South Coast 101 HOV Lanes Project

Santa Barbara County, California
05-SB-101-PM 1.4 to 12.3
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SCH# 2009051018

Final Environmental Impact Report/Environmental Assessment with Finding of No Significant Impact

Appendices

Volume II of IV

Prepared by the
State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by the California Department of Transportation under its assumption of responsibility pursuant to 23 U.S. Code 327.

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Caltrans

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Appendix A California Environmental Quality Act Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include "potentially significant impact," "less than significant impact with mitigation," "less than significant impact," and "no impact."

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Environmental Impact Report/Environmental Assessment. Documentation of "No Impact" determinations is provided at the beginning of Chapter 2. Except for noise, discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2. Noise impacts under the California Environmental Quality Act are discussed in Chapter 3.

Changes made to the checklist between the draft environmental document and the final environmental document are identified with a vertical line in the right margin. An explanation is also provided. The changes are listed below:

III. Air Quality (c, d)

IV. Biological Resources (a, d)

VI. Geology and Soils (a) ii, iii, and (b)

VIII. Hazards and Hazardous Materials (a, c, and d)

IX. Hydrology and Water Quality (f)

XII. Noise (a-d)

XVII. Utilities and Service Systems (c)

XVIII. Mandatory Findings of Significance (c)

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒	☐	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
Explanation for the two above changes (c and d): Although the air quality section (Volume I, Section 2.2.6) concluded that the project would result in "less than significant impacts" to air quality, boxes were incorrectly checked in the draft environmental document to reflect a significant impact without mitigation. No mitigation is required.				
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
Explanation for the two above changes (a and d): Fish passage issues were discussed in Section 2.3.4 of the draft environmental document, but the correct box wasn't checked. A Biological Opinion (H-13) issued by NOAA Fisheries was released in September 2013.				
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Explanation: Changes were made to ii, iii, and iv (b) to reflect that, by incorporating Caltrans engineering standards, the project will have "less than significant impacts." Refer to Section 2.2.3 in Volume I of the final environmental document.

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Explanation: Changes for hazards and hazardous materials (a, c, and d) were made after the oil tank was removed in May 2012 and the site was cleared by the County of Santa Barbara Fire Prevention Division. Refer to Section 2.2.5 in Volume I of the final environmental document.

IX. HYDROLOGY AND WATER QUALITY: Would the project:

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

Explanation: The Water Quality Addendum called for mitigation measures to be incorporated to address potential impacts to water quality during construction and over the long term. Refer to Sections 2.23 and 2.4 in Volume I of the final environmental document. This information was reflected in the text of the draft environmental document, but the box was incorrectly checked.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Explanation: Changes were made to the responses for a, b, c, and d as the project would not result in a significant impact per CEQA. The boxes were incorrectly checked "less than significant impact with mitigation" in the draft environmental document when they should have been checked just “less than significant."

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

XIV. PUBLIC SERVICES:

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

XV. RECREATION:

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

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Explanation: A change was made to the response for c to clarify that the storm water facilities would not result in a significant impact. The box checked was incorrect.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Explanation: Although the draft environmental document stated in Chapter 3 (CEQA Chapter) that the project would result in significant visual impacts that could not be mitigated, the correct box was not checked. The project continues to have significant impacts to visual resources, both cumulatively and individually.

Appendix B Resources Evaluated Relative to the Requirements of Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S. Code 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that the Secretary of Transportation may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, State, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land, and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use

Federal responsibility for environmental review, consultation, and any other action required in accordance with the National Environmental Policy Act and other applicable federal laws for this project is being, or has been, carried out by the Department under its assumption of responsibility pursuant to 23 U.S. Code 327.

This section of the document discusses parks, recreational facilities, wildlife refuges, and historic properties found within or adjacent to the project area. The listed properties do not trigger Section 4(f) protection for the following reasons: 1) they are not publicly owned; 2) they are not open to the public; 3) they are not eligible historic properties; 4) the project does not permanently use the property and does not hinder the preservation of the property; or 5) the proximity impacts do not result in constructive use [substantial impairment of the activities, features, or attributes that qualify the resource for protection under Section 4(f)].

