytonii*), and habitat assessments for tidewater goby (*Eucyclogobius newberryi*), steelhead trout (*Oncorhynchus mykiss*), southwestern pond turtle (*Emys marmorata*), two-striped garter snake (*Thamnophis hammondii)*, Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*), the light-footed clapper rail (*Rallus longirostris levipes*), southwestern willow flycatcher (*Empidonax traiillii extimus*), least Bell's vireo (*Viero bellii pusillus*), California least tern (*Sterna antillarum browni*) and the western snowy plover (*Charadrius alexandrinus nivsus*).

2.1.1. Biological Study Area

Appendix B shows the biological study area (BSA). The BSA includes the project footprint and all surrounding area that may be temporarily or permanently impacted

by construction or construction-related activities.

2.1.2. Special-Status Wildlife Surveys

Habitat requirements of special-status species described in Table 3 were compared with potential habitat found within the project limits. Reference materials were consulted to determine the nearest known locations of sensitive species.

Surveys for California red-legged frogs were conducted according to the US. Fish and Wildlife Service's *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (USFWS 2005). Surveys were conducted in Arroyo Paredon Creek (4500 feet upstream from Highway 101and downstream to the Pacific Ocean) and Romero Creek (3000 feet upstream from Highway 101 and downstream to the Pacific Ocean). Additional surveys were conducted at locations with potential to support populations of red-legged frogs, which included Greenwell Creek south of Highway 101 (Appendix C, Mapsheet 16), and the drainage ditches located north of the South Padaro Lane Overcrossing (Appendix C, Mapsheet 10).

General wildlife surveys of the BSA were conducted between March 1, 2009 and February 15, 2010, utilizing binoculars and identification of tracks, sign, nests and dens. Overhead structures were surveyed for roosting bats and nesting birds in May, June and July 2009. Structures were inspected for evidence of roosting bats, including bat sign, such as urine stains and guano. Surveys for Monarch butterfly roosts and raptor nests in the BSA were performed in January and February, 2010.

2.1.3. Special-Status Plant Surveys

Botanical surveys of the BSA were conducted by Caltrans Biologist Mitch Dallas and Jon Moule, a wildlife biologist with SWCA Environmental Consultants. A botanical survey of the Bailard Overcrossing area (PM 1.39 to PM 1.84) was conducted by Caltrans biologist Morgan Robertson after this area was added to the project.

2.1.4. Wetland Delineations

Delineations of jurisdictional wetlands and other waters of the U.S. were conducted by Bob Sloan (Senior Biologist) and Jon Claxton (Biologist) from SWCA Environmental Consultants to identify wetland resources and determine potential impacts. Over the course of two survey efforts (Survey 1: April 28 – May 1 and Survey 2: May 12 - 13), SWCA biologists studied three disjunctive sections of Caltrans ROW along Highway 101 between Carpinteria and Santa Barbara. The first

section (from south to north) is located at the Bailard Avenue overcrossing, and extends from PM 1.39 to PM 1.84. The second section extends from PM 1.97 to PM 2.2 in the southern portion of Carpinteria. The third section (and longest) extends from PM 3.3 (Franklin Creek in the center of Carpinteria) to PM 10.85 (Coast Village Circle in the eastern portion of the City of Santa Barbara).

Sections of the BSA not evaluated by SWCA were evaluated in other studies conducted by Caltrans for adjacent highway projects. Jurisdictional delineations from Post Mile 10.85 to Post Mile 12.3 were completed by Caltrans Associate Biologist David Hacker in 2006 as part of the Milpas to Hot Springs Highway Improvements Project (Caltrans EA#: 05-44780). A 401 Water Quality Certification was obtained from the California Regional Water Quality Control Board on December 5, 2006, and a U.S Army Corps of Engineers 404 Permit (# SPL-2006-2026-PHT) was obtained April 17, 2007. The City of Santa Barbara issued a Coastal Development Permit for the project on December 16, 2007 and road construction began in 2008. Jurisdictional waters and wetlands identified as part of the Milpas to HotSprings project would not be impacted since they are not within the footprint of the proposed alternatives for the South Coast HOV project. Delineations of waters of the U.S., including wetlands, between Post Mile 2.2 and 3.8 were conducted by Caltrans Associate Biologist Mitch Dallas on 3/1/02, 4/23/07 and 5/4/07, and by Caltrans Associate Biologists Morgan Robertson and Jimmy Walth on October 8, 2009 as part of the Linden-Casitas Highway Improvements Project. These delineations are documented in that project's Natural Environmental Study (Caltrans EA#: 05-4482U0).

Wetlands and other waters of the U.S were delineated according to the *1987 USACE Corps Wetland Delineation Manual* (Environmental Laboratory 1987), *the Final Arid West Regional Supplement Version 2.0 (USACE 2008), the Definition and Delineation of Wetlands in the Coastal Zone (CCC 2006), the Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone (CCC 2007*), and federal, state, and local guidelines for identification of wetland areas. The Wetland Study for the project contains jurisdictional delineations and a more detailed discussion of methods (Appendix G).

2.2. Personnel and Survey Dates

Caltrans Associate Biologist, Morgan Robertson, conducted wildlife surveys aided by Caltrans Associate Biologists, Nancy Siepel, Jennifer Moonjian, Jimmy Walth and Chuck Cesena. Caltrans Associate Environmental Planner, Samer Momani, assisted with two red-legged frog surveys. Botanical surveys of the BSA were conducted by

Caltrans Biologist Mitch Dallas and Jon Moule, a wildlife biologist with SWCA environmental consultants. Delineations of jurisdictional waters of the US, including wetlands, were conducted by Bob Sloan, Senior Biologist, and Jon Claxton, Biologist, with SWCA environmental consultants.

Table 2. Personnel and Survey Dates

Survey Type	Survey Date	Personnel
Botanical surveys of BSA, and habitat site assessments	May 2, 2008	Mitch Dallas
Botanical surveys of BSA, and habitat site assessments	June 10,12, 13,16,17, 19, 20, 24,25, 26, 2008	John Moule
General biological survey and habitat site assessments	March 3, 2009	Morgan Robertson
USFWS Protocol surveys-California red-legged frog	March 16, 2009	Morgan Robertson, Chuck Cesena
General biological survey and habitat site assessment	April 7, 2009	Morgan Robertson, Jimmy Walth
Wetland delineations	April 28, 2009	Bob Sloan, Jon Claxton
Wetland delineations	May 12-13, 2009	Bob Sloan, Jon Claxton
Focused surveys: swallow nesting on highway structures	May 18, 2009	Morgan Robertson
USFWS Protocol surveys-California red-legged frog	May 18, 2009	Morgan Robertson, Nancy Siepel
USFWS Protocol surveys-California red-legged frog	June 4, 2009	Morgan Robertson, Nancy Siepel
Focused surveys: bats and nesting birds	June 05, 2009	Morgan Robertson, Jennifer Moonjian
USFWS Protocol surveys-California red-legged frog	June 16-17, 2009	Morgan Robertson, Jennifer Moonjian
Botanical survey of BSA extension (PM 1.4-1.8)	June 22, 2009	Morgan Robertson
USFWS Protocol surveys-California red-legged frog	June 25, 2009	Morgan Robertson, Samer Momani

USFWS Protocol surveys-California red-legged frog	July 8, 2009	Morgan Robertson, Samer Momani
Focused surveys: bats and nesting birds	July 28, 2010	Morgan Robertson, Jennifer Moonjian
USFWS Protocol surveys-California red-legged frog	Sept 2, 2009	Morgan Robertson, Jimmy Walth
USFWS Protocol surveys-California red-legged frog	Sep 30, 2009	Morgan Robertson, Jimmy Walth
Focused surveys: Monarch roosting and raptor nests	Jan 26, 2010	Morgan Robertson
Focused surveys: Monarch roosting and raptor nests	Feb 2, 2010	Morgan Robertson

2.3. Agency Coordination and Professional Contacts

NOAA's National Marine Fisheries Service

In response to Caltrans Notice of Preparation for the project (dated May 12, 2009), NOAA's National Marine Fisheries replied by letter (dated May 29, 2009), identifying information needs, jurisdictional species and critical habitat in the project area, and the NOAA contact for the project (NOAA Biologist, Matthew McGoogan). Because the project was determined to be complex by NOAA, the agency recommended that Caltrans begin early consultation with agency staff.

Two field meetings with NOAA staff, Matthew McGoogan, David Crowder and Mark Capelli, took place on July 16, 2009 (Mr. McGoogan) and August 5, 2009 (Dr. Crowder and Mr. Capelli). Site reviews were conducted at the following locations: Carpinteria Creek, Arroyo Paredon Creek, San Ysidro Creek, Romero Creek, and Montecito Creek. During site visits, it was determined that project build alternatives as proposed would require formal consultation with NOAA under Section 7 of the Endangered Species Act for potential incidental take of southern California steelhead and for work in critical habitat. On July 16, Mr. McGoogan indicated that proposed bridge structures work at San Ysidro, Romero and Arroyo Paredon creeks would likely need to be assessed to determine if current and proposed conditions could result in hydraulic barriers to steelhead movement, and recommended coordinating field visit with Dr. David Crowder. Mr. McGoogan also noted that Caltrans would need to

include de-watering plans for Arroyo Paredon and Romero Creeks in a BA submittal.

On November 23, 2009, Caltrans conducted an additional meeting in Santa Barbara, CA with NOAA staff, Matthew McGoogan, David Crowder and Anthony Spina, and Maureen Spencer of Santa Barbara County Flood Control, to discuss potential impacts of proposed bridge designs on fish passage. Following the meeting, it was agreed that further communication would be needed to determine the extent of hydraulic analyses needed by NOAA for critical habitat creeks. Discussions regarding hydraulic analyses between Caltrans' Hydraulic Engineer, Lyn Wickham, and NOAA Engineer, David Crowder, have been ongoing.

U.S. Fish and Wildlife Service

On June 29, 2009, Caltrans biologist, Morgan Robertson, spoke with USFWS Biologist, Steve Kirkland, regarding negative survey findings for salt marsh bird's-beak, Gambel's watercress and other listed plant species. Following a brief discussion of the status of the light-footed clapper rail populations in Carpinteria Marsh, Mr. Kirkland concurred that the project would not affect the light-footed clapper rail since it will avoid Carpinteria Marsh. Ms. Robertson also apprised Mr. Kirkland of the survey schedule and negative survey results to date for California red-legged frogs.

On March 24, 2010, Mr. Kirkland confirmed that formal consultation under Section 7 of the Endangered Species Act would be required for potential incidental take of tidewater goby.

On May 21, 2010, A USFWS Species List was obtained from the Ventura Office of the USFWS (Appendix A).

California Department of Fish and Game

In response to Caltrans Notice of Preparation for the project (dated May 12, 2009), the California Department of Fish and Game (DFG) replied by letter (dated June 2, 2009) identifying information needs and the DFG contact for the project (DFG Environmental Scientist, Jamie Jackson).

A field meeting with Jamie Jackson, Caltrans biologist Morgan Robertson, Caltrans Environmental Planner Michael Sandeki, and Caltrans Hydraulic Engineer Lyn Wickham, took place on 12/10/09. Site reviews were conducted at the following locations: Franklin Creek, Arroyo Paredon Creek, Toro Canyon Creek, Romero

Creek, San Ysidro Creek, and Greenwell Creek. It was concluded that a 1602 streambed alternation agreement would be required for work in and adjacent to creeks in the project area. Ms. Jackson noted that Caltrans would need to submit dewatering and diversion plans as part of the 1602 permit application, and that riparian vegetation removal would need to be conducted between September 1 and February 15 to avoid potential affects to nesting migratory birds. Trees removed between February 16 and August 31 would require surveys for nesting birds and clearance prior to removal. Caltrans discussed plans to replant riparian vegetation impacts at a 3:1 ratio within the project area, but noted that flooding concerns from SBCFC would need to be considered when developing planting plans. Ms. Jackson noted that offsite mitigation measures could be considered to benefit southern California steelhead trout populations. Caltrans also discussed plans for Greenwell Creek that would incorporate bioengineering techniques, such as brush layering with willows.

2.4 Limitations That May Influence Results

One limitation or constraint that occurred during field studies was the timing of the final night survey for California red-legged frog breeding-season survey. The survey took place on 7/8/2009 with approval from Steve Kirkland of the USFWS. The USFWS protocol for surveys of the California red-legged frog states that the non-breeding season for frogs is defined as July 1- September 30. With the USFWS approval, the final night-time breeding season surveys were conducted on July 8, 2009. The timing of the last California red-legged frog survey should have no bearing on the negative survey results since it occurred close to the recommended time-frame. All other field surveys were conducted at the appropriate time of the year.

This impact analysis is based on the cut/fill limits for each alterative shown in Appendix C: *Project Map Sheets*. Features such as temporary detours, retention basins or staging areas may be designed in areas beyond the currently proposed cut/fill limits. This may incur impacts not addressed in this report. Also, the ACOE has not verified the wetland delineation. The Corps may take jurisdiction over areas that are not currently delineated or may decline to take jurisdiction over some areas.

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Chapter 3. Results: Environmental Setting

3.1 Description of the Existing Biological and Physical Conditions

The proposed project is located along Route 101 in Santa Barbara County, beginning at the south end of Carpinteria and ending immediately south of Sycamore Creek in Santa Barbara. This portion of Route 101 is located on a narrow coastal plain between the Pacific Ocean and the Santa Ynez portion of the Transverse Ranges.

Work would be confined primarily to the existing Highway Right-of Way (ROW) as it travels through the urban environments of Santa Barbara, Montecito, Summerland and Carpinteria. Areas adjacent to the project limits include the Union Pacific Railroad (UPRR) railroad corridor, residential and business areas, agriculture operations, and limited open space along bluffs. The UPRR railroad ROW borders the southern limits of the Highway ROW for approximately 70% of the project distance.

The physical conditions within the project limits consist of flat topography of a coastal plain dissected by the depositional zones of various creeks. The project crosses 13 floodplains and includes 11 creek-crossings. Improvements to highway structures are proposed at two creeks that are listed as critical habitat for the southern steelhead trout (federally endangered). One creek (Arroyo Paredon) is also known to support tidewater goby (federally endangered). Various species of birds, amphibians, reptiles and small mammals also utilize the more undisturbed creek corridors. Other hydrologic resources in the area include the Carpinteria Salt Marsh and the Andree Clark Bird Refuge, both of which contain valuable habitat for both aquatic and avian species.

3.1.1 Study Area

Appendix B shows the biological study area (BSA). The BSA delineates biological field study limits. The biological study area (BSA) consists of two components. The first is the area to be directly impacted by construction-related activities or the Area of Direct Impact (ADI). The ADI was defined as the State Highway ROW plus temporary construction easements up 40 feet beyond the ROW in areas where soundwalls or structure work is proposed. The second component of the BSA was the creek channels along Arroyo Paredon Creek and Romero Creek that were surveyed for herpetofauna, including the California red-legged frog (*Rana draytonii).*

Within the BSA, the project is divided into four major work areas:

1. Carpinteria (PM 1.4 – 4.59)
2. Summerland/Toro Canyon (PM 4.59 – 8.87)
3. Montecito (PM 8.87 – 10.54)
4. Santa Barbara (PM 10.54 – 12.30)

3.1.1.1 Carpinteria (PM 1.4 - 4.59)

This part of the BSA (Appendix C, Mapsheets 1-8) is located along a portion of a coastal terrace at an elevation of 50 ft or less that is bordered to the northeast by the Santa Ynez Mountains. Within the project limits, the coastal terrace is dissected by the depositional zone of Carpinteria, Franklin and Santa Monica Creeks. This portion of State Highway 101 is largely urban as it travels through the built urban environment (City of Carpinteria), surrounded primarily by residential and commercial development. Vegetation in the ROW is primarily limited to ornamental landscaping or ruderal weeds. Other areas adjacent to the project limits include intensive agricultural development to north of the Highway, and the Carpinteria Salt Marsh to the south of the UPRR railroad tracks between PM 4.2 and PM 4.75.

Between PM 4.3 and PM 4.7, the BSA runs adjacent to the Carpinteria Salt Marsh, a protected estuarine wetland that receives tidal flushing from the Pacific Ocean and nutrient rich freshwater from Santa Monica and Franklin Creeks. The mixture of these waters provides nutrients that support several coastal wetland species. The estuary covers 230 acres and supports rich and highly important ecosystem function (City of Carpinteria General Plan 2003). The Carpinteria Salt Marsh is the largest remnant of the native ecosystem in the broader project area, and has the highest occurrence of special status species in the area (CNDDB). It is a critically important Southern California coastal estuary, and is protected as a conservation and research reserve by the University of California Natural Reserve System.

Carpinteria, Franklin and Santa Monica Creeks flow southwest through the project area, crossing under Highway 101. Within and adjacent to the project limits, these creeks are characterized as having passed through the headwaters, areas of intensive agriculture within the depositional zone, and then past the project area into an urban setting before reaching the Pacific Ocean (Caltrans, 2008). South of the Highway,

Carpinteria Creek flows directly to the Pacific Ocean, whereas Franklin and Santa Monica creeks flow into the Carpinteria Salt Marsh.

3.1.1.2 Summerland/Toro Canyon (PM 4.59 –8.87)

Summerland and Toro Canyon (Appendix C, Mapsheets 8-16) are unincorporated areas of Santa Barbara County, located along the coast east of the city of Santa Barbara. The community of Montecito borders this area to the west, the Pacific Ocean to the south, the Los Padres National Forest to the north, and the city of Carpinteria to the east. Elevation ranges from 50 to 100 feet above mean sea level.

The portion of State Highway 101 that travels through Summerland and Serena Point is surrounded by residential and agricultural development. From Sand Point Road (PM 4.7) north to Garrapata Creek (PM 6.2) the north side of the highway is devoted to intensive agriculture (primarily commercial greenhouses) and polo fields. The Union Pacific Railroad traverses the southern portion of BSA in this area with residential development bordering the coastline south of the railroad tracks. Santa Claus Lane and Via Real at the eastern Padaro Lane/Highway101 interchange are the only commercial areas in Toro Canyon (Toro Canyon LCP).

Arroyo Paredon, Garrapta, Toro Canyon and Greenwell creeks flow south through this portion of the BSA, crossing under Highway 101 before reaching the Pacific Ocean. While the creek crossings at Highway 101 are developed, the upper watersheds of both Toro Creek and Arroyo Paredon Creek support stretches of relatively undisturbed habitat that serve as wildlife corridors between the mountainous Los Padres National Forest and the lower foothills and valley regions.

Garrapata Creek at PM 6.2 marks the approximate beginning of the “Memorial Oaks” area. Several dozen coast live oaks (*Quercus agrifolia*) trees were planted here in the 1920s, and grow alongside the highway with other ornamental trees such as eucalyptus, cypress and acacia. Most of these trees are found within the median or the southbound shoulder.

West of the Memorial Oaks area, agricultural fields abut the Highway ROW to the north, while the UPRR and the Pacific Ocean border the Highway to the south. The agricultural fields to the north soon give way to the commercial and residential land uses of the community of Summerland. The coastal area of Summerland has an extensive history of oil production which began in the 1890s. While oil production in the nearshore region of Summerland ended in the 1940s, remnants of on and offshore

oil activity are still evident today, especially on the beach and in the nearshore area (Summerland Community Plan 1992).

3.1.1.3 Montecito (PM 8.87 – 10.54)

Montecito is east of, and directly adjacent to the city of Santa Barbara, occupying the eastern portion of the coastal plain south of the Santa Ynez Mountains (Appendix C, Mapsheets 17-20). Beginning just west of Summerland, the highway alignment moves inland. The portions of State Highway 101 that travel through Montecito are surrounded primarily by residential areas with limited commercial development. The Southern Pacific Railroad traverses part of the southern edge of the BSA in this area from PM 8.87 to PM 9.55.

Romero (aka Picay), San Ysidro, Oak and Montecito creeks flow south through this portion of the BSA. Upstream and downstream of the project limits, creek alignments have been significantly altered for flood control purposes as they wind through urban and residential portions of Montecito. Within the project area, creek channels flow under multiple bridges (county, state highway, and railroad bridges) and into an urban setting before reaching the Pacific Ocean.

3.1.1.4 Santa Barbara (PM 10.54-12.30)

This part of the BSA is located at the western boundary of the city limits of Santa Barbara and is completely within an urbanized area (Appendix C: Mapsheets 20-24). While the mountains of the Los Padres National Forest to the north provide habitat for a wide range of species, the intervening urban area is a barrier that prevents most of these species from reaching the project limits. Exceptions would be avian species, fish and herpetofauna that utilize the more undisturbed stream corridors in the area and the Andree Clark Bird Refuge.

Between Los Patos Way and the Salinas Street on/off ramps (PM 11.7 to 12.1), Highway 101 and the Union Pacific Railroad tracks parallel the Andree Clark Bird Refuge. The Bird Refuge is a 42 acre brackish wetland which supports a large assortment of organisms, including insects, plankton diatoms and algae. 192 species of birds are known to make use of the Refuge, including migratory waterfowl and domestic geese and ducks. The Refuge includes a 29 acre lake with a salinity of about 15% and an average depth of four feet. The lake drains into East Beach and receives runoff from drainage culverts on the northern and eastern shores. Tidewater goby are known to inhabit portions of this lake (USFWS 2005). A groundwater well, situated

in the parking lot of the "Child's Estate Zoological Gardens" to the west, replenishes the lake during periods of rapid evaporation. (City of Santa Barbara Local Coastal Plan, 2004).

Sycamore Creek, the westernmost creek in the City of Santa Barbara, is located outside the limits of work for this project.

3.1.2 Physical Conditions

Climate

The climate of the South Central Coast is characterized as Mediterranean type climate, with approximately half the year (November to April) being wet and cool and the remainder of the year characterized by warm, dry warm weather. The average rainfall is 15-20 inches with the majority of precipitation occurring between November and April.

The proximity of the Pacific Ocean moderates Santa Barbara County's climate and temperatures near the coast. The adjacent steep mountain ranges paralleling the coast produce a significant "orographic effect," which occurs when storms approaching the county from the Pacific Ocean are forced upward against the mountains resulting in an increased precipitation release with the increased topographic elevation. This orographic effect, in conjunction with the steep, short watersheds, occasionally results in flash flooding along the county's south coast (Santa Barbara County Public Works, 2010).

Soils

The physical conditions within the project limits consist of a coastal terrace dissected by the depositional zones of various creeks. Elevation ranges from 0 to 200 feet above sea level with topography that is nearly level to moderately sloping. Soils formed in deep alluvium from sedimentary rock resulting in fine sandy loams, loams and silty clay loam soils on flood plains, valleys and alluvial fans. In the Carpinteria Valley and adjacent to the beaches in Santa Barbara, where the topography is nearly level, soils tend to be poorly drained fine sandy loams. Alluvial deposits of gravel sand silt and clay underlie modern drainage concourses (NRCS 1981). All soil test pits for wetland delineations were excavated in areas mapped as Camarillo Variant, a sandy loam found on nearly level soils in low alluvial plains (Wetland Report).

Watersheds

The project area consists of coastal terraces and broad valleys between the Pacific Ocean and the Santa Ynez portion of the Transverse Ranges. The project area crosses 13 floodplains and includes 11 creek-crossings. Watersheds within the project area include Sycamore, Montecito, Oak, San Ysidro, Romero, Toro, Garrapata, Arroyo Paredon, Santa Monica, Franklin, and Carpinteria. These are shown in relation to the project BSA in Appendix D - *Watershed Mapping*. Additional information for individual creeks and watersheds is included in Chapter 4 of this document, in the Wetlands Report.

3.1.3 Biological Conditions in the Biological Study Area

3.1.3.1. Habitat/Site Vegetation

The following briefly describes the vegetative communities observed within the BSA

Landscaped Vegetation

Vegetation within the project limits is predominantly freeway landscaping that was planted by Caltrans, with the exception of some creeks and vegetated drainage features. The Right of Way adjacent to the freeway shoulders is planted primarily with non-native trees and shrubs such as myopurum, eucalyptus, oleander, and acacia. Native species that were planted along with the non-native ornamental species account for approximately 15 percent of the vegetation and are randomly mixed in with the non-native species. Native species are predominantly coast live oak (*Quercus agrifolia*), western sycamore (*Platanus recemosa*), Monterey cypress (*Cupressus macrocarpus*), toyon (*Heteromeles arbutifoila*), holly-leaved cherry (*Prunus ilicifolia*), and lemonade berry (*Rhus integrifolia*).

Ruderal

Ruderal habitat covers most of the existing highway right-of-way that is not landscaped with trees or shrubs. Ruderal habitat is comprised of a combination of native and alien species resulting from invasive species introduction and highway construction, operation, and maintenance (Frenkel 1970). The Mediterranean climate combined with the horticultural history of the Santa Barbara region has significantly influenced and changed the natural plant ecology in the project area. Many of the non-native plant species are escaped or planted ornamentals. Common ruderal species found in the highway right of way include rip gut brome (*Bromus diandrus*), ice plant (*Carpobrotus edulis*), Bermuda butter cup (*Oxalis pes-capre*), radish *(Raphanus sativus),* Cape ivy (*Senecio mikanioides),* bindweed (*Convolvulus sp*.), and castor

bean (*Ricinus communis*).

Coastal Scrub

Within the BSA, Ortega Hill (PM 8.5-8.9) supports patches of coastal scrub (Holland 1986). In 2006 Caltrans constructed a Class II bike path within the NB Highway ROW at Ortega Hill between northern Summerland and Sheffield Drive in Montectio. Following construction of the bike route, temporarily disturbed areas were replanted with native coastal scrub species, including black sage (*Salvia mellifera*) and sagebrush (*Artemesia californica).* This area is adjacent to but outside of the proposed footprint (ADI) of this project.

Coast Live Oaks

The Memorial Oaks are parallel rows of coast live oak trees planted along Highway 101 between PM 6.3 and PM 6.7. Seventy-one trees were originally planted along the highway in 1928 to commemorate Santa Barbara County soldiers who had given their lives in service during Word War I. At the time, Route 101 was a two-lane conventional highway and trees flanked both sides of the road for approximately one-quarter mile. In the 1950s the highway department converted the old highway to a four-lane limited-access freeway, retaining the original highway as the southbound lanes and building the two new northbound lanes on the inland side. It was at this time that the trees that originally lined the north side of the old highway became part of the median of the new freeway. In July 2008, the total number of trees remaining was estimated at 33 (16 in the median and 17 on the southbound shoulder) (State of California Department of Parks and Recreation, Primary Record P-42-040797, 7/17/2008).

Aside from the Memorial Oaks grove, coast live oak trees that occur within and adjacent to the project limits are individual trees interspersed randomly throughout roadside landscaping along the highway shoulder.

Riparian

Riparian habitat occurs on banks of Arroyo Paredon, Garrapata, Toro Canyon and San Ysidro creeks. Riparian vegetation in and adjacent to creek channels is limited within the Highway ROW due to routine clearance according to Santa Barbara County Flood Control District's Annual Maintenance Plans. Franklin and Santa Monica Creeks have no riparian vegetation within or adjacent to the project limits

because they are concrete-lined channels.

Dominant species in the riparian canopy within and adjacent to the BSA included arroyo willow (*Salix lasiolepis*), western sycamore (*Plantus racemosa*), coast live oak (*Quercus agrifolia*), blue gum eucalyptus (*Eucalyptus globulus*) and alder (*Alnus rubra*). Dominant understory species include California blackberry (*Rubus ursinus*), Cape ivy (*Senecio mikanioides*), stinging nettle (*Urtica dioicia*), giant reed (*Arundo donax*), coyote brush (*Baccharis pilularis*), Kikuyu grass (*Pennisetum clandestinum*), sowthistle (*Sonchus oleraceaus*), Italian ryegrass (*Lolium multiflorum*), ripgut brome (*Bromus diandrus*), common horsetail (*Equisetum arvense*), ice plant (*Carpobrotus sp*.), garden nasturtium (*Tropaeolum majus*), broad-leaved cattail (*Typha latifolia*), watercress (*Rorippa sp*.), nightshade (*Solanum americanum)* and bristly ox-tongue (*Picris echioides*).

Wetlands and Other Hydrologic Features

Hydrology within the BSA is controlled by existing creeks, drainages, and storm drain systems, with extensive runoff occurring from urban and residential development, roadways, and parking areas. Numerous manmade roadside drainage ditches consisting of dirt or concrete v-ditches, and associated culvert structures occur along the route. These ditches are typically less than three feet deep and four feet wide, and showed evidence of regular maintenance.

The BSA crosses several large watersheds drained by creek channels. These creeks are mostly intermittent riverine coastal streams systems that convey both natural flows and hardscape runoff to the Pacific Ocean. Creeks within the project area (from north to south) include Sycamore, Montecito, Oak, San Ysidro, Romero, Toro, Garrapata, Arroyo Paredon, Santa Monica, Franklin, and Carpinteria, and are shown in relation to the project BSA in Appendix B. In the vicinity of Route 101, the creek channels are narrow and are constrained by development and numerous crossings, including Route 101, UPRR, county roads and private driveways. Creek alignments have been altered for flood control purposes and many of the channels are at least partially lined.

Characteristic plant species observed within potentially jurisdictional areas included arroyo willow (*Salix lasiolepis*), cattail (*Typha* sp.), mugwort (A*rtemesia douglasana*), common horsetail (*Equisetum arvense*), California blackberry *Rubus ursinus*, curly dock (*Rumex crispus*), tall flatsedge (*Cyperrus eragrostis*), small-fruited bulrush (*Scirpus microcarpus*), watercress (*Rorippa nasturtiumaquaticum*),

rabbitsfoot grass (*Polypogon monspeliensis*), speedwell (*Veronica anagalis-aquatica*), and marsh baccharis (*Baccharis douglasii*).

No tidally influenced or brackish areas are present within the BSA. The project parallels the northern edge of the Carpinteria Salt Marsh between PM 4.2 and PM 4.7, separated from the marsh by the Union Pacific Railroad tracks. The Andree Clark Bird Refuge, adjacent to the BSA from PM 11.7 to PM 12.0, contains valuable habitat for both aquatic and avian species.

3.1.3. Wildlife

Wildlife observed during surveys of the BSA included the western fence lizard, California vole, California ground squirrel, brown towhee, red-tailed hawk, American kestrel, turkey vulture, mourning dove, Brewer's blackbird, Western gull, American crow, mallard duck, Anna's hummingbird, song sparrow, house finch, red-winged blackbird, great blue heron, and black phoebe. Pacific chorus frogs, steelhead trout, mosquito fish, raccoons, striped skunk, big brown bats and California myotis were observed in waterways or creek channels. Other typical birds in the area include the Northern mockingbird, European starling, Northern Flicker, Common Yellowthroat, house finch, lesser goldfinch, brown-headed cowbird, and bushtit. Common terrestrial mammals found within the biological study area include coyote, domestic cat, opossum, and Botta's Pocket Gopher.

3.1.4. Exotic and Invasive Species

Invasive plant species in the BSA which have the greatest possibility of negatively affecting the natural ecology in this project area are veldt grass *(Ehrharta calicina),* giant reed *(Arundo donax),* ice plant or Hottentot fig *(Carpobrotus eduli),* pampass grass *(Cortaderia jubata),* French broom *(Genista monspessulana),* Myopurum *(Myopurum laetum),* Cape ivy *(Senecio mikanioides),* garden nasturtium *(Tropaeolum majus),* and castor bean (*Ricinus communis*).

Single non-native red-eared slider turtles (*Trachemys scripta elegans)* were observed in Arroyo Paredon Creek and Greenwell Creek during herpetofauna surveys. These highly aquatic turtles have been introduced throughout California, especially in populated areas, primarily as a result of the release of pets by owners. Other exotic species observed in the BSA include unidentified crayfish and mosquito fish (*Gambusia affinis*). The mosquitofish, native to the eastern U.S., was introduced to the western U.S. to control mosquito larvae in ponds, streams and ditches.

3.2 Regional Species and Habitats of Concern

Table 3 provides data on special-status species that occur in the region and that may have potential to occur within the proposed project area.

Table 3: Regional Species and Habitats Potentially Occurring or Known to Occur within the Project Vicinity

Common Name	Scientific Name	Status	Habitat Type	Potential Habitat Present/ Absent	Rationale
PLANTS					
black-flowered figwort	*Scrophularia atrata*	CNPS 1B	sand dunes and diatomaceous shales	Present	Potential habitat present
Contra Costa goldfields	*Lasthenia conjugens*	FE	Vernal pools	Absent	No vernal pools in action area
Coulter's saltbush	*Atriplex coulteri*	CNPS 1B	coastal scrub, coastal dunes, grasslands	Present	Limited patches of coastal scrub present
Coulter's goldfields	*Lasthenia glabrata ssp. coulteri*	CNPS 1B	coastal alkaline soils in vernal pools, marshes, playas, grasslands	Present	Limited patches of coastal scrub present
Davidson's saltscale	*Atriplex sernana var. davidsonii*	CNPS 1B	coastal scrub, coastal bluff	Present	Limited patches of coastal scrub present
Gambell's watercress	*Rorippa gambelli*	FE, ST	Fresh and brackish water in marshes and swamps. Present in 1 location in Santa Barbara County on Vandenberg Air Force Base, and 1 location in San Luis Obispo County.	Present	Potential habitat present
Late-flowered mariposa lilly	*Calochortus weedii var. vestus*	CNPS 1B	chaparral, cistamonte woodland	Absent	Suitable habitat not present
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	CNPS 1B	Gabbroic clay in chaparral ,coastal scrub, grassland	Present	Limited patches of coastal scrub present
Marsh sandwort	*Arenaria paludicola*	FE	Marshes, bogs. Present in 2 locations in San Luis Obispo County	Present	Potential habitat present

Common Name	Scientific Name	Status	Habitat Type	Potential Habitat Present/ Absent	Rationale
Mesa horkelia	*Horkelia cuneata ssp. puberula*	CNPS 1B	Closed-cone coniferous forest, maritime chaparral ,coastal dunes or scrub	Present	Limited patches of coastal scrub present
Nutall's scrub oak	*Quercus dumosa*	CNPS 1B	Chaparral, coastal scrub	Present	Limited patches of coastal scrub present
Refugio manzanita	*Arctostaphylos refugioensis*	CNPS 1B	chaparral (sandstone)	Present	Limited patches of coastal scrub present
Salt marsh bird's beak	*Cordylanthus maritimus ssp. maritimus*	FE, SE	coastal dunes and salt marsh	Present	Carpinteria Marsh adjacent to BSA
Santa Barbara honeysuckle	*Lonicera subspicata var. subspicata*	CNPS 1B	coastal scrub and chaparral on south side of Santa Ynez Mountains	Present	Limited patches of coastal scrub present
Santa Ynez false lupine	*Thermopsis macrophylla*	CNPS 1B	chaparral (sandy, granitic)	Absent	Suitable habitat not present
Umbrella larkspur	*Delphinium umbraculorum*	CNPS 1B	Cistamonte woodland	Absent	Suitable habitat not present
Ventura Marsh Milk-vetch	*Astragalus pycnostachyus var. lanosissmus*	FE, SE	Coastal salt marsh, within reach of high tide or protected by barrier beaches	Present	Critical habitat designated in Carpinteria Marsh
BIRDS					
Bank swallow	*Riparia riparia*	ST	Colonial nester that requires vertical banks, on cliffs with sandy soils near streams	Absent	Nesting habitat not present in action area
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	SE	Coastal salt marshes, nests in *Salicornia* on and about margins of tidal flats	Absent	Nesting habitat not present in action area.
Brown pelican	*Pelecanus occidentalis*	FE	Nests on coastal islands free of mammalian predators	Absent	Nesting habitat not present in action area
California least tern	*Sterna antillarum browni*	FE, SE	Nests in coastal, sandy, open areas usually near estuaries	Absent	Nesting habitat not present in action area
Least Bell's vireo	*Vireo belli pusillus*	FE, SE	mature riparian woodland overstory with dense shrubby understory	Absent	Nesting habitat not present in action area

Common Name	Scientific Name	Status	Habitat Type	Potential Habitat Present/ Absent	Rationale
Light-footed clapper rail	*Rallus longirostris levipes*	FE, SE	Salt marshes traversed by tidal sloughs south of Pt. Conception., where cordgrass & picklegrass are dominant vegetation	Absent	Habitat not present in action area.
Southwestern willow flycatcher	*Empidonax trallii extimus*	FE	dense riparian vegetation in all layers present, with standing water or saturated soil, often larger tree overstory	Absent	Potential migrant through area. No known records in or near action area. Only narrow (≤30'), degraded strip of willow in action area within RR right-of-way.
Western snowy plover	*Charadris alexandrinus nivosus*	FT, SSC	Sandy beaches, dunes and shores of alkali lakes	Absent	no dunes, beaches, or alkali lakes in action area
AMPHIBIANS					
Arroyo toad	*Anaxyrus californicus*	FE,SSC	low-gradient rivers and streams with sandy banks, shallow pools, and cottonwoods, willows, and sycamores	Absent	Lack of habitat; not known from south side of Santa Ynez Mtns.
California red-legged frog	*Rana aurora draytonii*	FT, SSC	permanent and temporary waters and nearby uplands	Present	Pooled water in creeks & ditches in BSA
REPTILES					
Two-striped garter snake	*Thamnophis hammondii*	SSC	associated with permanent or nearly permanent water, often along streams with rocky beds and riparian growth	Present	Potential aquatic habitat in action area
Western pond turtle	*Actinemys marmorata pallida*	SSC	associated with permanent or nearly permanent water in a wide variety of habitats	Present	Potential aquatic habitat in action area
INVERTEBRATES					
monarch butterfly (roost sites)	*Danaus plexippus*	none	Roosts in wind-protected tree groves (eucalyptus, monterey pine, cypress)	Present	Documented roosts located near action area.
FISH					
Steelhead trout	*Oncorhynchus mykiss S. Ca. ESU*	FE, SSC, CH	Coastal streams and rivers from the Pajaro River to, but not including, the Santa Maria River	Present	Known to be present in five creeks in BSA which are designated critical habitat by NOAA's National Marine Fisheries Services

Common Name	Scientific Name	Status	Habitat Type	Potential Habitat Present/ Absent	Rationale
Tidewater Goby	*Eucyclogobius newberryi*	FE, SSC, CH (proposed)	Found in shallow lagoons and lower stream reaches with fairly still water containing high oxygen levels	Present	Known to be present in lagoon at Arroyo Paredon Creek (proposed critical habitat) and in Andre Clark Bird Refuge.

Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS).

Chapter 4. Biological Resources, Discussion of Impacts and Mitigation

This chapter addresses impacts to natural communities of special concern, special-status species and critical habitat occurring or having the potential to occur within the BSA.

4.1. Natural Communities of Special Concern, Wetlands and Other Waters

This section discusses natural communities of special concern found in the BSA, including those that are protected under Clean Water Act (CWA) Section 401 and 404, Fish and Game Code Section 1602 Streambed Alteration Agreements, and the California Coastal Act.

The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters through prevention and elimination of pollution. Section 404 of the CWA establishes a permit program administered by the Army Corps of Engineers (ACOE) regulating the discharge of dredged or fill material into waters of the United States (including wetlands).

Waters of the U.S are waterways, either for commerce or recreation, below the Ordinary High Water Mark (OHWM). Wetlands are a subcategory of waters and are the transitional areas between open water and upland. The Corps has established a three parameter approach to determining if an area qualifies as a wetland. The area must exhibit wetland hydrology, hydric soils, and hydrophytic vegetation for Corps to take jurisdiction of a wetland. Areas below the OHWM but lacking anyone of the three parameters are considered “other waters.”’

The California Coastal Commission (CCC) oversees implementation of the California Coastal Act. A permit from the California Coastal Commission (CCC) or the city or county with coastal permit jurisdiction is required if a project plans to place fill in wetlands within the coastal zone. The CCC takes jurisdiction over areas exhibiting only one wetland parameter.

The DFG regulates activities that would alter the flow, bed, channel or bank of streams and lakes by issuing Streambed Alteration Agreements. In riparian areas their jurisdictional limits are usually to the tops of the stream or lake banks or the outer edge of riparian vegetation.

4.1.1 Other Waters of the United States

This section discusses other waters of the U.S. which are present throughout the BSA. Hydrology in the BSA is controlled by existing creeks, drainages and storm drain systems. Waters of the U.S. delineated in this project fall into three general categories: partially altered creek channels, highly altered creek channels, and manmade drainage features associated with the Highway 101 and the Union Pacific Railroad (UPRR) transportation corridor.

Creeks within the project area (from north to south) include Montecito, Oak, San Ysidro, Romero, Greenwell, Toro Canyon, Garrapata, Arroyo Paredon, Santa Monica, Franklin, and Carpinteria, and are shown in relation to the project BSA in Appendix B. These creeks are mostly intermittent riverine coastal streams systems that convey both natural flows and hardscape runoff to the Pacific Ocean. In the vicinity of Route 101, the creek channels are narrow and are constrained by development and numerous crossings, including Highway 101, the UPRR line, county roads and private driveways. Creek alignments have been significantly altered for flood control purposes and many of the channels are at least partially lined. In addition to being other waters of the U.S., creeks in the project area fall under the jurisdiction of the DFG. Because the project occurs within the Coastal Zone, these creek areas are also under Coastal jurisdiction per the California Coastal Act.

4.1.1.1 SURVEY RESULTS

Eighty two potential "other waters" features (OW) were identified in the BSA. Individual "other waters" features that would be affected by construction are presented in Table 11 (Appendix E), and shown in Project Mapping (Appendix C).

Manmade drainage features

Sixty-one roadside drainage ditches and associated culverts were mapped within in the BSA. Ditches were typically less than 2 feet deep and showed evidence of regular maintenance (see Appendix G: *Wetland Report*). More than half of the constructed drainage features that would be impacted are concrete-lined. These lined channels provide stormwater control benefits but do not provide significant groundwater recharge or wildlife services.

Highly Altered Channels

Within the state ROW, Franklin and Santa Monica Creeks consist of open concrete

box channels and Garrapata Creek is completely culverted. No substrate or vegetative cover is present within these channels. These altered channels provide stormwater control benefits but do not provide significant biological diversity, groundwater recharge, or wildlife habitat.

Franklin Creek

Franklin Creek crosses Route 101 at PM 3.11. Within and adjacent to the BSA, Franklin Creek is confined to a concrete box channel. Franklin Creek provides no riparian or wildlife habitat within the BSA as the bottom and sides of the channel consist entirely of concrete. Channel lining extends for approximately 1000 feet downstream of the highway bridge. One half mile downstream, near to and within the Carpinteria Salt Marsh, there is known habitat for tidewater goby.

The existing bridge deck will be extended either 22 linear feet (Alternative 1 and 3) or 40 linear feet (Alternative 2) to the north, and will extend 26 linear feet in the center to enclose the currently open area between the two bridge decks. No permanent structures would be placed in the channel. Therefore, no permanent impacts on the creek channel shape or substrate would occur.

Santa Monica Creek

Santa Monica Creek crosses Route 101 at PM 3.78. Santa Monica Creek is confined to a concrete box channel within and adjacent to the project limits. Santa Monica Creek provides no riparian or wildlife habitat within the BSA as the bottom and sides of the channel consists entirely of concrete. Approximately 1000 feet downstream of Highway Bridge, Santa Monica Creek crosses under the UPRR bridge and drains into the Carpinteria Salt Marsh.

The existing bridge deck will be extended 16 linear feet to the north and 28 linear feet to the south and will extend 26 linear feet in the center to enclose the currently open area between the two bridge decks. No permanent structures would be placed in the channel. Therefore, no permanent impacts on the creek channel shape or substrate would occur.

Garrapata Creek

Garrapata Creek crosses Route 101 at PM 6.25. The creek enters the highway culvert to the north of Via Real on the north side of the highway and daylights directly south of the highway. Garrapata Creek provides very little riparian or wildlife habitat within

the BSA, as the majority of the drainage consists of a culvert beneath Highway 101. All build alternatives will avoid Garrapata Creek.