The following is a brief project description (see Chapter 1 for more details): The proposed HOV lane project would add a part-time, continuous-access HOV lane in each direction on U.S. 101 extending from Carpinteria Creek in the City of Carpinteria to Cabrillo Boulevard in the City of Santa Barbara. The three build alternatives vary in terms of where widening would occur. Alternative 1 proposes to widen to the median in some locations and widen to the outside in other locations to balance inside and outside resources. Alternative 2 proposes to widen to the outside wherever possible to maximize available areas for median landscaping. Alternative 3 proposes to widen to the inside, which means building all new paved lanes within the existing available median.

The project also includes replacing both the Sheffield Drive and the Cabrillo Boulevard interchanges. There is one configuration proposed for the Sheffield Drive interchange and five configurations proposed for the Cabrillo Boulevard interchange. The five configurations are summarized briefly below, with a focus on the three requiring work in the railroad right-of-way.

All five configurations close the median ramps at Cabrillo Boulevard. The differences between the configurations include whether Hermosillo Drive remains open and whether Los Patos Way remains open. Three configurations—J, M, and M Modified—require improvements to the Los Patos overhead railroad structure to accommodate the ramps. This work requires raising the railroad profile from 1 to 4 feet for a distance of 0.67 mile and includes the construction of several retaining walls. Construction activities include the need for a temporary shoofly to continue train operations while the work is being conducted. The shoofly would be constructed on either side of the overhead structure and continue for 800 feet. The new railroad tracks would be shifted approximately 15 or 20 feet.

The following properties are located within one-half mile of the project area and fall within the category of parks, recreational facilities, and wildlife refuges. Certain cultural resources next to the project corridor have also been considered under Section 106 of the National Historic Preservation Act. The analysis resulted in the determination that the following properties do not trigger Section 4(f) protection.

Parks, Recreational Facilities, Wildlife Refuges

Santa Barbara Municipal Tennis Stadium, 1414 Park Place at Old Coast Highway, Santa Barbara, CA—This property sits right next to U.S. 101. The property is owned by the City of Santa Barbara and is open to the public. The tennis

stadium contains 12 hard-surface tennis courts and an enclosed stadium that seats 1,000 spectators; locker, restroom, and shower facilities; and a parking lot that abuts the state right-of-way. A soundwall on the property line separates the tennis stadium and U.S. 101. The existing soundwall blocks noise and views of the highway.

The stadium was previously determined eligible for listing in the National Register of Historic Places. However, consistent with Attachment 3 of the January 1, 2004, Programmatic Agreement among the Federal Highway Administration, the Advisory Council for Historic Preservation, the California State Historic Preservation Officer and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, As It Pertains to the Administration of the Federal-Aid Highway Program in California, the stadium was not included within the project Area of Potential Effects because the project lacks the potential to directly or indirectly cause alterations in the character or use of the historic property. Therefore, the provisions of Section 4(f) are not triggered.

There would be no permanent or temporary occupancy of any portion of the tennis stadium property as a result of this undertaking. All of the work near the tennis stadium would be contained within the state right-of-way and railroad-right-of-way. The project elements closest to the stadium would be widening the highway to add the HOV lanes and constructing the proposed Cabrillo Boulevard interchange. Any construction work associated with widening and paving ends at post mile 11.8, which is 100 feet south (west) of the tennis stadium. The three interchange configurations—J, M, and M Modified—would include raising the railroad profile 1 to 4 feet for a distance of 0.67 mile as part of ramp improvements at the Los Patos Way railroad overhead structure. The railroad work, including the construction of retaining walls, would occur in the railroad right-of-way with access from the state right-of-way. The tennis courts are over 200 feet away from the work that would occur at the railroad. If one of the three configurations—J, M, and M Modified—is selected, this work would occur on the opposite side of the highway across six lanes of traffic and south of the tennis stadium.

The existing noise conditions in the area are heavily influenced by U.S. 101 traffic volumes. Noise measurements taken at the stadium as part of the noise study prepared for the Milpas Avenue to Hot Springs Project[1] forecast ambient noise readings of about 70 dBA within 100 feet of the highway by 2025. A soundwall built as

[1] Noise Study Report prepared for the Milpas Avenue to Hot Springs Project (2002)

mitigation for the Milpas Avenue to Hot Springs Project was projected to reduce the noise level at the stadium by 6 dBA.

According to the South Coast 101 HOV Noise Addendum[2] prepared for the project, there would be no perceptible changes to noise as a result of predicted increases in traffic conditions (design year 2040). In regard to temporary construction noise impacts, construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced at a rate of 6 dBA per doubling of distance (100 feet from construction noise levels would range from 67 to 84 dBA). Construction noise would be short term, intermittent and overshadowed by local traffic noise. No adverse noise impacts from construction are anticipated because construction would be done in accordance with Caltrans' standard minimization measures.

Caltrans standard measures to address construction noise impacts include: 1) Each internal combustion engine, used for any purpose on the job, or related to the job, is required to be equipped with a muffler of a type recommended by the manufacturer; 2) If possible, avoid use of impact pile driving for bridge demolition/reconstruction unless a less noise-intrusive pile installation technique can be used, such as vibratory pile driving or Cast-In Drilled-Hole (CIDH) piling; 3) Use and relocate temporary barriers, if needed, to protect sensitive receptors from excessive construction noise generated by small items such as compressors, generators, pneumatic tools, and jackhammers.

Caltrans standard measures to minimize dust include: 1) Use of water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. Increased watering should take place whenever wind speeds exceed 15 miles per hour (daily watering can typically reduce dust by 50 percent); 2) Minimize disturbed areas and reduce onsite vehicle speeds to 15 miles per hour or less; 3) Equipment and materials storage sites should be located as far away as possible from residential and public park areas, schools, and other possible sensitive receptors; 4) If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetation, or

[2] South Coast 101 HOV Noise Addendum, January 2012

spreading soil binders until the area is paved or otherwise developed so that dust generation does not occur.

Therefore, the project would not contribute additional noise, dust or visual changes that would affect the tennis courts or other stadium features. With implementation of the proposed project, the public would continue to be able to use the property in the manner intended. The project will not cause a constructive use of the tennis stadium because the proximity impacts will not substantially impair the protected activities, features, or attributes of the outdoor tennis courts.

Dwight Murphy Baseball Field, 501 Niño's Drive, Santa Barbara, CA—This property sits just off Cabrillo Boulevard, between U.S. 101 and East Beach. The sports facility is owned by the City of Santa Barbara and is open to the public. The property contains one softball field, one soccer field, bleachers, and a fitness circuit-training course, and playground.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Dwight Murphy Baseball Field property. All of the work for this project would be contained within the state right-of-way and railroad right-of-way. Any construction work associated with widening/paving HOV lanes ends at post mile 11.8, which is more than 600 feet south (west) of the sports fields.

The project work associated with three of the five Cabrillo Boulevard interchange configurations—J, M, and M Modified—is approximately 350 feet from the baseball field at the closest point. The work activities associated with the three configurations—J, M, and M Modified—would raise the railroad profile 1 to 4 feet for a distance of 0.67 mile as part of ramp improvements at the Los Patos Way railroad overhead structure. The railroad work, which includes building several retaining walls, would occur in the railroad right-of-way with access from the state right-of-way.

Next to the baseball fields, U.S. 101 is six lanes wide. The existing noise conditions in the area are heavily influenced by U.S. 101 traffic volumes. Noise measurements taken near the baseball fields as part of the noise study prepared for the Milpas Avenue to Hot Springs Project[3] forecast ambient noise readings of about 60 dBA within 100 feet of the highway by 2025. According to the South Coast 101 HOV

[3] Noise Study Report prepared for the Milpas Avenue to Hot Springs Project (2002)

Noise Addendum[4] prepared for this project, there would be no perceptible changes to noise as a result of predicted increases in traffic conditions (design year 2040). In addition to highway traffic, according to the Santa Barbara County Noise Element, locomotives have been measured at 96 to 100 dBA, 100 feet from the tracks and rail cars typically measure between 83 and 90 dBA.[5] This also contributes to the ambient noise level in the project vicinity.

For temporary construction noise impacts, construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of 6 dBA per doubling of distance.[6] Any construction work associated with adding HOV lanes would be located a minimum of 350 feet from the baseball field. The noise levels associated with project construction (less than 70 to 90 dBA) would be similar to the intermittent noise level already experienced in the project vicinity due to railroad activities (83 to 90 dBA). The distance from the construction area combined with the already high noise levels in the U.S. 101 corridor and railroad and the use of the following Caltrans' standard minimization measures during construction would further offset any perceptible changes in noise levels.