Partially Altered Channels

Of the eleven creeks that cross the route, eight contain areas of natural substrates. Channel banks within the state ROW typically consist of concrete walls, and in most cases there are county or railroad bridge structures and modified channel conditions immediately up and/or downstream. Limited riparian vegetation occurs within the ROW at several creeks. These natural-bottom creek channel sections provide stormwater control, groundwater recharge, biological diversity, and wildlife habitat.

Carpinteria Creek

No work is planned in the bed or banks of Carpinteria Creek. Bridge replacement and widening planned for the Linden Casitas Highway Improvements Project, currently in design, will accommodate HOV lanes proposed with this project.

Arroyo Paredon Creek

Arroyo Paredon Creek crosses under Route 101 at PM 5.63. Before crossing under the 101, the creek passes under a county bridge at Via Real Road upstream of the southbound and northbound Highway 101 bridges (two separate bridges). Downstream, the creek flows under the UPRR bridge and finally under Padaro Lane before following a rip-rap lined channel to the Pacific Ocean.

Within the BSA, Arroyo Paredon consists of a natural bottom channel that conveys water beneath the highway and drains to the Pacific Ocean during periods of high flow. During the dry season, a seasonal lagoon forms at the mouth which extends north of the railroad bridge and can even extend upstream of the highway. Beneath and adjacent to Highway 101, the channel is relatively flat and the bed material consists of natural sediments (sand and mud with some cobble). The banks are vertical concrete walls from the Via Real bridge inlet through the southbound Route 101 bridge outlet. Riparian vegetation is minimal within the state ROW; however, there is sparse emergent vegetation with some arroyo willow canopy existing on sections of the banks.

Arroyo Paredon Creek is within the geographical area known to be occupied by steelhead trout (*Onchorynus mykiss;* federally endangered*)* and has been federally designated as critical habitat for this species, although critical habitat designation

ends approximately 350 feet upstream of the Highway 101 crossing. Tidewater gobies (*Eucyclogobius newberryi*; federally endangered) are also known to inhabit the seasonal lagoon at the mouth of Arroyo Paredon Creek.

The NB and SB bridges at Arroyo Paredon Creek would be replaced with a single structure that would measure approximately 80 feet long and 173 feet wide. The new structure would enclose the open channel between the two bridges, resulting in 26 linear feet of additional shading by the bridge deck. Alternative 2 would extend the bridge deck an additional 7 linear feet to the north to accommodate median planting on the bridge deck. A new 40 foot-wide channel with a natural bottom will be constructed adjacent to the existing creek channel. The two channels will be separated by an instream pier. The new bridge structure will have a span approximately twice as long as the existing bridges to meet 25-year flood flow requirements. Banks of the creek will continue to consist of concrete walls, and the creek bed will consist of natural substrates. The second channel would result in a gain of approximately 0.160 acre of unlined creek bed.

Toro Canyon Creek

Toro Canyon Creek crosses Route 101 at PM 6.79. Within the BSA, Toro Canyon Creek consists primarily of a concrete-lined channel that conveys water beneath Highway 101. The natural bottom channel transitions to a concrete-lined channel beneath northbound Highway 101 and remains concrete-lined for the remainder of the the state ROW. A four-foot drop structure occurs immediately downstream of the state ROW at the UPRR ROW. Some riparian vegetation exists on the banks of the channel to the north of the NB highway bridge, where the channel bed and banks consists of natural cobbles and soil. This section of Toro Canyon Creek was included in the SBCFC 2009/2010 Annual Maintenance Plan and all vegetation was cleared from the channel in summer 2009.

The NB and SB bridges at Toro Canyon Creek would be replaced with a single structure that would measure approximately 35 feet long and 150 feet wide. The new structure would enclose the open channel between the two bridges, resulting in 30 linear feet of additional shading by the bridge deck. The structure will continue to span the channel without instream piers. Up to 0.105 acre of concrete bed lining will be removed within the state ROW to allow the restoration of the creek bottom.

Greenwell Creek

Greenwell Creek currently flows under Highway 101 at Post Mile 7.7 through a 72" corrugated pipe culvert. The culvert inlet would be replaced with a like structure, resulting in temporary impacts along 20 linear feet of creek bed at the north end. In June 2009, the area around the culvert inlet (outside the Caltrans ROW) consisted of earth banks and non-native vegetation.

Adjacent to the southbound lanes of Highway 101, the culvert outlets approximately 12 feet above a plunge pool, and flows travel along a disturbed open channel and under UPRR culverts before draining into the Pacific Ocean. The channel consists of a natural earthen bottom, although remains of sack-crete check-dams occur at varying intervals downstream of the pool. Several scattered willows are present, but the channel is dominated by escaped ornamental species such as iceplant (*Carpobrotus edulis*) and garden nasturtium (*Tropaeolum majus*), as well as invasive species like arrundo (*Arundo donax*) and castor bean (*Ricinis communis*). Although heavily disturbed, the drainage provides marginal habitat for a variety of wildlife species. Native species observed using this area of the creek include the Pacific chorus frog (*Pseudacris regilla*), raccoon (*Procyon lotor*), black phoebe (*Sayornis nigricans*) and mallard ducks (*Anas Platyrhynchos*).

A plunge pool has formed below the culvert outlet which measures approximately 12 feet in depth. Approximately 35 linear feet of rock slope protection (RSP) would be used to line the basin and side slopes immediately downstream of the culvert outlet to help prevent further erosion and dissipate flow. Bioengineering techniques such as brush-layering with willows would be used to stabilize the south bank. Approximately 120 feet downstream of the culvert outlet, the creek is eroding the fill-slope that supports Highway 101. Caltrans proposes to excavate slide material from the channel and stabilize the channel and banks adjacent to the fill-slope with RSP and brush layering or live siltation for up to 250 feet beyond the culvert outlet. Sack-crete and fill-material from previous work would be removed. Invasive plants castor bean and arrundo occur in the proposed work area and are listed on the California Invasive Plant Council's Invasive Plant Inventory. These invasives would be removed and temporarily disturbed areas would be planted with native species. Creek banks would be re-planted with native riparian species, including arroyo willow.

Santa Barbara County Flood Control's Conceptual Plan for Creeks in Montecito

In Montecito, the Santa Barbara County Flood Control District (SBCFCD) has a conceptual plan to improve the channel and bridge capacities at Romero, San Ysidro and Oak creeks. The county has replaced its bridges at North Jameson Lane directly upstream of Route 101 at these three creeks. The county bridges were designed to pass flood flows and have significantly greater capacity than adjacent facilities immediately downstream (Route 101 bridges and UPRR bridges). In order to avoid the hydraulic and geomorphic disruption caused by severe contraction and expansion downstream, all three county bridges were partially blocked to match their previous capacities for the indefinite future. With this project, Caltrans plans to replace the highway structures at Romero, San Ysidro and Oak creeks. The new highway bridges will have longer spans that match the county structures located directly upstream. While highway bridges will be built with longer spans, Caltrans would adopt a similar approach to the county and partially block capacity to maintain current channel widths until capacities are improved throughout the reach. Ultimately, when SBCFC achieves its goals of improving creek capacities throughout the reaches of concern, both county and highway bridges can be fully utilized. There are currently no set plans for when downstream improvements will be made.

Romero Creek

Romero Creek crosses under Route 101 at PM 9.34. Within the BSA the channel consists of a natural bottom drainage that conveys water beneath Highway 101. Channel substrate consists of cobble and boulders. Banks are vertical concrete walls from the county bridge inlet to the Railroad bridge outlet downstream of the highway. Romero is channelized in its lower reaches as it flows through the urban areas of Montecito. Some riparian habitat was present in open channel areas within the BSA during wetland surveys in spring 2009, consisting of sparse emergent vegetation and three sycamore saplings (< 3 inches dbh). This section of Romero Creek was included in the SBCFC 2009/2010 Annual Maintenance Plan and all vegetation was cleared from the channel in 2009.

Romero Creek is within the geographical area known to be occupied by steelhead trout (*Onchorynus mykiss;* federally endangered*)* and has also been federally designated as critical habitat for this species.

The NB and SB bridges at Romero Creek would be replaced with a single bridge structure that would measure approximately 105 feet long and 120 feet wide. The new structure will extend 10 feet to the north and south to support soundwalls, and

will span the channel without instream piers. The span of the new bridge structure will be designed to match the county bridge at Jameson Lane, directly upstream of Route 101 (see discussion of Santa Barbara County Flood Control's Conceptual Plan for Creeks on page 37). The longer bridge span will accommodate a wider channel, resulting in a gain of approximately 0.13 acre of unlined creek bed. The creek bed will continue to be a natural bottom and banks will continue to consist of concrete walls that support the bridge deck.

San Ysidro Creek

San Ysidro Creek is a moderately-sized drainage that crosses under Route 101 at PM 9.56. Within the BSA, the channel consists of vertical concrete banks and a natural bottom (primarily cobble) that conveys water beneath Highway 101 and drains to the Pacific west of Frenald Point. Upstream of the BSA, the creek is highly channelized with sack-crete walls. Downstream of the highway bridge, unlined channel banks extend for approximately 300 feet to the UPRR bridge.

San Ysidro Creek is within the geographical area known to be occupied by steelhead trout (*Onchorynus mykiss;* federally endangered*)* and has also been federally designated as critical habitat for this species.

The NB and SB bridges at San Ysidro Creek would be replaced with a single bridge structure that would measure approximately 80 feet long and 110 feet wide, and will span the channel without instream piers. The span of the new bridge structure across the channel will be designed to match the County Bridge at North Jameson Lane, directly upstream of Route 101 (see discussion of Santa Barbara County Flood Control's Conceptual Plan for Creeks on page 37). The longer bridge span will accommodate a wider channel, resulting in a gain of approximately 0.11 acre of unlined creek bed. The creek bed will continue to consist of a natural bottom and banks will continue to consist of concrete walls that support the bridge deck. ESA fencing will be placed around the western sycamore trees on the SE bank which provide shading to this portion of the creek.

Oak Creek

Oak Creek is a small drainage that crosses under Route 101 at PM 9.66. Within the BSA the channel consists of vertical concrete banks and a natural bottom (primarily cobble) that conveys water beneath Highway 101 and drains to the Pacific Ocean.

The NB and SB bridges at Oak Creek would be replaced with a single bridge structure that would measure approximately 44 feet long and 105 feet wide. The new structure will extend 23 feet to the north of the existing facility and the structure will span the channel without instream piers. The span of the new bridge structure across the channel will be designed to match the County Bridge at North Jameson Lane, directly upstream of Route 101 (see discussion of Santa Barbara County Flood Control's Conceptual Plan for Creeks on page 37). The longer bridge span will accommodate a wider channel, resulting in a gain of approximately 0.03 acre of unlined creek bed. The creek bed will continue to consist of a natural bottom and banks will continue to consist of concrete walls that support the bridge deck.

Montecito Creek

No work is planned in the bed or banks of Montecito Creek. The HOV lanes proposed with this project will be accommodated in the median of the existing bridge structure.

4.1.1.2 AVOIDANCE AND MINIMIZATION EFFORTS

- Work in creek channels would occur between May 1 and October 31, unless creek channels are dry earlier than May 1. At Arroyo Paredon, Romero and San Ysidro creeks, work would be limited to June 1 through October 31 to avoid impacts to migrating steelhead trout or tidewater goby.

- To minimize potential effects upon water quality it will be necessary to divert flows around the work site by means of coffer dams and water diversions in creeks that are flowing.

- To minimize temporary, construction-related impacts Environmentally Sensitive Area (ESA) fencing would be established at 12 feet from the edge of cut/fill limits at creeks. No equipment or earthwork would be allowed within the ESAs.

- Temporary effects to water quality will be minimized by implementing the best management practices (BMPs) from the Caltrans National Pollutant Discharge Elimination System statewide storm water permit.

- Equipment staging areas and storage/stockpile areas would be located in uplands.

4.1.1.3 PROJECT IMPACTS

Table 4 summarizes the temporary and permanent impacts to all "other waters" across

the project area per alternative. Table 5 summarizes impacts to creeks per alternative. Table 11 (Appendix E) presents impacts to individual OW features per alternative. Alternative 2 has greater temporary and permanent impacts to "other waters." Impacts do not differ substantially between Alternatives 1 and 3.

Table 4: Summary of Impacts to Other Waters of the U.S. (acres)

Wetland Type	Alternative 1 impacts		Alternative 2 impacts		Alternative 3 impacts	
	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Other Waters of the U.S.						
Manmade drainage features	0.401	0.710	0.465	0.927	0.397	0.690
Creeks	0.380	0.042	0.380	0.042	0.380	0.042
TOTAL	**0.781**	**0.752**	**0.845**	**0.969**	**0.777**	**0.732**

* Creeks: Franklin, Santa Monica, Arroyo Paredon, Toro Canyon , Greenwell, Romero, San Ysidro and Oak creeks.

Temporary impacts to other waters would result from construction-related activities, including equipment access, temporary water diversions, and temporary fill placement. Permanent impacts would result from soundwalls, retaining walls, replacing or extending bridge structures, culvert extensions, and fill placement.

Table 5: Impacts to Other Waters of the U.S. at Creeks (acres) for all Alternatives

Creek	Mapsheet (Appendix C)	Temporary Impacts	Permanent Impacts
Franklin	Mapsheet C: 5	0.074	0.0
Santa Monica	Mapsheet C: 6	0.108	0.0
Arroyo Paredon [a]	Mapsheet C: 10	0.078	0.0
Toro Canyon [b]	Mapsheet C: 12	0.039 [b]	0.0
Greenwell [a, c]	Mapsheet C: 14	0.006 [c]	0.042 [c]
Romero/ Picay [a]	Mapsheet C: 18	0.021	0.0
San Ysidro [a]	Mapsheet C: 18	0.037	0.0
Oak [a]	Mapsheet C: 18	0.016	0.0

[a] Unlined creek reaches in the BSA are considered both "other waters" and Coastal Zone wetlands.

[b] At Toro Canyon Creek, the channel is partially lined. In addition to temporary impacts to "other waters" in the lined portion of the channel, temporary impacts will occur in 0.023 acres of unlined channel delineated as seasonal wetlands (ACOE & Coastal Zone).

[c] In addition to impacts to "other waters," work at Greenwell Creek would result in 0.104 acres of temporary impacts and 0.072 acres of permanent impacts to Coastal Zone wetlands. Restoration of the creek channel is proposed which would include bioengineering techniques such as live siltation or brush-layering with willow.

Table 5 summarizes impacts to creeks. Temporary impacts to creeks would result from construction-related activities, including equipment access, temporary water diversions and dewatering, and temporary fill placement. At Greenwell Creek, permanent impacts to 0.042 acres of other waters would occur from installing rock slope protection at the base of the scour pool and along the unlined channel where it is eroding the slope against the Highway at PM 7.6. New bridge structures will result in expanded area of unlined creek beds at multiple creeks (Arroyo Paredon and Toro Canyon creeks immediately; Romero, San Ysidro and Oak creeks once downstream conditions allow). At Arroyo Paredon and Toro Canyon creeks, jurisdictional waters that currently flow under two separate parallel bridge structures would flow under single elongated bridges.

4.1.1.4 COMPENSATORY MITIGATION

All manmade roadside drainage features delineated as "other waters" that are lost during construction would be replaced in-kind. Temporary impacts to other waters of the U.S will be re-graded, as needed, to reflect their pre-existing state. Unlined channels will be stabilized according to Caltrans' National Pollution Discharge Elimination System statewide storm water permit. Caltrans will hydroseed roadside banks with native seed mix where practicable to benefit water quality by decreasing run-off and sedimentation into waterways.

At creeks temporary impacts will be re-graded, as needed, to reflect their pre-existing state. All partially-modified creek channels are within the active floodplain and will quickly re-establish with vegetation naturally; however, vegetation in these creek reaches will continue to be subject to maintenance by SBCFC. Native vegetation will be planted on creek banks above other waters of the U.S where it does not conflict with flood control practices. Planting at creeks will occur in accordance with local coastal plans, and will be detailed in Caltrans' Landscape Architecture Landscape Planting Plan.

Removal of the concrete channel lining in Toro Canyon Creek will allow the restoration of up to 0.105 acres of creek bottom through state ROW. The longer bridge spans at Arroyo Paredon, Romero, San Ysidro and Oak creeks will result in wider natural channels at these four creeks (Arroyo Paredon immediately (+0.160 acre); Romero (+0.13 acre), San Ysidro (+0.110 acre) and Oak Creek (+0.030 acre) once downstream conditions allow). Wider channels will result in a net gain of an additional 0.430 acres of natural creek bed. Expanded channels would increase filtration capacity and groundwater recharge in these creek reaches.

At Greenwell Creek, impacts to other waters of the U.S would be offset by enhancement of 0.145 acres of the creek located south of Route 101. Sack-crete and other fill-material would be removed from the channel bed. Non-native plants (iceplant, arrundo and castor bean) will be removed from banks in the work area. Bioengineering techniques incorporating arroyo willows and other native plants will be applied in and above RSP along creek banks, to reduce erosion and enhance riparian habitat available for wildlife. Invasive plants castor bean and arrundo occur in the proposed work area and are listed on the California Invasive Plant council's Invasive Plant Inventory. Non-native invasive plants that are removed from the work area and creek banks during construction would be re-planted with native riparian

species, including willow and sycamore. Riparian plantings would be monitored for three years to ensure that successful revegetation has occurred. Disturbed areas that are not large enough to accept riparian trees and shrubs would be hydroseeded for erosion control.

4.1.1.5 CUMULATIVE IMPACTS

Cumulative impacts include the impacts of future State, Federal, tribal, local, or private actions that are reasonably certain to affect "other waters" in the project area. Caltrans is in the process of studying the Linden Casitas Highway Improvements Project, a project which includes interchange reconstruction, new bridge and soundwall construction and frontage road extensions starting 0.2 miles south of the Carpinteria Creek bridges and ending 0.4 miles north of Linden Avenue. The Linden Casitas Project would impact approximately 0.166 acres of other waters of the U.S. which will be fully mitigated as part of that project. Other than the Linden Casitas Project, and the updated list of local projects that the City of Carpinteria publishes, Caltrans is unaware of any other federal or non-federal actions that are reasonably certain to occur in the project area. Impacts to "other waters" with this project would be fully mitigated. Therefore, the project does not have the potential to contribute to a cumulative effect.

4.1.2 Jurisdictional Wetlands

Two types of wetlands occur within the BSA. The California Coastal Commission and County of Santa Barbara regulate some wetlands through the California Coastal Act (Coastal Zone wetlands). The U.S. Army Corps of Engineers regulates others through the Federal Clean Water Act (Army Corps wetlands).

Army Corps wetlands are labeled on project maps as "AC#" and exhibit three wetland parameters: hydrology, hydric soils, and hydrophytic vegetation (Appendix C: Mapsheets). Coastal zone wetlands are labeled on project maps as "CC#." The California Coastal Commission uses a "single parameter" wetland definition which states that "wetlands shall be defined as land where the water table is at, near or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action water flow turbidity, or high concentrations of salts or other substances in the substrate."

Following the single parameter wetland definition, unlined creek channels within the

BSA were delineated as Coastal Zone wetlands (Arroyo Paredon, Romero, San Ysidro, Oak, Montecito Creeks, and portions of Toro Canyon Creek). Because these creek channels are also considered "other waters of the United States" they are discussed in detail in Section 4.2 "*Other Waters of the U.S.*" Temporary and permanent impacts to these creeks are shown in Table 5.

4.1.2.1 SURVEY RESULTS

Forty-six potential wetland locations were identified in the BSA. Individual wetlands and "other waters" that would be affected by project construction are detailed in Table 11 (Appendix E), and shown in Project Mapping (Appendix C).

All alternatives will result in temporary impacts to 0.027 acres of a seasonal wetland (AC 2/CC2) in an earth-lined roadside drainage ditch along the NB lanes of Highway 101. The ditch receives run-off from the highway and nearby residential areas, and was covered in a dense layer of vegetation which included tall flatsedge, blackberry, and mugwort. Temporary impacts to this wetland would result from soundwall construction at this location.

Between PM 3.9 and 4.1, all alternatives will result in temporary and permanent impacts to vegetated roadside drainage ditches that run parallel to the NB and SB highway lanes (Army Corps and Coastal Zone wetlands AC5 and CC7, CC8, and CC9). Impacts will result from soundwall placement on both sides of the highway.

Alternative 2 will result in additional impacts to coastal zone wetlands in order to accommodate road widening. At PM 3.3, Alternative 2 would temporarily impact 0.019 acres of a vegetated roadside drainage channel (CC1) that flows along SB lanes and drains into Franklin Creek. Between PM 3.9 and 4.1 Alternative 2 will result in temporary and permanent impacts to vegetated roadside features (AC6 and CC6) to accommodate soundwall placement. Alternative 2 would also result in temporary and permanent impacts to a vegetated culvert outlet (CC10/OW 27) at PM 4.15 that leads into an open drainage channel dominated by arroyo willow and arrundo. The channel flows approximately 70 feet to the south, before entering a culvert under the frontage road and draining into Carpinteria Marsh. CC27 and CC28 consist of arroyo willows growing in drainage swales between Route 101 and the UPRR ROW, between PM 5.45 and PM 5.60. All build alternatives will result in temporary and permanent impacts to willows growing at these two locations resulting from soundwall placement.

Impacts for each creek are shown in Table 5. All build alternatives will result in temporary impacts to unlined portions of creek channels in the following creeks: Arroyo Paredon Creek, Toro Canyon Creek (partially-lined), Romero Creek, San Ysidro Creek and Oak Creek. Temporary and permanent impacts at Greenwell Creek will be offset would be offset by enhancement of 0.145 acres of the creek located south of Route 101. These creek reaches are discussed in detail in Section 4.2 "Other Waters of the U.S."

4.1.2.2 FUNCTIONS AND VALUES

With the exception of creeks, all wetlands that would be affected are constructed drainage features which are periodically disturbed for maintenance purposes. The vegetated drainage features along Highway 101 contribute some function to filter highway runoff, but provide little wildlife habitat.

Creeks in the BSA provide habitat and serve as corridors for movement of fish and wildlife through the area. However, creek reaches through the highway ROW are highly modified and maintained for flood control practices, which include vegetation removal. The functions and services of these channels vary according to watershed area, size, and location of each feature, the degree of channelization/concrete structures or lining present, and by the presence or absence of water and riparian/wetland vegetation. Factors that negatively affect the quality of functions and services provided by creeks within the BSA include regular disturbance from flood control practices, noise, lighting, limited vegetative diversity and the occurrence of exotic plant species (Wetland Report).

4.1.2.3 AVOIDANCE AND MINIMIZATION EFFORTS

- All design alternatives presented to the Project Development Team (PDT) were modified to minimize effects to wetlands.

- Work in creek channels would occur between May 1 and October 31, unless creek channels dry earlier than May 1. At Arroyo Paredon, Romero and San Ysidro creeks, work would be limited to June 1 through October 31 to avoid impacts to migrating steelhead trout or tidewater goby.

- To minimize potential effects upon water quality it will be necessary to divert flows around the work site by means of coffer dams and water diversions in creeks that are flowing.

- To minimize temporary, construction-related impacts Environmentally Sensitive

Area (ESA) fencing would be established at 12 ft from the cut/fill limits around wetlands.

- Temporary effects to water quality will be minimized by implementing the best management practices (BMPs) from the Caltrans National Pollutant Discharge Elimination System statewide storm water permit.

- Equipment staging areas and storage/stockpile areas would be located in uplands.

4.1.2.4 PROJECT IMPACTS

Table 6 summarizes the temporary and permanent impacts to Army Corps wetlands and Coastal Zone wetlands per alternative. Table 11 (Appendix E) catalogs impacts to each wetland per alternative. Alternative 2 has the greatest wetland impacts. Impacts do not differ between Alternatives 1 and 3.

Table 6: Impacts to Jurisdictional Wetlands (acres)

Wetland Type	Alternative 1 impacts		Alternative 2 impacts		Alternative 3 impacts	
	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Army Corps & Coastal Zone	0.078	0.005	0.073	0.016	0.078	0.005
Additional Coastal Zone Wetlands	0.487	0.146	0.430	0.506	0.487	0.146

*Impacts to individual creeks are presented in Table 5. *Impacts to Other Waters of the U.S. at Creeks (acres).*

Temporary impacts to manmade drainage features would result from construction-related activities, including equipment access, vegetation removal, excavation and grading for new structures, and temporary water diversions. Permanent impacts would result from replacing or extending bridge structures, soundwalls, highway fill for road widening, and culvert extensions.

Temporary impacts to creeks would result from construction-related activities, including equipment access, temporary water diversions, and temporary fill placement. Permanent impacts at Greenwell Creek would occur from installing rock slope protection at the base of the scour pool and along the unlined channel where eroding the slope against the Highway at PM 7.6. New bridge structures will result in expanded area of unlined creek beds at five creeks (Arroyo Paredon and Toro Canyon creeks immediately; Romero, San Ysidro and Oak creeks once downstream conditions allow). At Arroyo Paredon and Toro Canyon creeks, jurisdictional waters

that currently flow under two separate parallel bridge structures would flow under single elongated bridges.

4.1.2.5 COMPENSATORY MITIGATION

The US Army Corps of Engineers and the California Coastal Commission have a 'no net loss of wetlands' policy and require compensatory mitigation for wetlands impacts. Caltrans should expect to mitigate at least at a 1:1 ratio and up to a 3:1 ratio for permanent impacts to Coastal Zone and Army Corps wetlands. The ratio required for compensating for impacts would be based on resource agency recommendations as well as the function and quality of wetland habitat that needs to be replaced. Table 7 below presents the range of compensatory mitigation that may be required for each alternative. Restoration in areas of temporary impacts would also be required and is not represented in the table.

Table 7. Compensatory Mitigation for Permanent Wetland Impacts (acres)

Wetland Type	Alternative 1	Alternative 2	Alternative 3
U.S. Army Corps & Coastal Zone Wetlands	0.005 – 0.015	0.016 – 0.048	0.005 – 0.015
Additional Coastal Zone Wetlands	0.146 – 0.438	0.506 – 1.518	0.146 – 0.438

Numbers based on mitigation ratios from 1:1 to 3:1.

Impacts to wetlands would be minimized at all jurisdictional areas. Wetlands that are temporarily disturbed during construction would be replaced onsite by restoring wetland areas to their original condition.

Removal of the concrete channel lining in Toro Canyon Creek will allow the restoration of up to 0.105 acres of creek bottom through state ROW. The longer bridge spans at Arroyo Paredon, Romero, San Ysidro and Oak creeks will result in wider natural channels at these four creeks (Arroyo Paredon immediately (+0.160 acre); Romero (+0.13 acre), San Ysidro (+0.110 acre) and Oak Creek (+0.030 acre) once downstream conditions allow). Wider channels will result in a net gain of an additional 0.430 acres of natural creek bed. Expanded natural channels would increase filtration capacity and groundwater recharge in these creek reaches and would lower peak water velocities for migrating steelhead trout. Improvements at Greenwell Creek are discussed in Section 4.1.1.4: *Other Waters of the U.S.-*

Compensatory Mitigation.

The functions of man-made wetlands (roadside drainage features) could easily be replaced with more manmade wetlands. Sites chosen for mitigation would be within the project limits where feasible. Constructing new vegetated ditches that receive and filter highway runoff would replace the function of the vegetated roadside ditches that are considered coastal zone wetlands. Enough room would be available in the proposed ROW to replace most or all of the coastal zone wetland losses onsite with vegetated ditches or bioswales. Grasses and other low-growing vegetation would provide the greatest filtering capacity. Plantings should include native species found locally, including horsetail, sedge, mugwort, marsh baccharis, and blackberry.

Where onsite mitigation is not practical due to constraints such as area required to offset impacts, then mitigation for permanent impacts to wetlands should occur where it will have the maximum benefits locally and regionally. The greatest benefit to wetlands locally and regionally would result from work to enhance the Carpinteria Salt Marsh. The Carpinteria Marsh, located immediately west of the City of Carpinteria, is the largest remnant of the native ecosystem in the region and has the highest occurrence of special status species in the area (CNDDB). It is a critically important southern California coastal estuary, and is protected as a conservation and research reserve by the University of California Natural Reserve System.

At least 75 percent of southern California's former coastal wetlands have been lost and the remainder experience varying levels of degradation (Wiley and Zembel 1989). Impacts to Carpinteria Marsh from agricultural runoff, sedimentation, and mosquito abatement threaten its productivity (Santa Barbara Coastal Plan 1982). Resource managers at Carpinteria Marsh have identified multiple needs, which include restoration or enhancement of degraded areas and control of invasive species that diminish the function and value of marsh resources (Andrew Brooks, Reserve Manager; personal communication 2009). In addition to benefiting water quality through increased filtration of sediment and pollutants, restoration of severely degraded areas of the marsh would benefit special-status animal species by increasing habitat available for shelter, foraging, breeding and rearing young.

4.1.2.6 CUMULATIVE IMPACTS

Cumulative impacts include the impacts of future State, Federal, tribal, local, or private actions that are reasonably certain to affect wetlands in the project area. Caltrans is in the process of studying the Linden Casitas Highway Improvements

Project, a project which includes interchange reconstruction, new bridge and soundwall construction and frontage road extensions starting 0.2 miles south of the Carpinteria Creek bridges and ending 0.4 miles north of Linden Avenue. The Linden Casitas Project would impact approximately 0.05 acres of Coastal Zone wetlands, which will be fully mitigated as part of that project. Other than the Linden Casitas Project, and the updated list of local projects that the City of Carpinteria publishes, Caltrans is unaware of any other federal or non-federal actions that are reasonably certain to occur in the project area. Impacts to wetlands with this project would be fully mitigated. Therefore, the project does not have the potential to contribute to a cumulative effect.

4.1.3 Riparian Community

Riparian habitat is a natural community of special concern that will be affected by this project. Currently some of the riparian vegetation within and adjacent to creeks in the BSA is routinely cleared as part of the SBCFC District Annual Maintenance Plan (2009-10, updated yearly). Maintenance, in combination with channel modifications such as concrete and/or sack-crete lined walls, results in limited opportunity for riparian communities to become established within the Highway ROW. Existing riparian areas in the ROW are patchy and exhibit limited species diversity.

4.1.3.1 SURVEY RESULTS

Patches of riparian vegetation were identified at Arroyo Paredon Creek, upstream of the highway bridge at Toro Canyon Creek, and downstream of the highway bridge at San Ysidro Creek. Four coast live oak trees grow at the top of the banks of the culvert outlet at Garrapata Greek. Franklin and Santa Monica Creeks have no riparian vegetation within or adjacent to the project limits because these are concrete-lined channels. Although riparian habitat occurs at Carpinteria Creek, no work is proposed at this location. Riparian trees that would be impacted by the proposed project were measured and delineated onto mapping. Dominant riparian vegetation in the ADI consisted of arroyo willow, western sycamore, Cape ivy, periwinkle, and garden nasturtium. Highway landscaping in upland areas near creeks included coast live oak, eucalyptus, cypress, pine and pittosporum trees.

4.1.3.2 AVOIDANCE AND MINIMIZATION EFFORTS

- All work will be confined to Caltrans ROW and delineated temporary construction easements.

- Prior to any ground-disturbing activities, (ESA) fencing will be installed around the dripline of trees and riparian vegetation to be protected. ESA fencing limits will be depicted on the final design layout plans.

- To avoid impacting nesting birds in the riparian vegetation, all clearing will be accomplished outside the nesting season (February 15- September 1).

4.1.3.3 PROJECT IMPACTS

Ten coast live oaks (*Quercus agrifolia*) ranging in size from 2 to 26-inch dbh will be removed from riparian areas during construction. Nineteen arroyo willows (*Salix lasiolepis*) ranging in size from 3 to 10 inch dbh will be removed from riparian areas. All build alternatives will avoid the large sycamore tree that provides shade to the south end of San Ysidro Creek and the four coast live oak trees that shade the culvert outlet at Garrapata Greek. See Table 8 for a summary of riparian impacts.

Table 8: Riparian Impacts

Number of Species	DBH & (# of Trees)	Locations
Arroyo Paredon Creek		
11- arroyo willows (*Salix lasiolepis)*	4 in (5), 5 in (2), 6 in (1), 7 in (2), 8 in (1)	6 –south bank 5- north bank
Toro Canyon Creek		
4- arroyo willows (*Salix lasiolepis)*	7 in (1), 8 in (1) 9 in (1), 10 in (1)	4- north bank
7- coast live oak *(Quercus agrifolia)*	2 in (1), 3 in (1), 4 in (4), 11 in (1)	5- north bank 2- south bank
6- Monterey Cypress (*Cupressus macrocarpa*)	9 in (1), 11 in (1), 12 in (1), 17 in (1), 19 in (1), 30 in (1),	2- north bank 4- south bank
2 – Eucalyptus (non-native) (*Eucalyptus globulus*)	16 in (1), 37 in (1)	2- south bank
Greenwell Creek		
4- arroyo willows (*Salix lasiolepis)*	3 in (3), 5 in (1)	4- south bank
San Ysidro Creek		
3- coast live oaks *(Quercus agrifolia)*	5 in (1), 6 in (1), 17 in (1)	3- south bank
2- Monterey pine (*Pinus radiata*)	24 in (1) , 28 in (1), 33 in (2)	2- south bank
1 – Eucalyptus (non native) (*Eucalyptus globulus*)	16 in (1)	1- south bank

4.1.3.4 COMPENSATORY MITIGATION

Impacts to native riparian vegetation would be offset by replacement planting within the project limits. Replanting plans for creek locations should be reviewed by Santa Barbara County Flood Control to ensure that plantings would not impede flows within creek channels to avoid flooding. Replacement planting will be achieved using a 3:1 ratio for willows and a 3:1 ratio for coast live oaks or western sycamore ≥ six inches dbh (See Table 9). Monterey cypress and Monterey pine trees will be replaced in kind. Plantings will be detailed in Caltrans' Landscape Architecture landscape planting plan. Although higher replacement ratios are sometimes appropriate, the fact that the state ROW along creek reaches is actively managed by the county for flood control, in combination with the fact that all replacement trees would be maintained within the Caltrans ROW, make this an appropriate number for this project.

Disturbed areas that are not replanted with riparian trees or shrubs would be stabilized and seeded with native grasses and forbs. If replacement ratios cannot be met at these locations due to flooding concerns, planting will occur at other appropriate locations within the state ROW. All riparian plantings will be monitored to ensure successful revegetation at six months after implementation and then once a year for three years. Removal of existing stands of invasive giant reed (*Arrundo donax*) on the south banks of Arroyo Paredon creek and at Greenwell Creek will be included in Caltrans Landscape Architecture landscape plans.

Table 9: Riparian Mitigation

Species	Total Trees Removed	Mitigation Ratio	Total Trees to be Replanted
Arroyo willows (*Salix lasiolepis)*	19	3:1	57
Coast live oaks *(Quercus agrifolia)*	7	3:1	21
Monterey Cypress (*Cupressus macrocarpa*)	6	1:1	6
Monterey Pine (*Pinus radiata*)	2	1:1	2

4.1.3.5 CUMULATIVE IMPACTS

Cumulative impacts include the impacts of future State, Federal, tribal, local, or private actions that are reasonably certain to affect riparian habitat in the project area. Caltrans is in the process of studying the Linden Casitas Highway Improvements Project, a project which includes interchange reconstruction, new bridge and soundwall construction and frontage road extensions starting 0.2 miles south of the Carpinteria Creek bridges and ending 0.4 miles north of Linden Avenue. The Linden Casitas Project would impact approximately 0.29 acres of riparian habitat which will be fully mitigated as part of that project. Other than the Linden Casitas Project, and the updated list of local projects that the City of Carpinteria publishes, Caltrans is unaware of any other federal or non-federal actions that are reasonably certain to occur in the project area. This project includes minimization and avoidance measures to reduce impacts to riparian areas, and impacts to riparian habitat would be fully mitigated. Therefore, the project does not have any cumulative impacts.

4.1.4 Coast Live Oaks

Senate Concurrent Resolution No. 17 Relative to Oak Woodlands defines oak woodlands as a five-acre circular area containing five or more oak trees per acre. Within and adjacent to the project limits, individual oak trees, but not true continuous oak woodlands (as defined by Senate Resolution 17) occur within the project limits.

4.1.4.1 SURVEY RESULTS

Approximately 220 individual coast live oaks or rows of oak trees occur within the maximum cut and fill limits of the project ADI. Ten of these oak trees occur within riparian areas and are addressed in Section 4.13 *Riparian Community*. Between PM 6.3 and 6.7 approximately 33 of the original 71 Memorial Oaks remain. These trees, planted in 1928 to commemorate local veterans of WWI, were planted on both sides of the two lane highway. The road was widened in the 1950s leaving the oaks to line the SB lanes only. Most of them have died over the years. As an important cultural resource for the local area, a replanting plan specific to the Memorial Oaks will be coordinated through the Caltrans Environmental Landscape Architecture and Caltrans Division of Cultural Resources. Although this section of the ROW arguably has the most terrestrial habitat value within the project limits, its habitat values are compromised by ornamental species present and the adjacent residential areas beyond the ROW. The habitat value of the trees is further limited by fragmentation, lack of

connectivity, regular pruning and traffic noise resulting from the surrounding four lane freeway.

The remaining oaks that occur within Caltrans right of way are individual trees that are interspersed randomly throughout roadside landscaping along the highway shoulder and are not considered a natural oak woodland community.

4.1.4.2 AVOIDANCE AND MINIMIZATION EFFORTS

- All oaks and other native trees ≥ 6" dbh that will remain in the project vicinity will be delineated on design plans. Prior to any ground-disturbing activities, ESA fencing will be installed around the dripline of trees to be protected.

- To avoid impacting nesting birds that might use the landscaped portions of the right of way, tree removal shall not occur between February 15 and September 1.

4.1.4.3 PROJECT IMPACTS

All oak trees to be impacted by the proposed project are coast live oaks (*Quercus agrifolia*). Up to 220 coast live oak trees, including riparian trees, would be removed from the state ROW during construction.

4.1.4.4 COMPENSATORY MITIGATION

Impacts to native oak trees ≥ 6" dbh would be offset by replacement planting within the project limits. Replacement plantings will be achieved using a 3:1 ratio for each oak tree removed, in accordance with Santa Barbara County's Draft Guidelines for Urban Oak Trees (2006). Although higher numbers are sometimes appropriate, the limited habitat value of the trees to be removed and the fact that all replacement trees would be maintained within Caltrans ROW make this an appropriate number for this project. Replacement plantings will be detailed in Caltrans' Landscape Architecture Landscape Planting Plan. Oak tree plantings would be monitored to ensure successful revegetation at six months and then once a year for three years. It is recommended that native tree and shrub species such as western sycamore, lemonade berry, toyon, laurel sumac and coyote brush also be included as replacement plantings.

4.1.4.5 CUMULATIVE IMPACTS

The statewide loss of oaks and oak woodlands to agricultural conversion, rangeland clearing, and development is well documented. It is also well known that grazing and invasive grasses have reduced oak regeneration and contributed to the decline of oak

woodlands statewide (Pavlik et al. 1991, Holland and Keil 1995).

With compensatory mitigation, the project would not contribute to the cumulative loss or degradation of oak woodland or isolated oak trees in southern Santa Barbara County.

4.2 Sensitive Species Potentially in the Project Area

Table 10, below, summarizes the sensitive species list for the project area. Species determined to be present were either observed in the BSA or presence was inferred based on suitable habitat and occurrences documented in the CNDDB, literature, or museum collections.

Table 10: Special-Status Species with the Potential to Occur in the Biological Study Area

Common Name	Scientific Name	Status	Species Present/ Absent	Rationale
Special-Status Plants				
Black-flowered figwort	*Scrophularia atrata*	CNPS 1B	A	Species not identified during botanical surveys
Coulter's saltbush	*Atriplex coulteri*	CNPS 1B	A	Species not identified during botanical surveys
Coulter's goldfields	*Lasthenia glabrata ssp. coulteri*	CNPS 1B	A	Species not identified during botanical surveys
Davidson's saltscale	*Atriplex sernana var. davidsonii*	CNPS 1B	A	Species not identified during botanical surveys
Gambell's watercress	*Rorippa gambelli*	FE, ST	A	Species not identified during botanical surveys
Long-spined spineflower	*Chorizanthe polygonoides var. longspina*	CNPS 1B	A	Species not identified during botanical surveys
Marsh sandwort	*Arenaria paludicola*	FE, SE	A	Species not identified during botanical surveys
Mesa horkelia	*Horkelia cuneata ssp. puberula*	CNPS 1B	A	Species not identified during botanical surveys

Common Name	Scientific Name	Status	Species Present/ Absent	Rationale
Nutall's scrub oak	*Quercus dumosa*	CNPS 1B	A	Species not identified during botanical surveys
Refugio manzanita	*Arctostaphylos refugioensis*	CNPS 1B	A	Species not identified during botanical surveys
Salt marsh bird's beak	*Cordylanthus maritimus ssp. maritimus*	FE, SE	A	Species not identified during botanical surveys
Santa Barbara honeysuckle	*Lonicera subspicata var. subspicata*	CNPS 1B	A	Species not identified during botanical surveys
Ventura Marsh Milk-vetch	*Astragalus pycnostachyus var. lanosissmus*	FE, SE	A	Species not identified during botanical surveys
Special-Status Wildlife				
Steelhead trout	*Oncorhynchus mykiss So. Ca. DPS*	FE, SSC	P	Known to be present in creeks in BSA. Some creeks are designated as critical habitat for steelhead.
Tidewater Goby	*Eucyclogobius newberryi*	FE, SSC	P	Known to be present in lagoon at Arroyo Paredon Creek (proposed critical habitat) and in lagoon at Andre Clark Bird Refuge.
California red-legged frog	*Rana aurora draytonii*	FT, SSC	A	Species not found during USFWS protocol level surveys
Two-striped garter snake	*Thamnophis hammondii*	SSC	A	Species not found during herpetofauna surveys
Western pond turtle	*Actinemys marmorata pallida*	SSC	A	Species not found during herpetofauna surveys
Belding's Savannah sparrow	*Passerculus sandwichensis beldingi*	SE	A	Nesting habitat not present in the BSA
California least tern	*Sterna antillarum browni*	FE, SE	A	Nesting habitat not present in the BSA
Least Bell's vireo	*Vireo belli pusillus*	FE, SE	A	Lack of specific habitat requirements.

Common Name	Scientific Name	Status	Species Present/ Absent	Rationale
Light-footed clapper rail	*Rallus longirostris levipes*	FE, SE	A	Nesting habitat not present in the BSA
Southwestern willow flycatcher	*Empidonax trallii extimus*	FE	A	Nesting habitat not present in the BSA
Western snowy plover	*Charadris alexandrinus nivosus*	FT, SSC	A	Nesting habitat not present in the BSA
Monarch Butterfly	*Danaus plexippus*		A	No known roosting sites in BSA. Aggregations not found in surveys of locations near documented roosting sites.

4.3 Special Status Plant Species

Appendix F summarizes the results of botanical surveys. No special-status plant species were found. No critical habitat for federally or state listed plant species occurs within the BSA. A plant list for the project is presented in Appendix F.

4.4 Special Status Animal Species Occurrences

Special-status animal species with the potential to occur in the project area include steelhead trout, tidewater goby, California red-legged frog, southwestern pond turtle, two-striped garter snake, light footed clapper rail, Belding's Savannah sparrow, southwestern willow flycatcher, least Bell's vireo, California least tern, western snowy plover, and Monarch butterfly.

4.4.1 California Red-Legged Frog

The project is within the geographic range for California red-legged frogs (USFWS 2002). California red-legged frogs [*Rana draytonii* (federally threatened, state species of special concern)] are known to occur in coast range watersheds from near Point Reyes to northern Baja California. California red-legged frogs breed in permanent or temporary freshwater bodies lacking predatory fishes and in areas holding water through July. They typically remain within 300 feet of water, but frogs will move between aquatic sites to breed, forage, or to escape drying conditions. Overland

movements occur up to 2 miles, often in straight lines and without regard to habitat type. California red-legged frogs also use uplands for foraging and have been observed using riparian areas for extended periods (USFWS 2002). Due to a decline in the population size and habitat, the species was listed as federally threatened under the Endangered Species Act of 1973, and amended effective 06/24/96. This project is not located in a designated critical habitat area for California red-legged frogs (USFWS 2010).

The BSA crosses the lower reaches of eleven intermittent creeks where channelization and man-made structures, combined with an altered hydroperiod due to urbanization and agriculture, result in altered flow regimes. Several of these creeks go dry at the Highway 101 crossings in spring or early summer. Montecito, Oak, San Ysidro, Toro Canyon and Garrapata creeks were all dry at Highway 101 by June 1, 2009.

There are no known records of California red-legged frogs within the BSA. The closest sighting to the project area was along upper Arroyo Paredon Creek in July 2008, when a single juvenile was observed northeast of the junction of the creek and Highway 192, approximately 1.3 miles north of the project area. Two other red-legged frog sightings are reported within five miles of the study area. In September 2005, a single adult red-legged frog was observed 1.6 miles north of the project area in upper Santa Monica Creek. In August 2002, three juvenile frogs and ten larvae were observed in Upper Hot Springs Creek, approximately 2 miles northwest of the project area (CNDDB).

SBCFC staff conducts annual walking surveys of creek reaches within the BSA each spring and staff members have not observed red-legged frogs in these creeks (Maureen Spencer, personal comment 2009). Previous protocol-level surveys of Arroyo Paredon Creek (2005) and Carpinteria Creek (2007) were negative for California red-legged frogs (Caltrans, District 5).

4.4.1.1 SURVEY RESULTS

At the recommendation of the USFWS Office in Ventura, Caltrans conducted protocol-level surveys of all suitable potential habitat in the BSA in 2009. Site assessments and field surveys were conducted according to the *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (USFWS 2005). Surveys were conducted at Arroyo Paredon Creek (4,500 feet upstream from Highway 101and downstream to the Pacific Ocean) and Romero Creek (3,000 feet

upstream from Highway 101 and downstream to the Pacific Ocean). Surveys were also conducted at Greenwell Creek south of Highway 101 and at the roadside drainage ditches located along the NB on and offramps at South Padaro Lane. Carpinteria Creek was not re-surveyed because previous negative survey results were less than 2 years-old.

Protocol-level surveys for California red-legged frog were negative. This project is not expected to affect California red-legged frogs. Minimization or avoidance measures are not warranted for this project.

4.4.2 Southern Steelhead

Steelhead trout (*Oncorhynchus mykiss*) are an ocean-going form of rainbow trout native to Pacific Coast streams from Alaska south to northwestern Mexico. Wild steelhead populations in California have decreased significantly from their historic levels. This decline prompted listing of the Southern California Distinct Population Segment (DPS) as endangered on 08/18/97 which includes populations from the Santa Maria River south to the Tijuana River at the U.S. Mexico border (NOAA 1997). Final critical habitat was designated by NOAA's National Marine Fisheries Service in September 2005 (NOAA 2005), and a Draft Recovery Plan for the Southern California Steelhead DPS was published in July 2009. The steelhead trout is also a state species of special concern.

Oncorhynchus mykiss exhibits one of the most complex suites of life history traits of any salmonid species. Although individuals may exhibit anadromy or freshwater residency, in California they typically migrate to marine waters after spending from 1-3 years in fresh water. They then reside in marine waters for typically 1-2 years prior to returning to their natural stream to spawn as 4-5 year-olds. Steelhead are iteroparous, meaning they are capable of spawning more than once before dying. However, it is rare for steelhead to spawn more than twice before dying. Adults typically spawn between January and March but spawning can occur as early as December or as late as June. Depending upon water temperature, steelhead eggs may incubate in nesting gravel for 1.5 to 4 months before hatching as "alevins" (a larval life stage dependent upon food stored in a yolk sac). Following yolk sac absorption, young juveniles or "fry" emerge from the gravel and begin actively feeding.

Higher elevation headwaters are the primary spawning and rearing areas for southern steelhead today. The lower elevation alluvial flats may have been important originally, although in central and southern California they may present potentially

inhospitably warm and fluctuating water temperatures and the streams are often intermittent.

4.4.2.1 SURVEY RESULTS

Steelhead trout occur in Carpinteria, Arroyo Paredon, Romero, San Ysidro, Montecito and Sycamore creeks (NOAA Fisheries list of current steelhead creeks, Stoeker 2002). In 2009, Caltrans biologists observed juvenile steelhead in pools in Romero Creek upstream of the state ROW.

No work is proposed in Carpinteria or Montecito Creeks, and Sycamore Creek is outside of the proposed project limits. The project proposes bridge replacements where the state highway crosses Arroyo Paredon, Romero and San Ysidro Creeks. Steelhead use these portions of creeks as migration corridors between the ocean and upstream spawning habitat. At these three locations, county roads, Highway 101, and the Union Pacific Railroad tracks cross each creek sequentially near their mouths. Channel beds are comprised of natural substrate (primarily cobble) and concrete walls line the banks. Upstream and downstream of highway crossings, channelization and man-made structures, combined with an altered hydroperiod due to urbanization and agriculture, have altered run−off patterns and flow regimes. County Flood Control's Annual Maintenance Plans typically include the removal of large woody debris and vegetation from these channels.

4.4.2.2 CRITICAL HABITAT

Within the BSA, the following creeks are designated critical habitat for federally endangered Southern Steelhead: Carpinteria, Romero, San Ysidro, Montecito and Sycamore Creeks. Critical habitat designation for Arroyo Paredon Creek ends approximately 350 feet upstream of the Highway 101 crossing. No work is proposed in Carpinteria or Montecito Creeks, and Sycamore Creek is outside of the proposed project limits. The project would affect designated critical habitat for the Southern California Steelhead DPS where the state highway crosses Romero and San Ysidro Creeks. Work at these locations will require formal consultation with the National Marine Fisheries Service for critical habitat.

4.4.2.3 AVOIDANCE AND MINIMIZATION EFFORTS

The following take avoidance and take minimization measures will be incorporated into each build alternative:

- All work activities within or adjacent to critical habitat creeks would only take

place during the low flow period between June 1 and October 31 to avoid impacting migrating steelhead trout, unless creek channels dry earlier than June 1.

- Pre-construction educational meetings discussing steelhead and other sensitive species will be required for construction personnel prior to work in creeks.

- Water diversions will be required at Arroyo Paredon and Romero creeks. San Ysidro Creek is typically dry at the state highway crossing by May 1 each year and remains dry until November.

- Only qualified personnel authorized under a Biological Opinion shall participate in activities associated with the capture, handling, and relocation of steelhead. The names and credentials of personnel who desire to conduct these activities shall be supplied to NOAA for their review and approval at least 15 day prior to the onset to these activities.

- If water is to be pumped around work sites, pump intakes shall be completely screened with wire mesh not larger than five millimeters (mm) to prevent fish from entering the pump system.

- During the de-watering effort, if present, steelhead shall be removed prior to draining the site. After barriers are constructed, steelhead shall be captured, transported in buckets, and released in the most appropriate habitat immediately adjacent to the de-watered area. Handling time for steelhead shall be minimized to the maximum extent practicable.

- Upon completion of construction activities each year, barriers to flow shall be removed in a manner that will allow flow to resume with the least disturbance to the substrate.

- All disturbance to potential steelhead habitat including riparian vegetation and jurisdictional waters shall be minimized with the use of ESA fencing and all soil exposed as a result of project construction shall be revegetated using native hydroseeding or live planting methods.

- If the substrate of the stream is altered during work activities, it shall be graded or otherwise treated to pre-construction conditions or better after the work is completed.

4.4.2.4 PROJECT IMPACTS

Proposed work within these creeks is the same for all three build alternatives. Build alternatives will result in both temporary and permanent impacts to migration habitat in Arroyo Paredon, Romero and San Ysidro creeks within the project limits.

All build alternatives may affect but are not likely to adversely affect steelhead trout and may result in incidental take. Incidental take could be a result of harassment, harm, or mortality of steelhead during water diversion, demolition and construction, or relocation actions if they become necessary. Following the selection of the project's preferred alternative, formal consultation under Section 7 of the Endangered Species Act will be initated with NOAA for potential incidental take of steelhead trout in Arroyo Paredon Creek, Romero Creek and San Ysidro Creek.

Temporary impacts could occur with the water diversion and dewatering. The water diversion and dewatering would temporarily raise water levels directly above the cofferdam, however creek flows would be maintained through a pipe culvert. Given that the window for work in the creek is outside of the time frame for steelhead trout migration, it is anticipated that any incidental take that might occur would be a take of steelhead trout juveniles during the water diversion and dewatering of Arroyo Paredon and Romero creeks (San Ysidro Creek typically dries up in May and remains dry until the winter rains in November). Following the water diversion, remaining fish within the area to be dewatered will be removed using a seine and dip nets. Any steelhead trout encountered during the seining of the dewatered area will be relocated to a suitable location within that creek.

Permanent impacts to Arroyo Paredon and Romero creeks would result from replacement bridge structures that extend beyond the footprint of the existing structures. New bridge structures at these locations would result in increased shading through these creek reaches. However, new bridge structures will also result in expanded area of natural creek beds at Arroyo Paredon Creek immediately; and at Romero and San Ysidro creeks once downstream conditions allow.

The NB and SB bridges at Arroyo Paredon Creek would be replaced with a single structure that would measure approximately 80 feet long and 173 feet wide. The new structure would enclose the open channel between the two bridges, resulting in 26 linear feet of additional shading by the bridge deck. For all build alternatives, a new 40 foot-wide channel with natural bed will be constructed adjacent to the original creek channel. The two channels will be separated by an instream pier. Banks of the

creek will continue to consist of concrete walls. The creek bed will continue to consist of natural substrates. The second channel will result in a gain of approximately 0.160 acre of natural creek bed.

Replacement highway bridges at Romero Creek and San Ysidro Creek will have longer spans that will match county bridges upstream to allow these bridges to pass flood flows. While the new highway bridges will have longer spans across the creek channels, the undersides would be temporarily walled off to match the existing conditions up and downstream conditions. The current channel width would be maintained until improvements are made to adjacent facilities immediately downstream (for more detail, see discussion of Santa Barbara County Flood Control's Conceptual Plan for Creeks on page 37). The bridge at Romero Creek would be widened an additional 10 feet to the north and south to support soundwalls. The twenty additional feet of bridge deck at Romero Creek would result in additional shading of the creek channel. Creek beds would continue to consist of natural substrates and no piers or permanent structures would be placed in channels.

Senate Bill 857 requires Caltrans rectify any fish passage impediments for anadramous fish when modifying a structure. Aside from one identified impediment at Carpinteria Creek, no physical obstructions to fish passage (in-stream structures, bed, lining, significant grade changes) were identified in steelhead creeks in the state ROW (Stoeker 2002, NOAA 2005). The impediment to fish passage at Carpinteria Creek (the current bike path) will be removed by the Linden-Casitas Highway Improvement Project prior to start of this project.

Caltrans began early consultation with NOAA's National Marine Fisheries Service in May 2009 to identify and conduct various hydraulic analyses of steelhead creeks where work is proposed (Arroyo Paredon Creek, Romero Creek and San Ysidro Creek). Although significant grade changes do not occur within in the BSA, the extent of channelization up and downstream at San Ysidro and Romero creeks results in peak flood flows that currently exceed recommended velocities for fish passage. While the extended spans of the new bridges would help to reduce velocities in the ROW, conditions at Romero and San Ysidro creeks would temporarily maintain current channel widths until the downstream structures are improved so as not to jeopardize downstream facilities. Consultations with federal and state agencies are currently ongoing.

4.4.2.4.1 COMPENSATORY MITIGATION

At Arroyo Paredon creek, the new channel will result in decreased velocities at peak flows, improving conditions for winter spawning in this portion of the creek reach. Similarly, the longer bridge spans at Romero Creek and San Ysidro Creek, will result in wider unlined channels and lower velocities at peak flow once the downstream facilities have been upgraded. Additional mitigation measures include 3:1 ratio for replanting of riparian vegetation to be removed during construction, as well as the removal of an existing stand of giant reed (*Arrundo donax*), an invasive non-native plant, at Arroyo Paredon Creek.

4.4.2.4.2 CUMULATIVE EFFECTS

Cumulative effects include the effects of past, present, and reasonably foreseeable future State, tribal, local, or private actions that are reasonably certain to occur in the project area. Caltrans is not aware of any federal or non-federal actions that have potential to affect steelhead or critical habitat within the project area.

4.4.3 Tidewater Goby

The tidewater goby (*Eucyclogobius newberryi*) is a small fish rarely exceeding 50 millimeters (2 inches) in length that occurs in tidal streams associated with coastal wetlands in California. Since 1900, the tidewater goby has disappeared from nearly 50 percent of the coastal lagoons within its historic range, including 74 percent of the lagoons south of Morro Bay in Central California (USFWS 2000). This decline prompted federal listing of the tidewater goby as endangered on February 4, 1994. Critical habitat was designated in November 20, 2000. Revised critical habitat was proposed on October 19, 2011 (USFWS 2011).

A member of the family *Gobiidae*, the tidewater goby is the only species in the genus Eucylogobius and is almost unique among fishes along the Pacific coast of the United States in its restriction to waters with low salinities in California's coastal wetlands. Tidewater gobies inhabit seasonally closed estuaries along the California coast, a habitat heavily impacted by anthropogenic filling and artificial opening, and the species exhibits varied metapopulation behavior as a consequence of hydrologic variation and anthropogenic impact. Their habitat is characterized by brackish water in shallow lagoons and in lower stream reaches where the water is fairly still but not stagnant. Gobies may use the edges of dense patches of vegetation, where they escape predation if disturbed. Substrate preference is for sand, mud, gravel, and silt, particularly associated with submerged vegetation that is likely used for cover. Tidewater gobies prefer

sand, coarse sand, and sand/mud substrates for breeding (USFWS 2006). Although usually associated with lagoons, the tidewater goby has been documented in ponded fresh water habitats as far as 8 kilometers (5 miles) upstream from San Antoino lagoon in Santa Barbara County (USFWS 2000).

4.4.3.1 SURVEY RESULTS

Surveys for tidewater gobies were not conducted for this project due to the known status of the species in Arroyo Paredon Creek and at the mouth of Franklin Creek. Tidewater gobies have been observed at Arroyo Paredon Lagoon just downstream of the project area (CNDDB). Tidewater gobies are not known to occur within the project limits on Franklin Creek due to an absence of appropriate habitat, however they have been observed near the mouth of the creek approximately one half mile downstream within the Carpinteria Salt Marsh.

The build alternatives are not likely to adversely effect, but may affect and may result in incidental take of tidewater gobies in Arroyo Paredon Creek. Incidental take of tidewater gobies is not anticipated although it has the potential to occur. Incidental take could be a result of harassment, harm, or mortality of tidewater gobies during water diversion, demolition, construction, or relocation actions if they become necessary. Following the selection of the projects preferred alternative, formal consultation under Section 7 of the Endangered Species Act will be initiated with the USFWS as a result of potential incidental take of tidewater gobies and potential impacts to critical habitat with proposed work in and adjacent to Arroyo Paredon Creek.

All alternatives propose to extend the Route 101 bridge deck over Franklin Creek. The existing bridge deck will be extended either 22 feet (Alternative 1 and 3) or 40 feet (Alternative 2) to the north, and will extend 26 feet in the center to enclose the currently open area between the two bridge decks. No permanent structures would be placed in the channel. This work is not expected to affect the tidewater goby at Franklin Creek due to a lack of habitat within or adjacent to the project limits.

4.4.3.2 CRITICAL HABITAT

Within the BSA, Arroyo Paredon Creek is proposed critical habitat for federally endangered tidewater goby (USFWS 2011). The project would affect proposed critical habitat for tidewater goby where the state highway crosses Arroyo Paredon Creeks. Work at this location will require consultation with the U.S. Fish and Wildlife Service

4.4.3.3 AVOIDANCE AND MINIMIZATION EFFORTS

The following avoidance and minimization measures will be incorporated into each build alternative:

- All work activities within and adjacent to Arroyo Paredon Creek and Franklin Creek shall be completed outside of the primary breeding season to reduce the potential harassment and mortality of tidewater gobies. The window of work for construction within or adjacent to Arroyo Paredon Creek and Franklin Creek would be during the low flow period between June 1st and October 31st.

- Pre-construction educational meetings discussing the tidewater goby will be required for construction personnel prior to work in Arroyo Paredon Creek and Franklin Creek.

- Only qualified personnel authorized under a biological opinion shall participate in activities associated with the capture, handling, and relocation of tidewater gobies. The names and credentials of personnel who desire to conduct these activities shall be supplied to the USFWS for their review and approval at least 15 day prior to the onset to these activities.

- If water is to be pumped from work sites, pump intakes shall be completely screened with wire mesh not larger than five millimeters (mm) or smaller to adequately prevent tidewater gobies from entering the pump system.

- During de-watering efforts, if present, as many tidewater gobies as possible shall be removed prior to draining the site. After barriers are constructed, tidewater gobies shall be captured, transported in buckets, and released in the most appropriate habitat immediately adjacent to the de-watered area. If a beach seine is used, it shall be pulled to shore in a deliberate manner with care being taken to avoid rolling the lead line inward. The number of tidewater gobies shall be estimated prior to release. All debris and aquatic and emergent vegetation in the pumped area shall be carefully inspected for tidewater gobies and other vertebrates. As the work site is de-watered, remaining pools shall be inspected for tidewater gobies. As many individuals as possible shall be captured using dipnets and other appropriate tools and moved as described above. Handling time for tidewater gobies shall be minimized to the maximum extent practicable.

- Upon completion of construction activities each year, barriers to flow shall be

removed in a manner that will allow flow to resume with the least disturbance to the substrate.

- All disturbance to potential tidewater goby habitat including riparian vegetation and jurisdictional waters shall be minimized with the use of ESA (environmentally sensitive area) fencing and all soil exposed as a result of the project shall be revegetated using native hydroseeding or live planting methods.

- If the substrate of the stream is altered during work activities, it shall be graded or otherwise treated to pre-construction conditions or better after the work is completed.

4.4.3.4 PROJECT IMPACTS

All build alternatives will result in both temporary and permanent impacts to tidewater goby and proposed critical habitat at Arroyo Paredon Creek. Proposed bridgework at Arroyo Paredon Creek within the project limits is discussed in detail in Section *4.4.2.4 Southern Steelhead- Project Impacts.*

Temporary impacts could occur with the water diversion and dewatering. Individual fish will be captured and relocated as described above. While handling time for tidewater gobies would be minimized to the maximum extent practicable, incidental take may occur with these activities.

Permanent, beneficial impacts would include an expanded area of natural creek bed at Arroyo Paredon Creek, which could provide additional habitat for tidewater gobies at this location. The new bridge structure would also result in increased shading through this portion of the creek reach.

4.4.3.5 COMPENSATORY MITIGATION

Mitigation measures include the 3:1 ratio for replanting of riparian vegetation to be removed during construction in addition to the removal of an existing stand of giant reed (*Arrundo donax*), an invasive non-native plant, at Arroyo Paredon Creek.

4.4.3.6 CUMULATIVE IMPACTS

Cumulative effects include the effects of past, present, and reasonably foreseeable future State, tribal, local, or private actions that are reasonably certain to occur in the project area. Caltrans is unaware of any federal or non-federal actions that are reasonably certain to affect tidewater goby in Arroyo Paredon and Franklin Creek watersheds.

4.4.4 Western Pond Turtle

The Western pond turtle (*Actinemys marmorata pallida*) is a state species of special concern. The distribution of the southwestern pond turtle is from the vicinity of the Monterey Bay southward through the Coastal Ranges to Baja California, Mexico (Jennings et al 1992). Western pond turtles are mostly aquatic, requiring habitat with a perennial water source. They can be found in ponds, marshes, rivers, streams, and irrigation ditches that typically have a muddy or rocky bottom. Aquatic habitats favored by pond turtles are characterized by emergent and floating vegetation such as watercress, cattails, and water lilies in areas with some slack or slow moving water. Dense cover and basking sites are very important to the turtle's habitat (Stebbins 1985).

Western pond turtles require upland habitat near aquatic habitat for nesting and overwintering (Jennings and Hayes 1994). Although most turtles tend to construct their nests within 32-623 feet of the water, they have been known to travel as far as 1,312 feet or more. Southwestern pond turtle populations are declining throughout their range, mainly because of human disturbance. This disturbance includes habitat alteration and land conversion, collecting, disease, and the introduction of non-native predators. The effects of increased urbanization and flood control practices in Southern California have been especially damaging to the turtle's suitable habitat.

The closest known occurrence of southwestern pond turtle is approximately 5 miles NW of the project area in and along San Roque Creek in the Los Padres National Forest (CNDDB).

4.4.4.1 SURVEY RESULTS

No western pond turtles were observed in the BSA. Potential aquatic habitat was observed at the outlet of Greenwell Creek and downstream of the BSA at Arroyo Paredon Creek. Adjacent uplands are fragmented by Highway 101, county roads, railroad tracks and urban development and do not provide suitable nesting and overwintering habitat.

Single non-native red-eared slider turtles (*Trachemys scripta elegans)* were observed in Arroyo Paredon Creek and Greenwell Creek during herpetofauna surveys. Red-eared slider turtles have been introduced throughout California, especially in populated areas, primarily as a result of the release of pets by owners. While the project would temporarily affect potential aquatic habitat, no potential habitat would be permanently lost. Southwestern pond turtles are unlikely to occur in these

locations during construction. The project is not expected to affect western pond turtles. Minimization or avoidance measures are not warranted for this species.

4.4.5 Two-Striped Garter Snake

The two-striped garter snake (*Thamnophis hammondii*) is designated as a state species of special concern. Two-striped garter snakes range from northern Monterey County south to Baja California. Two-striped garter snakes are associated with permanent or semi-permanent bodies of water in a variety of habitats from sea level to 2400 meters in elevation. The species is highly aquatic and is associated with streams and aquatic habitats bordered with dense vegetation that provide open areas for basking. The two-striped garter snake is currently gone from about 40% of its original range (Jennings and Hayes 1994).

The closest known occurrence to the project area is approximately 3.5 miles north of the BSA in Rattlesnake Creek in the Los Padres National Forest (CNDDB).

4.4.5.1 SURVEY RESULTS

No garter snakes were observed in the BSA during herpetofauna surveys. Potential aquatic habitat was observed upstream of the BSA in Arroyo Paredon Creek. Two-striped garter snakes are unlikely to occur in the BSA or in modified creek reaches upstream and downstream due to a lack of dense vegetation and protected areas for basking. The project is not expected to affect two-striped garter snakes. Minimization or avoidance measures are not warranted for this project.

4.4.6 Monarch Butterfly

Monarch butterflies aggregate in California coastal woodlands between October and March. Monarchs typically aggregate in eucalyptus groves, Monterey cypress, Monterey pines, and coast live oaks. They first collect in smaller numbers in autumn, then in much larger aggregations when cold weather and storms begin. The large aggregations are typically in groves that offer wind protection, slightly warmer temperatures, and basking sites. Large aggregations are fairly predictable as monarchs typically use the same sites each year.

4.4.6.1 SURVEY RESULTS

The CNDDB does not contain any records of monarch butterfly roosts in the BSA. Meade (1999) mapped autumnal, permanent and overwintering sites throughout Santa Barbara County, and identified two overwintering sites near the study area, one along

the north edge of a eucalyptus grove at Ortega Hill "between US 101, Sheffield Drive and Ortega Hill Road," and the second along a private driveway at 3177 Padaro Lane, outside the western boundary of the BSA. Surveys were conducted in areas of the BSA adjacent to these locations to determine if monarch butterflies were overwintering in trees within or immediately adjacent to the work area. On January 26, 2010, six monarch butterflies were observed flying in the study area at Ortega Hill. On February 2, 2010, five monarch butterflies were observed flying in the study area adjacent to Padaro Lane. No aggregations were observed at either location. Surveys were conducted in the morning when temperatures were cool and monarchs would be expected to aggregate. This project is not expected to affect monarch butterfly roosting sites. Minimization or avoidance measures are not warranted for this project.

4.4.7 Bats

Roosts are important habitat features for bats. Bats often select roost locations because they are within range of foraging areas. Bats must not expend more energy retrieving forage than they can get from that forage. Bats also select roost sites based on thermal characteristics, predation potential, noise and other disturbance levels, and light levels. Night roosts provide resting areas with suitable temperature mediation characteristics that bats require for proper digestion at potentially any time of year. Day roosts provide essential resting areas, sleeping areas, mating and socialization areas, and thermoregulation required during torpor and all other terrestrial activities. Maternity roosts offer the cover, thermoregulation, and safety required for birthing and raising young.

Day roosts and maternity roosts are often regarded as the most important to protect because they allow for reproduction that perpetuates colonies. Disturbing maternal roosts when young are present can cause the adults to abandon young and to abort fetuses. Day and maternity roosts may be limiting factors for many bat populations, influencing species' distribution.

The CNDDB does not contain any bat occurrences in the project vicinity. No day roosts are known in the BSA.

4.4.7.1 SURVEY RESULTS

Bridge structures in the BSA were surveyed for roosting bats in June and July 2009

by Caltrans Associate Biologists, Jennifer Moonjian and Morgan Robertson. All structures were inspected for evidence of roosting bats and bat sign, such as urine stains and guano. No day roosts or maternity roosts were found. The structure at Romero Creek showed signs of limited use as a night roost, including some urine staining. No accumulations of guano were observed. Five individual bats (four big brown bats (*Eptesicus fuscus*) and one Mexican free tail bat (*Tadarida brasilliensis)* were observed using bridge girders as night roosts on June 16 and June 25, 2009.

Within the BSA, some of the larger oak trees that would be removed likely have hollow cavities that could provide roosting habitat for bats. Most oak trees are near the highway and are not expected to contain bats because they are close to the existing highway. Bats may prefer not to roost in such trees because of human activity underneath the trees. Bats are not known to roost on structures over highways or roads, but are known to often roost on structures that highways or roads go over (bridges over creeks, rivers, or other open spaces).

4.4.7.2 AVOIDANCE AND MINIMIZATION EFFORTS

Oak trees would be removed between September and February to avoid impacting bats during the critical maternity season and to ensure survival of first-year bats. Bats are not expected to be present in oak trees at this time because they typically use trees only in warm seasons. Trees do not typically have the thermal mass required for winter temperature mediation.

4.4.7.3 PROJECT IMPACTS

All alternatives would replace the bridge at Romero Creek. This would displace the night roost observed at this location.

4.4.7.4 COMPENSATORY MITIGATION

To replace the lost night roost habitat resulting from the Romero Bridge removals, the new bridge would incorporate bat-friendly features:

1. Minimized sandblasting: a final surface treatment under box-girder bridges often includes sandblasting. This smoothes the surfaces and, unfortunately, removes any surface irregularities and roughness that bats can grasp while roosting. If the bridge construction includes sandblasting or otherwise smoothing-out of external or internal surfaces under the bridges, all surfaces

should be left rough within a few inches of the insides of corners that are 90 degrees or less. This can be accomplished by placing a small board in the corners while sandblasting to block the treatment.

2. Construct grooves or ridges: small grooves or ridges could be built into each corner underneath the bridges. Bats often grasp the slightest irregularities, such as the small ridges of concrete resulting from seams between boards used in the concrete forms.

4.4.7.5 CUMULATIVE IMPACTS

Cumulative effects include the effects of past, present, and reasonably foreseeable future State, tribal, local, or private actions that are reasonably certain to occur in the project area. Caltrans is unaware of any federal or non-federal actions that are reasonably certain to affect bats in the vicinity. If a cumulative impact exists, then the proposed project would not contribute to it because the lost night roost would be replaced.

4.4.8 Light-footed Clapper Rail

The light-footed clapper rail (*Rallus longirostris levipes*) is a state and federally listed endangered species. The subspecies is resident in dense coastal marsh vegetation consisting of cordgrass and pickle weed in regions of southern California and northern Baja California (Zembal and Massey 1985). Loss and degradation of habitat threaten the continued existence of this bird. The amount of suitable habitat for light-footed clapper rail is about one-third of what was known to occur historically. A decline the subspecies population led to the endangered listing status by the CDFG Commission on 06/27/71 under the California Endangered Species Act of 1970. Species decline also prompted a federal listing of endangered under the Endangered Species Act of 1973, as amended effective 10/13/70.

4.4.8.1 SURVEY RESULTS

Annual surveys for nesting pairs of light-footed clapper-rail in Carpinteria Marsh have reported between one and five pairs annually since 1987 (Zembel et al. 2009). In 2003, a single unmated female was heard vocalizing with no answering call. In 2004, two adult male clapper rails were released in the hope that the female was still alive. Subsequent annual surveys for light-footed clapper-rail in Carpinteria Marsh have been negative (Zembel et al. 2009). At present, non-native predators in the marsh, particularly feral cats and red foxes, constitute a major threat to this population.

The specific habitat type required by this species (dense coastal marsh) does not occur within or immediately adjacent to the project limits. The project will avoid the Carpinteria Salt Marsh. There are no known records of this species nesting in the biological study area. No impacts to the species will result from the current proposed project alternatives. No further studies for this species are required.

4.4.9 Beldings Savannah Sparrow

Belding's Savannah sparrow (*Passerculus sanwichensis beldingi*) was placed on the state endangered species list in 1974 after the population was estimated to be less than 1500 individuals. Belding's Savannah sparrow is a non-migratory subspecies of sparrow endemic to coastal salt marshes from Santa Barbara south through San Diego County. Birds are ecologically associated with dense pickleweed (*Salicornia* sp.), and nest in pickleweed on and about the margins of tidal flats (CNDDB). Threats to this population include non-native predators such as dogs, feral cats, red foxes and raccoon, agricultural runoff, upstream flood control projects and habitat degradation.

4.4.9.1 SURVEY RESULTS

In Santa Barbara County, populations of Belding's Savannah sparrows are found in the Goleta Slough and the Carpinteria Salt Marsh. In May 2006, fifty-three breeding territories were counted in the Carpinteria Salt Marsh (Zembel et al. 2006). The majority of birds were observed at three locations in the marsh: the small central basin west of Santa Monica Creek, the western third of the basin most along the north side and the west basin at the southern end of the dirt road. Sparrows were concentrated on the higher edges of the marsh.

The specific habitat required for this species (dense pickleweed in coastal marsh) does not occur within or immediately adjacent to the project limits. The project will avoid the Carpinteria Salt Marsh. There are no known records of this species nesting in the biological study area. No impacts to the species will result from the current proposed project alternatives. No further studies for this species are required.

4.4.10 Southwestern Willow Flycatcher

There are four or five recognized subspecies (races) of the willow flycatcher (*Empidonax traillii*). These subspecies are distinguished primarily by subtle differences in color and morphology (size and shape). The southwestern willow flycatcher is somewhat paler, and has slightly different wing and tail length ratios. Each of the four subspecies occupy distinct breeding ranges.The southwestern willow

flycatcher (*E.t. extimus*) breeding range includes southern California (from the Santa Ynez River south), Arizona, New Mexico, extreme southern portions of Nevada and Utah, extreme southwest Colorado, and western Texas. Records of probable breeding southwestern willow flycatchers in Mexico are rare, and restricted to extreme northern Baja California and Sonora.

The southwestern willow flycatcher breeds in dense riparian habitats along rivers, streams, or other wetlands. The vegetation can be dominated by dense growths of willows (*Salix* sp.), seepwillow (*Baccharis salicifolia*), or other shrubs and medium-sized trees. There may be an overstory of cottonwood (*Populus* sp.), tamarisk (*Tamarix* sp.), or other large trees, but this is not always the case. In some areas, the flycatcher will nest in habitats dominated by tamarisk and Russian olive (*Eleagnus angustifolia*). One of the most important characteristics of the habitat is the presence of dense vegetation, usually throughout all vegetation layers present (USFWS 2005).

The southwestern willow flycatcher population has declined during the last 100 years, primarily due to the loss, fragmentation, and modification of riparian habitats. In 1993, the U.S. Fish and Wildlife Service formally proposed to list the flycatcher as a federal endangered species, and to designate critical habitat on 07/23/93. In a 1995 ruling, the Service found that the flycatcher population was currently very low and faced a significant threat of extinction unless protected. Therefore, the flycatcher was listed as endangered on 02/27/95, but designation of critical habitat was postponed.

The nearest known location for the southwestern willow flycatcher is approximately 8 miles to the north of the project area, north-east of Gibraltar reservoir and upper Santa Ynez in the Los Padres National Forest, reported in 1991 (CNDDB).

4.4.10.1 SURVEY RESULTS

The specific habitat types required for this subspecies do not occur within or adjacent to the project limits. There are no known records of this subspecies nesting in the biological study area. No impacts to the species will result from the proposed project alternatives. No further studies for this subspecies are required.

4.4.11 Least Bell's Vireo

The least Bell's vireo (*Vireo belli pusillus*) is a small, olive-gray migratory songbird that nests and forages almost exclusively in riparian woodland habitats. Least Bell's vireo nesting habitat typically consist of well-developed riparian overstories and understories, and low densities of aquatic and herbaceous cover. The understory

frequently contains dense subshrub and shrub thickets.

Due to population declines the species was listed as endangered by the CDFG Commission on 05/27/80 under the California Endangered Species Act of 1970. Species decline also prompted a federal listing of endangered under the Endangered Species Act of 1973, as amended effective 05/02/86. Critical habitat for this species was designated on 02/02/94 (USFWS 1994).

The nearest known location for least Bell's vireo is approximately six miles to the north of the project area on the Santa Ynez River at Juncal Campground, reported in 1980 (CNDDB).

4.4.11.1 SURVEY RESULTS

The specific habitat types required for this subspecies do not occur within or adjacent to the project limits. There are no known records of this subspecies nesting in the biological study area. No impacts to the species will result from the proposed project alternatives. No further studies for this subspecies are required.

4.4.12 California Least Tern

The California least tern (*Sterna antillarum browni)* is the smallest of the North American terns, distinguished by its long, narrow wings and a broad, forked tail. Its current breeding range runs from south of the San Francisco Bay Area to Baja California (USFWS 2006). The least tern feeds primarily in shallow estuaries or near-shore marine waters where small fish are abundant. Adults typically nest in small colonies at undisturbed sites on open, sandy beaches near feeding areas in estuaries. Historically least terns nested along beaches in colonies of varying size and density, but today nest sites are restricted to defined locations most of which persist due to active management. Management actions focus on limiting disturbance and controlling predators since predators can quickly decimate breeding colonies (USFWS 2009). A decline of the subspecies population led to the endangered listing status by the CDFG Commission on 06/27/71 under the California Endangered Species Act of 1970. Species decline also prompted a federal listing of endangered under the Endangered Species Act of 1973, as amended effective 10/13/70.

4.4.12.1 SURVEY RESULTS

California least tern nest on sandy beaches, which will be not affected by the proposed project. The specific habitat types required for this species do not occur within or adjacent to the project limits. There are no known records of this species

nesting in the biological study area. No impacts to the species will result from the current proposed project alternatives. No further studies for this species are required. The project will have no effect on California least tern critical habitat.

4.4.13 Western Snowy Plover

The western snowy plover (*Charadrius alexandrinus nivosus*) is a small shore bird distinguished from other plovers (family Charadriidae) by its small size, pale brown upper parts, dark patches on either side of the upper breast, and dark gray to blackish legs. The Pacific coast population of the western snowy plover is defined as those individuals that nest beside or near tidal waters, and includes all nesting colonies on the mainland coast, peninsulas, offshore islands, adjacent bays and estuaries from southern Washington to southern Baja California, Mexico. Habitats used by this subspecies include sandy beaches, salt pans, coastal dredged spoils sites, dry salt pond levees and gravel bars. The Pacific coast population of the western snowy plover breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico (USFWS 1999). Due to declines in the species population the species was listed as federally threatened under the Endangered Species Act of 1973, as amended effective 03/05/93. Critical habitat for this species was designated on 12/07/99.

4.4.13.1 SURVEY RESULTS

Snowy plovers live on sandy beaches or alkaline lakes, neither of which will be affected by the proposed project. The specific habitat types required for this species do not occur within or adjacent to the project limits. There are no known records of this species nesting in the biological study area. No impacts to the species will result from the current proposed project alternatives. No further studies for this species are required. The project will have no effect to western snowy plover critical habitat.

Chapter 5. Permits and Technical Studies for Special Laws or Conditions

This chapter describes state and federal endangered species act consultation, state and federal permit requirements and noxious/invasive weeds associated with the construction of the project.

5.1. Federal Endangered Species Act Consultation Summary

Two Biological Opinions will be required, one from the U.S. Fish and Wildlife Service and one from NOAA's National Marine Fisheries Service.

U.S. Fish and Wildlife Service

A special-status species list for the project area was requested from the USFWS on April 29, 2010. The list was received on May 21, 2010. A copy of the list is included in Appendix A. Section 2.3 of this document summarizes informal consultation to date. Protocol-level surveys for California red-legged frogs were negative. Formal Section 7 Consultation with USFWS will be required for the tidewater goby.

NOAA's National Marine Fisheries Service

In response to Caltrans Notice of Preparation for the project (dated May 12, 2009), NOAA National Marine Fisheries replied by letter (dated May 29, 2009). The letter identifies jurisdictional species and critical habitat in the project area, information needs, and assigns a NOAA representative to the project. Because NOAA categorized the project as "complex," the agency recommended that Caltrans conduct early consultation with NOAA staff in the region. Section 2.3 of this document summarizes informal consultation to date. Formal Section 7 Consultation NOAA will be required for steelhead trout and critical habitat.

5.2. California Endangered Species Act Consultation

The project alternatives as proposed will have no effect and are not likely to jeopardize the continued existence of any State listed threatened or endangered species. No consultation is required under the California Endangered Species Act because no state-listed species would be affected.

5.3. Permit Requirements

Caltrans will obtain a permit pursuant to Section 404 of the Clean Water Act, from the Army Corps of Engineers for the discharge of fill material into waters of the US. Additionally, pursuant to Section 401 of the CWA, Caltrans will obtain State certification from the Regional Water Quality Control Board for these discharges.

Caltrans will obtain a Streambed Alteration Agreement pursuant to Section 1602 of the California Fish and Game Code, from the California Department of Fish and Game for work to be completed in the following creeks: Franklin, Santa Monica, Arroyo Paredon, Toro Canyon, Greenwell, Romero, San Ysidro and Oak creeks.

The project is located within the coastal zone and will require coastal development permits from the City of Carpinteria, the City of Santa Barbara and the County of Santa Barbara prior to construction. Caltrans will consult with Santa Barbara County, the City of Carpinteria, and the City of Santa Barbara regarding the proposed work that would impact coastal wetlands and other environmentally sensitive habitat areas occurring within the project limits.

5.4. Migratory Bird Treaty Act

Migratory birds are protected according to provisions of the federal Migratory Bird Treaty Act. The Migratory Bird Treaty Act and California Fish and Game Code prohibit taking occupied nests. No raptor nests were observed in the BSA during surveys conducted in January and February 2010. To avoid impacts to nesting birds, tree removal would occur between September 1 and February 15, outside the breeding season for migratory birds. If tree removal is required during the nesting season, before any trees are removed, a qualified biologist will need to conduct a focused survey for active bird nests in the trees to be removed. If any active migratory bird nests are found, Caltrans will coordinate with DFG to determine an appropriate buffer based on the habits and needs of the species. Caltrans' Standard Specifications for Bird Protection will be included with the project's Plans and Specifications.

Swallows were observed nesting under some bridges within the BSA. Activities that result in the harassment or harm of nesting swallows violate the Migratory Bird Treaty Act. Non-standard Specifications for nesting swallows will be included with the project's Plans and Specifications.

Options for avoiding and minimizing impacts to swallows include the following:

- Work outside the swallows nesting season (March to August).
- If construction activities will occur on these structures during the swallow nesting season, a qualified biologist would need to inspect all nests to ensure that no birds are using them. If the nests are abandoned, the contractor can remove the nests before March 1 and either prohibit birds from accessing the structure using netting, or actively discourage nesting.

5.5. Invasive Species

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

The following plants found in the BSA occur on the California Invasive Plant Council's Invasive Plant Inventory:

- Arrundo *(Arundo donax)*
- Bermuda butter cup (*Oxalis pes-capre)*
- Common brass buttons (*Cotula coronopifolia*)
- Bristly ox-tongue (*Picris echioides)*
- Bur clover (*Medicago polymorpha)*
- Cape Ivy *(Senecio mikanioides),*
- Castor bean (*Ricinus communis)*
- Fennel (*Foeniculum vulgare)*
- French Broom *(Genista monspessulana),*
- Garden Nasturtium *(Tropaeolum majus)*
- Ice Plant *(Carpobrotus edulis)*
- Italian ryegrass (*Lolium multiflorum)*
- Italian thistle (*Carduus pycnocephalus)*
- Myopurum *(Myopurum laetum)*
- Pampass Grass *(Cortaderia jubata*

- Plantain (*Plantago lanceolata)*
- Poison hemlock (*Conium maculatum)*
- Radish (*Raphanus sativus)*
- Red brome (*Bromus madritensis ssp. rubens)*
- Ripgut brome (*Bromus diandrus)*
- Soft chess (*Bromus hordeaceus)*
- Veldt Grass *(Ehrharta calicina),*
- Vinca (*Vinca major)*

Invasive plant species which have the greatest possibility of negatively affecting the natural ecology in the project area are: Veldt Grass *(Ehrharta calicina),* Giant Reed *(Arundo donax),* Ice Plant or Hottentot fig *(Carpobrotus eduli),* Pampass Grass *(Cortaderia jubata),* French Broom *(Genista monspessulana),* Myopurum *(Myopurum laetum),* Cape Ivy *(Senecio mikanioides),* and Garden Nasturtium *(Tropaeolum majus).*

To avoid and minimize the spread of invasive weeds, the invasive species removed during construction activity and would not be replanted as part of highway landscaping. Care shall be taken to avoid including any species that occurs on the California Invasive Plant Council's Invasive Plant Inventory in the Caltrans erosion control seed mix or landscaping plans for the project.

To prevent new invasive species from being imported to the site, Caltrans recommends that the construction contractor implement the following control measures:

1. All imported fill material used on the construction site shall be weed-free.

2. The California Department of Food and Agriculture maintains a current listing of noxious weeds. Only certified noxious weed free erosion control materials will be used. All straw and seed material shall be certified weed free by the County Agricultural Commissioner prior to being used at the project site.

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Appendix A U.S Fish and Wildlife Service Species List

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
81440-2010-CPA-0280

May 21, 2010

Morgan Robertson
Associate Environmental Planner
California Department of Transportation
50 Higuera Street
San Luis Obispo, California 93401-5415

Subject: Species List for Highway 101 HOV Lane Project Between the Cities of Santa Barbara and Carpinteria, Santa Barbara County, California

Dear Mr. Robertson:

We are responding to your request, dated April 29, 2010, and received in our office on May 3, 2010, for a list of endangered, threatened, and other special status species that may occur in the vicinity of the subject project. The California Department of Transportation (CalTrans) is considering implementing a project to widen Highway 101 in between Sycamore Creek in the city of Santa Barbara and 0.44 mile south of Carpinteria Creek in the city of Carpinteria. The proposed project would add a high occupancy vehicle lane on both the northbound and southbound sides of the highway. The CalTrans is the designated non-Federal representative of the Federal Highway Administration in California.

The enclosed list of species fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act of 1973, as amended (Act). CalTrans, as the lead Federal agency for the project, has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a construction project which may require an environmental impact statement[1], CalTrans 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 CalTrans 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 written request for formal consultation. During this review

[1] Construction project" means any major Federal action which significantly affects the quality of the human environment designed primarily to result in the building of structures such as dams, buildings, roads, pipelines, and channels. This includes Federal actions such as permits, grants, licenses, or other forms of Federal authorizations or approval which may result in construction.

TAKE PRIDE IN AMERICA

process, CalTrans 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.

The enclosed list includes only those species listed by the Service; however, other species protected by the State of California may occur in the project area. We recommend that you review information in the California Department of Fish and Game's Natural Diversity Data Base. You can contact the California Department of Fish and Game at (916) 324-3812 for information on other sensitive species that may occur in this area.