Caltrans standard minimization measures to address noise impacts include: 1) Each internal combustion engine, used for any purpose on the job, or related to the job, is required to be equipped with a muffler of a type recommended by the manufacturer; 2) If possible, avoid use of impact pile driving for bridge demolition/reconstruction unless a less noise intrusive pile installation technique can be used, such as vibratory pile driving or CIDH piling; 3) Use and relocate temporary barriers, if needed, to protect sensitive receptors from excessive construction noise generated by small items such as compressors, generators, pneumatic tools, and jackhammers. Noise barriers can be made of heavy plywood, moveable insulated sound blankets, or other best available control techniques. Caltrans standard measures to minimize dust include: 1) Use of water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. Increased watering should take place whenever wind speeds exceed 15 miles per hour (daily watering can typically reduce dust by 50 percent); 2) Minimize disturbed areas and reduce onsite vehicle speeds to 15 miles per hour or less; 3) Equipment and materials storage sites should be located as far away as possible from residential and public park areas, schools, and other

[4] South Coast 101 HOV Noise Addendum, January 2012
[5] Santa Barbara County Noise Element, adopted 1979 and republished May 2009, pages 42-43
[6] South Coast 101 HOV Noise Addendum, January 2012

possible sensitive receptors; 4) If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetation, or spreading soil binders until the area is paved or otherwise developed so that dust generation does not occur.

With required noise and dust minimization measures in place during construction, there would be no perceptible difference from what currently exists along the highway and railroad rights-of-way. With implementation of the proposed project, the public would continue to be able to use the property in the manner intended. The project will not cause a constructive use of the Dwight Murphy Baseball Field because the proximity impacts will not substantially impair the protected activities, features, or attributes of the outdoor sports fields.

Santa Barbara Zoological Gardens, 500 Niño's Drive, Santa Barbara, CA— Located off Cabrillo Boulevard, right next to the railroad and the highway, the Santa Barbara Zoo sits on 30 acres of botanical gardens. The zoo is dedicated to the preservation, conservation, and enhancement of the natural world through education, research, and recreation. The property is owned by the City of Santa Barbara and operated by a non-profit organization. The property is open to the public. The section of the zoological gardens property that abuts the railroad right-of-way contains mostly maintenance facilities, while most of the animals and visitor attractions are situated farther away from the railroad and highway. The exception is the miniature train that operates on a track around the perimeter of the property.

The project does not require a permanent physical occupancy or temporary occupancy of any of the Santa Barbara Zoological Gardens. All of the work for the project would be contained within the state right-of-way and railroad right-of-way. Any construction work associated with widening or paving to add HOV lanes ends at post mile 11.8, which is 1,000 feet from the zoo**.**

The project element closest to the zoo would be the proposed Cabrillo Boulevard/Hot Springs Road interchange. Three of the five proposed interchange configurations—J, M, and M Modified—would raise the railroad profile 1 to 4 feet for a distance of 0.67 mile as part of ramp improvements at the Los Patos Way railroad overhead structure. The railroad work includes a temporary shoofly and construction of several retaining

walls. This work would occur in the railroad right-of-way with access from the state right-of-way. The shoofly would extend only 800 feet, ending about 1,000 feet from the zoo. The permanent railroad track would be moved away from the zoo about 15 feet, and the toe of the fill slope would be placed closer to the highway. If interchange configuration J, M or M Modified is selected, the railroad work would vary in terms of distance from the zoo. Work in the railroad section closest to the zoo would be approximately 20 feet to 30 feet away from the property line (70 feet to 80 feet from the buildings), while work at the Los Patos structure would be 0.67 mile away.

Next to the zoo, U.S. 101 is six lanes wide. The existing noise conditions in the area are heavily influenced by U.S. 101 traffic volumes. Noise measurements taken near the zoo as part of the noise study prepared for the Milpas Avenue to Hot Springs Project[7] forecast ambient noise readings of about 73 dBA within 100 feet of the highway by the year 2025. According to the South Coast 101 HOV Noise Addendum[8] prepared for this project, there would be no perceptible changes to noise as a result of predicted increases in traffic conditions (design year 2040). Passing trains also contribute to the ambient noise level in the project vicinity.