If you have any questions regarding this matter, please contact David Simmons of our staff at (805) 644-1766, extension 368.

Sincerely,

Chris Dellith
Senior Biologist

Enclosure

ENDANGERED AND THREATENED SPECIES THAT MAY OCCUR NEAR HIGHWAY 101 BETWEEN THE CITIES OF SANTA BARBARA AND CARPENTERIA, SANTA BARBARA COUNTY, CALIFORNIA

Birds		
Brown pelican	*Pelecanus occidentalis*	E
California least tern	*Sterna antillarum browni*	E
Least Bell's vireo	*Vireo bellii pusillus*	E, CH
Light-footed clapper rail	*Rallus longirostris levipes*	E
Southwestern willow flycatcher	*Empidonax traillii extimus*	E
Western snowy plover	*Charadrius alexandrinus nivosus*	T, CH
Amphibians		
California red-legged frog	*Rana draytonii*	T, CH
Fish		
Tidewater goby	*Eucyclogobius newberryi*	E, CH
Steelhead trout	*Oncorhynchus mykiss*	*
Plants		
Salt marsh bird's-beak	*Cordylanthus maritimus* ssp. *maritimus*	E
Gambel's watercress	*Rorippa gambellii*	E
Marsh sandwort	*Arenaria paludicola*	E
Contra Costa goldfields	*Lasthenia conjugens*	E
Ventura marsh milk-vetch	*Astragalus pycnostachyus lanosissimus*	E, CH

Key:

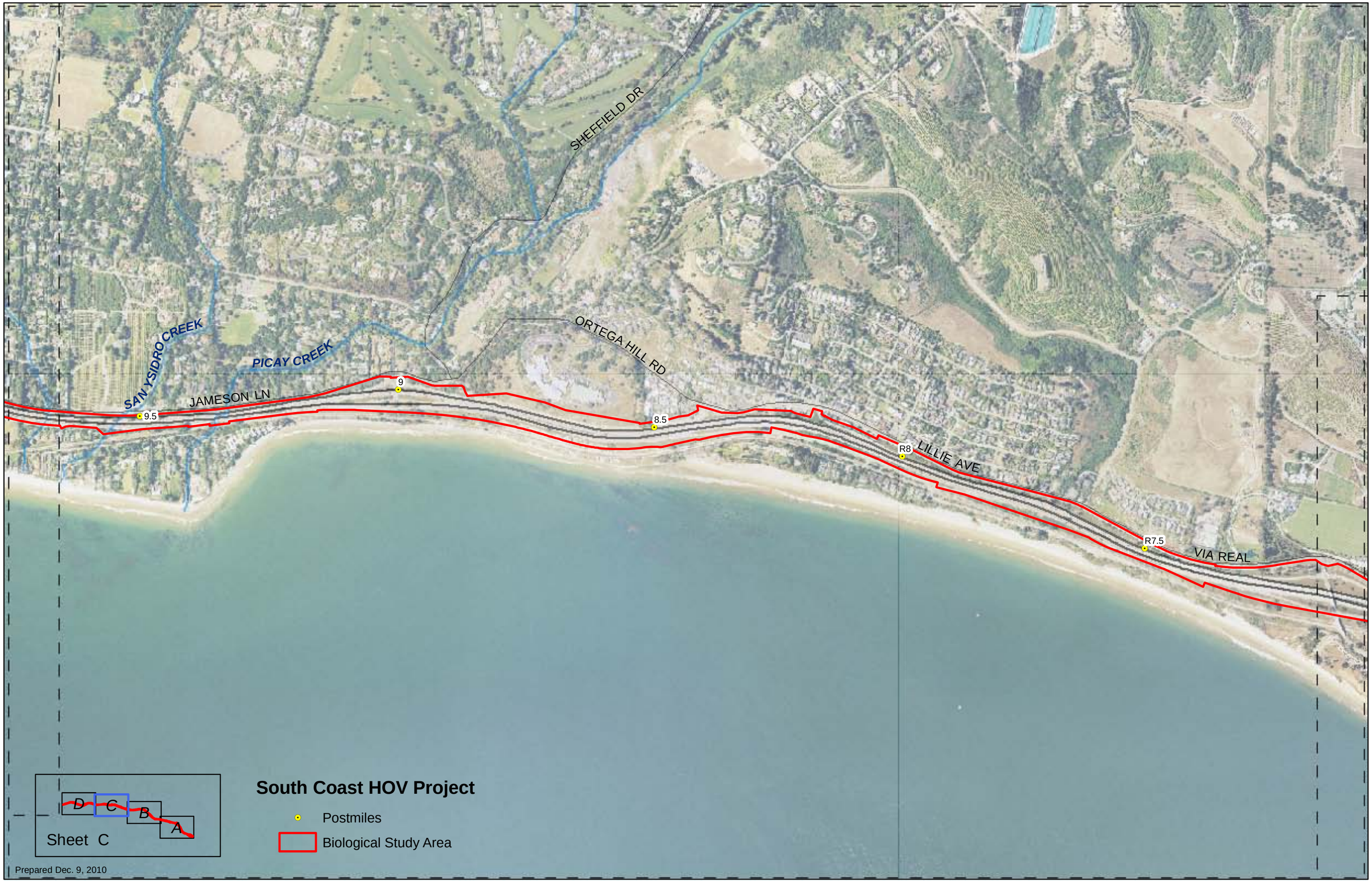
E Endangered
T Threatened
CH Critical habitat

* Species for which the National Marine Fisheries Service has responsibility. For more information, call the Santa Rosa Field Office at 707-575-6050 or go to http://swr.ucsd.edu/

Appendix B Project BSA Map

South Coast HOV Project
Postmiles
Biological Study Area
Sheet A
D
C
B
A
Prepared Dec. 9, 2010
Carpinteria Marsh
VIA REAL
SANTA MONICA RD
SANTA YNEZ AVE
SANTA MONICA CREEK
FRANKLIN CREEK
7TH ST
LINDEN AVE
FOOTHILL RD
STATE HWY 192
CASITAS PASS RD
CARPINTERIA CREEK
CARPINTERIA AVE
BAILARD AVE
4
3.5
3
2.5
2
1.5

TORO CANYON RD
GARRAPATO CREEK
TORO CANYON
FOOTHILL RD
STATE HWY 192
ARROYOPARIDA
VIA REAL
R7
R6.5
R6
R5.5
R5
4.5
Carpinteria Marsh
D
C
B
A
Sheet B
South Coast HOV Project
Postmiles
Biological Study Area
Prepared Dec. 9, 2010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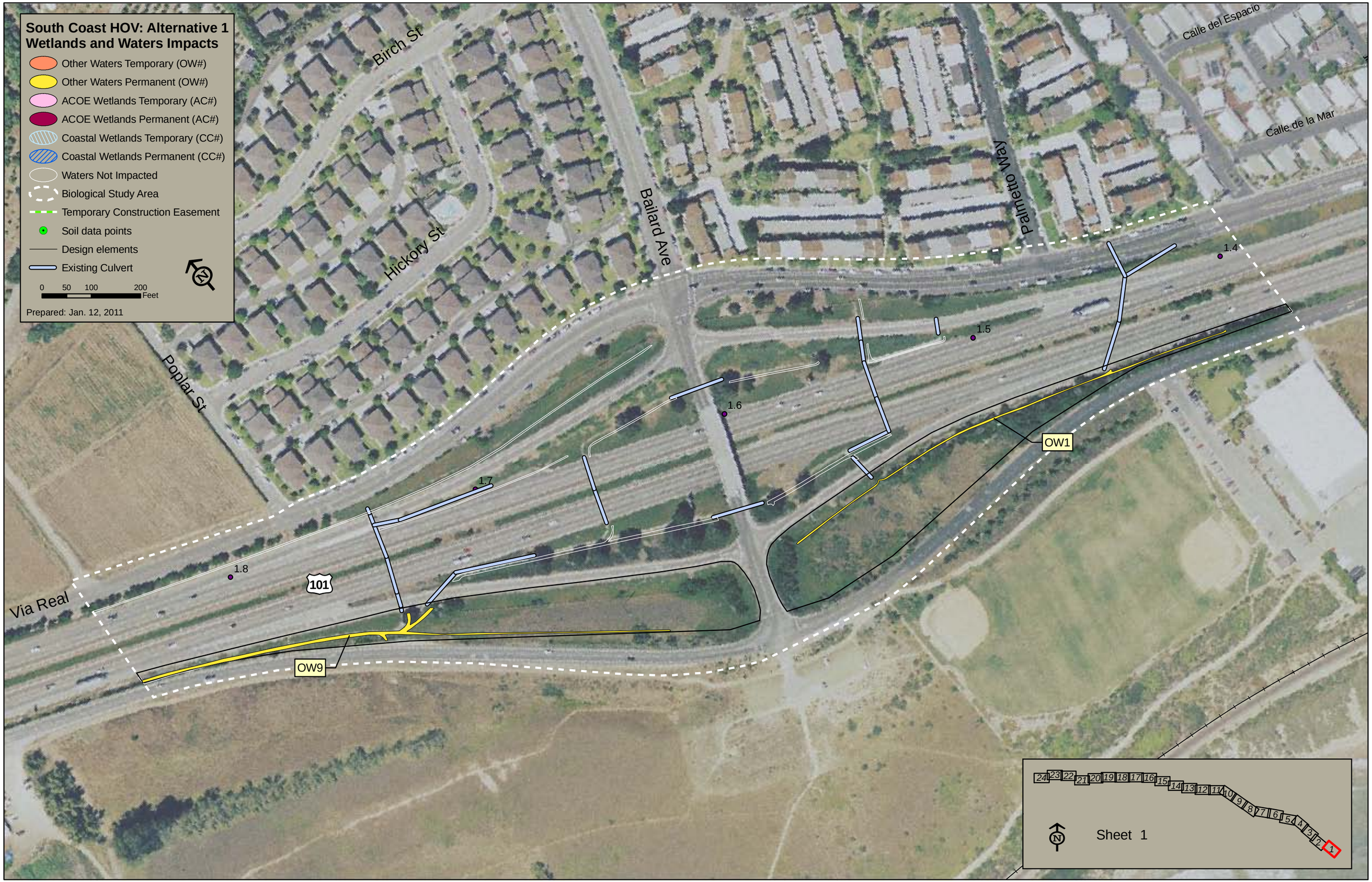
ORTEGA HILL RD
SAN YSIDRO CREEK
PICAY CREEK
JAMESON LN
9.5
9
8.5
R8
LILLIE AVE
R7.5
VIA REAL
D
C
B
A
Sheet C
South Coast HOV Project
Postmiles
Biological Study Area
Prepared Dec. 9, 2010

CAMINO VIEJO
ALSTON RD
SYCAMORECANYON RD
HOT SPRINGS RD
HOT SPRINGS RD
SAN YSIDRO RD
MONTECITO CREEK
SALINAS ST
OLD COAST HWY
11.5
12
JAMESON LN
10
OLIVE MILL RD
10.5
COAST VILLAGE HWY
COAST VILLAGE RD
11
Andre Clark Bird Refuge
SYCAMORE CREEK
STATE HWY 225
CABRILLO BLVD
CHANNEL DR
D
C
B
A
Sheet D
South Coast HOV Project
Postmiles
Biological Study Area
Prepared Dec. 9, 2010

Appendix C Project Map Sheets

** See Attachment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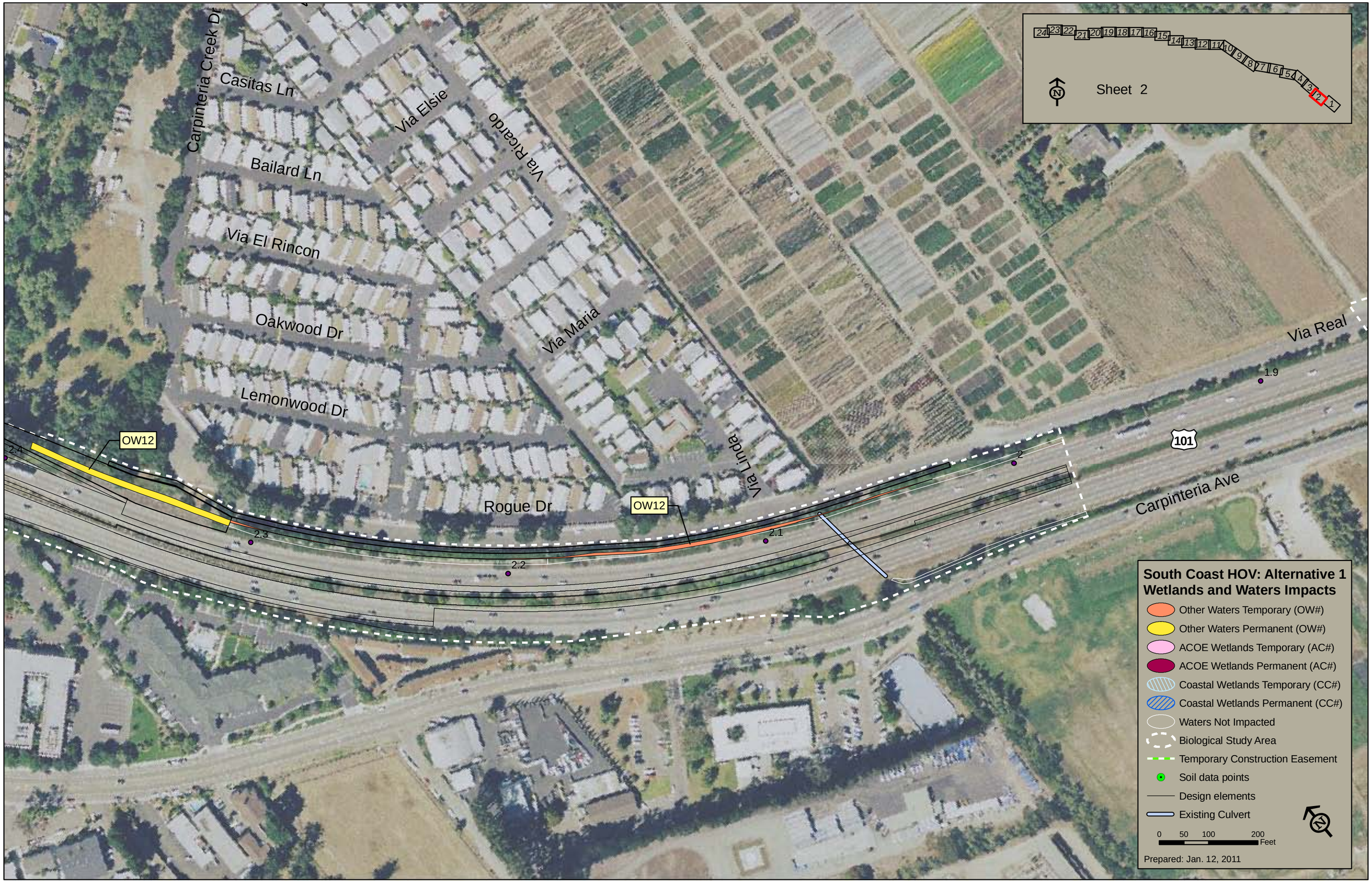
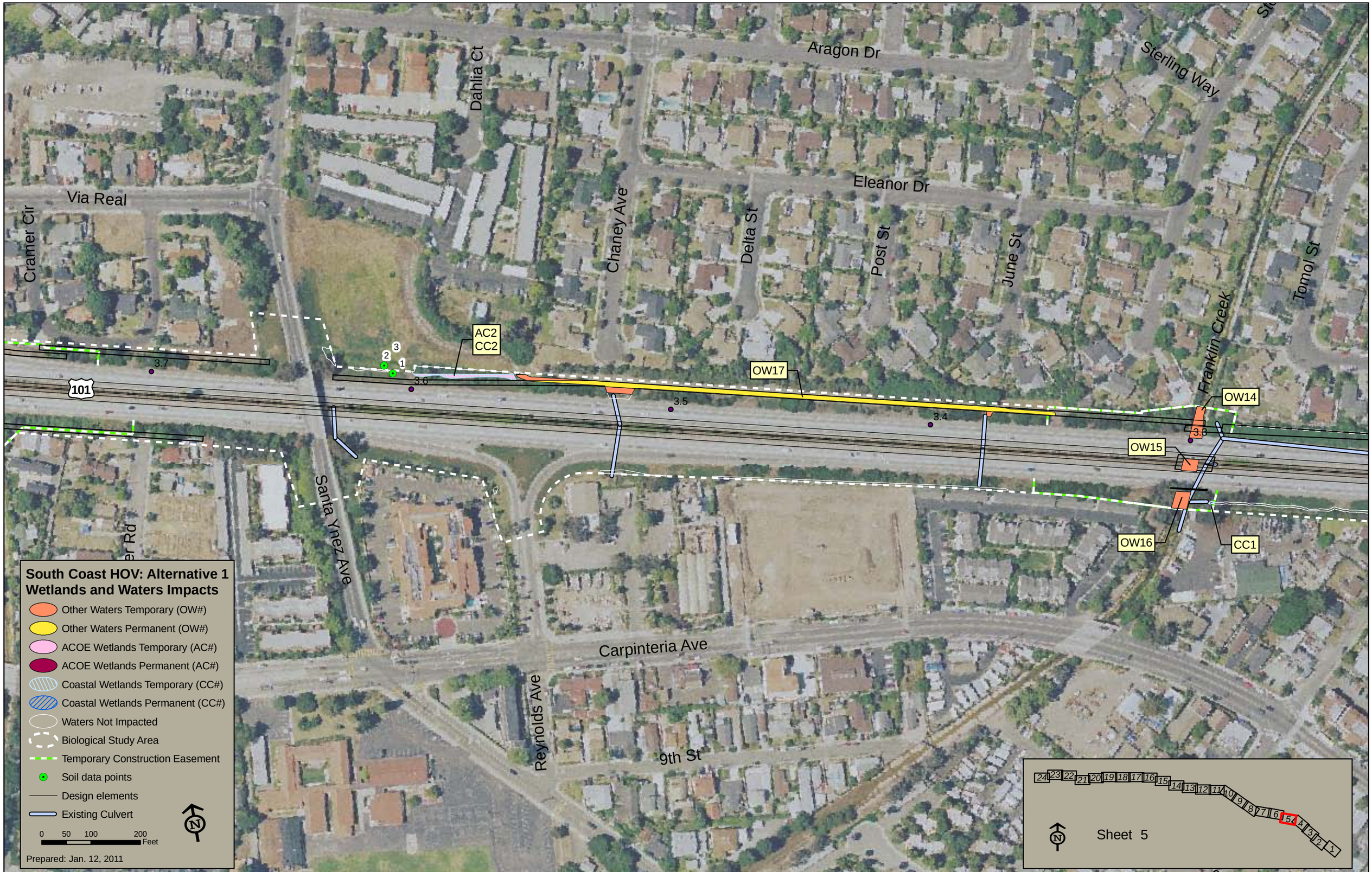
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Birch St
Hickory St
Poplar St
Bailard Ave
Palmetto Way
Calle del Espacio
Calle de la Mar
Via Real
101
1.4
1.5
1.6
1.7
1.8
OW1
OW9
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 1


Carpinteria Creek Dr
Casitas Ln
Via Elsie
Via Ricardo
Bailard Ln
Via El Rincon
Oakwood Dr
Via Maria
Lemonwood Dr
Via Linda
Rogue Dr
Via Real
Carpinteria Ave
101
OW12
OW12
2.4
2.3
2.2
2.1
2
1.9
Sheet 2
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
Prepared: Jan. 12, 2011

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Star Pine Rd
Via Real
Hales Ln
Casitas Pass Rd
Byrnes Ln
La Pala Ln
Cameo Rd
La Brea Ln
Vallecito Rd
Carpinteria Creek
101
2.8
2.7
2.6
2.5
2.4
2.3
OW12
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 3

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Pacific Village Dr
Ogan Rd
Star Pine Rd
Linden Ave
Via Real
101
Nipomo Dr
Tomol St
Franklin Creek
Holly Ln
Sawyer Ave
Elm Ln
Eugenia Pl
Church Ln
Vallecito Rd
Carpinteria Ave
OW14
OW15
OW16
CC1
2.9
2.8
3
3.1
3.2
3.3
Sheet 4


South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Aragon Dr
Sterling Way
Dahlia Ct
Via Real
Cramer Cir
Eleanor Dr
Chaney Ave
Delta St
Post St
June St
Tomol St
Franklin Creek
101
AC2
CC2
OW17
OW14
OW15
OW16
CC1
3.7
3.6
3.5
3.4
3.3
Santa Ynez Ave
Carpinteria Ave
Reynolds Ave
9th St
Sheet 5

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Sheet 6
Trieste Ln
Via Marcina
Via Latina
Verano St
Taranto Cir
Venice Ln
Santa Monica Rd
SANTA MONICA CR
Via Real
Cramer Cir
Cramer Rd
Plum St
Apple St
Carpinteria Ave
Carpinteria Marsh
CC8
CC9
CC7
AC5
OW23
OW22
OW21
4.1
3.9
3.8
3.7
101

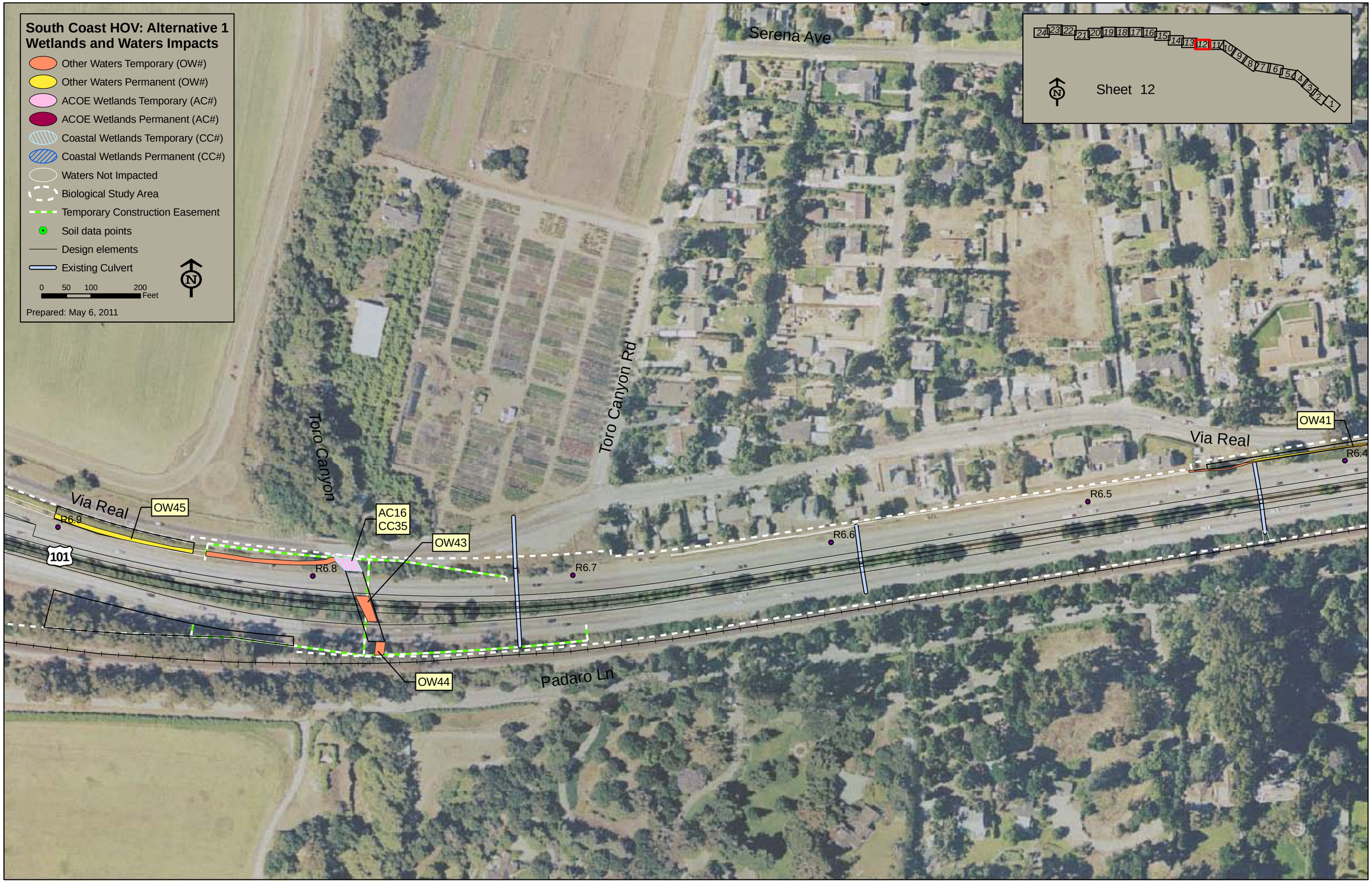
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Coast Dr
Sandpiper Dr
Bayside Dr
Cove St
Lemon Dr
Pearl St
Beach St
Cravens Ln
Franciscan Ct
Via Real
OW29
4.5
4.4
4.3
4.2
101
7
Carpinteria Marsh
Carpinteria Marsh
Sheet 7

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 8
Cove St
Pearl St
Beach St
Via Real
OW29
4.6
4.7
R4.723
4.723
R5
R4.9
R4.8
101
Santa Claus Ln
Sand Point Rd
Carpinteria Marsh

Sheet 9
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Via Real
Padaro Ln
Santa Claus Ln
101
R5.5
R5.4
R5.3
R5.2
R5.1
CC27
OW32
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
Prepared: Jan. 12, 2011

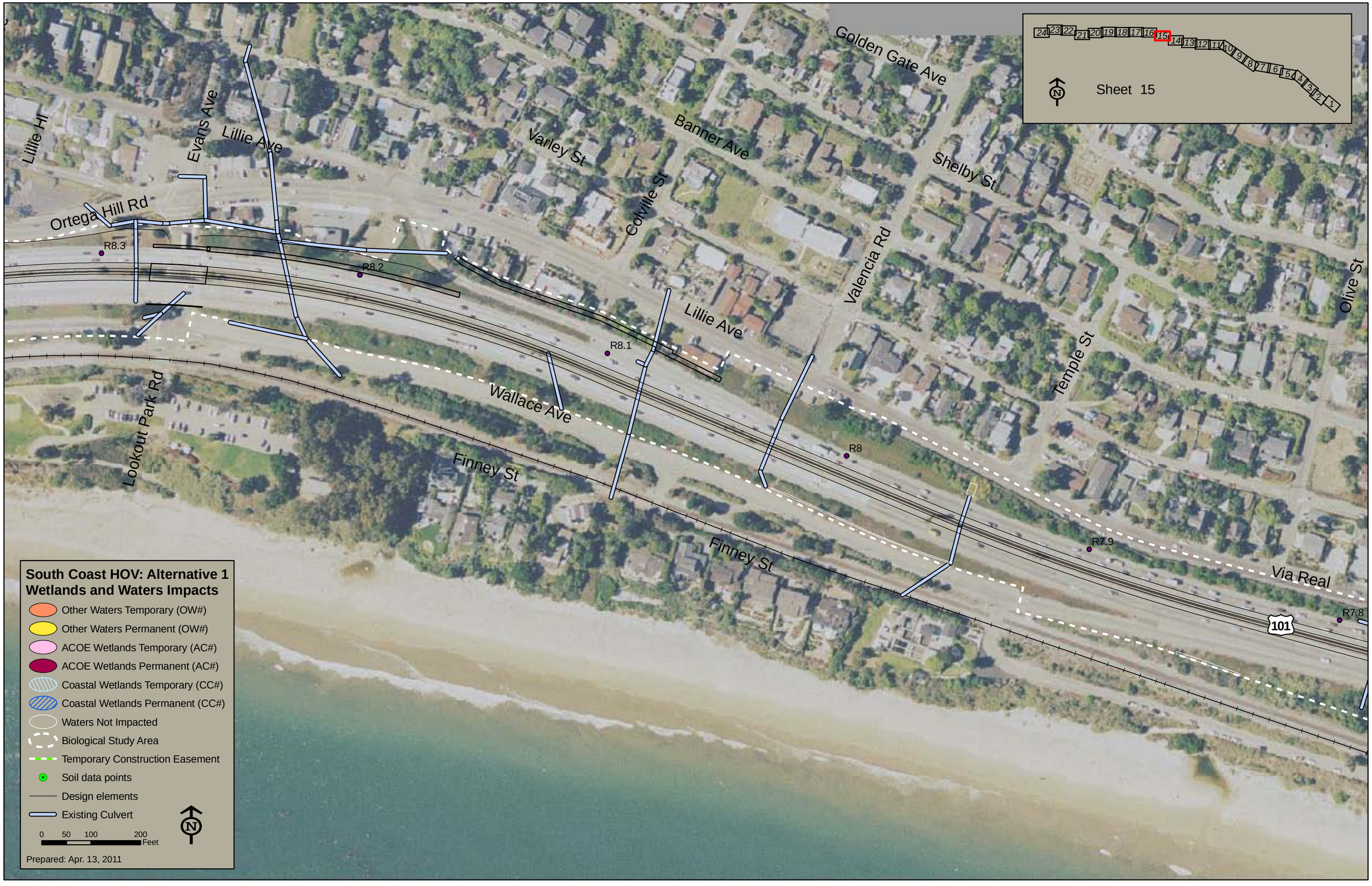
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Aug. 31, 2011
Nidever Rd
Arroyo Parida
Via Real
Via Real
101
R5.9
R5.8
R5.7
R5.6
R5.5
R6
CC3O
OW36
CC31
CC29
OW34
OW35
CC28
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 10

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011
Serafin St
Morgan Ln
Sentar Rd
Garrapato Creek
OW39
OW41
R6.4
R6.3
R6.2
R6.1
R6
Via Real
Via Real
101
Beach Club Rd
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
N
Sheet 11


South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: May 6, 2011
Sheet 12
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Serena Ave
Toro Canyon
Toro Canyon Rd
Via Real
Via Real
Padaro Ln
101
OW45
OW43
OW44
OW41
AC16
CC35
R6.9
R6.8
R6.7
R6.6
R6.5
R6.4

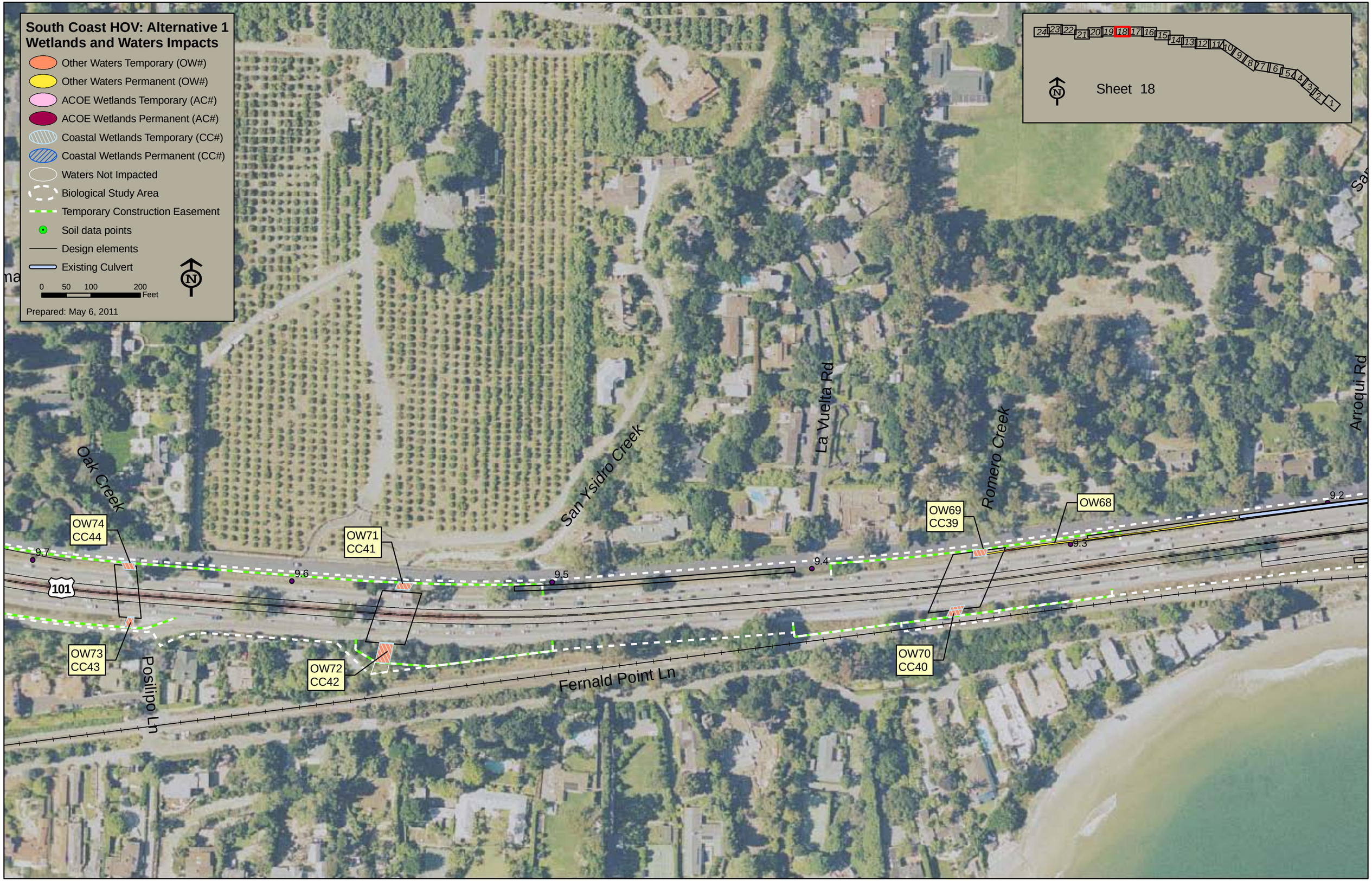
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Via Real
Lambert Rd
R7.3
R7.2
R7.1
R7
R6.9
OW47
OW45
101
Padaro Ln
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 13

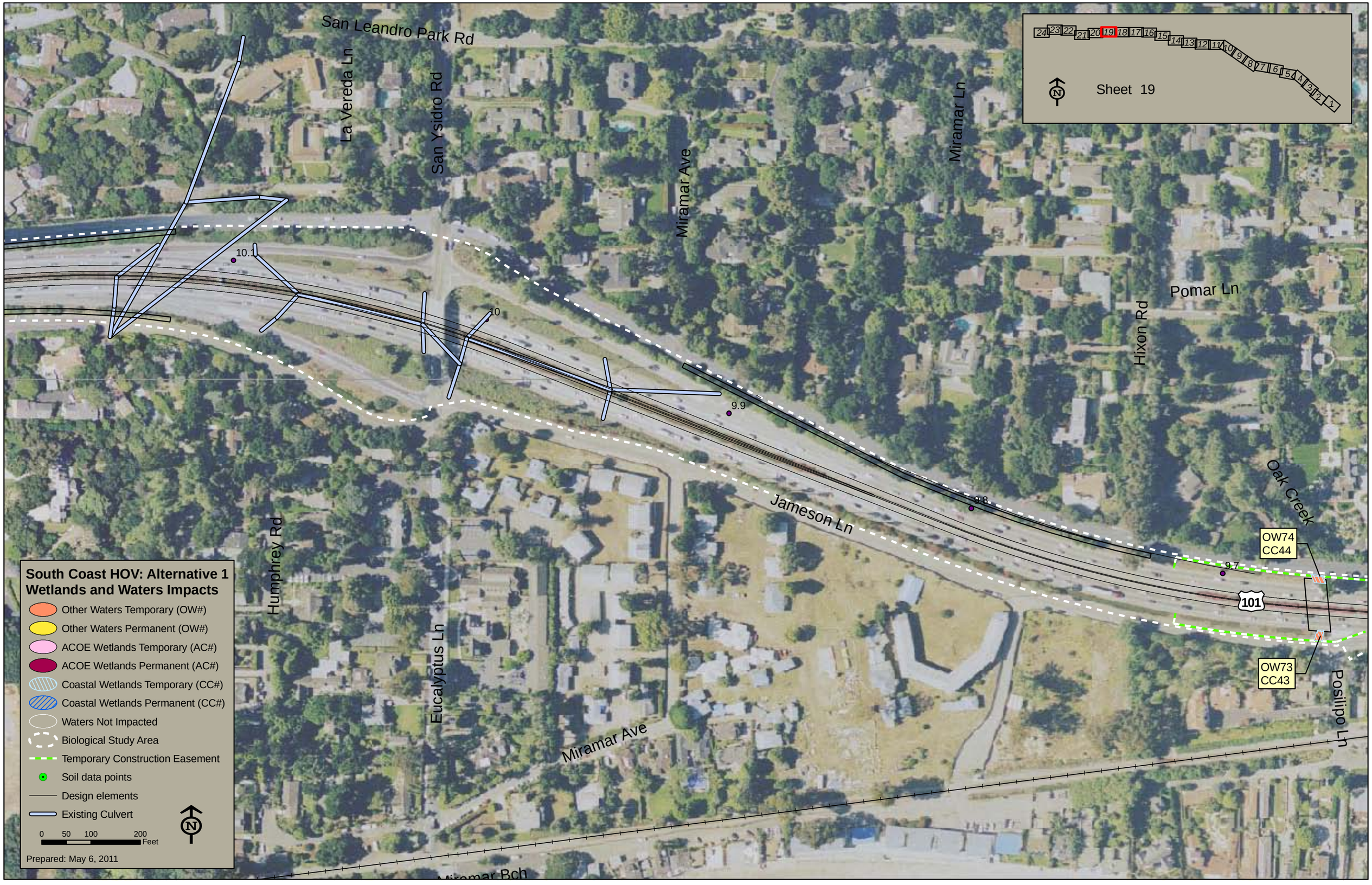
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011
Sheet 14
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Colby St
Via Real
101
R7.8
OW52
CC37
R7.7
OW54
CC38
R7.6
R7.5
R7.4
Vista Oceano Ln
Caspia Ln
Freesia Dr
Marguerite Way
Via Real


Sheet 15
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Golden Gate Ave
Lillie Hl
Evans Ave
Lillie Ave
Varley St
Banner Ave
Shelby St
Colville St
Ortega Hill Rd
Valencia Rd
Olive St
Temple St
Lillie Ave
Wallace Ave
Lookout Park Rd
Finney St
Finney St
Via Real
101
R8.3
R8.2
R8.1
R8
R7.9
R7.8
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
N
Prepared: Apr. 13, 2011

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011
Sheet 16
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sears St
Hardinge Ave
Pierpont Ave
Lillie Hl
Ortega Hill Rd
Lookout Park Rd
101
OW59
OW60
8.8
8.7
8.6
8.5
R8.487
8.495
R8.4
R8.3

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements (OLD)
Existing Culvert
0 50 100 200
Feet
N
Prepared: May 22, 2013
Sheet 17
Arroqui Rd
Loureyro Rd
N Jameson Ln
Sheffield Dr
Ortega Hill Rd
101
9.2
9.1
9
8.9
8.8
Cormorant nesting locations


South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: May 6, 2011
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 18
Oak Creek
San Ysidro Creek
La Vuelta Rd
Romero Creek
Arroqui Rd
Posilipo Ln
Fernald Point Ln
101
OW74
CC44
OW73
CC43
OW71
CC41
OW72
CC42
OW69
CC39
OW70
CC40
OW68
9.7
9.6
9.5
9.4
9.3
9.2


San Leandro Park Rd
La Vereda Ln
San Ysidro Rd
Miramar Ave
Miramar Ln
Pomar Ln
Hixon Rd
Oak Creek
Jameson Ln
Humphrey Rd
Eucalyptus Ln
Miramar Ave
Posilipo Ln
Miramar Bch
101
10.1
10
9.9
9.8
9.7
OW74
CC44
OW73
CC43
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 19
N
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
N
Prepared: May 6, 2011

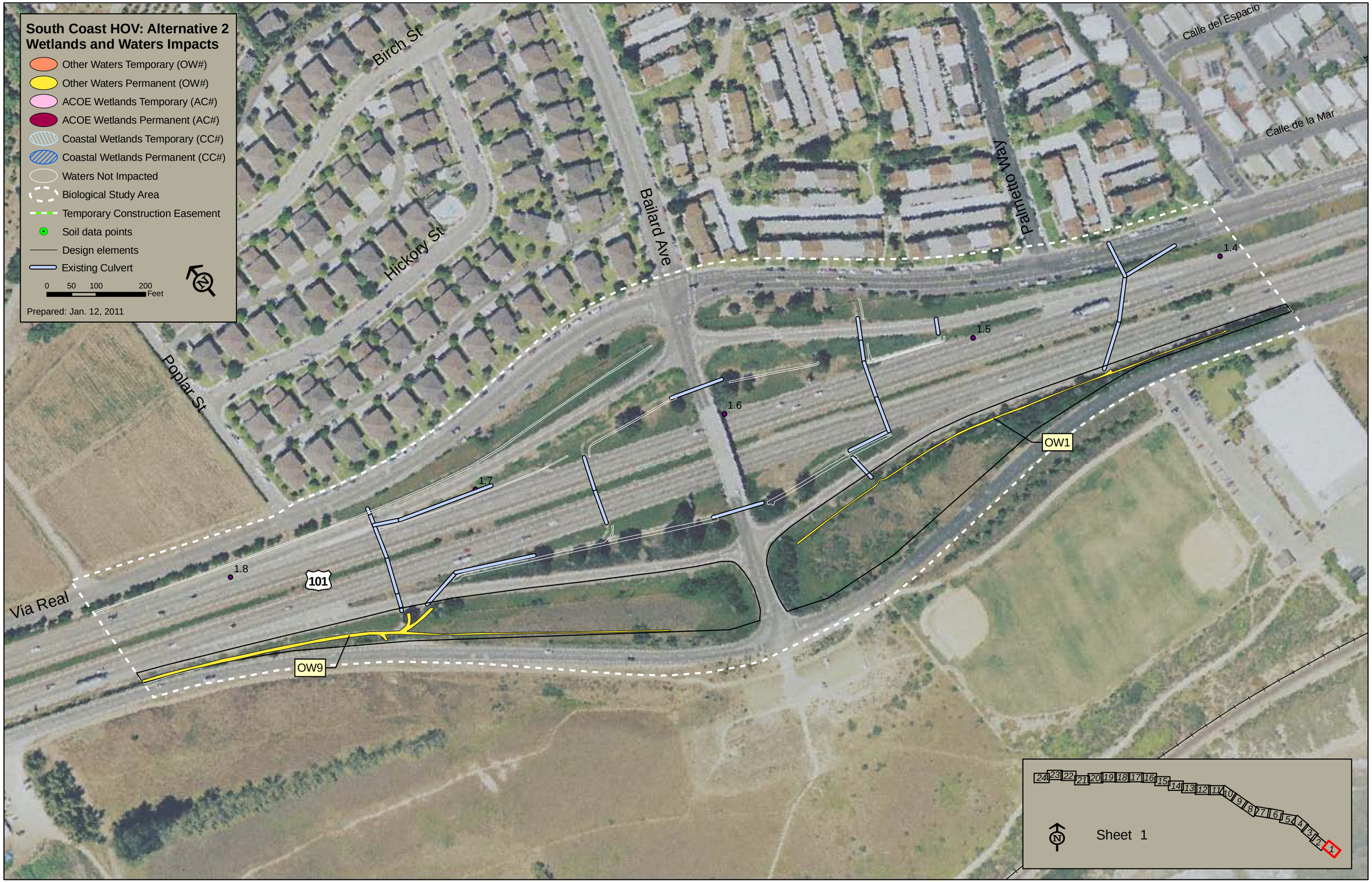
Sheet 20
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Santa Clara Way
Santa Isabel Ln
Jameson Ln
Jameson Ln
Eleven Oaks Ln
Olive Mill Rd
10.2
10.3
10.4
10.5
10.6
Virginia Rd
Virginia Ln
Danielson Rd
Spring Rd
Depot Rd
101
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
Prepared: Jan. 12, 2011

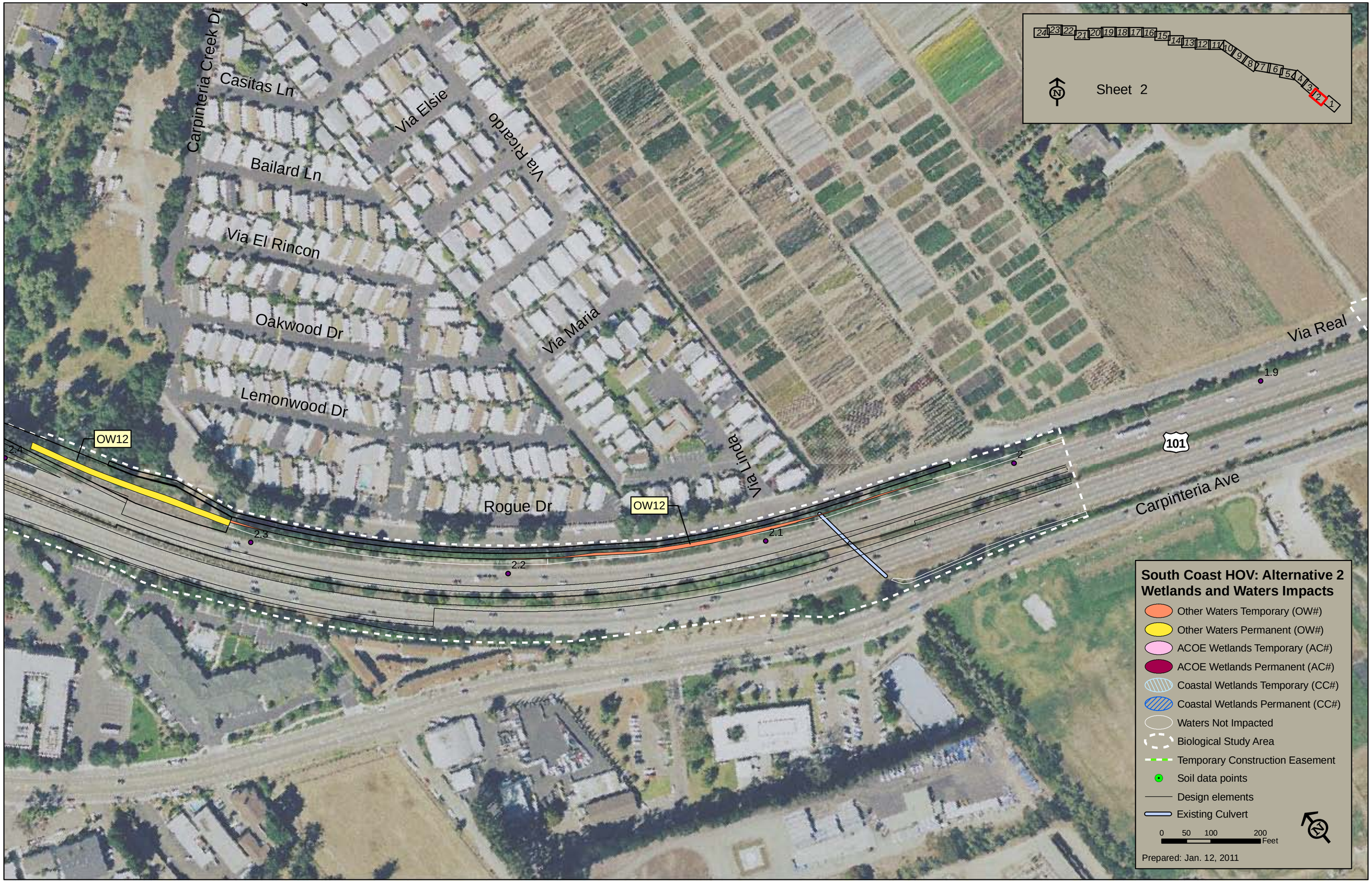
Hermosillo Rd
Butterfly Ln
Coast Village Hwy
Coast Village Cir
Butterfly Ln
Hill Rd
Depot Rd
101
11.1
11
10.9
10.8
10.6
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 21
South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
N
Prepared: Jan. 12, 2011

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Sheet 22
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
101
11.6
11.5
11.4
11.3
11.2
11.1
Los Patos Way
Cabrillo Blvd
Hot Springs Rd
Palm Tree Ln
Hermosillo Rd
Monte Cristo Ln

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Old Coast Hwy
Park Pl
Los Patos Way
101
11.6
11.7
11.8
11.9
12
12.1
Andre Clark Bird Refuge
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 23

South Coast HOV: Alternative 1
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Indio Muerto St
Canada St
Punta Gorda St
Harmon St
Salinas St
Park Pl
Liberty St
Soledad St
Pitos St
Voluntario St
Sycamore Canyon Creek
12.1
12.2
12.3
12.4
12.5
101
Alisos St
Ninos Dr
Por la Mar Dr
Por la Mar Cir
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 24


South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Birch St
Hickory St
Poplar St
Bailard Ave
Palmetto Way
Calle del Espacio
Calle de la Mar
Via Real
101
1.4
1.5
1.6
1.7
1.8
OW1
OW9
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 1


Carpinteria Creek Dr
Casitas Ln
Via Elsie
Via Ricardo
Bailard Ln
Via El Rincon
Oakwood Dr
Via Maria
Lemonwood Dr
Via Linda
Rogue Dr
Via Real
Carpinteria Ave
101
OW12
OW12
2.4
2.3
2.2
2.1
2
1.9
Sheet 2
South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
Prepared: Jan. 12, 2011

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Star Pine Rd
Via Real
Hales Ln
Casitas Pass Rd
Byrnes Ln
La Pala Ln
Cameo Rd
La Brea Ln
Vallecito Rd
Carpinteria Creek
101
2.8
2.7
2.6
2.5
2.4
2.3
OW12
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 3

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Pacific Village Dr
Ogan Rd
Star Pine Rd
Linden Ave
Via Real
101
Nipomo Dr
Tomol St
Franklin Creek
Holly Ln
Sawyer Ave
Elm Ln
Eugenia Pl
Church Ln
Vallecito Rd
Carpinteria Ave
OW14
OW15
OW16
CC1
2.9
3
2.8
3.1
3.2
3.3
Sheet 4

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Aragon Dr
Sterling Way
Dahlia Ct
Via Real
Cramer Cir
Eleanor Dr
Chaney Ave
Delta St
Post St
June St
Franklin Creek
Tomol St
101
AC2
CC2
OW17
OW14
OW15
OW18
OW16
CC1
Santa Ynez Ave
Carpinteria Ave
Reynolds Ave
9th St
Sheet 5

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Sheet 6
Trieste Ln
Via Marcina
Via Latina
Verano St
Taranto Cir
Venice Ln
Santa Monica Rd
SANTA MONICA CR
Via Real
Cramer Cir
Cramer Rd
Plum St
Apple St
Carpinteria Ave
Carpinteria Marsh
101
CC8
CC6
OW23
OW27
CC10
AC6
AC5
CC9
CC7
OW22
OW21
4.1
3.9
3.8
3.7
4
5
6
7

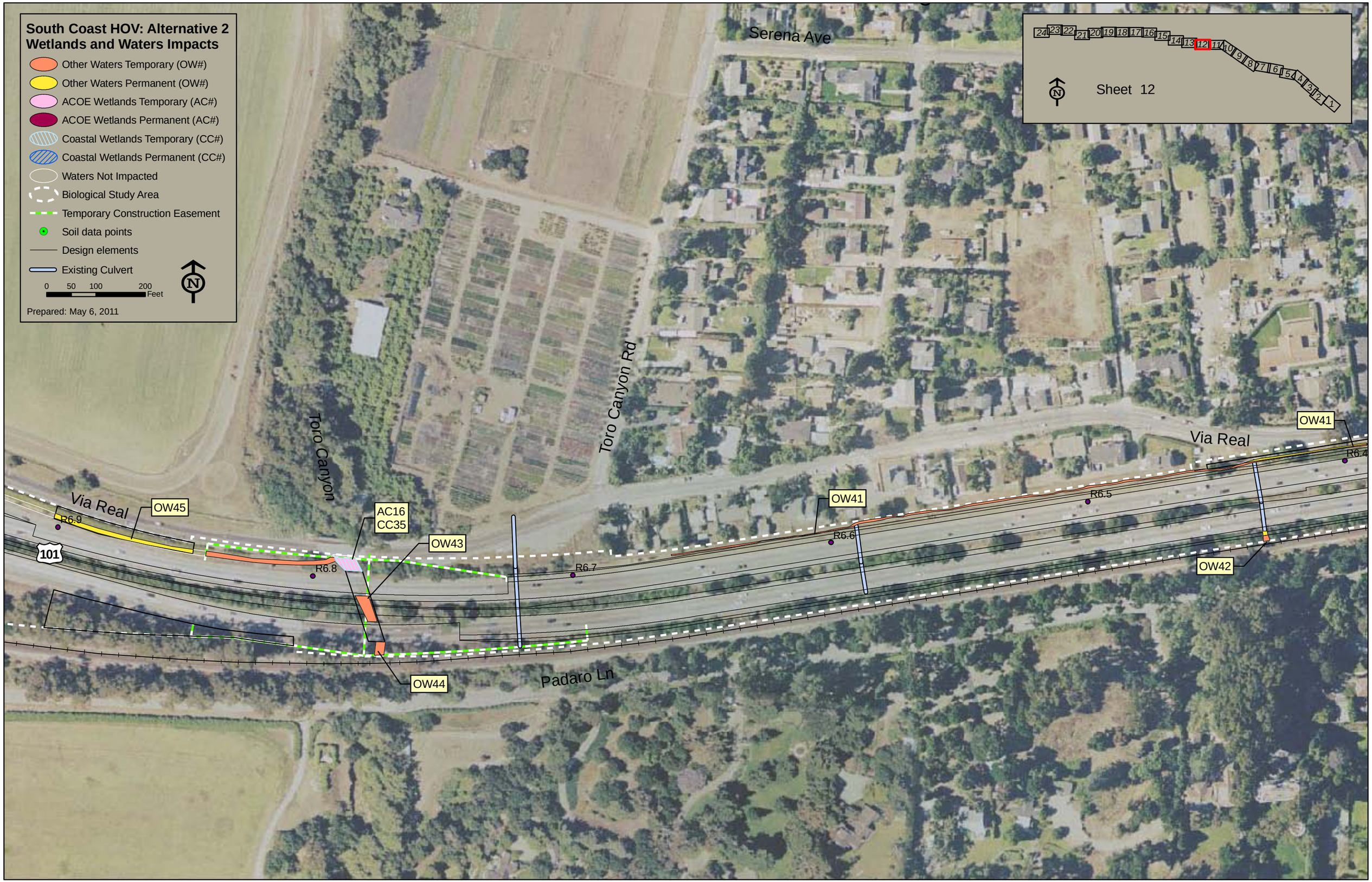
South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Coast Dr
Sandpiper Dr
Bayside Dr
Cove St
Lemon Dr
Pearl St
Beach St
Cravens Ln
Franciscan Ct
Via Real
101
OW29
4.5
4.4
4.3
4.2
6
7
AC11
CC18
CC17
AC10
CC15
OW27
CC10
Carpinteria Marsh
Carpinteria Marsh
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
N
Sheet 7

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 8
Cove St
Pearl St
Beach St
Via Real
OW29
4.6
4.7
R4.7234.723
R4.8
R4.9
R5
101
Santa Claus Ln
Sand Point Rd
Carpinteria Marsh

24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
Sheet 9
Via Real
OW33
R5.5
R5.4
R5.3
Padaro Ln
R5.2
R5.1
Via Real
CC27
OW32
101
Santa Claus Ln
South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
Prepared: Jan. 12, 2011

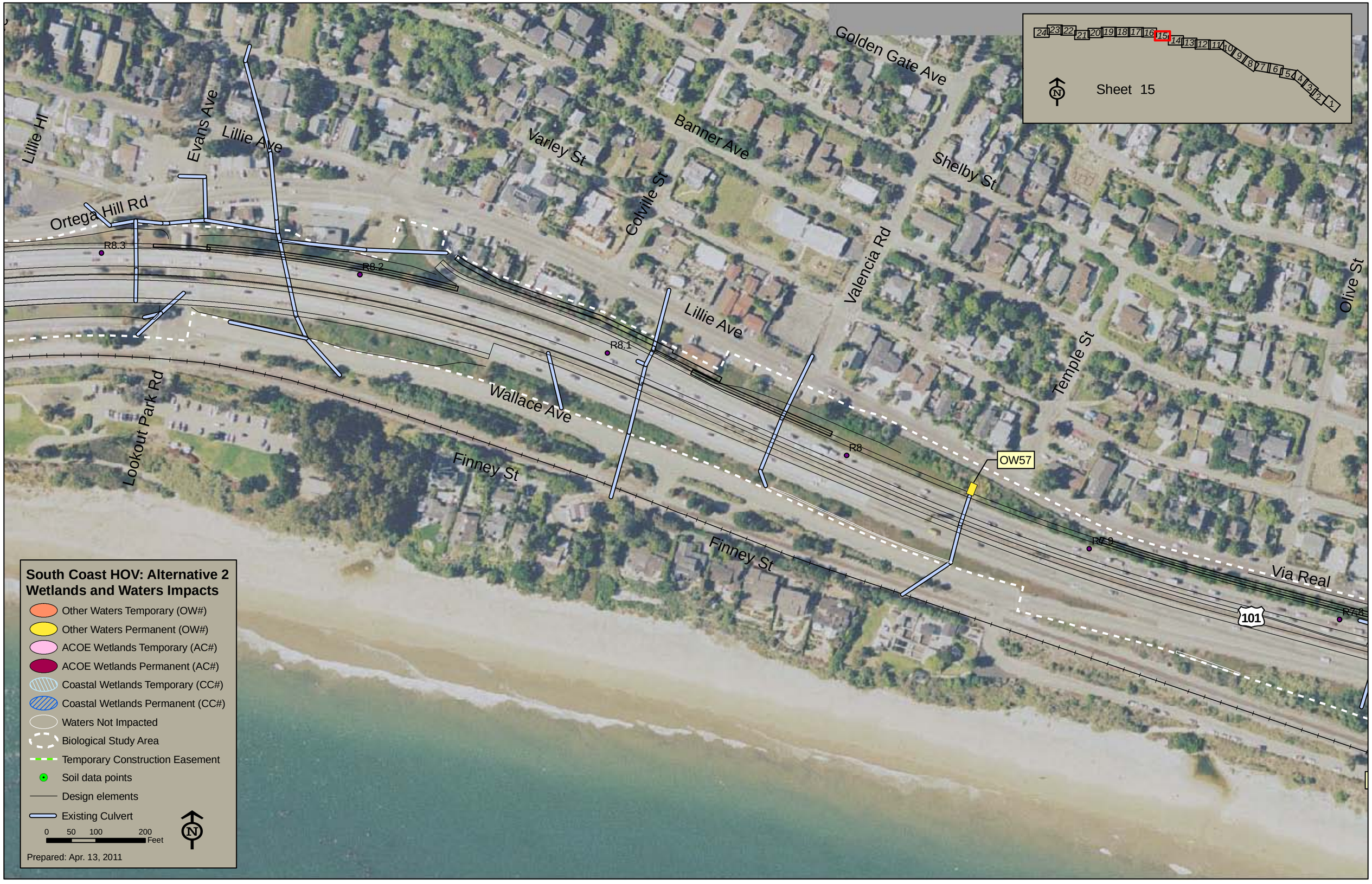
South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Aug. 31, 2011
Nidever Rd
Arroyo Parida
Via Real
Via Real
101
R5.8
R5.7
R5.6
R5.5
R5.9
R6
CC30
OW36
CC31
CC29
OW34
OW35
CC28
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 10

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011
Serafin St
Morgan Ln
Sentar Rd
Garrapato Creek
OW39
OW41
OW42
R6.4
R6.3
R6.2
R6.1
R6
Via Real
Via Real
101
Beach Club Rd
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
N
Sheet 11


South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: May 6, 2011
Sheet 12
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Serena Ave
Toro Canyon
Toro Canyon Rd
Via Real
Via Real
Padaro Ln
101
OW45
OW43
AC16
CC35
OW44
OW41
OW41
OW42
R6.9
R6.8
R6.7
R6.6
R6.5
R6.4

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Via Real
OW48
R7.3
R7.2
R7.1
R7
R6.9
OW47
OW45
101
Lambert Rd
Padaro Ln
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 13

Sheet 14
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Colby St
Via Real
101
Vista Oceano Ln
Caspia Ln
Freesia Dr
Marguerite Way
Via Real
R7.8
R7.7
R7.6
R7.5
R7.4
OW52
CC37
OW51
OW54
CC38
South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011


Sheet 15
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Golden Gate Ave
Banner Ave
Shelby St
Varley St
Colville St
Valencia Rd
Olive St
Temple St
Lillie Hl
Evans Ave
Lillie Ave
Ortega Hill Rd
Lookout Park Rd
Wallace Ave
Finney St
Via Real
101
R8.3
R8.2
R8.1
R8
R7.9
R7.8
OW57
South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
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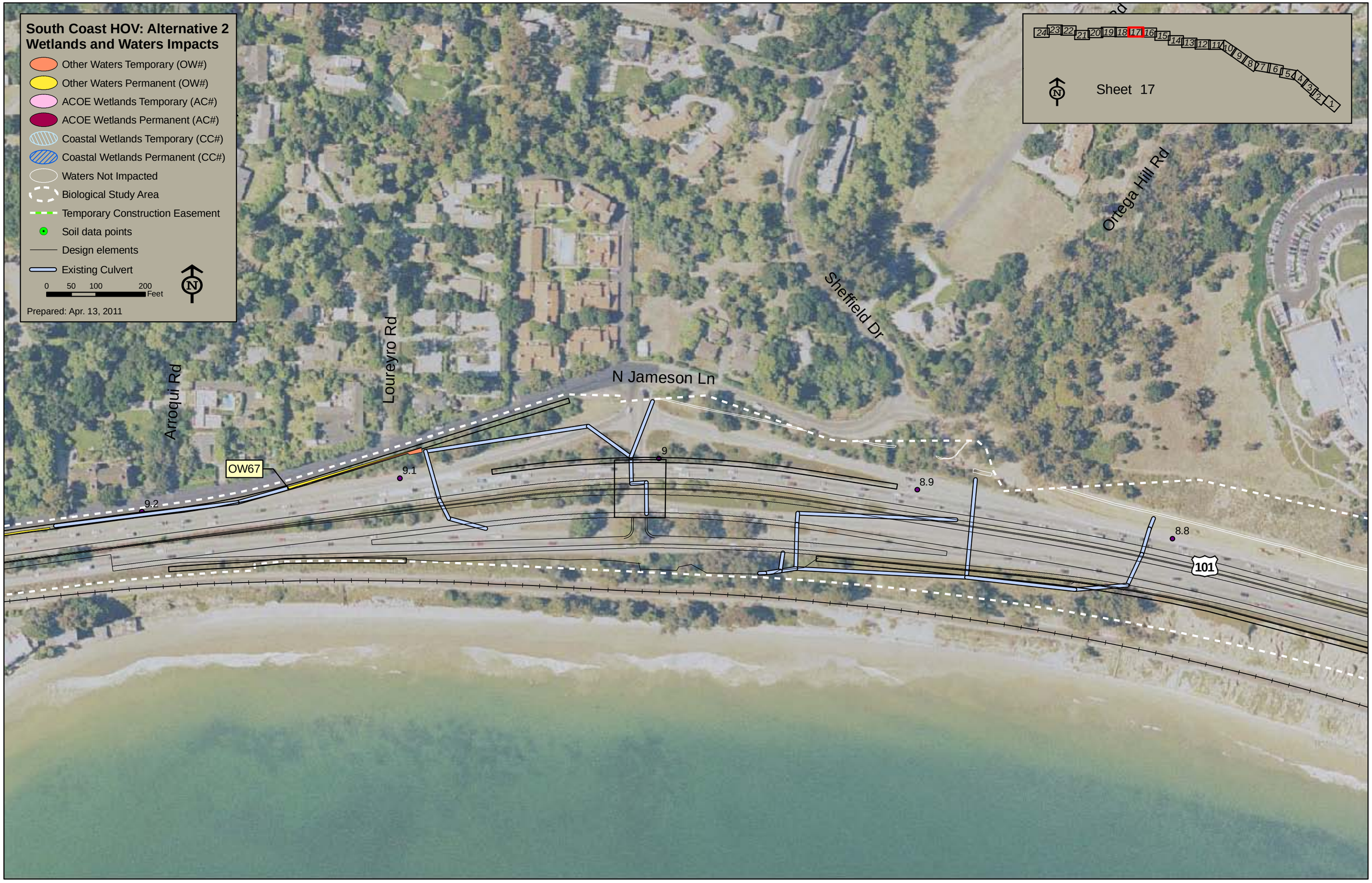
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 16
Sears St
Hardinge Ave
Pierpont Ave
Lillie Hl
Ortega Hill Rd
Lookout Park Rd
101
8.8
8.7
8.6
8.5
R8.487
8.495
R8.4
R8.3
OW59
OW60
OW62


South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
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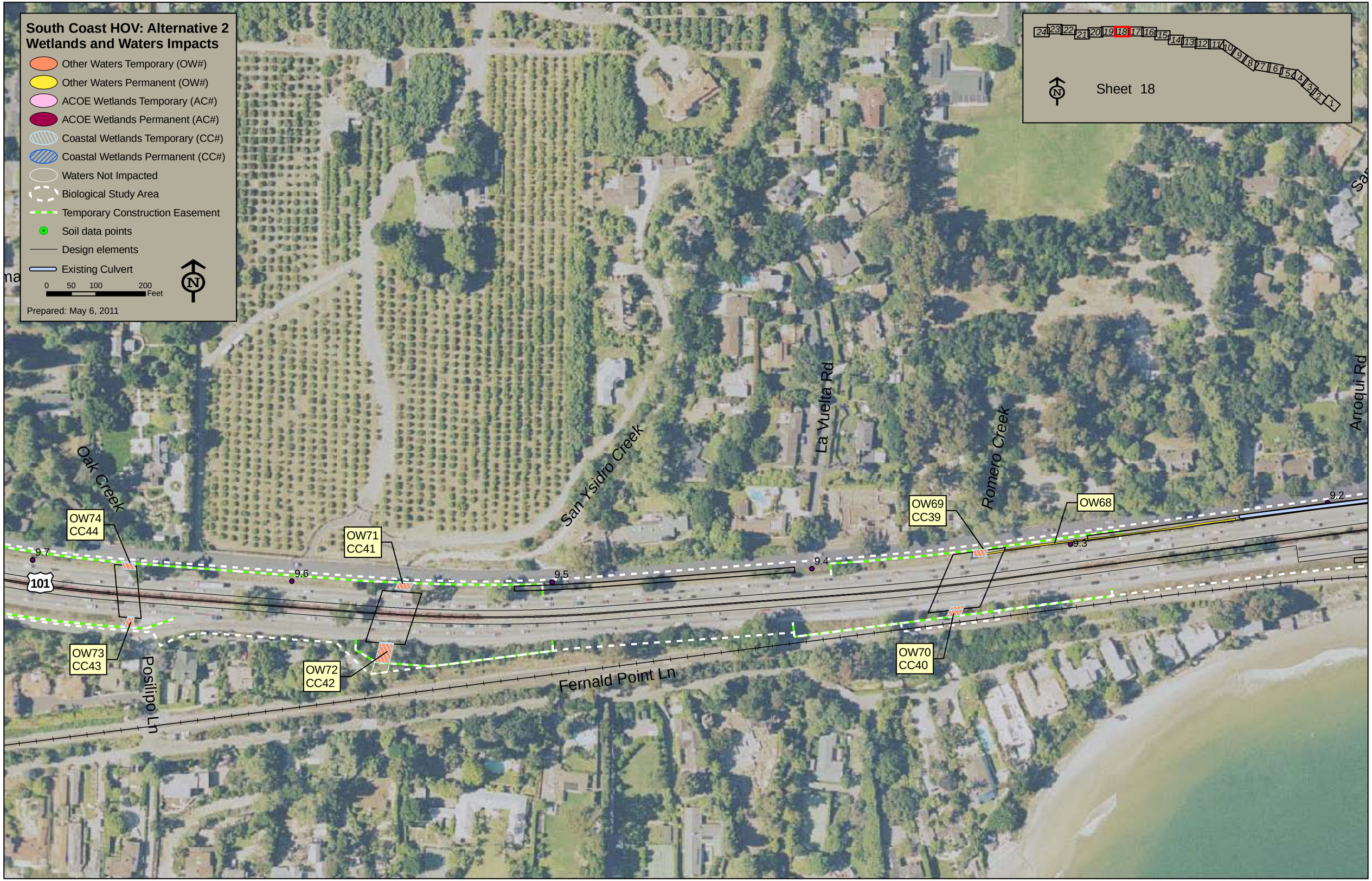
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 17
Arroqui Rd
Loureyro Rd
N Jameson Ln
Sheffield Dr
Ortega Hill Rd
OW67
9.2
9.1
9
8.9
8.8
101


South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
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Biological Study Area
Temporary Construction Easement
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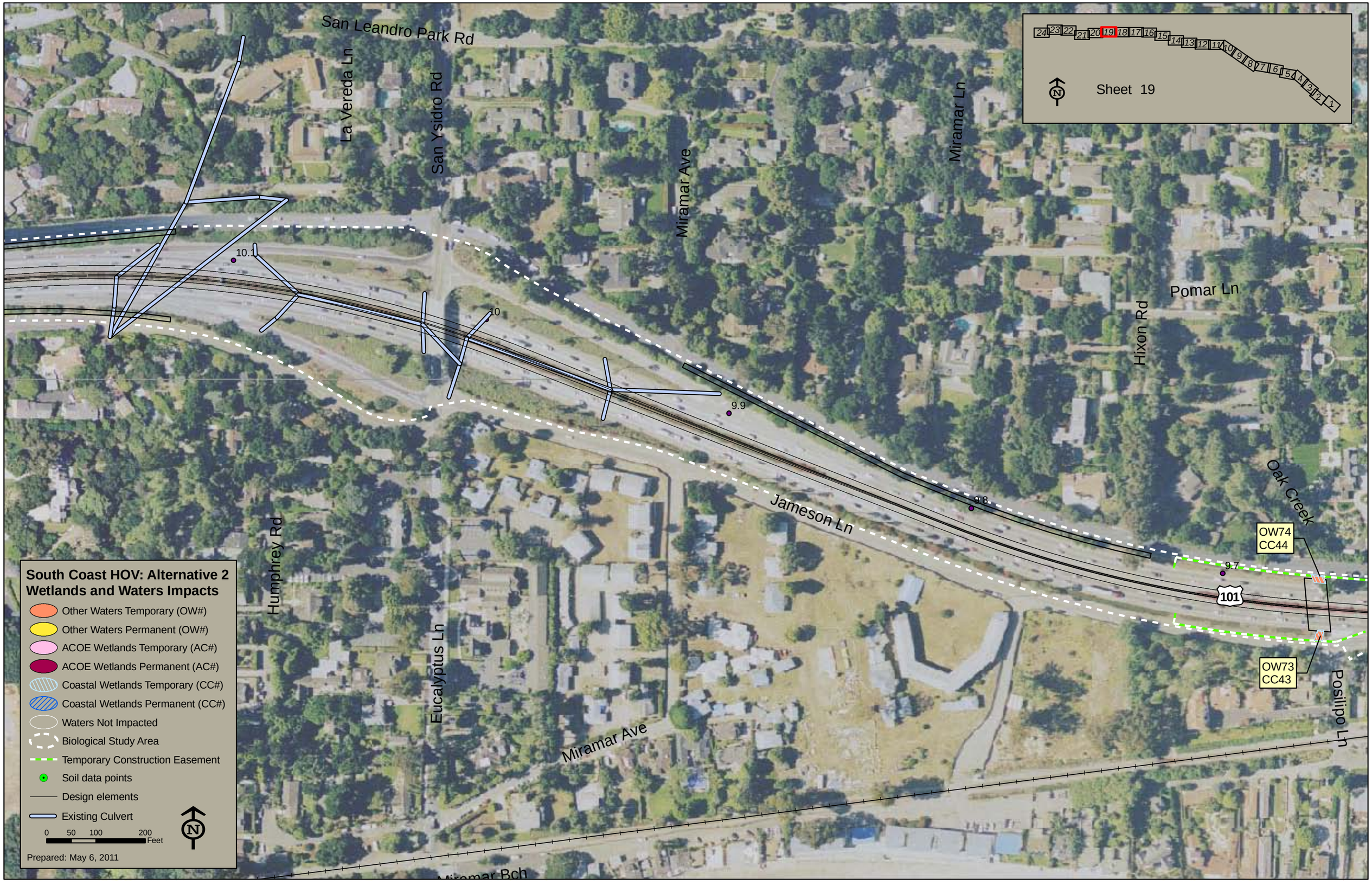
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: May 6, 2011
Sheet 18
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Oak Creek
San Ysidro Creek
La Vuelta Rd
Romero Creek
Arroqui Rd
Posilipo Ln
Fernald Point Ln
101
OW74
CC44
OW73
CC43
OW71
CC41
OW72
CC42
OW69
CC39
OW70
CC40
OW68
9.7
9.6
9.5
9.4
9.3
9.2


San Leandro Park Rd
La Vereda Ln
San Ysidro Rd
Miramar Ave
Miramar Ln
Pomar Ln
Hixon Rd
Oak Creek
Jameson Ln
Humphrey Rd
Eucalyptus Ln
Miramar Ave
Posilipo Ln
Miramar Bch
101
10.1
10
9.9
9.8
9.7
OW74
CC44
OW73
CC43
Sheet 19
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
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Design elements
Existing Culvert
0 50 100 200
Feet
N
Prepared: May 6, 2011

Sheet 20
Santa Clara Way
Santa Isabel Ln
Jameson Ln
Jameson Ln
Eleven Oaks Ln
Olive Mill Rd
Virginia Rd
Virginia Ln
Danielson Rd
Spring Rd
Depot Rd
101
10.2
10.3
10.4
10.5
10.6
South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
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Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011

Hermosillo Rd
Butterfly Ln
Coast Village Hwy
Coast Village Cir
Butterfly Ln
Hill Rd
Depot Rd
101
11.1
11
10.9
10.8
10.6
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 21
South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
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Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
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Other Waters Permanent (OW#)
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ACOE Wetlands Permanent (AC#)
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Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
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Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Sheet 22
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
11.6
11.5
11.4
11.3
11.2
11.1
101
Los Patos Way
Cabrillo Blvd
Hot Springs Rd
Palm Tree Ln
Hermosillo Rd
Monte Cristo Ln

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
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Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Old Coast Hwy
Park Pl
Los Patos Way
101
11.6
11.7
11.8
11.9
12
12.1
Andre Clark Bird Refuge
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 23

South Coast HOV: Alternative 2
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
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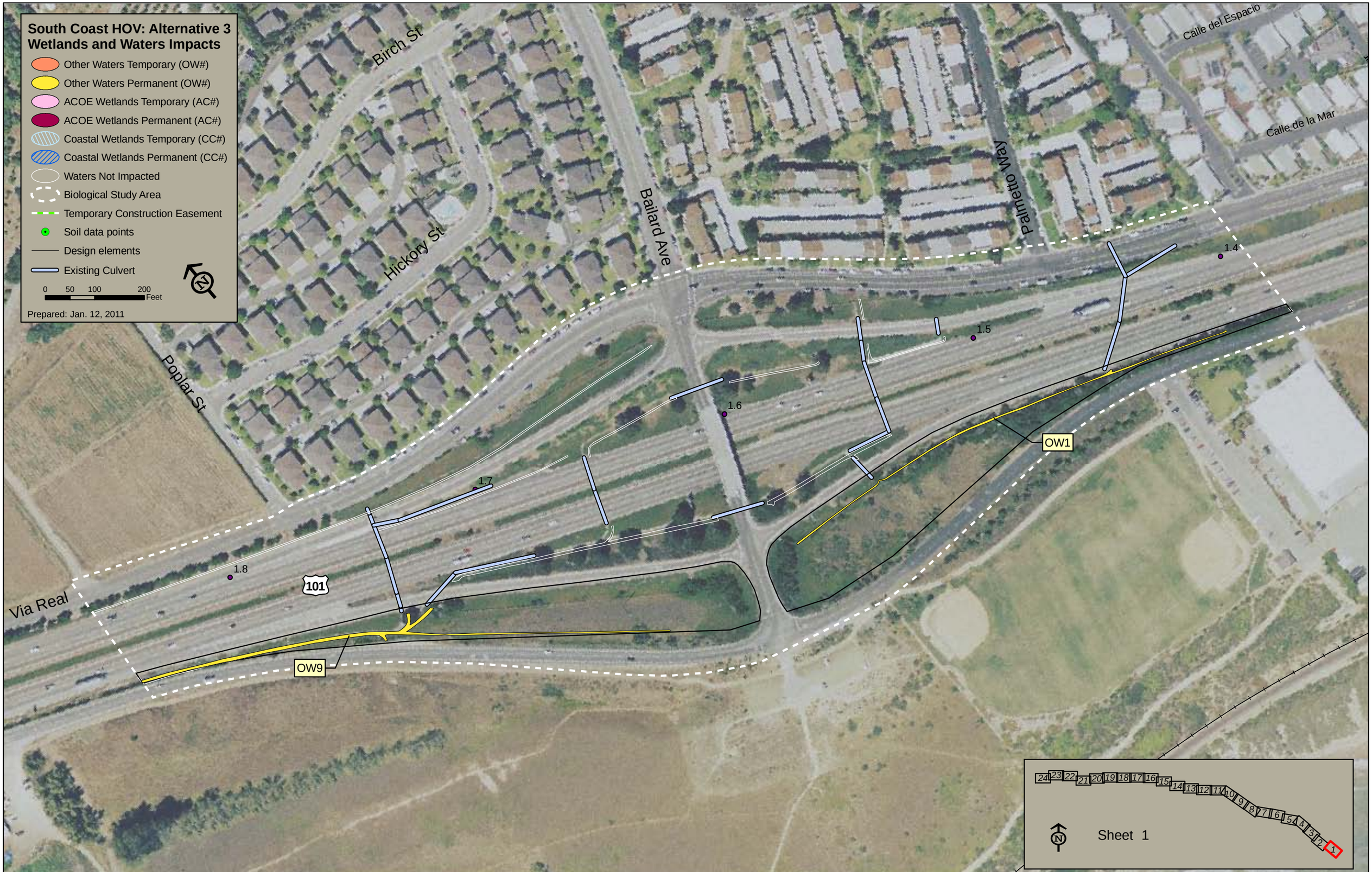
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Indio Muerto St
Canada St
Punta Gorda St
Harmon St
Salinas St
Park Pl
Liberty St
Soledad St
Pitos St
Voluntario St
Sycamore Canyon Creek
12.1
12.2
12.3
12.4
12.5
101
Alisos St
Ninos Dr
Por la Mar Dr
Por la Mar Cir
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 24


South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
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Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Birch St
Hickory St
Poplar St
Bailard Ave
Palmetto Way
Calle del Espacio
Calle de la Mar
Via Real
101
1.4
1.5
1.6
1.7
1.8
OW1
OW9
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 1

Sheet 2
Carpinteria Creek Dr
Casitas Ln
Via Elsie
Via Ricardo
Bailard Ln
Via El Rincon
Oakwood Dr
Via Maria
Lemonwood Dr
Via Linda
Rogue Dr
Via Real
Carpinteria Ave
101
OW12
OW12
2.4
2.3
2.2
2.1
2
1.9
South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
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Coastal Wetlands Permanent (CC#)
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Temporary Construction Easement
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Existing Culvert
0 50 100 200
Feet
Prepared: Jan. 12, 2011

South Coast HOV: Alternative 3
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Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
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Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Star Pine Rd
Via Real
101
Hales Ln
Casitas Pass Rd
Byrnes Ln
La Pala Ln
Cameo Rd
La Brea Ln
Vallecito Rd
Carpinteria Creek
OW12
2.8
2.7
2.6
2.5
2.4
2.3
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 3

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
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Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Pacific Village Dr
Ogan Rd
Star Pine Rd
Linden Ave
Via Real
101
Nipomo Dr
Tomol St
Franklin Creek
Holly Ln
Sawyer Ave
Elm Ln
Eugenia Pl
Church Ln
Vallecito Rd
Carpinteria Ave
OW14
OW15
OW16
CC1
3
3.1
3.2
3.3
2.9
2.8
Sheet 4

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
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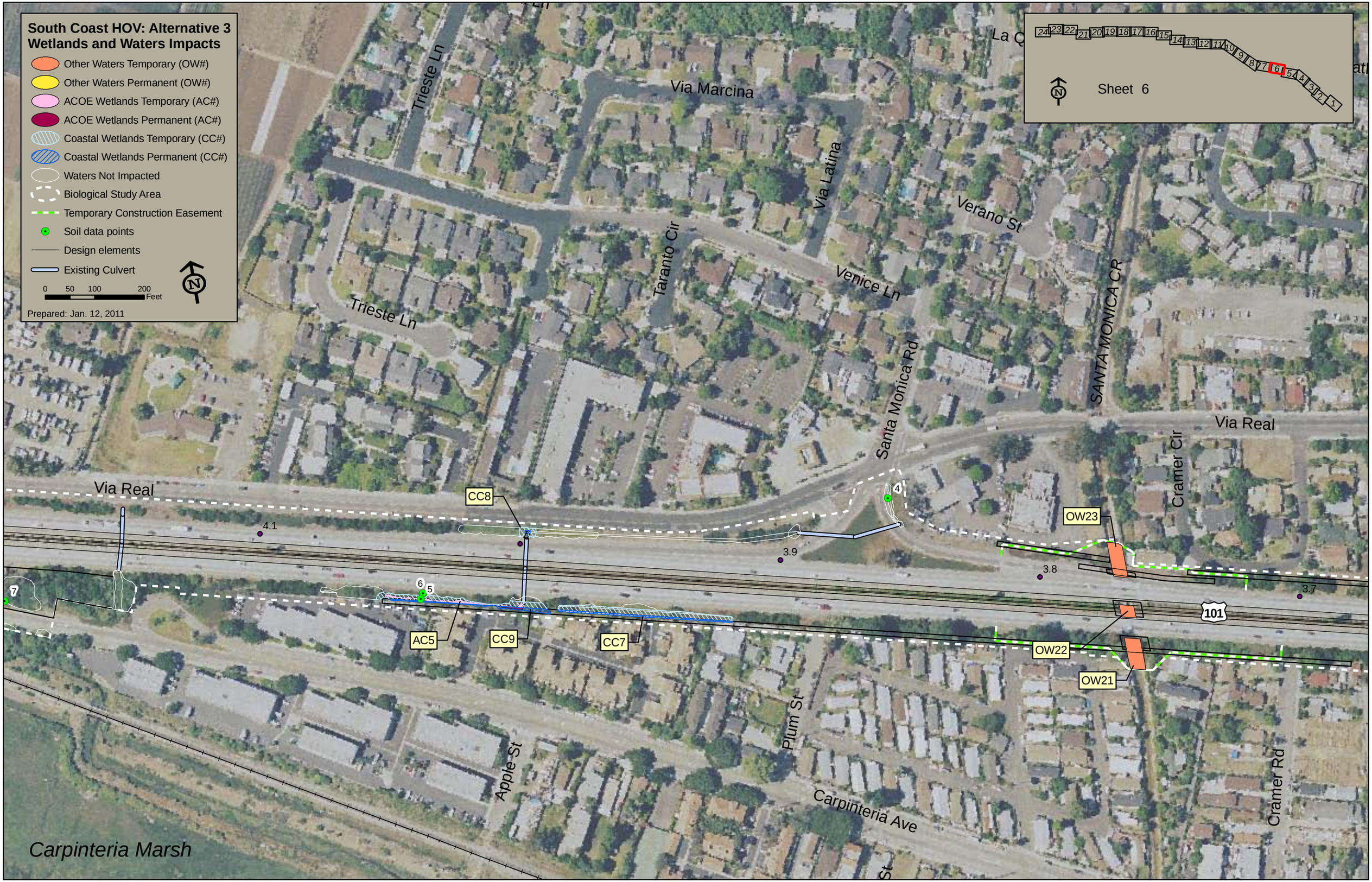
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Aragon Dr
Sterling Way
Dahlia Ct
Eleanor Dr
Via Real
Cramer Cir
Chaney Ave
Delta St
Post St
June St
Franklin Creek
Tomol St
Santa Ynez Ave
Carpinteria Ave
Reynolds Ave
9th St
101
AC2
CC2
OW17
OW14
OW15
OW16
CC1
3.7
3.6
3.5
3.4
3.3
Sheet 5


South Coast HOV: Alternative 3
Wetlands and Waters Impacts
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Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Sheet 6
Trieste Ln
Via Marcina
Via Latina
Verano St
Taranto Cir
Venice Ln
Santa Monica Rd
SANTA MONICA CR
Via Real
Cramer Cir
Cramer Rd
Plum St
Apple St
Carpinteria Ave
Carpinteria Marsh
101
CC8
CC9
CC7
AC5
OW23
OW22
OW21
4.1
3.9
3.8
3.7
4
5
6
7

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
Coast Dr
Sandpiper Dr
Bayside Dr
Cove St
Lemon Dr
Pearl St
Beach St
Cravens Ln
Franciscan Ct
Via Real
101
OW29
4.5
4.4
4.3
4.2
7
Carpinteria Marsh
Carpinteria Marsh
Sheet 7

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 8
Cove St
Pearl St
Beach St
Via Real
OW29
4.6
4.7
R4.723
4.723
R5
R4.9
R4.8
101
Santa Claus Ln
Sand Point Rd
Carpinteria Marsh

24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
Sheet 9
Via Real
R5.5
R5.4
R5.3
Padaro Ln
R5.2
R5.1
Via Real
CC27
101
Santa Claus Ln
South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
Prepared: Jan. 12, 2011

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
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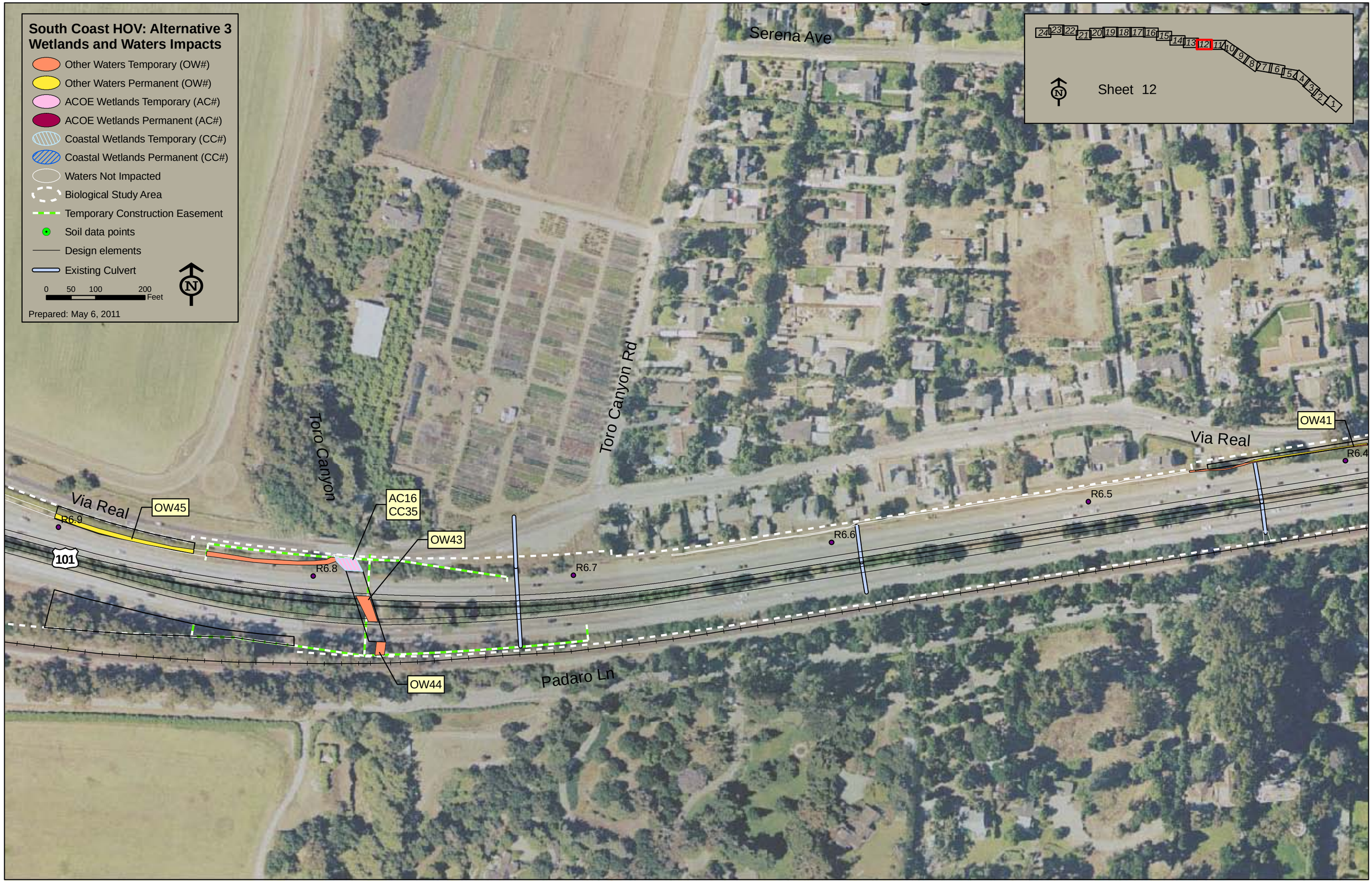
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Aug. 31, 2011
Nidever Rd
Arroyo Parida
Via Real
Via Real
101
R5.9
R5.8
R5.7
R5.6
R5.5
R6
CC30
OW36
CC31
CC29
OW34
OW35
CC28
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 10

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011
Serafin St
Morgan Ln
Sentar Rd
Garrapato Creek
OW39
OW41
R6.4
R6.3
R6.2
R6.1
R6
101
Via Real
Via Real
Beach Club Rd
24 23 22 21 20 19 18 17 16 15 14 13 12 11A 10 9 8 7 6 5 4 3 2 1
N
Sheet 11


South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: May 6, 2011
Sheet 12
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Serena Ave
Toro Canyon Rd
Toro Canyon
Via Real
Via Real
Padaro Ln
101
OW45
OW43
OW44
AC16
CC35
OW41
R6.9
R6.8
R6.7
R6.6
R6.5
R6.4

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
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Other Waters Permanent (OW#)
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ACOE Wetlands Permanent (AC#)
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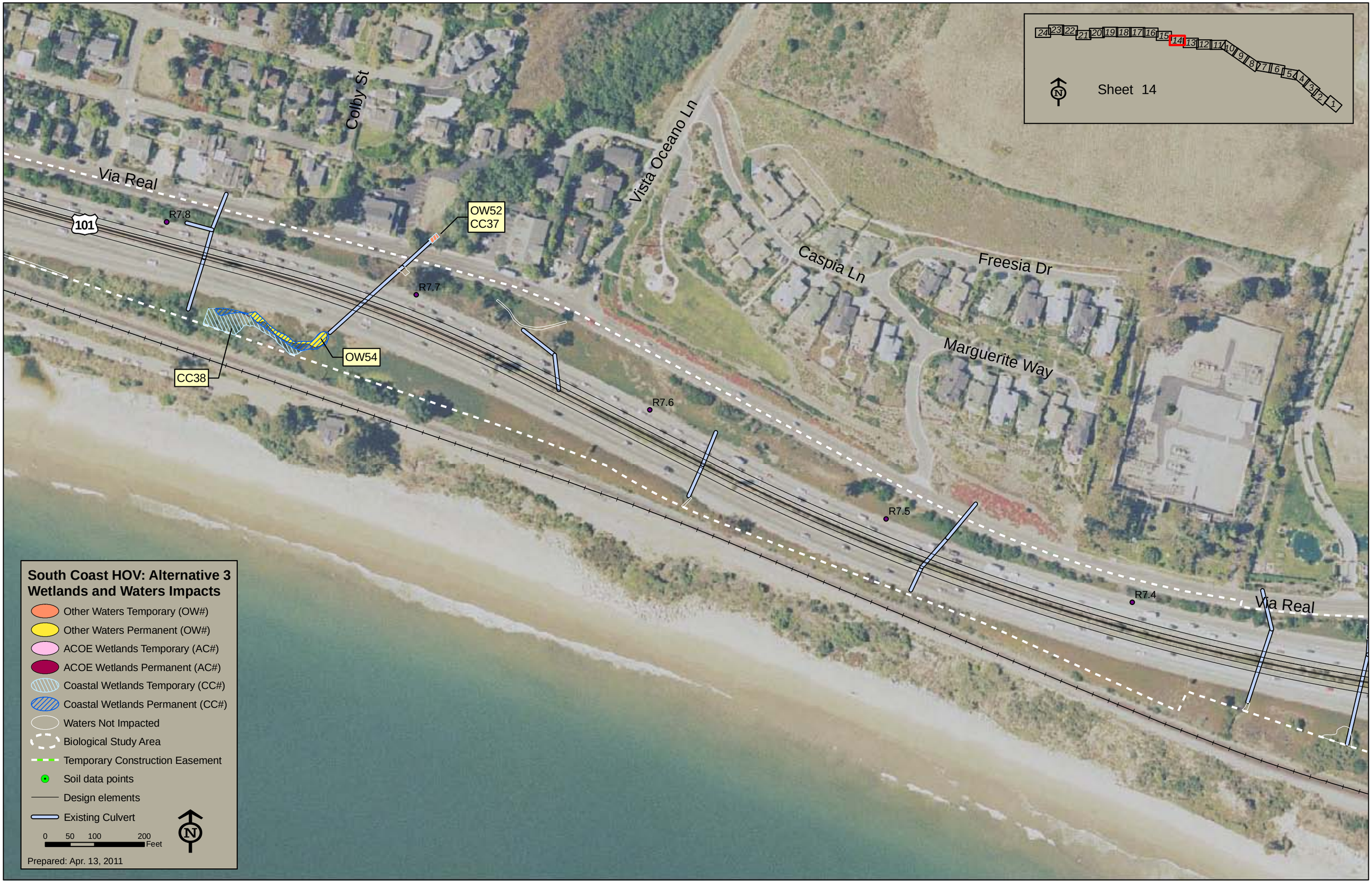
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Via Real
Lambert Rd
R7.3
R7.2
R7.1
R7
R6.9
OW45
101
Padaro Ln
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 13


Sheet 14
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Colby St
Via Real
101
R7.8
OW52
CC37
R7.7
OW54
CC38
Vista Oceano Ln
Caspia Ln
Freesia Dr
Marguerite Way
R7.6
R7.5
R7.4
Via Real
South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
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Biological Study Area
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Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
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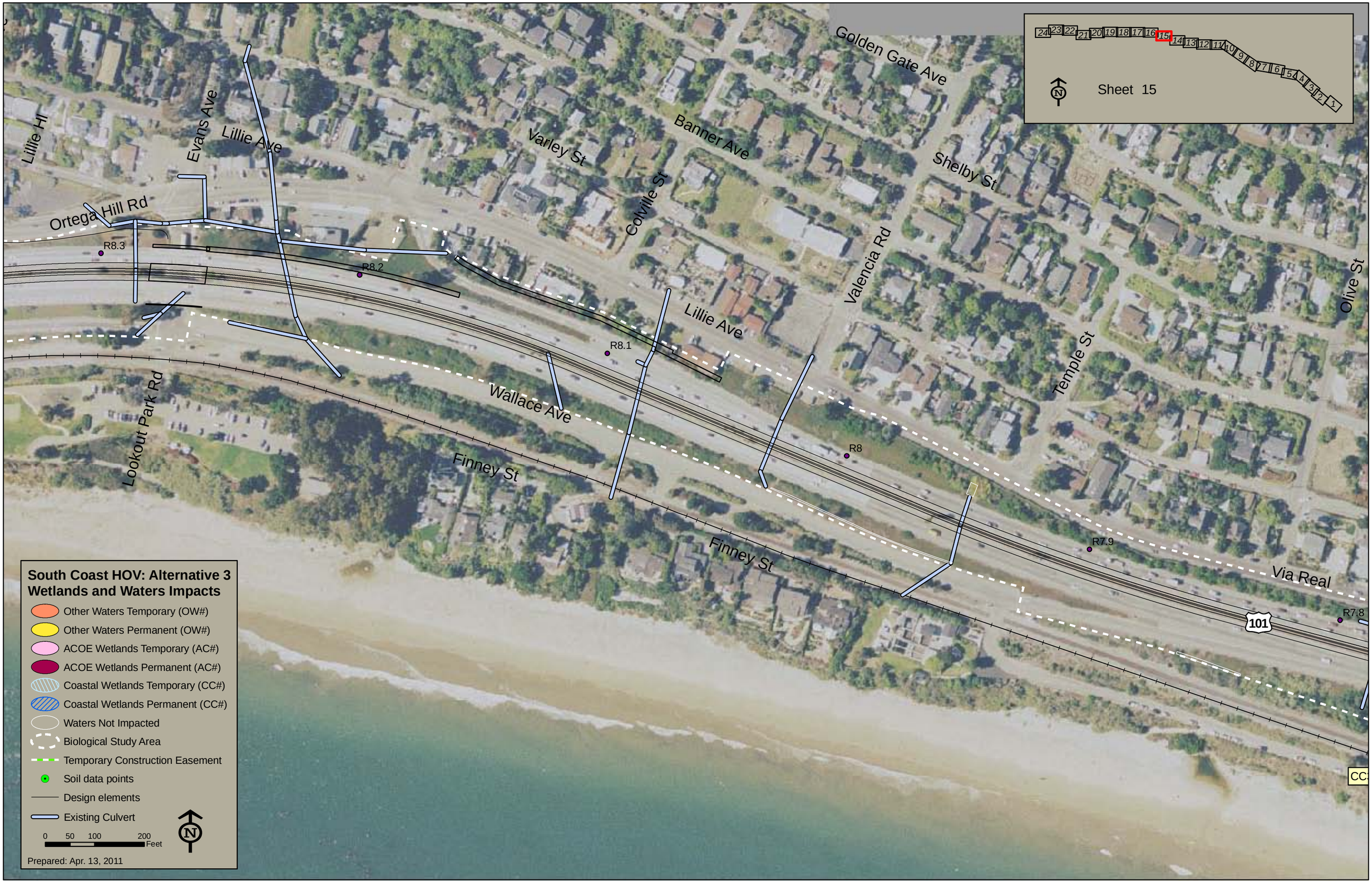
Prepared: Apr. 13, 2011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Other Waters Permanent (OW#)
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0 50 100 200 Feet
N
Prepared: Apr. 13, 2011
Sheet 15
Golden Gate Ave
Banner Ave
Shelby St
Varley St
Colville St
Valencia Rd
Olive St
Temple St
Lillie Hl
Evans Ave
Lillie Ave
Ortega Hill Rd
Lookout Park Rd
Wallace Ave
Finney St
Via Real
101
R8.3
R8.2
R8.1
R8
R7.9
R7.8

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
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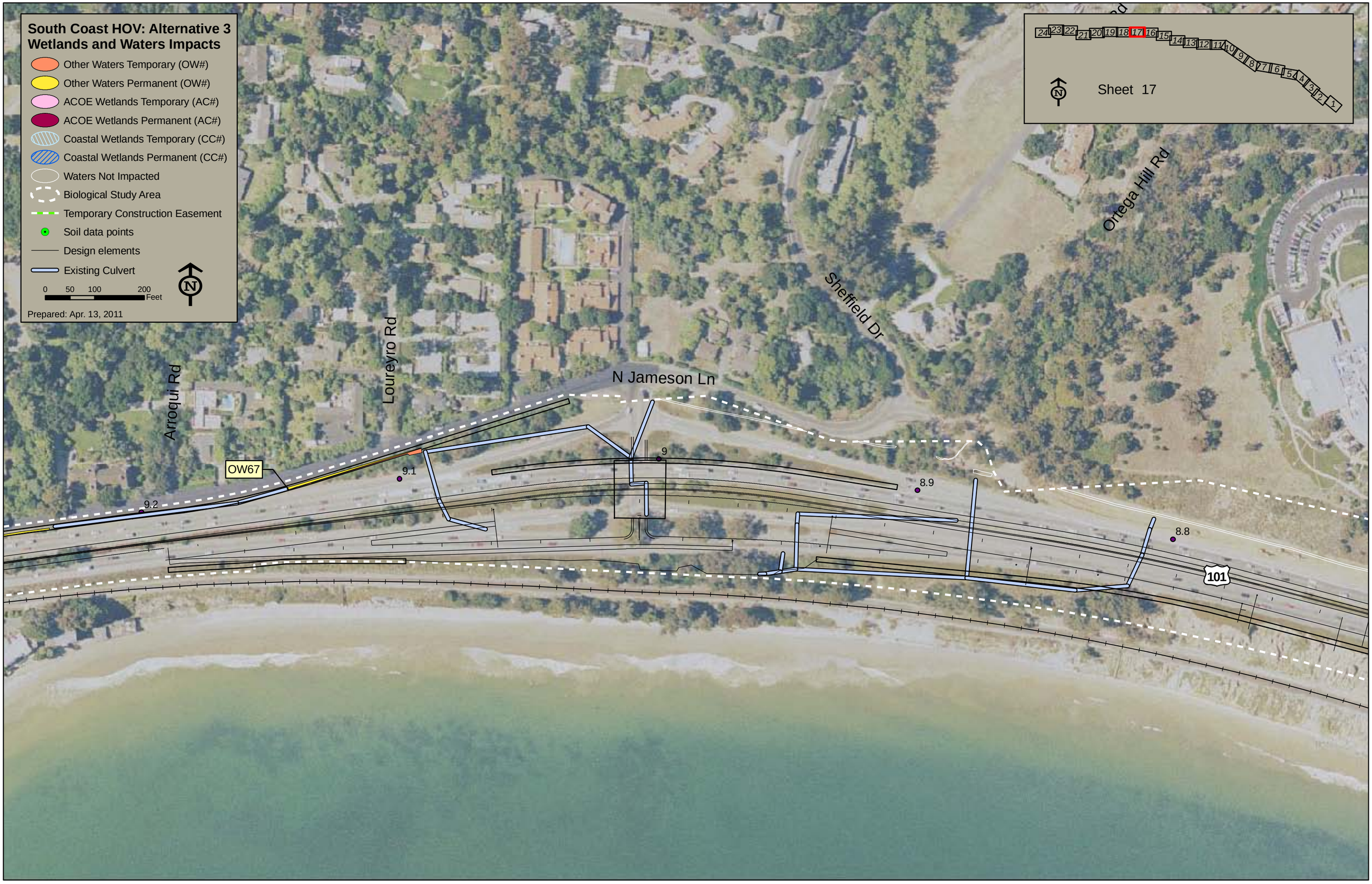
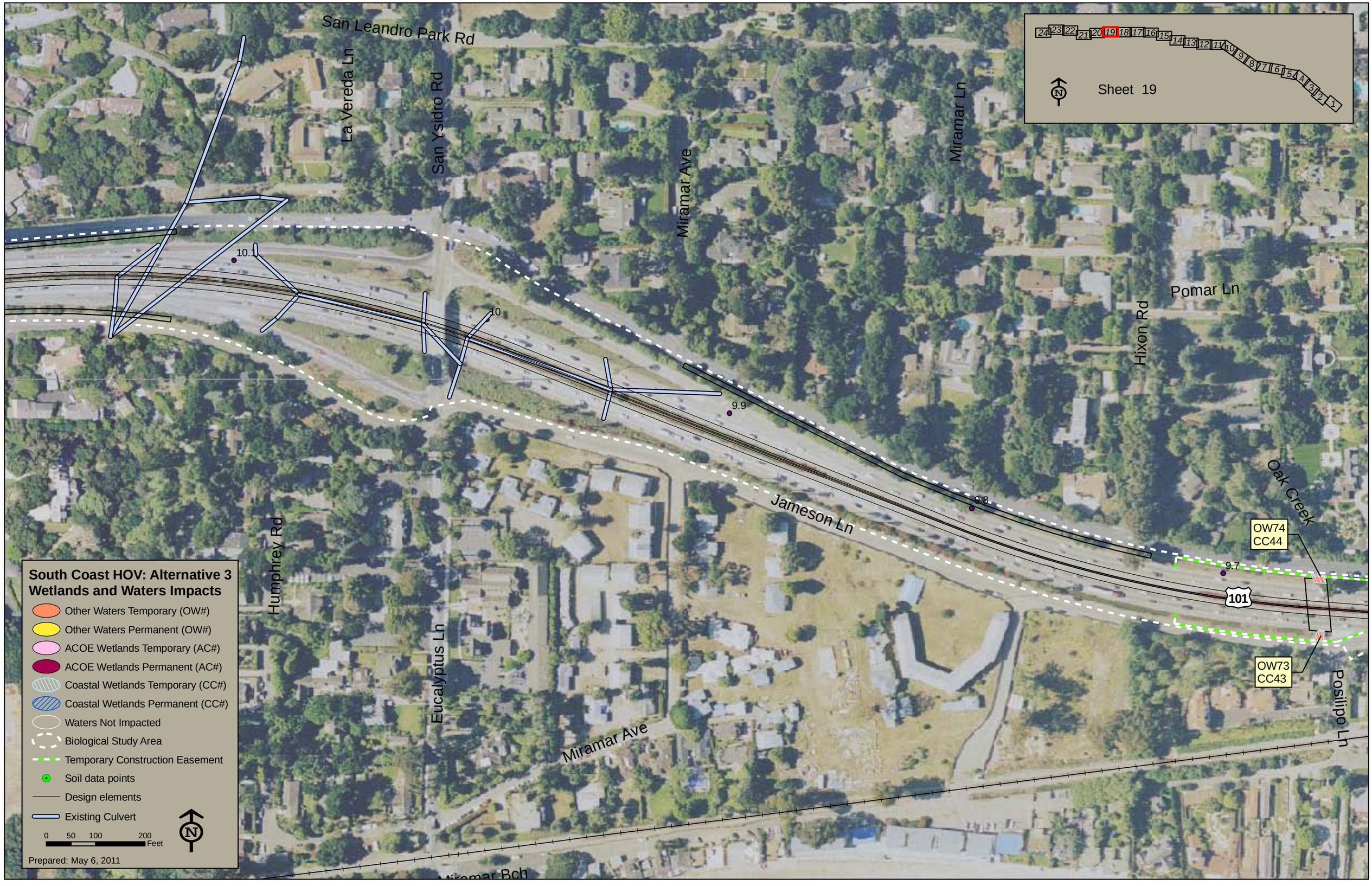
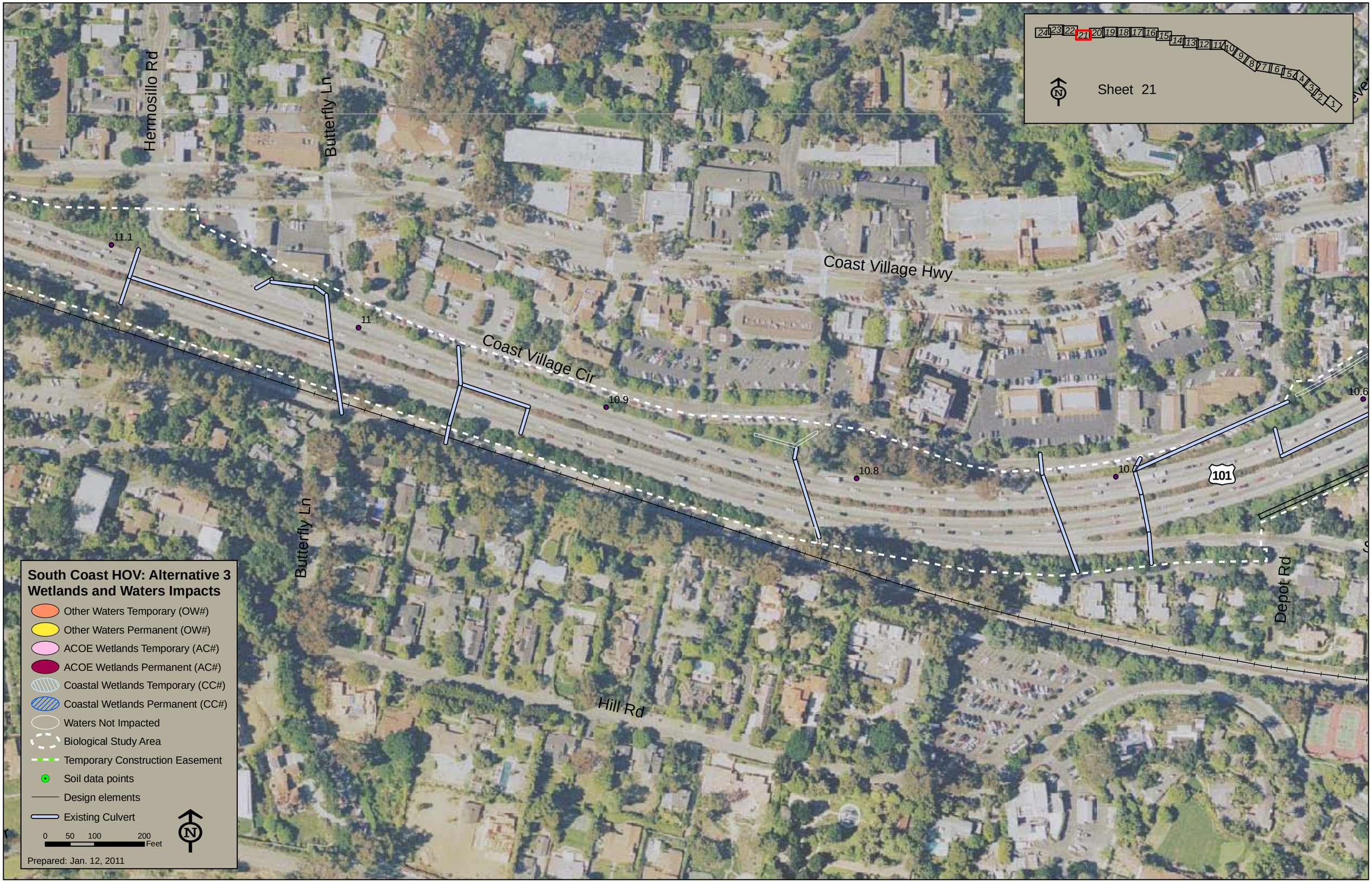
Sheet 16
Sears St
Hardinge Ave
Pierpont Ave
Lillie Hl
Ortega Hill Rd
Lookout Park Rd
101
OW59
OW60
8.8
8.7
8.6
8.5
R8.487
8.495
R8.4
R8.3


South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Apr. 13, 2011
Sheet 17
Arroqui Rd
Loureyro Rd
N Jameson Ln
Sheffield Dr
Ortega Hill Rd
OW67
9.2
9.1
9
8.9
8.8
101

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: May 6, 2011
Sheet 18
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Oak Creek
San Ysidro Creek
La Vuelta Rd
Romero Creek
Arroqui Rd
Posilipo Ln
Fernald Point Ln
101
OW74
CC44
OW73
CC43
OW71
CC41
OW72
CC42
OW69
CC39
OW70
CC40
OW68
9.7
9.6
9.5
9.4
9.3
9.2

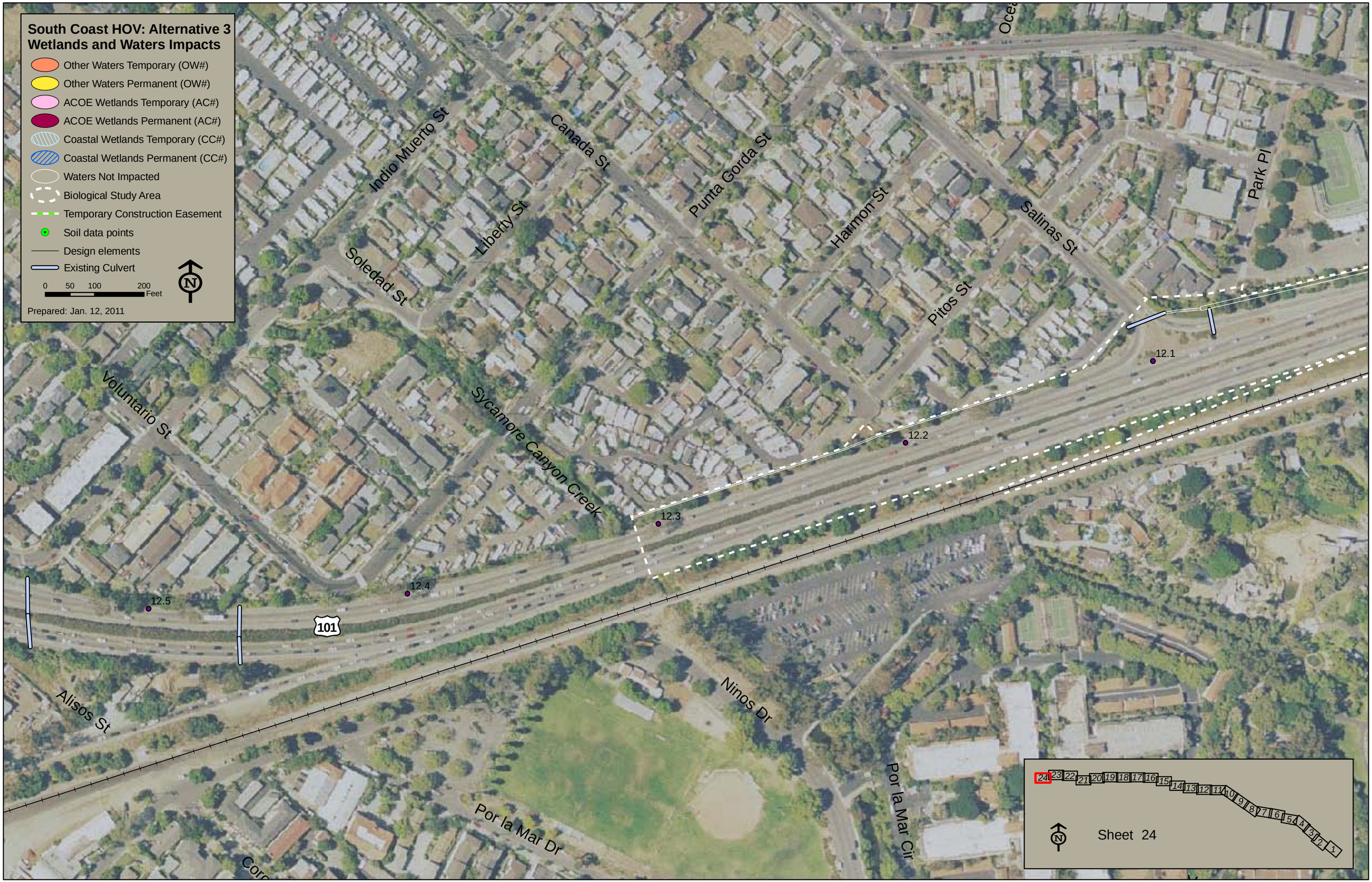

San Leandro Park Rd
La Vereda Ln
San Ysidro Rd
Miramar Ave
Miramar Ln
Pomar Ln
Hixon Rd
Oak Creek
Jameson Ln
Humphrey Rd
Eucalyptus Ln
Miramar Ave
Posilipo Ln
Miramar Bch
101
10.1
10
9.9
9.8
9.7
OW74
CC44
OW73
CC43
Sheet 19
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
N
South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200
Feet
N
Prepared: May 6, 2011

Sheet 20
Santa Clara Way
Santa Isabel Ln
Jameson Ln
Jameson Ln
Eleven Oaks Ln
Olive Mill Rd
Virginia Rd
Virginia Ln
Danielson Rd
Spring Rd
Depot Rd
101
10.2
10.3
10.4
10.5
10.6
South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
Prepared: Jan. 12, 2011

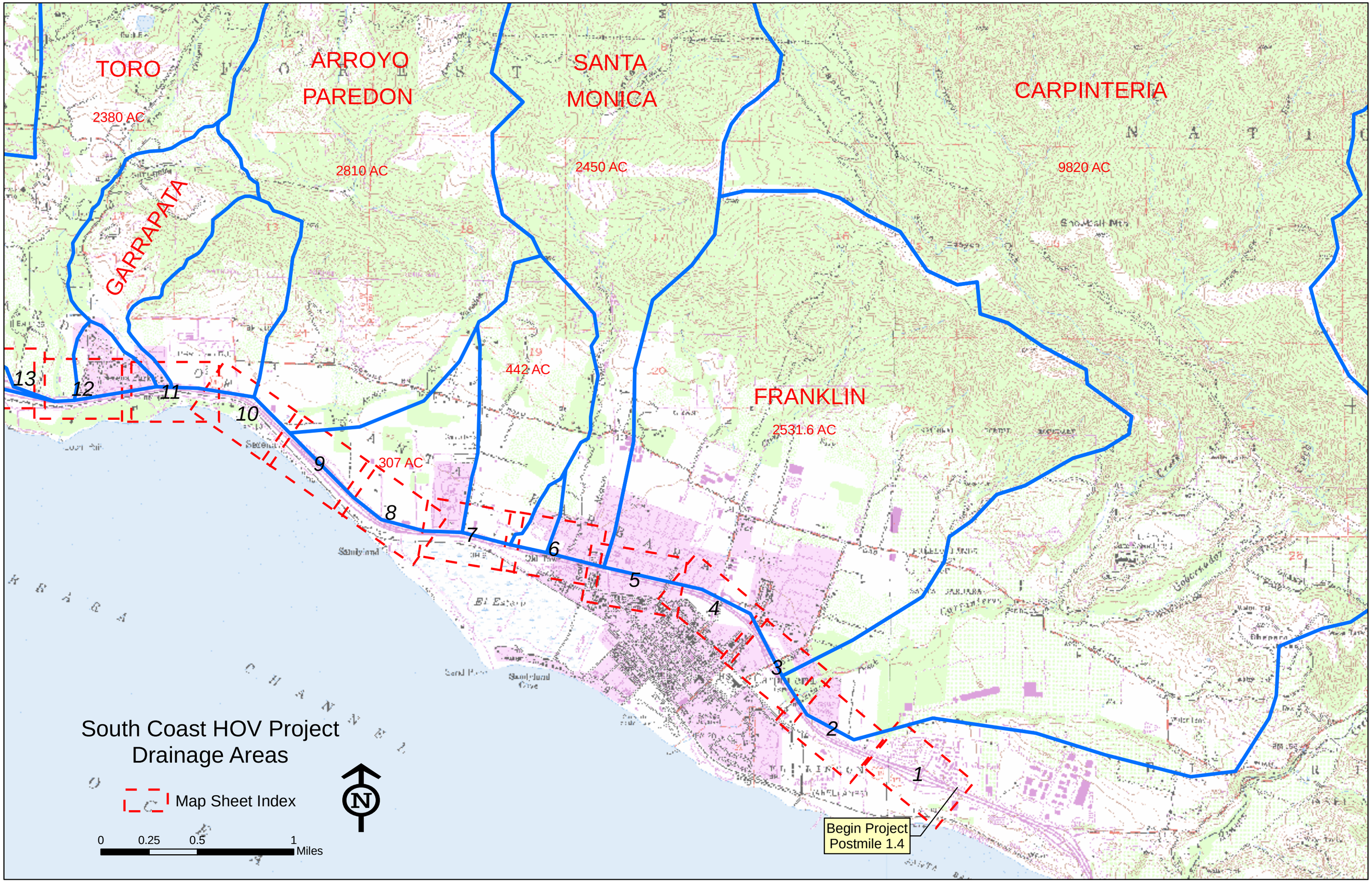

Hermosillo Rd
Butterfly Ln
Coast Village Hwy
Coast Village Cir
Butterfly Ln
Hill Rd
Depot Rd
101
11.1
11
10.9
10.8
10.6
Sheet 21
South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011

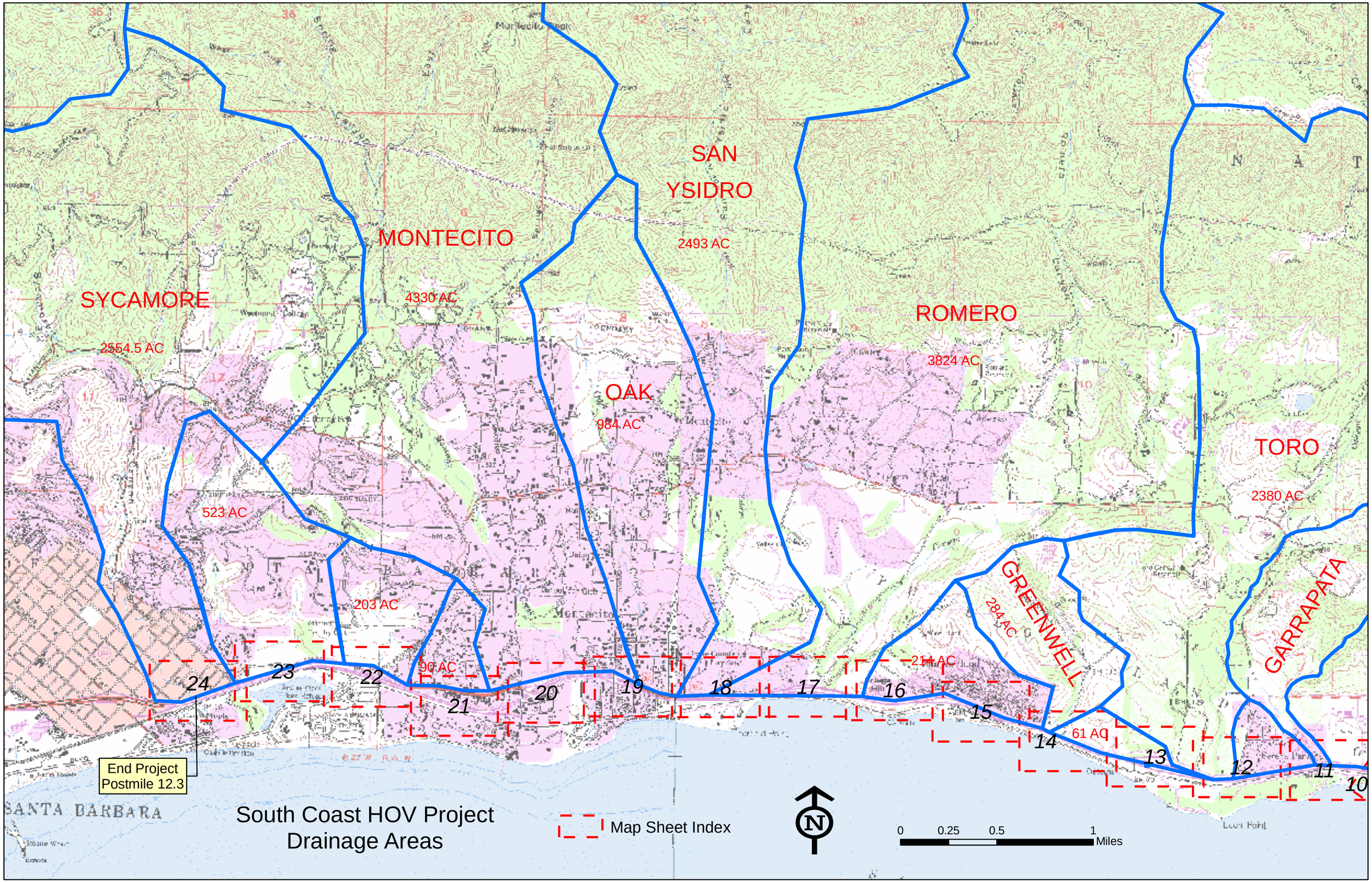
South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Sheet 22
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
11.6
11.5
11.4
11.3
11.2
11.1
101
Los Patos Way
Cabrillo Blvd
Hot Springs Rd
Palm Tree Ln
Hermosillo Rd
Monte Cristo Ln

South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Old Coast Hwy
Park Pl
Andre Clark Bird Refuge
Los Patos Way
101
11.6
11.7
11.8
11.9
12
12.1
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 23


South Coast HOV: Alternative 3
Wetlands and Waters Impacts
Other Waters Temporary (OW#)
Other Waters Permanent (OW#)
ACOE Wetlands Temporary (AC#)
ACOE Wetlands Permanent (AC#)
Coastal Wetlands Temporary (CC#)
Coastal Wetlands Permanent (CC#)
Waters Not Impacted
Biological Study Area
Temporary Construction Easement
Soil data points
Design elements
Existing Culvert
0 50 100 200 Feet
N
Prepared: Jan. 12, 2011
Indio Muerto St
Canada St
Punta Gorda St
Harmon St
Salinas St
Park Pl
Liberty St
Soledad St
Pitos St
Voluntario St
Sycamore Canyon Creek
12.1
12.2
12.3
12.4
12.5
101
Alisos St
Ninos Dr
Por la Mar Dr
Por la Mar Cir
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Sheet 24

Appendix D Watershed Mapping


TORO
2380 AC
ARROYO
PAREDON
2810 AC
SANTA
MONICA
2450 AC
CARPINTERIA
9820 AC
GARRAPATA
442 AC
FRANKLIN
2531.6 AC
307 AC
13
12
11
10
9
8
7
6
5
4
3
2
1
Begin Project
Postmile 1.4
South Coast HOV Project
Drainage Areas
Map Sheet Index
N
0
0.25
0.5
1
Miles


SAN YSIDRO
2493 AC
MONTECITO
4330 AC
SYCAMORE
2554.5 AC
ROMERO
3824 AC
OAK
984 AC
TORO
2380 AC
523 AC
203 AC
90 AC
214 AC
284 AC
61 AC
GREENWELL
GARRAPATA
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
End Project
Postmile 12.3
SANTA BARBARA
South Coast HOV Project
Drainage Areas
Map Sheet Index
N
0
0.25
0.5
1
Miles

Appendix E Areas of Impacts to Individual Wetlands and Other Waters

** Refer to the maps in Appendix C for locations of wetlands and “other waters“

Table 11: Temporary and Permanent Impacts to Wetlands and Waters of the U.S.

Impact Areas Within Wetlands and Other Waters of the United States*

Square feet within Area of Direct Impacts

Waters and wetlands NOT affected are not listed in table.

Other Waters (OW)	ACOE Wetlands (AC)	Coastal Wetlands (CC)	Map Sheet Appendix C	Feature: (ditch, creek, etc)	Lined / Unlined	Alternative 1 impacts		Alternative 2 impacts		Alternative 3 impacts	
						Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
OW1	-	-	C:1	roadside ditch	L	3553.2	0.0	3553.2	0.0	3553.2	0.0
OW9	-	-	C:1	roadside ditch	L	6056.8	0.0	6056.8	0.0	6056.8	0.0
OW12	-	-	C:2	roadside ditch	L	5563.7	4440.0	5563.7	4440.0	5563.7	4440.0
-	-	CC1	C:5	roadside ditch	U	0.0	42.8	0.0	817.4	0.0	42.8
OW14	-	-	C:5	Franklin Ck	L	0.0	1356.2	0	1356.2	0	1356.2
OW15	-	-	C:5	Franklin Ck	L	0.0	764.8	0	764.8	0	764.8
OW16	-	-	C:5	Franklin Ck	L	0.0	1087.8	0	1087.8	0	1087.8
OW17	-	-	C:5	roadside ditch	L	9027.9	1711.3	10192.5	1027.0	9027.9	1711.3
-	AC2	CC2	C:5	roadside ditch	U	0.0	1166.4	0.0	1166.4	0.0	1166.4
OW18	-	-	C:5	roadside ditch	U	0.0	0.0	0.0	2228.5	0.0	0.0
OW21	-	-	C:6	S. Monica Ck	L	0.0	1980.93	0.0	1980.93	0.0	1980.93
OW22	-	-	C:6	S. Monica Ck	L	0.0	714.0	0.0	714.0	0.0	714.0
OW23	--	-	C:6	S. Monica Ck	L	0.0	2011.1	0.0	2011.1	0.0	2011.1

Other Waters (OW)	ACOE Wetlands (AC)	Coastal Wetlands (CC)	Map Sheet Appendix C	Feature: (ditch, creek, etc)	Lined / Unlined	Alternative 1 impacts		Alternative 2impacts		Alternative 3 impacts	
						Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
-	-	CC6	C:6	culvert outlet	U	0	0	222.1	242.8	0	0
-	-	CC7	C:6	roadside ditch	U	1081.9	4040.1	5392.7	409.2	1081.9	4040.1
-	-	CC8	C:6	roadside ditch	U	50.0	499.0	2689.2	1743.4	50	499
-	-	CC9	C:6	roadside ditch	U	1031.1	3177.3	4855.7	2171.5	1031.1	3177.3
-	AC5	-	C:6	roadside ditch	U	223.6	1236.1	498.8	960.8	223.6	1236.1
	AC6	-	C:6	roadside ditch	U	0	0	28.8	22.2	0	0
OW27	-	-	C:6	roadside ditch	U	0	0	103.2	176.8	0	0
-	-	CC10	C:6	roadside ditch	U	0	0	141.1	288.5	0	0
-	AC10	-	C:7	roadside ditch	U	0	0	109.1	17.0	0	0
-	-	CC15	C:7	roadside ditch	U	0	0	1795.9	448.4	0	0
-	-	CC17	C:7	roadside ditch	U	0	0	1853.4	217.0	0	0
-	AC11	CC18	C:7	roadside ditch	U	0	0	80.5	16.0	0	0
-	-	CC27	C:9	roadside swale	U	65.2	759.6	65.2	759.6	65.2	759.6
OW29	-	-	C:8	roadside ditch	U	0.0	188.7	2321.2	0.0	0.0	188.7
OW32	-	-	C:9	roadside ditch	L	487.9	111.7	2468.3	5.0	0.0	0.0
OW33	-	-	C:9	roadside ditch	L	0.0	0.0	5.8	323.5	0.0	0.0
-	-	CC28	C:10	roadside swale	U	1222.0	1558.8	1421.5	1359.3	1222.0	1558.8
OW34	-	-	C:10	A. Paredon Ck	U	0.0	1249.5	588.4	666.1	0.0	1249.5

Other Waters (OW)	ACOE Wetlands (AC)	Coastal Wetlands (CC)	Map Sheet Appendix C	Feature: (ditch, creek, etc)	Lined / Unlined	Alternative 1 impacts		Alternative 2 impacts		Alternative 3 impacts	
						Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
-	-	CC29	C:10	A. Paredon Ck	U	0.0	628.1	0	628.1	0.0	628.1
OW35	-	-	C:10	A. Paredon Ck	L	0.0	478.9	0.0	478.9	0.0	478.9
OW36	-	CC30	C:10	A. Paredon Ck	U	0.0	2770.0	0.0	2770.0	0.0	2770.0
-	-	CC31	C:10	roadside swale	U	0.0	1235.3	1128.7	106.6	0.0	1235.3
OW39	-	-	C:11	roadside ditch	U	94.2	2848.2	2906.4	482.1	94.2	2848.2
OW41	-	-	C:11	roadside ditch	U	707.6	760.8	735.6	3748.1	707.6	760.8
OW42	-	-	C:12	Culvert outlet	U	0.0	0.0	83.2	145.2	0.0	0.0
-	AC16	CC35	C:12	Toro Cyn Ck	U	0.0	1011.0	0.0	1011.0	0.0	1011.0
OW43	-	-	C:12	Toro Cyn Ck	L	0.0	1205.1	0.0	1205.1	0.0	1205.1
OW44	-	-	C:12	Toro Cyn Ck	L	0.0	514.8	0.0	514.8	0.0	514.8
OW45	-	-	C:12	roadside ditch	L	2454.2	2339.9	2454.2	2339.9	2454.2	2339.9
OW47	-	-	C:13	roadside ditch	L	376.6	50.2	376.6	242.0	0.0	0.0
OW48	-	-	C:13	roadside ditch	L	0.0	0.0	0.0	155.4	0.0	0.0
OW51	-	-	C:14	roadside ditch	U	0.0	0.0	0.0	224.2	0.0	0.0
OW52	-	CC37	C:14	Greenwell Ck	U	0.0	200.0	0.0	200.0	0.0	200.0
OW54	-	-	C:14	Greenwell Ck	U	1827.0	82.3	1827.0	82.3	1827.0	82.3
-	-	CC38	C:14	Greenwell Ck	U	3125.2	4324.5	3125.2	4324.5	3125.2	4324.5
OW57	-	-	C:15	Culvert inlet	U	0.0	0.0	373.1	0.0	0.0	0.0

Other Waters (OW)	ACOE Wetlands (AC)	Coastal Wetlands (CC)	Map Sheet Appendix C	Feature: (ditch, creek, etc)	Lined / Unlined	Alternative 1 impacts		Alternative 2 impacts		Alternative 3 impacts	
						Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
OW59	-	-	C:16	roadside ditch	L	12.1	1330.1	12.1	1330.1	12.1	1330.1
OW60	-	-	C:16	roadside ditch	L	264.8	1655.9	264.8	1876.2	264.8	1655.9
OW62	-	-	C:16	roadside ditch	U	0.0	0.0	0.0	72.3	0.0	0.0
OW67	-	-	C:17	roadside ditch	U	869.0	620.4	869.0	620.4	869.0	620.4
OW68	-	-	C:17	roadside ditch	L	1401.9	359.7	1401.9	359.7	1401.9	359.7
OW69	-	CC39	C:18	Romero Ck	U	0.0	386.4	0.0	386.4	0.0	386.4
OW70	-	CC40	C:18	Romero Ck	U	0.0	517.9	0.0	517.9	0.0	517.9
OW71	-	CC41	C:18	San Ysidro Ck	U	0.0	427.1	0.0	427.1	0.0	427.1
OW72	-	CC42	C:18	San Ysidro Ck	U	0.0	1183.7	0.0	1183.7	0.0	1183.7
OW73	-	CC43	C:18	Oak Ck	U	0.0	326.8	0.0	326.8	0.0	326.8
OW74	-	CC44	C:18	Oak Ck	U	0.0	386.7	0.0	386.7	0.0	386.7

Appendix F List of Plants Observed in the Biological Study Area

List of Plants Observed in the South Coast HOV Project BSA during 2008 and 2009 Botanic Surveys

Genus	Specific Epitat	Common Name	NATIVE or EXOTIC
Acacia	dealbata	Silver wattle	Exotic Pest Plant
Agave	americana	Century plant	exotic
Alnus	Rhombifolia	White alder	native
Aloe	arborea	Bush Aloe	exotic
Anagallis	arvensis	scarlet pimpernel	exotic
Artemisia	californica	California or Coastal Sagebrush	native
Artemisia	douglasiana	Douglas mugwort	native
Arundo	donax	Giant reed, arrundo	Exotic Pest Plant
Aster	chilensis	California ater	native
Astragalus	sp	Vetch	
Atriplex	lentiformis	Brewers saltbrush	Native
Atriplex	rosea	Redscale	exotic
Atriplex	semibaccata	Austrailian saltbrush	Exotic Pest Plant
Atriplex	triangularis	Spearscale	exotic
Avena	fatua	Wild oat	Exotic Pest Plant
Baccharis	douglasii	Marsh baccharis	native
Baccharis	pilularis	Coyote bush	native
Bambusa	sp.	Bamboo	exotic
Bougainvillea	sp.	Bougainvillea	exotic
Brassica	nigra	Black mustard	Exotic Pest Plant
Bromus	diandrus	Ripgut brome	Exotic Pest Plant
Bromus	hordeaceus	Soft chess brome	exotic
Bromus	madritensis ssp. rubens	Red brome	Exotic Pest Plant
Calendula	arvensis	Field Marigold	exotic
Callistemon	citrinus	Brilliant bottle-brush	exotic
Camissonia	Cheiranthifolia ssp. suffruticosa	Beach Evening Primrose	native
Carduus	pycnocephalus	Italian thistle	Exotic Pest Plant
Carpobrotus	edulis	hottentot fig	Exotic Pest Plant
Ceanothus	sp.	lilac	native
Centaurea	melitensis	tocolote	Exotic Pest Plant
Cercis	occidentalis	Western redbud	native
Clarkia	unguiculata	elegant clarkia	native
Conium	maculatum	Poison hemlock	Exotic Pest Plant
Convolvulus	arvensis	Field bindweed	Exotic Pest Plant
Cortaderia	jubata	Andean pampass	Exotic Pest Plant
Cotula	coronopifolia	Common brass butons	Exotic Pest Plant
Crassula	ovata	Jade plant	exotic
Cupaniopsis	anacardioides	carrot wood	exotic
Cupressus	macrocarpa	Monterey Cypress	native

Cuscuta	salina	California dodder	native
Cynodon	dactylon	Bermuda grass	exotic
Cynosurus	echinatus	Dog-tail grass	exotic
Cyperus	eragrostis	Tall flatsedge	exotic
Datura	wrightii	jimson weed	native
Dimorphotheca	sinuata	African daisy	Exotic Pest Plant
Echium	candicans	Pininana	Exotic Pest Plant
Ehrharta	calycina	Veldt grass	Exotic Pest Plant
Epilobium	parviflorum	Willow herb	native
Equisetum	hyemale	Giant Scouring rush	native
Equisetum	telmateia	Giant Horsetail	native
Ericameria	latifolia	Sawtooth goldenbush	native
Eriogonum	cinereum	Ashy leafed buckweat	native
Eriogonum	fasciculatum	California Buckwheat	native
Eriogonum	giganteum	St. Catherine's Lace	native
Eriogonum	parvifolium	Seacliff Buckwheat	native
Erodium	botrys	long-beaked fillaree	Exotic Pest Plant
Erodium	cicutarium	red-stemmed filaree	Exotic Pest Plant
Eriophyllum	confertifollium	Golden yarrow	native
Escallonia	sp.	Escallonia	exotic
Eschscholzia	californica	California poppy	native
Eucalyptus	globulus	Tasmanian blue gum	Exotic Pest Plant
Eucalyptus	sp.	Eucalyptus	Exotic Pest Plant
Euphorbia	crenulata	Chinese caps	native
Foeniculum	vulgare	Fennel, Annis	Exotic Pest Plant
Fremontodendron	californicum ssp. californicum	Fremontia, flannelbush	native
Galium	aparine	Bedstraw, Goose grass	exotic
Genista	monspessulana	French broom	Exotic Pest Plant
Geranium	dissectum	cut-leaved Geranium	exotic
Gnaphalium	californicum	green everlasting	native
Gnaphalium	luteo-album	weedy cudweed	exotic
Gnaphalium	stramineum	cotton-batting plant	native
Hedera	helix	English ivy	Exotic Pest Plant
Heliotropium	curassavicum	heliotrope	native
Hemizonia	fasciculata	Fascicled tarweed	native
Heteromeles	arbutifolia	Toyon	native
Heterotheca	grandiflora	Telegraph Weed	native
Hordeum	murinum ssp. glaucum	foxtail barley	exotic
Ipomoea	sp.	Morning glory	exotic
Jacaranda	mimosifolia	Sharpleaf Jacaranda , Blue Jacaranda	exotic
Jaumea	carnosa	fleashy Jaumea	native
Juncus	phaeocephalus	Brownheaded rush	native
Lactuca	serriola	prickly lettuce	exotic
Lemna	minor	Duckweed	native
Leymus	condensatus	Giant rye	native
Lobularia	maritima	Sweet Alyssum	exotic
Lolium	multiflorum	Italian ryegrass	Exotic Pest Plant
Lonicera	japonica	Japanese honeysuckle	exotic
Lotus	scoparius	Deerweed, Calif. broom	native
Lupinus	albifrons	Silver bush lupine	native
Malacothamnus	fasciculatus	Chaparral, Mesa Bush	native
Malosma	laurina	Laurel Sumac	native
Malva	parviflora	Cheeseweed	Exotic Pest Plant

Marah	fabaceus	Wild cucumber, manroot	native
Medicago	polymorpha	California bur-clover	Exotic Pest Plant
Melaleuca	sp.	Paper bark Tree	exotic
Melilotus	alba	White sweet clover	exotic
Mesembryanthemum	crystallinum	Crystalline iceplant	Exotic Pest Plant
Myoporum	laetum	Myoporum, ngaio tree	Exotic Pest Plant
Nasella	pulchra	Purple needlegrass	native
Nasturtium	gambelii	Nasturtium, Gambel's watercress	exotic
Nerium	oleander	oleander	Exotic Pest Plant
Nicotiana	glauca	Tree tobacco	Exotic Pest Plant
Oenothera	elata ssp. hirsutissima	Hookers evening primrose	native
Olea	europaea	Common or Mission Olive	Exotic Pest Plant
Optunia	sp.	Prickly pear cactus	Exotic
Oxalis	pes-caprae	Bermuda buttercup	exotic
Pennisetum	setaceum	fountain grass	Exotic Pest Plant
Persea	americana	Avocado	exotic
Phoenix	sp.	Date Palm	exotic
Picris	echioides	Bristly ox-tongue	Exotic Pest Plant
Pinus	torreyana	Torrey Pine	exotic
Pinus	radiata	Monterey Pine	native
Piptotherum	Miliaceum	Smilo grass	exotic
Pittosporum	undulatum	Orange Pittosporum	exotic
Plantago	lanceolata	English Plantain	exotic
Platanus	racemosa	Western or California Sycamore	native
Podocarpus	macrophyllus	Yew Podocarpus	exotic
Polypogon	monspelliensis	Rabbitsfoot grass	exotic
Potamogeton	pectinatus	Fennel leaved pondweed	native
Quercus	agrifolia	Coast Live Oak	native
Raphanus	sativus	Wild Radish	Exotic Pest Plant
Rhus	integrifolia	Lemonade Berry	native
Rhus	laurina	Laurel-sumac	native
Rhus	ovata	Sugarbush	native
Ricinus	communis	Castor Bean	Exotic Pest Plant
Romneya	coulteri	Matilija Poppy	native
Rorippa	nasturtium-aquaticum	Watercress	exotic
Rubus	ursinus	California blackberry	native
Rumex	acetosella	Sheep Sorrel	exotic
Rumex	crispus	Curly dock	exotic
Salicornia	virginica	Pickleweed	native
Salix	babylonica	Weeping Willow	exotic
Salix	sp.	willow	native
Salsola	tragus	Russian thistle, tumbleweed	Exotic Pest Plant
Salvia	mellifera	Black sage	native
Sambucus	mexicana	Blue or Mexican Elderberry	native
Senecio	vulgaris	common groundsel	exotic
Senecio	mikanioides	Cape ivy, German ivy	Exotic Pest Plant
Schinus	molle	Peruvian pepper tree	Exotic Pest Plant
Scirpus	americanus	American three-square	native
Scirpus	microcarpus	Small-fruited bulrush	native
Scirpus	pugens	common three-square	native
Sequoia	sempervirens	Redwood	native
Sysyrinchium	elmeri	Western blue eyed grass	native
Solanum	douglasii	White nightshade	native

Sonchus	oleraceus	sowthistle	exotic
Stachys	bullata	Hedge Nettle	native
Stellaria	media	Common Chickweed	exotic
Stephanomeria	exigua	wire lettuce	native
Suaeda	calceoliformis	Horned sea blight	native
Syagrus	romanzoffiana	Queen Palm	exotic
Toxicodendron	diversilobium	Poison oak	native
Tropaeolum	majus	Garden Nasturtium	exotic
Typha	latifolia	Cattail	native
Urtica	dioica	Stinging nettle	exotic
Verbena	lasiostachys	Western verbena	native
Vicia	sativa	Spring vetch	exotic
Vinca	major	Vinca, periwinkle	Exotic Pest Plant
Vitis	vinifera	Wine Grape	exotic
Vulpia	myuros	mouse-tail fescue	exotic
Washingtonia	filifera	California Fan Palm	Exotic
Yucca	sp.	Yucca	exotic

Appendix G Wetlands Study

The *Preliminary Jurisdictional Determination for the South Coast 101 HOV Project, Santa Barbara, California* (Wetland Study) was prepared by SWCA Environmental Consultants for Caltrans in May 2010. Since its completion, Caltrans design alternatives have been updated, resulting in impacts calculations that differ from the values reported in Section 5 of the *Preliminary Jurisdictional Determination.*

Final temporary and permanent impacts to proposed jurisdictional areas are reported in Chapter 4 of the Natural Environmental Study and are shown in the Project Map Sheets (Appendix C).

Preliminary Jurisdictional Determination for the South Coast 101 HOV Lanes Project, Santa Barbara County, California

Prepared for:

Caltrans District 5

Prepared by:

SWCA Environmental Consultants

May 2010

PRELIMINARY JURISDICTIONAL DETERMINATION
FOR THE
SOUTH COAST 101
HIGH OCCUPANCY VEHICLE LANES PROJECT

Prepared for:

Caltrans District 5
50 Higuera Street,
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May 2010

SWCA Project Number: 15401

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1. INTRODUCTION

1.1 SCOPE

This Preliminary Jurisdictional Determination summarizes existing hydrology, soil, and vegetative conditions for a portion of the South Coast 101 High Occupancy Vehicle (HOV) Lanes Project (project), in Santa Barbara County, California (refer to Figures 1 and 2). SWCA Environmental Consultants (SWCA) has prepared this report at the request of the California Department of Transportation (Caltrans) District 5, and it is intended for use by Caltrans and affected regulatory agencies. This report identifies potential wetlands and waters of the United States, as defined by the U.S. Army Corps of Engineers (USACE), and potential waters of California, as defined by the State, including the State Water Resources Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), and the California Coastal Commission (CCC). Findings reported herein are based on information gathered in the field at the time of investigation, and the investigator's understanding of the *USACE 1987 Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Final Arid West Regional Supplement* Version 2.0 (USACE 2008), the *Definition and Delineation of Wetlands in the Coastal Zone* (CCC 2006), the *Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone* (CCC 2007), and federal, state, and local guidelines for identification of wetland areas. This report is subject to review by the USACE, and should be submitted to the USACE for confirmation.

1.2 BACKGROUND

It is important to highlight that the South Coast 101 HOV Lanes Project, as a whole, includes additional study areas that were not investigated under the scope of work provided to SWCA by Caltrans. Specifically, there were two large portions of the total project area that were not investigated by SWCA. These two areas include the project boundaries for the Milpas to Hot Springs Highway Improvements Project (Post Mile [PM] 10.85 to PM 12.3) and the Linden-Casitas Highway Improvements Project (PM 2.2 to PM 3.4). The Milpas to Hot Springs project is currently under construction at the time this study was conducted and the report was prepared. The Linden-Casitas project is currently in the Project Approval (PA) and Environmental Document (ED) Phase. Because the jurisdictional features that will eventually be created (e.g., concrete lined ditches, etc.) within these two project areas may be impacted at a later date by South Coast 101 HOV construction activities, Caltrans has calculated and classified the potential impacts based on engineering plans. The total area of these impacts has been incorporated into the impact calculations within this report, at the request of Caltrans. Descriptions of these jurisdictional features can be found within the respective reports prepared for the projects.

Jurisdictional delineations from PM 10.85 to PM 12.3 were completed by Caltrans staff in 2006 as part of the Milpas to Hot Springs Highway Improvements Project (Caltrans Expenditure Authorization #: 05-44780). A 401 Water Quality Certification (34206WQ25) was obtained from the RWQCB on December 5, 2006, a California Department of Fish and Game 1602 Streambed Alteration Agreement (1600-2006-0418-R5), and a USACE 404 Permit (# SPL-2006-2026-PHT) was obtained April 17, 2007. The City of Santa Barbara issued a Coastal Development Permit for the project on December 16, 2007 and road construction began in 2008.

Jurisdictional delineations from PM 2.2 to PM 3.4 were conducted by Caltrans staff in 2007 and 2009 as part of the Linden-Casitas Highway Improvements Project (Caltrans Expenditure Authorization#: 05-4482U0), and are documented in the project's Natural Environmental Study. Jurisdictional delineations were conducted according to the *USACE 1987 Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid*

West Region (2006). Further information regarding environmental studies conducted for the Milpas to Hot Springs project and the Linden-Casitas project can be obtained by contacting Senior Environmental Planner, Chuck Cesena, Caltrans District 5 Division of Environmental Planning Division, San Luis Obispo, California (phone: (805) 549-3622; email: Chuck_Cesena@dot.ca.gov).

1.3 SITE LOCATION AND DESCRIPTION

The Biological Study Area (BSA) examined by SWCA as part of this study consists of three disjunctive sections of Caltrans right-of-way (ROW) along Highway 101 between the cities of Santa Barbara and Carpinteria, California (refer to Figure 3). The first section (from south to north) is located at the Bailard Avenue overcrossing, and extends from PM 1.39 to PM 1.84. The second section extends from PM 1.97 to PM 2.2 in the southern portion of Carpinteria. The third section (and longest) extends from PM 3.3 (Franklin Creek in the center of Carpinteria) to PM 10.85 (Coast Village Circle in the eastern portion of the City of Santa Barbara). Sections not evaluated in this report have been evaluated in other studies conducted by Caltrans for the project (refer to Section 1.2). For the purposes of this report, one BSA has been provided, which encompasses the study area from previous Caltrans studies and the study area that was investigated by SWCA. Refer to Appendix A for the Biological Study Area boundary.

1.4 PROJECT DESCRIPTION AND SETTING

Caltrans, in cooperation with the Santa Barbara County Association of Governments, proposes to add one HOV lane in each direction on Highway 101, resulting in a six-lane freeway from approximately one-half mile south of Carpinteria Creek in the City of Carpinteria to Sycamore Creek in the City of Santa Barbara. Three build alternatives and a no build alternative are proposed for evaluation in the environmental document. Alternative 1 proposes to add the HOV lane while balancing outside and inside (median) landscaping impacts. Alternative 2 proposes to add the HOV lanes while maximizing the amount of median planting within the project limits. Alternative 3 proposes to add the HOV lanes within the existing median with minor incidental outside widening.

The portion of the total project BSA addressed in this report crosses ten named creek channels, including: 1) Franklin Creek; 2) Santa Monica Creek; 3) Arroyo Parida Creek; 4) Garrapata Creek; 5) Toro Canyon Creek; 6) Greenwell Creek; 7) Romero Creek; 8) San Ysidro Creek; 9) Oak Creek; and, 10) Montecito Creek. Although not included within the BSA, the Carpinteria Salt Marsh is a major water feature that is located directly adjacent to the BSA. This natural estuary receives water from numerous drainages that transect the BSA. An extensive network of culverts, unnamed drainages, and ditches also convey water within the BSA. Many of the open water features are concrete lined channels; however, several of the open channel features (ditches and drainages) within the BSA have natural bottoms and contain wetland and/or riparian habitats.

Overall, flowing surface water within the BSA is generally directed into the highway storm drain system. The storm drain system associated with Highway 101 directs flows either to city storm drain systems or into larger creek channels that ultimately flow to the Pacific Ocean. For the purposes of this report, watersheds within the BSA are discussed in further detail below. This discussion includes natural channel features and manmade ditches and swales that convey normal flows and stormwater runoff through the BSA. Watershed areas are based on Caltrans engineering plans and are distinguished by post mile PM numbers. Field surveys were conducted during April and May of 2009, resulting in low surface water flow conditions for most drainage features within the BSA.

Figure 1. Regional Location Map

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Figure 2. Project Location Map

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Figure 3. Map Sheet Index

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1.4.1 Franklin Creek

Within the BSA, Franklin Creek consists entirely of a concrete-lined box channel that conveys water beneath Highway 101 and drains to the Pacific Ocean. Franklin Creek is a relatively major drainage that has a watershed of approximately 2,532 acres, which includes the BSA and surrounding topography. Franklin Creek is influenced by Highway 101 storm water flows that occur between PM 2.55 and PM 3.68. Franklin Creek provides no riparian or wildlife habitat within the BSA, as the bottom of the channel consists entirely of concrete. During the field investigation, SWCA noted only a small surface flow within the channel, likely a result of urban runoff from surrounding development. The location of this drainage is shown in Appendix A, Sheet 4, and photo-documentation is included in Appendix C, Photo 4.

1.4.2 Santa Monica Creek

Similar to Franklin Creek, Santa Monica Creek consists entirely of a concrete-lined box channel that conveys water beneath Highway 101 and drains to the Pacific Ocean. Santa Monica Creek is a relatively major drainage with a watershed of approximately 2,484 acres, which includes the BSA and surrounding topography. Santa Monica Creek is influenced by Highway 101 storm water flows that occur between PM 3.68 and PM 3.84. Santa Monica Creek provides no riparian or wildlife habitat within the BSA, as the bottom of the channel consists entirely of concrete. During the field investigation, SWCA noted only a small surface flow within the channel, likely a result of urban runoff from surrounding development. The location of this drainage is shown in Appendix A, Sheet 6, and photo-documentation is included in Appendix C, Photo 9.

1.4.3 Carpinteria Salt Marsh

The Carpinteria Salt Marsh is a 230-acre coastal estuary managed by the City of Carpinteria and the University of California, Santa Barbara, Natural Reserve System. Although the Carpinteria Salt Marsh is not included directly within the BSA, this natural estuary receives surface water flow from several drainages that cross the BSA. The Carpinteria Salt Marsh watershed is relatively small at approximately 725 acres. The salt marsh is influenced by Highway 101 storm water flows that occur between PM 3.84 to PM 5.52. The majority of this storm water flow includes culverts that transect the BSA, conveying flows from the north side of Highway 101 to the south side of Highway 101, including water collected from drop inlets between the two end points. The northern edge of the Carpinteria Salt Marsh is separated from the BSA by the Union Pacific railroad tracks. No tidal influence is present within the channel between the highway and the railroad. The location of this drainage is shown in Appendix A, Sheets 7 and 8, and photo-documentation is included in Appendix C, Photo 20.

1.4.4 Arroyo Parida Creek

Within the BSA, Arroyo Parida Creek consists entirely of natural bottom channel that conveys water beneath Highway 101 and drains to the Pacific Ocean during periods of high flow. Arroyo Parida Creek is a relatively major drainage with a watershed of approximately 2,998 acres, which includes a portion of the BSA and surrounding topography. Arroyo Parida Creek is influenced by Highway 101 surface water flows that occur between PM 5.52 and PM 6.04. Riparian vegetation within the channel is minimal along the banks of the channel; however, there is sparse emergent vegetation within the BSA, with some arroyo willow canopy existing on sections of the bank. Beneath and adjacent to Highway 101, the bottom of the creek consists of natural sediments and the banks of the creek consist of concrete wing-walls. During the field investigation, SWCA noted that a substantial amount of standing water was present within Arroyo Parida Creek, providing open water habitat. The location of this drainage is shown in Appendix A, Sheet 10, and photo-documentation is included in Appendix C, Photos 24, 25, and 26.

1.4.5 Garrapata Creek

Within the BSA, Garrapata Creek consists almost entirely of a culverted drainage that conveys water beneath Highway 101 and drains to the Pacific Ocean through a series of culverts. Garrapata Creek is a relatively small drainage with a watershed of approximately 324 acres, which includes the BSA and surrounding topography. Garrapata Creek is influenced by Highway 101 storm water flows that occur between PM 6.04 and PM 6.27. Garrapata Creek provides very little riparian or wildlife habitat within the BSA, as the majority of the drainage consists of a culvert beneath Highway 101. The creek daylights north of the frontage road on the north side of the highway, and the creek daylights directly south of the highway. During the field investigation, SWCA noted no surface flow within the channel. The location of this drainage is shown in Appendix A, Sheet 11, and photo-documentation is included in Appendix C, Photo 27.

1.4.6 Serena Park

The Serena Park watershed area provides drainage for surface water that occurs between PM 6.27 and PM 6.71. The total area of this small watershed area is approximately 63 acres, which includes the BSA and surrounding topography. Surface water flow collected within the BSA is collected by a series of culverts which direct water flow to the south side of Highway 101. Small drainage features on the northern side of the highway run parallel to the Caltrans ROW boundary and focus water flow towards the culverts.

1.4.7 Toro Canyon Creek

Within the BSA, Toro Canyon Creek consists almost entirely of a natural bottom channel that conveys water beneath Highway 101 and drains to the Pacific Ocean at Loon Point during periods of high flow. Toro Canyon Creek is a relatively major drainage with a watershed of approximately 2,611 acres, which includes a portion of the BSA and surrounding topography. Toro Canyon Creek is only influenced by Highway 101 surface water flows that occur between PM 6.71 and PM 6.84. Toro Canyon Creek provides marginal habitat value. Some mature riparian vegetation exists within the channel on the north side of Highway 101, where the bottom of the channel consists of natural cobbles and soil. This natural bottom channel transitions to a concrete-lined channel immediately after crossing beneath northbound Highway 101. The channel remains entirely concrete-lined for the remaining width of the BSA, and then transitions back to natural bottom substrate after crossing beneath the Union Pacific Railroad. During the field investigation, SWCA noted a small amount of flowing water present within the channel. The location of this drainage is shown in Appendix A, Sheet 12, and photo-documentation is included in Appendix C, Photos 28-31.

1.4.8 Padaro Lane Interchange

The Padaro Lane Interchange watershed area provides drainage for surface water that occurs within between PM 6.84 and PM 7.70. The total area of this small watershed area is approximately 61 acres, which includes the BSA and surrounding topography. Surface water flow collected within the BSA is collected by a series of culverts which direct water flow to the south side of Highway 101.

1.4.9 Greenwell Avenue

The Greenwell Avenue watershed area provides drainage for surface water that occurs between PM 7.70 and PM 7.74. The Greenwell Avenue watershed area is approximately 284 acres, which includes the BSA and surrounding topography. Within the BSA, the Greenwell Avenue watershed consists entirely of a culverted drainage that conveys water beneath Highway 101 and daylights within Caltrans ROW directly

to the south of the southbound lanes of Highway 101. The culvert outlets approximately 15 feet above a plunge pool, and flows travel along a disturbed open channel and under UPPR culverts before draining into the Pacific Ocean. This channel contained a small amount of flowing and ponded water, and consisted of a natural earthen bottom. Several scattered willows are present, but the channel was dominated by escaped ornamental species such as iceplant (*Carpobrotus edulis*) and garden nasturtium (*Tropaeolum majus*). Numerous common weedy species were also present. Although heavily disturbed and isolated, the drainage provides marginal habitat for a variety of wildlife species. The location of this drainage is shown in Appendix A, Sheet 14, and photo-documentation is included in Appendix C, Photos 32 and 33.

1.4.10 Summerland

The Summerland watershed area provides drainage for surface water that occurs within between PM 7.74 and PM 8.71. The total area of this relatively small watershed area is approximately 214 acres, which includes the BSA and surrounding topography. Surface water flow generated within the BSA is collected by a series of culverts which direct water flow to the south side of Highway 101. Small drainage features also exist on the northern side of the highway and along the Ortega Hill bike path. These drainages run parallel to the Caltrans ROW boundary and direct water flow towards drop inlets within the ROW.

1.4.11 Romero Creek

Romero Creek is one of the largest watersheds within the BSA, second only to the Montecito Creek drainage. The Romero Creek watershed is approximately 3,824 acres, which includes the BSA and surrounding topography. The channel consists almost entirely of a natural bottom drainage that conveys water beneath Highway 101 and drains to the Pacific Ocean at Frenald Point. Romero is channelized in its lower reaches as it flows through the urban areas of Montecito, but does maintain some natural substrate. Romero Creek is influenced by Highway 101 storm water flows that occur between PM 8.71 and PM 9.51. Some riparian habitat is present in open channel areas within the BSA, consisting of sparse emergent vegetation and willow canopy. During the field investigation, SWCA noted minimal surface flow within the channel. The location of this drainage is shown in Appendix A, Sheet 18, and photo-documentation is included in Appendix C, Photos 37 and 38.

1.4.12 San Ysidro Creek

San Ysidro Creek is a moderately sized drainage with a watershed of approximately 2,493 acres, which includes the BSA and surrounding topography. Within the BSA, the channel consists of vertical concrete banks and a natural bottom that conveys water beneath Highway 101 and drains to the Pacific west of Frenald Point. San Ysidro Creek is influenced by Highway 101 storm water flows that occur between PM 9.51 and PM 9.78. The upstream and downstream portions of the channel within the BSA consist of natural sediment and provide minimal habitat value. These areas are dominated by non-native annual grass species and common weeds. No hydrophytic plant species were observed in association with this creek channel. During the field investigation, SWCA noted no surface flow within the channel. The location of this drainage is shown in Appendix A, Sheet 18, and photo-documentation is included in Appendix C, Photos 35 and 36.

1.4.13 Oak Creek

Oak Creek is a small drainage with a watershed of approximately 984 acres, which includes the BSA and surrounding topography. Oak Creek is influenced by Highway 101 storm water flows that occur between PM 9.88 and PM 10.68. Within the BSA, the channel consists of vertical concrete banks and concrete

channel which transect Highway 101 and drains to the Pacific Ocean. At the entrance and exits of these concrete channels, natural sediments are present which provide suitable substrate for non-native grasses and common weeds. No hydrophytic plant species were observed in association with this creek channel. During the field investigation, SWCA noted no surface flow within the channel. The location of this drainage is shown in Appendix A, Sheet 18, and photo-documentation is included in Appendix C, Photos 39 and 40

1.4.14 Montecito Creek

Montecito Creek is the largest watershed crossed by the BSA, with an approximate size of 4,330 acres. This area includes storm water flows that occur between PM 10.68 and PM 11.15. The westernmost terminus of the BSA is located at PM 10.85. The entire channel within the BSA consists of a concrete bridge that conveys flows beneath Highway 101 to the Pacific Ocean. The bridge structure begins and ends outside of the BSA, and no riparian habitat is present. During the field investigation, SWCA noted no surface flow within the channel. Dense riparian canopy was present upstream and downstream of the BSA. The location of this drainage is shown in Appendix A, Sheet 19, and photo-documentation is included in Appendix C, Photo 41.

2. REGULATORY BACKGROUND

2.1 U.S. ARMY CORPS OF ENGINEERS

The USACE regulates discharges of dredged or fill material into waters of the United States. These waters include wetland and non-wetland bodies of water that meet specific criteria. USACE regulatory jurisdiction, pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 United States Code [U.S.C.] 403), regulates almost all work in, over, and under waters listed as “navigable waters of the U.S.” that results in a discharge of dredged or fill material within USACE regulatory jurisdiction, pursuant to Section 404 of the Clean Water Act. Under Section 404, the USACE regulates traditional navigable waters, wetlands adjacent to traditional navigable waters, relatively permanent non-navigable tributaries that have a continuous flow at least seasonally (typically three months), and wetlands that directly abut relatively permanent tributaries. The USACE will determine jurisdiction over waters that are non-navigable tributaries, that are not relatively permanent and wetlands adjacent to non-navigable tributaries, and that are not relatively permanent only after making a significant nexus finding.

33 Code of Federal Regulations (CFR) 328.3 defines waters of the United States as:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce;
(2) All interstate waters including interstate wetlands;
(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams) the use, degradation or destruction of which could affect interstate or foreign commerce;
(4) All impoundments of waters otherwise defined as waters of the United States under the definition; and,
(5) Tributaries of waters defined in paragraphs (a) (1)–(4) of this section
(6) The territorial seas;
(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section.

USACE jurisdiction over nontidal waters of the United States extends laterally to the Ordinary High Water Mark (OHWM) or beyond the OHWM to the limit of any adjacent wetlands, if present (33 CFR 328.4). The OHWM is defined as

> *"that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area" (33 CFR 328.3).*

Jurisdiction over nontidal waters typically extends upstream to the point where the OHWM is no longer perceptible. USACE jurisdiction over tidal waters of the United States extends to the line on the shore reached by the highest high water.

The preamble to USACE regulations (Preamble §328.3, Definitions) states that the USACE does not generally consider the following waters to be waters of the United States. The USACE does, however, reserve the right to regulate these waters on a case-by-case basis.

- Nontidal drainage and irrigation ditches excavated on dry land;
- Artificially irrigated areas that would revert to upland if the irrigation ceased;
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons; and,
- Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for purposes of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States.

Waters found to be isolated or not subject to USACE regulation are often still regulated by the RWQCB under the State Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

2.2 STATE WATER RESOURCES AND REGIONAL WATER QUALITY CONTROL BOARDS

The SWRCB and nine RWQCBs regulate discharges of fill and dredged material in California, under Section 401 of the Clean Water Act and the Porter-Cologne Act, through the State Water Quality Certification Program. State Water Quality Certification is necessary for all projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State. Waters of the State are defined by the Porter-Cologne Act as

> *"any surface water or groundwater, including saline waters, within the boundaries of the state."*

In order for a Section 404 permit to be valid, Section 401 of the Clean Water Act requires a Water Quality Certification or waiver to be obtained. The Water Quality Certification (or waiver) determines that the permitted activities will not violate water quality standards individually or cumulatively over the term of

the action. Water quality certification must be consistent with the requirements of the Federal Clean Water Act, California Environmental Quality Act (CEQA), California Endangered Species Act, and Porter-Cologne Act.

The SWRCB and RWQCB have not established a formal wetland definition nor have they developed a wetland delineation protocol; however, these agencies generally adhere to the same delineation protocol set forth by the USACE. Therefore, the methods used to determine potential Waters of the State were the same as those described above for potential Section 404 jurisdiction.

2.3 CALIFORNIA COASTAL COMMISSION

The CCC has jurisdiction over activities within the coastal zone under the California Coastal Act of 1976. The Coastal Act defines wetlands as:

> *"Wetland means lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." (Public Resources Code* [PRC] *Section 30121)*

CCC Administrative Regulations (Section 13577 (b)) provides a more explicit definition:

> *"Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats."*

The CCC has considered this definition as requiring the observation of one diagnostic feature of a wetland such as wetland hydrology, dominance by wetland vegetation (hydrophytes), or presence of hydric soils as a basis for asserting jurisdiction under the Coastal Act. In addition, if the Coastal Zone boundary line bisects a wetland resource, the CCC will typically consider the entire resource within the project area subject to CCC wetland regulations, since impacts to another portion of the resource could negatively affect the CCC area.

3. METHODOLOGY

3.1 DELINEATION METHODS

Wetland delineation efforts utilized the routine delineation methodology described in the *1987 USACE Wetlands Delineation Manual* (Environmental Laboratory 1987), and as supplemented in the *Final Arid West Supplement* Version 2.0, (USACE 2008). Delineators also utilized *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (USACE 2008). Habitat and plant species descriptions follow the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), *Preliminary Description of Terrestrial Natural Communities of California* (Holland 1986), *The Jepson Manual* (Hickman 1993), and the *National List of Plant Species that Occur in Wetlands* (Reed 1988). Soils data was obtained from the *Soil*

Survey Geographic Database (SSURGO) *for Santa Barbara County, California* (2009). Specific references not listed above are cited in text.

Delineation of jurisdictional areas associated with the project study area were based on review of pertinent literature and a thorough on-site investigation conducted on April 28-30, and May 12-13, 2009, by SWCA biologists Jon Claxton and Bob Sloan. Mr. Sloan is a University of California, Berkeley Extension-trained wetland delineator, and Mr. Claxton has been trained and certified by Wetland Training Institute, Inc. Prior to beginning the field delineation, scaled aerial photographs, and U.S. Geological Survey (USGS) topographic maps of the project site were examined to determine the locations of potential areas of USACE/State jurisdiction. These resources were also used as a reference to determine hydrologic connectivity to a navigable water body. A detailed site examination including excavation of soil test pits was performed to identify boundaries between upland and jurisdictional habitats. Soil matrix colors were classified according to the *Munsell Soil Color Charts* (Munsell Color, 2000). Hydrological conditions, including any surface inundation, saturated soils, groundwater levels, and other hydrology indicators, were recorded.

Soil test pits were excavated in and adjacent to smaller drainage channels and other undefined areas that exhibited one or more of the standard wetland criteria. Pits were not excavated in defined natural or man-made channels that exhibited an OHWM, or in channels containing standing water or saturated soils dominated by Facultative Wetland (FACW) or Obligate Wetland (OBL) vegetation. Jurisdictional features, including OHWM and top-of-bank/edge of riparian canopy, were mapped using a Trimble® Pathfinder Global Positioning System (GPS) capable of sub-meter accuracy. Jurisdictional boundaries for the CCC were mapped where applicable. Identified jurisdictional boundaries are shown in Appendix C.

Plant species identified at soil test pit locations were assigned a wetland status according to the U.S. Fish and Wildlife Service (USFWS) list of plant species that occur in wetlands (Reed 1988). This wetland classification system is based on the expected frequency of occurrence in wetlands as follows:

- Obligate Wetland (OBL) – Almost always found in wetlands (estimated probability >99%)
- Facultative Wetland (FACW) – Usually occurs in wetlands (estimated probability 67-99%)
- Facultative (FAC) – Equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%)
- Facultative Upland (FACU) – Usually occurs in non-wetlands (estimated probability 1-33%)
- No Indicator (NI) – Species has not been assigned an indicator status or frequency

4. RESULTS

4.1 SOIL CONDITIONS

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) *Santa Barbara County, California, South Coastal Part* maps eight soil series' containing twelve soil map units as present within the boundaries of the study area (refer to Figure 4). Soils within the BSA are composed primarily of fine sandy loams, with stony loamy sand, clay, Orthent, and Aquent soils also represented. Of these 12 soils, one is listed as hydric (Camarillo Variant), and one can contain an inclusion of Riverwash soils that are hydric (Cortina stony loamy sand). All soil test pits were excavated in areas mapped as Camarillo Variant soil type. The 12 soil map units present within the BSA are described below.

4.1.1 Soil Unit Descriptions

Aquents, fill areas (AC)

Aquents, fill areas, are reclaimed areas of soils resulting from filling low, poorly drained areas near the ocean. Soil colors and horizons vary according to the type of fill used. Slopes are 0-2%, and the parent material consists of earthy fill from variable sources. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. This soil is rarely flooded, and is not ponded. This soil does not meet hydric criteria. Aquents, fill areas soils are used mainly for urban development.

Ballard Series - Ballard fine sandy loam, 0-2% slopes (BaA), Ballard fine sandy loam, 2-9% slopes (BaC)

Ballard fine sandy loam consists of well-drained soils on alluvial fans and low terraces. The surface layer is typically a dark brown (10YR 3/3 moist) fine sandy loam approximately 14 inches thick, underlain by dark brown (5YR 3/4 moist) fine sandy loam to 23 inches. The parent material consists of alluvium derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. This soil is rarely flooded, and is not ponded. This soil does not meet hydric criteria. Ballard soils are used mainly for citrus, avocados, and urban development.

Camarillo Variant, fine sandy loam (Cb)

Camarillo Variant is a nearly level soil on low alluvial plains. The surface layer is typically a dark brown (7.5YR 3/2 moist) sandy loam approximately 12 inches thick, underlain by dark reddish brown (5YR 3/3 moist) sandy loam to 19 inches. Slopes are 0-2%, and the parent material consists of alluvium derived from calcareous sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. This soil is frequently flooded, but is not ponded. This soil meets hydric criteria. Camarillo Variant soils are used for lemons and field crops.

Cortina stony loamy sand, 2-9% slopes (ChC)

Cortina stony loamy sand is a gently to moderately sloping soil found along major stream channels and on alluvial fans. The surface layer is typically a dark brown (10YR 4/3 moist) stony sandy loam approximately nine inches thick, underlain by very dark brown (10YR 2/2 moist) stony sandy loam to 44 inches. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. This soil is frequently flooded but is not ponded. This soil does not meet hydric criteria, but can contain an inclusion of riverwash soil which does meet hydric criteria. Cortina soils are primarily used for urban development.

Diablo clay, 9-15% slopes (DaD)

Diablo clay consists of well drained soils on low hills within three miles of the coast. The surface layer is typically a black (10YR 2/1 moist) clay 30 to 37 inches thick. The parent material consists of residuum weathered from mudstone and/or soft shale. Depth to a root restrictive layer, bedrock, paralithic, is 45 to 60 inches. The natural drainage class is well drained. This soil is not flooded or ponded, and does not meet hydric criteria. Diablo soils are used for orchard, range, and urban development.

Goleta Series - Goleta fine sandy loam 0-2% slopes (GcA), Goleta fine sandy loam 2-9% slopes (GcC)

Goleta fine sandy loam consists of well-drained soils on flood plains and alluvial fans. The surface layer is typically a very dark grayish brown (10YR 3/2 moist) fine sandy loam approximately 13 inches thick, underlain by dark brown (10YR 4/3 moist) fine sandy loam to 29 inches. The parent material consists of alluvium derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. This soil is rarely flooded and is not ponded. This soil does not meet hydric criteria.

Milpitas-Positas Series - Milpitas-Positas fine sandy loam, 2-9% slopes (MeC), Milpitas-Positas fine sandy loam, 9-15% slopes, eroded (MeD2), Milpitas-Positas fine sandy loam, 15-30% slopes, eroded (MeE2)

Milpitas-Positas Series soils consist of moderately well drained soils on terraces. The surface layer is typically a dark brown (10YR 3/3 moist) fine sandy loam approximately eight inches thick, underlain by dark brown (10YR 3/3 moist) loam to 24 inches. Eroded map units may have lost between eight and 24 inches of soil. The parent material consists of mixed alluvium. The natural drainage class is moderately well drained. This soil is not flooded or ponded. This soil does not meet hydric criteria. Milpitas-Positas soils are used for rangeland, lemons, avocados, and urban development.

Orthents, 50-75% slopes (OAG)

Orthents typically consist of stony fine sandy loam, and are found on steep and very steep escarpments. The parent material consists of mixed alluvium. Soil colors and horizons vary according to the location and slope. This soil is not flooded or ponded, and does not meet hydric criteria.

4.1.2 Data Point Descriptions

A total of seven soil pits were excavated during the jurisdictional determination. Pits were excavated in and adjacent to smaller drainage channels and other undefined areas that exhibited one or more of the standard wetland criteria. Areas with defined natural or man-made channels that exhibited an OHWM, or areas containing water or saturated soils dominated by FACW or OBL vegetation, were considered to meet jurisdictional requirements.

USACE data sheets and photographs for each test pit location are provided in Appendix C. Several additional exploratory pits were dug throughout the BSA, as needed, to check soil characteristics during wetland boundary identification. The observed soils consisted of clay, clay loam, sandy loam, and loam, and included several areas of obvious fill soils. Soils observed at Test Pit locations 4, 6, and 7 generally corresponded with the mapped series characteristics of Camarillo Variant fine sandy loam. Detailed descriptions of the conditions observed at each soil pit location are presented below.

Soil Test Pit 1

Test Pit 1 was located on the northbound shoulder of Highway 101, just south of the Santa Ynez Avenue overcrossing (refer to Appendix A, Sheet 5). This pit documents upland conditions between the highway edge and a dirt drainage ditch along the BSA boundary line that connects to Franklin Creek. The investigation revealed very dark brown (10YR 3/2) dry clay loam soils from zero to 22 inches. No hydrophytic vegetation, hydric soil indicators, or wetland hydrology indicators were noted at this location. This pit location is in uplands.

Soil Test Pit 2

Test Pit 2 was located approximately 15 feet northwest of Pit 1, in the center of the dirt drainage ditch. The investigation revealed very dark brown (10YR 2/2) moist to saturated clay loam soils from zero to 10 inches, with organic staining present above 15 inches in black soil (10YR 2/1). Vegetation consisted of three FACW species: California blackberry (*Rubus ursinus*), tall flat sedge (*Cyperus eragrostis*), and mugwort (*Artemisia douglasiana*). The drainage ditch receives road and urban runoff, and channels flow east along Highway 101 to Franklin Creek. Due to the presence of hydrophytic vegetation, wetland hydrology, and hydric soil indicator (depleted matrix), Test Pit 2 was determined to be located within a wetland.

Soil Test Pit 3

Test Pit 3 was located approximately 15 feet north of Pit 2, in the empty field adjacent to the dirt drainage ditch. The investigation revealed very dark brown to dark brown (10YR 3/2) dry clay loam soils from zero to 7, and brown (10YR 3/3) dry clay loam soils from 7 to 20 inches. A plow pan was noted at a depth of seven inches. Vegetative cover was dominated by annual grass species. No hydrophytic vegetation, hydric soil indicators, or wetland hydrology indicators were noted at this location. This pit location is in uplands.

Soil Test Pit 4

Test Pit 4 was located on the northbound shoulder of Highway 101, on the southern edge of the Santa Monica Road offramp (refer to Appendix A, Sheet 6). This pit documents conditions in a small dirt drainage ditch located between the offramp and the adjacent gas station. A defined OHWM was not visible in the drainage during the investigation, but is expected to be present during the winter months following flow events. The investigation revealed dark brown (10YR 3/3) dry sandy loam and clay loam soils from zero to 20 inches. The upper half of the horizon contained trash and appeared to be regularly disturbed by maintenance efforts. Vegetative cover was dominated by a dense stand of the FAC species common horsetail (*Equisetum arvense*). The drainage ditch receives road and urban runoff, and channels flow under Highway 101 through a concrete culvert. Runoff from this ditch likely reaches Santa Monica Creek through the storm drain system. Although no hydric soil or hydrology indicators were present, dominance of FAC vegetation and connectivity to the storm drain system indicate that Test Pit 4 is located within non-wetland waters of the U.S.

Figure 4. Soil Survey Map

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Soil Test Pit 5

Test Pit 5 was located on the southbound shoulder of Highway 101, in the center of a dirt drainage ditch that parallels the highway (refer to Appendix A, Sheet 6). The investigation revealed very dark brown (10YR 2/2, 10YR 3/2) moist to saturated clay loam soils from 0-13 inches, and brownish yellow (10YR 6/8) saturated gravely clay from 13 to 20 inches. Black organic material and redoxomorphic features were present from nine to 13 inches, and black stains and greenish gray gley (5/10Y) were present from 13 to 20 inches. Vegetation was dominated by a dense stand of the FAC species common horsetail, with small, non-dominant occurrences of the OBL species cattail (*Typha latifolia*), and FACW species California blackberry, tall flat sedge, and rabbitsfoot grass (*Polypogon monspeliensis*). The drainage ditch receives road and urban runoff, and channels flow east along Highway 101 to a storm drain inlet that leads to Santa Monica Creek. Due to the presence of hydrophytic vegetation, wetland hydrology, and hydric soil indicators, Test Pit 5 was determined to be located within a wetland.

Soil Test Pit 6

Test Pit 6 was located on the southbound shoulder of Highway 101, two feet above and approximately five feet north of Pit 5. The investigation revealed dark brown (10YR 3/3) dry loam and clay loam soils from zero to 22 inches. Vegetation was dominated by UPL species ice plant (*Carpobrotus edulis*), with FAC species common horsetail as a lesser co-dominant. No hydric soil indicators or wetland hydrology indicators were noted at this location, and hydrophytic vegetation cover does not exceed 50 percent. This pit location was determined to be in uplands.

Soil Test Pit 7

Test Pit 7 was located on a median strip between the southbound lanes of highway 101 and the Carpinteria Avenue offramp (refer to Appendix A, Sheet 7), in a level area containing willow trees. The investigation revealed dark brown (10YR 3/3) dry loam soils from zero to nine inches, and reddish brown (2.5YR 5/4) dry gravely sandy loam from nine to 20 inches. Vegetation was dominated by the UPL species Bermuda buttercup (*Oxalis pes-caprae*), with FACW species mugwort and arroyo willow (*Salix lasiolepis*), as co-dominants. A faint depressional area was noted within a portion of the willow canopy, but no connection to a hydrologic feature was observed. The area receives limited amounts of runoff from adjacent highway road surfaces. Due to the presence of dominant wetland vegetation, this area was mapped as potential CCC wetlands, and was considered non-jurisdictional for USACE due to the lack of connectivity.

4.2 VEGETATIVE CONDITIONS

The potentially jurisdictional areas examined in this report contained a diverse mixture of riparian and wetland plant species, including native and non-native plants, and numerous escaped ornamental species. Named creek channels with natural bottom sections contained a variety of riparian canopy cover, and scattered occurrences of emergent wetland species. The two unnamed natural channels were dry during the examination, and did not contain significant vegetative resources. Franklin and Santa Monica creeks consist of concrete-lined box channels, and did not contain vegetative resources. The larger roadside ditches contained a variety of wetland indicator species, intermixed with common upland annual species. Dominant riparian canopy, understory, and wetland indicator species observed during the examination are listed below.

Dominant tree species encountered as riparian canopy included coast live oak (*Quercus agrifolia*), sycamore (*Platanus racemosa*), arroyo willow, blue gum eucalyptus (*Eucalyptus globulus*), black

cottonwood (*Populus balsamifera* ssp. *trichocarpa*), California bay (*Umbellularia californica*), and big leaf maple (*Acer macrophyllum*). Most riparian corridor areas exhibited canopy cover within and extending past the top of the defined creek banks, while smaller roadside ditches were generally dominated by shrub, forb, or emergent species.

Dominant understory species observed within and adjacent to potentially jurisdictional areas included California blackberry, coyote brush (*Baccharis pilularis*), stinging nettle (*Urtica dioicia*), Kikuyu grass (*Pennisetum clandestinum*), sowthistle (*Sonchus oleraceaus*), Italian ryegrass (*Lolium multiflorum*), common horsetail, ice plant, garden nasturtium (*Tropaeolum majus*), and bristly ox-tongue (*Picris echioides*).

Dominant wetland indicator species observed within potentially jurisdictional areas included arroyo willow, cattail (*Typha* sp.), mugwort, common horsetail, California blackberry, curly dock (*Rumex crispus*), tall flatsedge, small-fruited bulrush (*Scirpus microcarpus*), watercress (*Rorippa nasturtium-aquaticum*), rabbitsfoot grass, speedwell (*Veronica anagalis-aquatica*), and marsh baccharis (*Baccharis douglasii*).

4.3 HYDROLOGIC CONDITIONS

Hydrology within the BSA is controlled by existing creeks, drainages, and storm drain systems, with extensive runoff occurring from urban and residential development, roadways, and parking areas. The BSA crosses several large watersheds drained by blue-line stream channels. No tidally influenced or brackish areas are present within the BSA, but the project parallels the northern edge of the Carpinteria Salt Marsh.

Numerous manmade roadside drainage ditches consisting of dirt or concrete v-ditches, and associated culvert structures were mapped along the route. These ditches were typically less than two feet deep and four feet wide, and showed evidence of regular maintenance. In some cases, connectivity from the ditches could be traced to nearby natural creek channels through culvert inlet and outlet structures. Other roadside ditches had no evidence of direct connection to identified jurisdictional areas, but did connect with municipal or highway storm drain systems. Water entering storm drain systems is assumed to eventually reach jurisdictional waters associated with the natural creek channels or the Pacific Ocean.

The BSA parallels the coastline between Carpinteria and Santa Barbara, and all stormwater runoff generated within or traveling through the BSA flows into the Pacific Ocean through creek channels, storm drain outlets, and the Carpinteria Salt Marsh. This hydrologic nexus with the Pacific Ocean establishes potential jurisdictional status as waters of the United States for all natural and man-made hydrologic features within the BSA.

4.4 FUNCTIONS AND SERVICES OF JURISDICTIONAL AREAS

The potentially jurisdictional areas identified in the project study area function as a series of extended, mostly intermittent riverine coastal stream systems that convey both natural flows and hardscape runoff to the Pacific Ocean. Some of the jurisdictional features consist of concrete lined channels; however, many of the creeks and drainages within the BSA have natural bottoms and contain wetland and/or riparian habitat. These natural and manmade channels combine to provide significant ground water recharge, flood control, and wildlife habitat/migration corridor services within the urbanized project area. The functions and services of the identified areas vary according to watershed area, type, size, and location of each feature, the degree of channelization/concrete structures present, and by the presence or absence of water and riparian/wetland vegetation. Factors that negatively affect the quality of functions and services

provided within the project area include noise, lighting, limited vegetative diversity, exotic plant species occurrences, and disturbance from flood control practices.

Natural Channels

Of the ten named channels that cross the route, seven contain areas of natural substrates and associated riparian vegetation within the ROW. These natural-bottom creek channel sections provide significant stormwater control, groundwater recharge, biological diversity, and wildlife services. These areas provide the highest level and variety of functions and services found within the ROW.

Altered Channels

Within the ROW, Franklin and Santa Monica Creeks consist of open concrete box channels, and Garrapata Creek is completely culverted. No substrate or vegetative cover is present within these channels. These altered channels provide stormwater control benefits, but do not provide significant biological diversity, groundwater recharge, or wildlife services within the ROW.

Manmade Channels

Numerous manmade roadside swales and channels are present within and immediately adjacent to the ROW, and consist of either earthen or concrete bank construction. These small features provide some level of function and service that is dependant on their size, hydrologic regime, and composition. In addition, vegetative cover and bank contours of manmade channels are routinely altered by maintenance activities, resulting in varying levels of services provided. Both types of ditches provide stormwater control benefits, but earthen bank ditches within the ROW typically contained some type of vegetative cover, and appeared to provide more biological diversity and potential wildlife services than concrete-lined ditches.

5. PRELIMINARY JURISDICTIONAL DETERMINATION

This Preliminary Jurisdictional Determination report identifies potential federal and state jurisdictional areas within the proposed project site, and discusses the potential jurisdictional impacts that would result from project implementation. Calculations for those potential jurisdictional areas identified were provided by Caltrans staff based on data collected by SWCA biologists. These jurisdictional results are preliminary, and are subject to review by the USACE prior to issuance of any permits. This preliminary jurisdictional determination report should be submitted to the USACE as part of any permit application. During the permit review process, the USACE will conduct a site visit to verify the conditions and jurisdictional areas identified in this report, and will approve or request amendments to the report based on their findings.

5.1 U.S. ARMY CORPS OF ENGINEERS JURISDICTIONAL AREAS

The following table summarizes the areas within each alternative that would be potentially subject to USACE jurisdiction, and therefore, subject to jurisdiction under Section 404 of the Clean Water Act. USACE jurisdictional determinations were based on the presence/absence of wetland indicators, definable OHWM's, and connectivity to relatively permanent waters.

Table 1. Impacts to USACE Jurisdictional Areas

Alternative	Total Area within Project Study Area	Permanent Impacts	Temporary Impacts
USACE Other Waters of the U.S.			
Alternative 1	0.72 ha (1.79 ac)	0.53 ha (1.31 ac)	0.19 ha (0.48 ac)
Alternative 2	0.76 ha (1.89 ac)	0.53 ha (1.32 ac)	0.23 ha (0.57 ac)
Alternative 3	0.65 ha (1.62 ac)	0.48 ha (1.20 ac)	0.17 ha (0.42 ac)
USACE Wetlands			
Alternative 1	0.022 ha (0.045 ac)	0.002 ha (0.005 ac)	0.02 ha (0.04 ac)
Alternative 2	0.046 ha (0.11 ac)	0.024 ha (0.06 ac)	0.022 ha (0.05 ac)
Alternative 3	0.019 ha (0.045 ac)	0.002 ha (0.005 ac)	0.017 ha (0.04 ac)

ha = hectares, ac = acres

5.2 REGIONAL WATER QUALITY CONTROL BOARD JURISDICTIONAL AREAS

The following table summarizes the areas within each alternative that would be potentially subject to RWQCB jurisdiction and, therefore, subject to jurisdiction under Section 401 of the Clean Water Act. RWQCB jurisdictional determinations were based on the presence/absence of wetland indicators, definable OHWM's, and connectivity to relatively permanent waters, and the jurisdictional areas are the same as USACE areas.

Table 2. Impacts to RWQCB Jurisdictional Areas

Alternative	Total Area within Project Study Area	Permanent Impacts	Temporary Impacts
RWQCB Waters of the State			
Alternative 1	0.74 ha (1.83 ac)	0.53 ha (1.31 ac)	0.21 ha (0.52 ac)
Alternative 2	0.80 ha (2.00 ac)	0.55 ha (1.38 ac)	0.25 ha (0.62 ac)
Alternative 3	0.66 ha (1.66 ac)	0.48 ha (1.21 ac)	0.19 ha (0.46 ac)

ha = hectares, ac = acres

5.3 CALIFORNIA COASTAL COMMISSION JURISDICTIONAL AREAS

The following table summarizes the areas within each alternative that would be potentially subject to CCC jurisdiction, all of which is subject to jurisdiction under the California Coastal Act of 1976 and associated Local Coastal Plans (LCPs). The CCC considers any area that supports any one of the three wetland indicators to be jurisdictional. CCC boundaries were delineated by the presence of a defined bed and bank, hydrophytic vegetation, hydric soils, or evidence of hydrology.

Table 3. Impacts to CCC Jurisdictional Areas

Alternative	Total Area within Project Study Area	Permanent Impacts	Temporary Impacts
CCC Jurisdiction			
Alternative 1	0.49 ha (1.21 ac)	0.24 ha (0.58 ac)	0.25 ha (0.63 ac)
Alternative 2	0.62 ha (1.53 ac)	0.29 ha (0.72 ac)	0.33 ha (0.81 ac)
Alternative 3	0.49 ha (1.21 ac)	0.23 ha (0.57 ac)	0.26 ha (0.64 ac)

ha = hectares, ac = acres

6. REFERENCES

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APPENDIX A:
PROJECT MAP SHEETS

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Project Map Sheets to be inserted by Caltrans

APPENDIX B:
PROJECT MAP SHEETS FOR ALTERNATIVES

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Project Map Sheets for Alternatives to be inserted by Caltrans.

APPENDIX C:
PHOTO DOCUMENTATION

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PHOTO 1:

View of Southbound Highway 101 at Bailard Avenue Bridge. Note trapezoidal concrete channel which transects the interchange, near the southbound on-ramp. Location is at PM 1.6.

Photo taken on April 30, 2009.

PHOTO 2:

View of concrete drainage channel located directly south of the Bailard Avenue offramp (southbound). Location is located near PM 1.65

Photo taken on April 30, 2009.

PHOTO DOCUMENTATION

PHOTO 3:

View of typical habitat associated with 'other waters' drainage located north of Highway 101 between PM 2.1 and PM 2.2. Concrete v-ditch provides conveyance.

Photo taken on April 30, 2009.

PHOTO 4:

View of Franklin Creek directly North of Highway 101. Northbound Highway 101 shown in background. Creek channel consists of concrete bottom and sides throughout the study area.

Photo taken on April 30, 2009

PHOTO 5:

View of concrete trapezoidal drainage located along northbound 101 between PM 3.4 and PM 3.5. View is looking east. Highway 101 northbound located to the right of photo (not shown). Private residences are on the left of the photo.

Photo taken on April 30, 2009

PHOTO 6:

View of concrete culverts which convey flows from the north side of Highway 101 to the south side of Highway 101. Location is near PM 3.5 on the north side of Highway 101.

Photo taken on April 30, 2009.

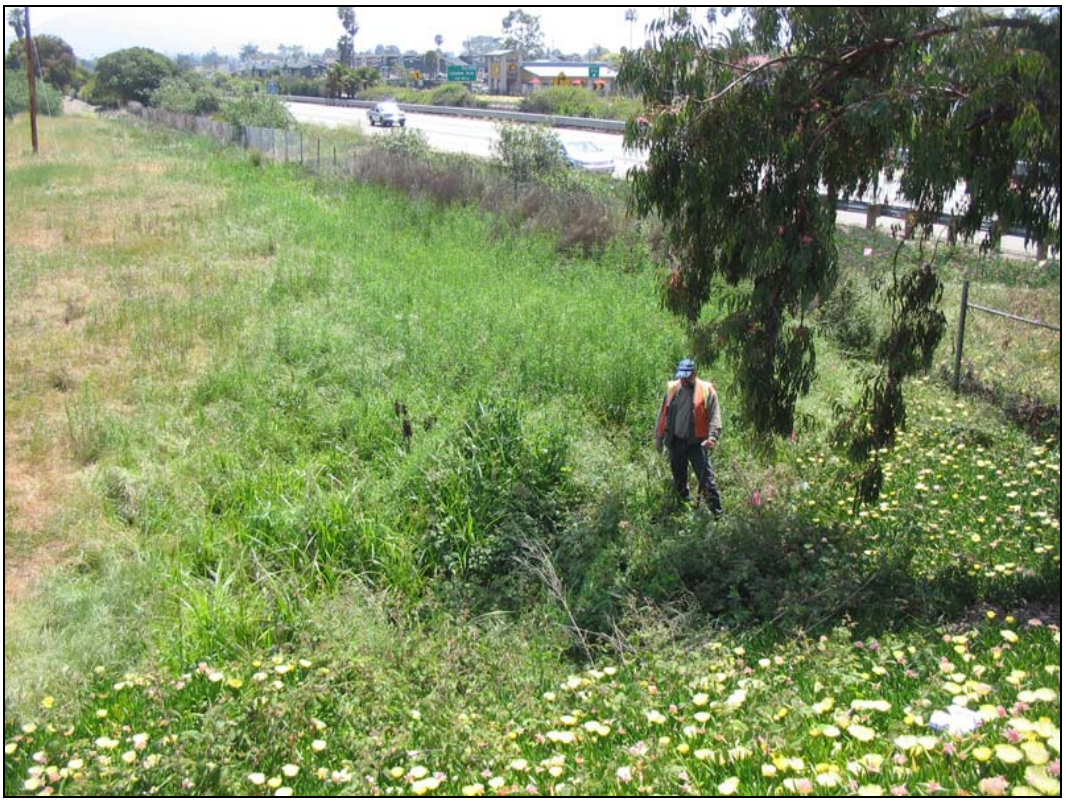

PHOTO 7:

Overview of wetland area located in the northeast corner of the Highway 101/Santa Ynez interchange. Photo is taken from Santa Ynez Road with northbound Highway 101 in the background.

Photo taken on April 30, 2009.

PHOTO 8:

View of concrete channel located along southbound Highway 101 near PM 3.5.

Photo taken on April 30, 2009.

PHOTO 9:

View of Santa Monica Creek, looking upstream and to the north. Entire channel consists of concrete lined bottom and sides. Photo taken from Highway 101 northbound bridge.

Photo taken on April 30, 2009.

PHOTO 10:

View of wetland area located adjacent to the Santa Monica Road offramp. Location is near PM 3.86.

Photo taken on April 30, 2009.

PHOTO DOCUMENTATION

PHOTO 11:

View of Santa Monica Road onramp to Highway 101 northbound. Note arroyo willow growing in roadside ditch.

Photo taken on April 30, 2009.

PHOTO 12:

View of wetland vegetation located within drainage that parallels the Santa Monica Road onramp to northbound Highway 101 (shown). Location is at PM 3.9.

Photo taken on April 30, 2009.

PHOTO 13:

View of concrete box culverts located directly south of the southbound Highway 101. Culverts convey water to urban area outside of Caltrans ROW. Drainage features within Caltrans ROW feed into the culverts. Location at PM 4.0.

Photo taken on April 30, 2009.

PHOTO 14:

View of roadside channel that conveys water towards the box culverts located at PM 4.9 (shown in photo above). Photo is taken from location between PM 4.0 and PM 4.1. Southbound Highway 101 shown in background.

Photo taken on April 30, 2009.

PHOTO 15:

View of drainage which conveys flow towards the box culverts at PM 4.0. Photo is taken from a location near PM 3.95. Note wetland vegetation consisting of cattails and Equisetum.

Photo taken on April 30, 2009.

PHOTO 16:

Overview of Carpinteria Avenue offramp looking east from PM 4.3. Isolated willows and other trees have no connection to drainage features. Willow vegetation shown on the right is associated with nearby drainage feature (shown in photo below).

Photo taken on April 30, 2009.

PHOTO 17:

View of drainage feature located directly to the south of Highway 101, between the Highway and the Union Pacific Railroad. Area includes standing water and hydrophytic vegetation. Area is adjacent to but almost entirely outside of Caltrans ROW.

Photo taken on April 30, 2009.

PHOTO 18:

View of small drainage and culvert outlets located near PM 4.4. Carpinteria Avenue offramp shown in the background.

Photo taken on April 30, 2009.

PHOTO 19:

View of natural bottom drainage feature located directly along the perimeter of the Caltrans and Union Pacific Railroad ROW boundaries. View is looking east from PM 4.6

Photo taken on April 30, 2009.

PHOTO 20:

Overview of culvert outlets that convey flows beneath Highway 101 and drain into the Carpinteria salt marsh. Photo taken near PM 4.6.

Photo taken on April 30, 2009.

PHOTO 21:

View of drainage feature located at the Santa Claus Lane southbound offramp. Area is dominated by *Rorippa nasturtium-aquaticum*. Water is conveyed under the railroad ROW to the Carpinteria salt marsh.

Photo taken on April 30, 2009.

PHOTO 22:

View of drainage feature located adjacent to the northbound offramp for Padaro Lane, near PM 5.3. View is looking east. Water source is primarily runoff from intensive greenhouse operations in the adjacent area.

Photo taken on April 30, 2009.

PHOTO 23:

View of drainage feature located along the northbound onramp at Padaro Lane.

Photo taken on April 30, 2009.

PHOTO 24:

View of upstream portion of Arroyo Parida Creek. Note concrete wing-walls shown in the bottom right-hand portion of photo. Channel bottom consists of natural substrate.

Photo taken on April 30, 2009.

PHOTO 25:

View looking south along Arroyo Parida Creek, downstream of the Highway 101 bridge. Mature willow vegetation and standing water present in this area.

Photo taken on April 30, 2009.

PHOTO 26:

View of Arroyo Parida Creek directly downstream of the railroad.

Photo taken on April 30, 2009.

PHOTO DOCUMENTATION

PHOTO 27:

View looking south and downstream of Garapata Creek. Photo is taken from culvert that transects Highway 101 and is looking south at the railroad bridge.

Photo taken on April 30, 2009.

PHOTO 28:

View of Toro Creek, looking northwest along the northbound Highway 101 shoulder. Concrete v-ditch shown feeding into Toro Creek. Western sycamore dominates photo on the right.

Photo taken on April 30, 2009.

PHOTO 29:

View of Toro Canyon Creek, in between northbound and southbound Highway 101. Note: natural channel bottom section beneath northbound Highway 101. View looking north.

Photo taken on April 30, 2009.

PHOTO 30:

View of Toro Canyon Creek between northbound and southbound Highway 101. Opposite view of photo shown above. View is looking south. Note: concrete lined channel as creek transects beneath southbound Highway 101.

Photo taken on April 30, 2009.

PHOTO 31:

View of Toro Canyon Creek, looking upstream. Highway 101 southbound lanes are visible behind the concrete arch railroad bridge Note: concrete lined channel bottom ends directly downstream of railroad bridge.

Photo taken on April 30, 2009.

PHOTO 32:

Overview of Greenwell Creek on the south side of Highway 101. View looking south, with the railroad visible in the background. Photo taken near PM 7.7.

Photo taken on April 30, 2009.

PHOTO 33:

View of Greenwell Creek culvert outlet, looking north across Highway 101. Photo taken near PM 8.4.

Photo taken on April 30, 2009.

PHOTO 34:

View looking west at concrete v-ditch which runs adjacent to the Ortega Hill Road bike pathway. Photo taken near PM 8.4.

Photo taken on April 30, 2009.

PHOTO 35:

View of San Ysidro Creek looking south along the Highway 101 northbound lanes. Note natural bottom features within channel. Photo taken near PM 9.55.

Photo taken on April 30, 2009.

PHOTO 36:

View of San Ysidro Creek from the railroad looking toward Highway 101 southbound. Although not shown, natural bottom features continue through this section. Photo taken near PM 9.55.

Photo taken on April 30, 2009.

PHOTO 37:

View of Romero Creek between Northbound 101 and Jameson Lane. Note natural bottom features with hydrophytic vegetation. Concrete v-ditch shown in background directs road runoff to the creek channel.

Photo taken on April 30, 2009.

PHOTO 38:

View of Romero Creek from beneath Highway 101. View is looking upstream (north). Note natural bottom features and hydrophytic vegetation.

Photo taken on April 30, 2009.

PHOTO 39:

View of Oak Creek upstream of Highway 101 northbound lanes. Photo taken from Jameson Lane bridge.

Photo taken on April 30, 2009.

PHOTO 40:

View of Oak Creek daylighting between Highway 101 douthbound and Jameson Lane. View looking west. Natural bottom features (not shown) continue in this portion of the creek.

Photo taken on April 30, 2009.

PHOTO 41:

View of Montecito Creek upstream of Jameson Lane and Highway 101. This portion of Montecito Creek is outside the study area. Montecito Creek is fully culverted through the study area. Photo demonstrates habitat quality and natural bottom features found in adjacent sections of the creek.

Photo taken on April 30, 2009.

PHOTO 42:

View looking east over roadside v-ditch along Highway 101 southbound lanes near San Ysidro Road. Note dominant ruderal vegetation along the ditch.

Photo taken on April 30, 2009.

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APPENDIX D:
FIELD DATA SHEETS AND
PIT PHOTOGRAPHS

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: South Coast Highway 101 HOV City/County: Santa Barbara County Sampling Date: 04/28/09

Applicant/Owner: Caltrans - District 5 State: CA Sampling Point: 1

Investigator(s): B. Sloan, J. Claxton Section, Township, Range: PUEBLO LANDS OF SANTA BARBARA

Landform (hillslope, terrace, etc.): Road Edge Local relief (concave, convex, none): none Slope (%): <2%

Subregion (LRR): Mediterranean California (LRR C) Lat: 34.40338016850 Long: -119.52596039100 Datum: NAD 83

Soil Map Unit Name: CAMARILLO VARIANT, FINE SANDY LOAM NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Site consists of a disturbed upland road edge area between Highway 101 and an undeveloped property. Soils, vegetation, and hydrology have been altered by highway construction.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			
2.			
3.			
4.			
	-- = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. --			
2.			
3.			
4.			
5.			
	-- = Total Cover		
Herb Stratum (Plot size: _____)			
1. Carpobrotus chilensis	90	Y	UPL
2. Vicia sativa	1	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. --			
2.			
	-- = Total Cover		

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✓

Remarks:

Pit located in Caltrans landscaped area between the right-of-way fence and Highway 101 edge of pavement.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10 YR 3/2	100	--	--	--	--	clay loam	fill soil, many roots,

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

Soil homogenous throughout profile, many roots present, soil dry, loosely blocky. No indicators present. Observed soil did not match map unit description.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology features present.

PHOTO 1:

View of general area of Pits 1-3, looking north along the Hwy 101 northbound lanes Right-of-Way fence. Note freeway landscaping of Carpobrotus inside the fence, and small swale along the outside fence edge. Picture taken on 4/28/09.

PHOTO 2:

View of Pit 1 location, looking north along the Hwy 101 northbound lanes. Note disturbed upland conditions at pit location. Picture taken on 4/28/09.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: South Coast Highway 101 HOV City/County: Santa Barbara County Sampling Date: 04/28/09

Applicant/Owner: Caltrans - District 5 State: CA Sampling Point: 2

Investigator(s): B. Sloan, J. Claxton Section, Township, Range: PUEBLO LANDS OF SANTA BARBARA

Landform (hillslope, terrace, etc.): Drainage channel Local relief (concave, convex, none): concave Slope (%): <2%

Subregion (LRR): Mediterranean California (LRR C) Lat: 34.40343171760 Long: -119.52601105800 Datum: NAD 83

Soil Map Unit Name: CAMARILLO, VARIANT, FINE SANDY LOAM NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes ✓ No _____**
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

Site located in small dirt drainage ditch along ROW boundary. Area disturbed by highway construction and landscaping. Ditch leads to Franklin Creek.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	-- = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Artemisia douglasiana	25	Y	FACW
2. Rubus ursinus	20	Y	FACW
3.			
4.			
5.			
	45 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Cyperus eragrostis	50	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✓ No _____**

Remarks:

Dense cover of wetland species present within ditch and along the edges of the ditch.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 2/2	100	--	--	--	--	clay loam	moist to top
10-15	10 YR 2/2	80	10 YR 4/6	15	RM	M	clay loam	saturated
15-20	10 YR 2/1	85	Black	15	D	PL	clay loam	organic staining - rotting roots

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Soil moist to surface, saturated at 10 inches. Many large and small roots. Lower section of profile saturated, stained with black oxidized root sheaths. Observed soil did not match map unit description.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 10

Wetland Hydrology Present? **Yes** ✓ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Dirt drainage channel leading to concrete V ditch - 15 ft wide, 2.5 ft deep. Channel receives runoff from roadways and nearby residential areas, and connects to Franklin Creek.

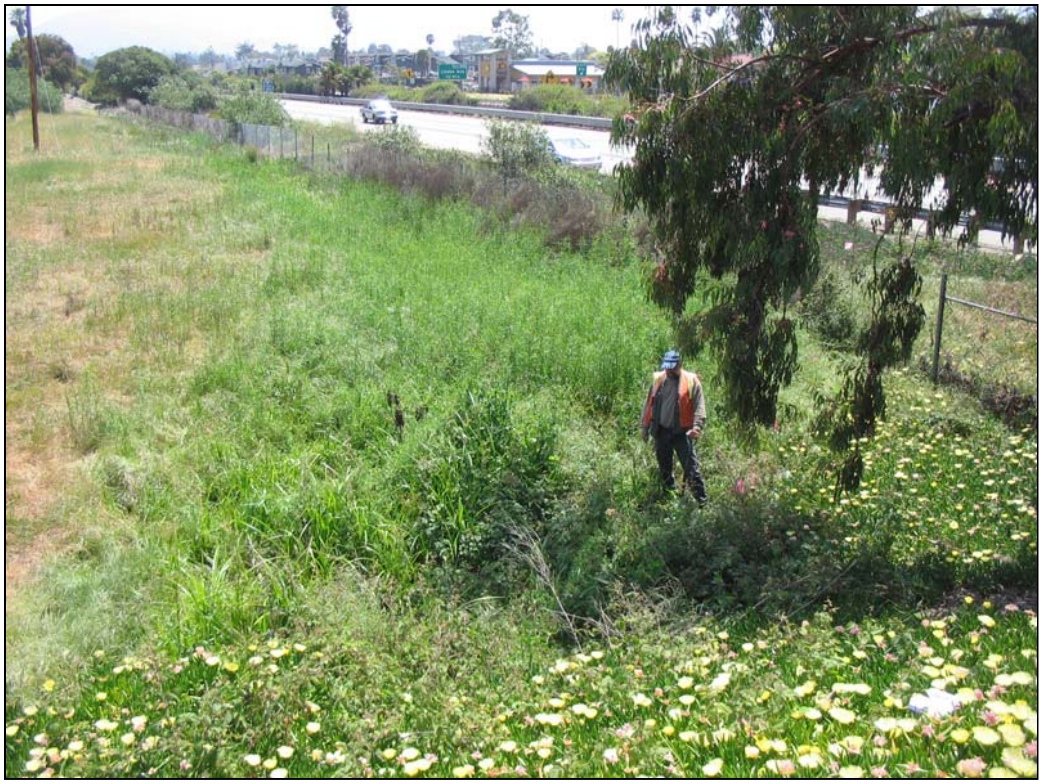

PHOTO 3:

View of general area of Pits 2 and 3, looking south along the Hwy 101 northbound lanes. Swale along ROW fence conveys runoff south to Franklin Creek. Picture taken on 4/28/09.

PHOTO 4:

View of Pit 2, looking west across the Hwy 101 northbound lanes. Note dominant Cyperus eragrostis in bottom of swale. Picture taken on 4/28/09.

PHOTO DOCUMENTATION

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: South Coast Highway 101 HOV City/County: Santa Barbara County Sampling Date: 04/28/09

Applicant/Owner: Caltrans - District 5 State: CA Sampling Point: 3

Investigator(s): B. Sloan, J. Claxton Section, Township, Range: PUEBLO LANDS OF SANTA BARBARA

Landform (hillslope, terrace, etc.): graded terrace Local relief (concave, convex, none): flat Slope (%): <2%

Subregion (LRR): Mediterranean California (LRR C) Lat: 34.40347565010 Long: -119.52598287500 Datum: NAD 83

Soil Map Unit Name: CAMARILLO, VARIANT, FINE SANDY LOAM NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Site located in field near edge of dirt drainage channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	--	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Artemisia douglasii	5	Y	FACW
2. Rubus ursinus	1	N	FACW
3.			
4.			
5.			
	6	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Avena fatua	50	Y	UPL
2. Bromus diandrus	40	Y	UPL
3. Gallium aparine	1	N	FACU
4. Pennisetum clandestinum	2	N	FACU
5. Rumex crispus	1	N	FACW
6.			
7.			
8.			
	94	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	--	= Total Cover	

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** _____ **No** ✓

Remarks:

Disturbed field dominated by annual grasses and escaped ornamentals.
Southern edge nearest dirt channel contains outlying wetland species.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	10 YR 3/2	100	--	--	--	--	clay loam	soil loose, many small roots
7-20	10 YR 3/3	100	--	--	--	--	clay loam	solid, blocky, few large roots

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

Plow pan visible at seven inches - upper soils loosely aggregated, below seven inches soil exhibits solid blocky structure.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Pit located in field above dirt channel. No hydrology features noted.

PHOTO 5:

View of general area of Pit 3, looking northeast from the Hwy 101 northbound lanes ROW fence. The area consists of a vacant field, dominated by ruderal vegetation. Picture taken on 4/28/09.

PHOTO 6:

View of Pit 3 location, looking south toward the Hwy 101 northbound lanes. Note dominant annual grass vegetation in pit area. Picture taken on 4/28/09.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: South Coast Highway 101 HOV City/County: Santa Barbara County Sampling Date: 04/28/09

Applicant/Owner: Caltrans - District 5 State: CA Sampling Point: 4

Investigator(s): B. Sloan, J. Claxton Section, Township, Range: PUEBLO LANDS OF SANTA BARBARA

Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR): Mediterranean California (LRR C) Lat: 34.40450747140 Long: -119.53018727500 Datum: NAD 83

Soil Map Unit Name: CAMARILLO, VARIANT, FINE SANDY LOAM NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Site consists of a dirt ditch along highway offramp that receives runoff from roadways and residential/commercial areas.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			
2.			
3.			
4.			
	--	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	--	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Equisetum arvense	80	Y	FAC
2. Bromus carinatus	5	N	UPL
3. Sonchus oleraceous	2	N	NI
4. Oxalis pes-caprae	1	N	UPL
5. Rumex crispus	1	N	FACW
6.			
7.			
8.			
		= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	--	= Total Cover	

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ✓ **No** _____

Remarks:

Dirt ditch dominated by a dense cover of Equisetum.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 3/3	100	--	--	--	--	sndy loam	deposits/dist by maint /dry
8-20	10 YR 3/3	100	--	--	--	--	sandy CL	fill soil, dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

Fill soils/sediment deposits in maintained dirt ditch. No hydric soil indicators observed. Old Coca Cola can found at 12 inches depth.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Ditch receives road runoff from highway offramp and adjacent surface streets, drains into culvert under highway. Runoff from this ditch eventually reaches Santa Monica Creek.

PHOTO 7:

View of general area of Pit 4, looking southwest along the Hwy 101 northbound lanes. Picture taken on 4/28/09.

PHOTO 8:

View of Pit 4, looking southwest. Note dense stand of Equisetum in the roadside ditch. Picture taken on 4/28/09.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: South Coast Highway 101 HOV City/County: Santa Barbara County Sampling Date: 04/29/09

Applicant/Owner: Caltrans - District 5 State: CA Sampling Point: 5

Investigator(s): B. Sloan, J. Claxton Section, Township, Range: PUEBLO LANDS OF SANTA BARBARA

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR): Mediterranean California (LRR C) Lat: 34.40436662430 Long: -119.53339457800 Datum: NAD 83

Soil Map Unit Name: CAMARILLO, VARIANT, FINE SANDY LOAM NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes ✓ No _____**
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

Site located in roadside ditch along Highway 101 between pavement edge and sound wall.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			
2.			
3.			
4.			
	-- = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	-- = Total Cover		
Herb Stratum (Plot size: _____)			
1. Equisetum arvense	55	Y	FAC
2. Cyperus eragrostis	15	N	FACW
3. Piptatherum miliaceum	10	N	NI
4. Rumex crispus	5	N	FACW
5. Typha latifolia	5	N	OBL
6. Polypogon monspeliensis	5	N	FACW
7. Carpobrotus chiliensis	5	N	UPL
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	-- = Total Cover		

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✓ No _____**

Remarks:

Roadside drainage ditch with dirt banks. Densely vegetated.

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10 YR 3/2	100	--	--	--	--	clay loam	moist, few roots
9-13	10 YR 3/2	85	7.5 YR 3/3	15	RM	M	sandy clay	saturated, black OM
13-20	10 YR 6/8	65	5 10 Y gley 1	35	RM	M	gravely cl	saturated/ponded/OM stains

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Soils moist to surface. Black OM stains present/common from nine to 20 inches. Gley Chart 1 used. Although F2 depth criteria exceeded by one inch, soil exhibits F2 characteristics and is functioning as a wetland soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ✓ No ___ Depth (inches): 17

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 9

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Channel bottom two ft wide, three ft deep. Flow pattern/drift deposits visible in channel bottom. Channel receives road and residential runoff and directs to deeper cattail-dominated swale to east, and connects to Santa Monica Creek through storm drains.

PHOTO 9:

View of general area of Pits 5 and 6, looking north along the Hwy 101 southbound lanes. Pit 5 location is marked by the shovel handle visible in the bottom of the swale. Picture taken on 4/29/09.

PHOTO 10:

Closeup of soil conditions at Pit 5. Note moist soils, and standing water visible in lower portion of pit. Picture taken on 4/29/09.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: South Coast Highway 101 HOV City/County: Santa Barbara County Sampling Date: 04/29/09

Applicant/Owner: Caltrans - District 5 State: CA Sampling Point: 6

Investigator(s): B. Sloan, J. Claxton Section, Township, Range: PUEBLO LANDS OF SANTA BARBARA

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 12%

Subregion (LRR): Mediterranean California (LRR C) Lat: 34.40439573620 Long: -119.53337250400 Datum: NAD 83

Soil Map Unit Name: CAMARILLO, VARIANT, FINE SANDY LOAM NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Site located on edge of Highway 101 above dirt drainage channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. --			
2.			
3.			
4.			
	--	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. --			
2.			
3.			
4.			
5.			
	--	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Carpobrotus edulis	45	Y	UPL
2. Equisetum arvense	25	Y	FAC
3. Ricinus communis	10	N	FACU
4. Carduus pycnocephalus	10	N	UPL
5. Polypogon monspeliensis	5	N	FACW
6. Picris echoides	5	N	FAC
7. Rhaphanus sativus	5	N	UPL
8. Sonchus oleraceus	2	N	NI
	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	--	= Total Cover	

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ✓ **No** _____

Remarks:

Equisetum growing up dirt channel banks from wetter bottom areas.

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10 YR 3/3	100	--	--	--	--	loam	loose, unconsolidated, dry
2-20	10 YR 3/3	100	--	--	--	--	clay loam	blocky, few roots

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

Fill soil from highway construction. Observed soils do not match map unit description.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators observed.

PHOTO 11:

View of general area of Pits 5 and 6, looking south along the Hwy 101 southbound lanes. Pit 6 location is marked by the shovel handle visible approximately halfway up the bank of the swale. Picture taken on 4/29/09.

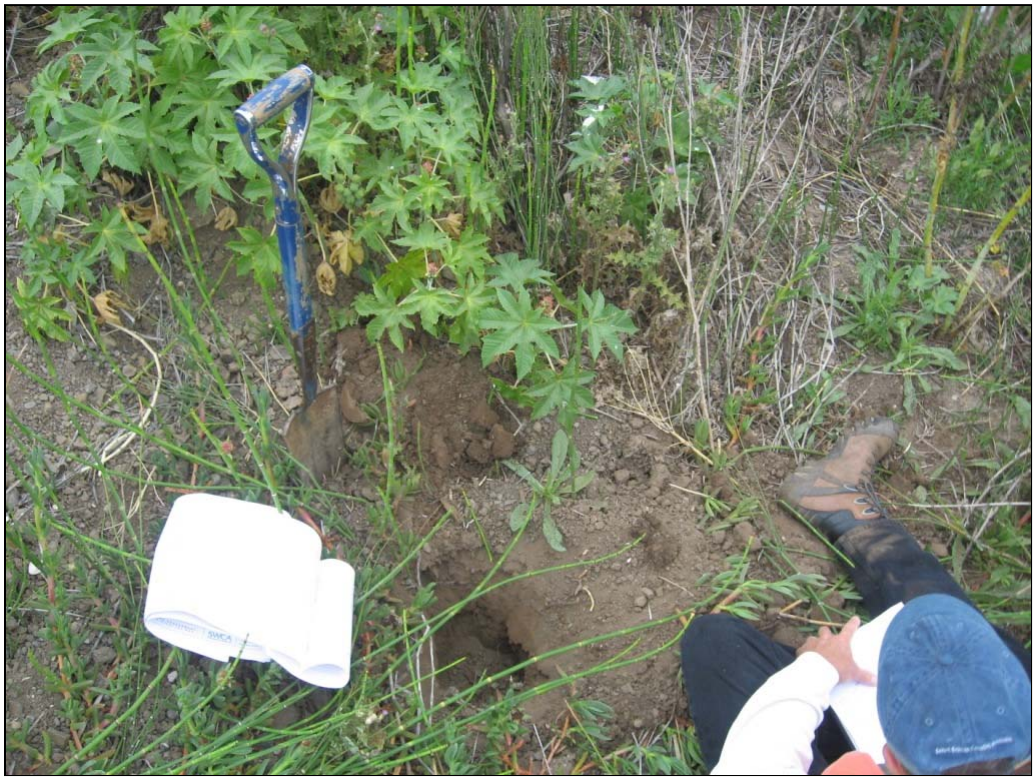

PHOTO 12:

Closeup of soil conditions at Pit 6. Note dry soils, and mixed vegetation types. Picture taken on 4/29/09.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: South Coast Highway 101 HOV City/County: Santa Barbara County Sampling Date: 05/12/09

Applicant/Owner: Caltrans - District 5 State: CA Sampling Point: 7

Investigator(s): B. Sloan, J. Claxton Section, Township, Range: PUEBLO LANDS OF SANTA BARBARA

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): slope Slope (%): 12%

Subregion (LRR): Mediterranean California (LRR C) Lat: 34.40439573620 Long: -119.53337250400 Datum: NAD 83

Soil Map Unit Name: CAMARILLO, VARIANT, FINE SANDY LOAM NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Site located in freeway median area that receives limited runoff from adjacent roadway.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	80	Y	FACW
2. Myoporum laetum	10	N	NI
3.			
4.			
	--	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. --			
2.			
3.			
4.			
5.			
	--	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Oxalis pes-caprae	35	Y	UPL
2. Artemisia douglasii	20	Y	FACW
3. Carpobrotus edulis	15	N	UPL
4. Bromus diandrus	15	N	UPL
5.			
6.			
7.			
8.			
		= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	--	= Total Cover	

% Bare Ground in Herb Stratum -- % Cover of Biotic Crust --

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ✓ **No** _____

Remarks:

Freeway median area dominated by oxalis and ice plant. Clump of willow and myoporum present at east end.

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 3/3	100	--	--	--	--	loam	loose, few roots
4-9	10 YR 3/3	100	--	--	--	--	loam	weakly blocky, few roots
9-20	2.5 Y 5/4	100	--	--	--	--	sndy loam	hard, gravelly, no roots

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

Lower portion of profile appears to consist of compacted road base. This layer may be impenetrable and create perched water from rainfall and road runoff. No indicators noted.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Faint depressional area under willow canopy, but no connection to any hydrologic feature. Road base may create a shallow aquitard in this area.

PHOTO 13:

View of Pit 7 location, looking north from the Carpinteria Avenue southbound offramp. Willow canopy in this area is not associated with any surface hydrologic features. Picture taken on 5/12/09.

PHOTO 14:

Closeup of soil conditions at Pit 7. Note dry soils, and lack of understory vegetation. Picture taken on 5/12/09.