For temporary construction noise impacts, construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of 6 dBA per doubling of distance.[9] Any construction work associated with adding HOV lanes would be 1,000 feet from the zoo. The noise levels associated with project construction (less than 70 to 90 dBA) would be similar to the intermittent noise level already experienced in the project vicinity due to railroad activities (83 to 90 dBA). The distance from the construction area combined with the already-high noise levels in the U.S. 101 corridor and railroad, and the use of the following Caltrans' standard minimization measures during construction, would further offset any perceptible changes in noise levels.

Caltrans standard measures to address noise impacts include: 1) Each internal combustion engine, used for any purpose on the job, or related to the job, is required to be equipped with a muffler of a type recommended by the manufacturer; 2) If possible, avoid use of impact pile driving for bridge demolition/reconstruction unless a less noise intrusive pile installation technique can be used, such as vibratory pile

[7] Noise Study Report prepared for the Milpas Avenue to Hot Springs Project (2002)
[8] South Coast 101 HOV Noise Addendum, January 2012
[9] South Coast 101 HOV Noise Addendum, January 2012

driving or CIDH piling; 3) Use and relocate temporary barriers, if needed, to protect sensitive receptors from excessive construction noise generated by small items such as compressors, generators, pneumatic tools, and jackhammers.

Caltrans standard measures to minimize dust include: 1) Use of water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. Increased watering should take place whenever wind speeds exceed 15 miles per hour (daily watering can typically reduce dust by 50 percent); 2) Minimize disturbed areas and reduce onsite vehicle speeds to 15 miles per hour or less; 3) Equipment and materials storage sites should be located as far away as possible from residential and public park areas, schools, and other possible sensitive receptors; 4) If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetation, or spreading soil binders until the area is paved or otherwise developed so that dust generation does not occur.

With required noise and dust minimization measures in place during construction, there would be no perceptible difference from what currently exists along the highway and railroad rights-of-way. With implementation of the proposed project, the public would continue to be able to use the property in the manner intended. The project will not have a constructive use of the Santa Barbara Zoological Gardens and zoo because the proximity impacts will not substantially impair the protected activities, features, or attributes of the gardens and zoo.

Andrée Clark Bird Refuge, 1400 E. Cabrillo Boulevard, Santa Barbara, CA— Located on Cabrillo Boulevard, next to the railroad right-of-way, this property is owned by the City of Santa Barbara and is open to the public. The bird refuge is a 42-acre brackish wetland that supports a large assortment of organisms. Some 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 an average depth of 4 feet that contains valuable habitat for both aquatic and avian species. The pond is surrounded by a dirt path that is regularly used by pedestrians who seek out the walking path for exercise and bird watching. A parking lot for the bird refuge sits on Los Patos Way, and there’s a maintenance entrance with a locked gate.

The Andrée Clark Bird Refuge is a contributing resource of the East Cabrillo Boulevard Parkway Historic District, which has already been duly considered under Section 106 of the National Historic Preservation Act. The historic district was previously determined eligible for listing in the National Register of Historic Places. However, consistent with Attachment 3 of the January 1, 2004, Programmatic Agreement among the Federal Highway Administration, the Advisory Council for Historic Preservation, the California State Historic Preservation Officer and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, As It Pertains to the Administration of the Federal-Aid Highway Program in California, the district was not included within the project Area of Potential Effects because the project lacks the potential to directly or indirectly cause alterations in the character or use of the historic property.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Andrée Clark Bird Refuge. All of the work for the project would be contained within the state right-of-way and railroad right-of-way. The work associated with adding HOV lanes ends at post mile 11.8, which falls just beyond the midpoint of the bird refuge property and is about 100 feet away.

The project element closest to the bird refuge would be the proposed Cabrillo Boulevard/Hot Springs Road interchange. Three of the five proposed interchange configurations—J, M, and M Modified—would also raise the railroad profile 1 to 4 feet for a distance of 0.67 mile as part of ramp improvements at the Los Patos Way railroad overhead structure. The railroad work, including construction of retaining walls, would occur in the railroad right-of-way with access from the state right-of-way. During construction, a temporary “shoofly” would be constructed on the curve closest to the Los Patos bridge structure to continue train operations during interchange re-construction. This temporary shoofly would extend for 800 feet and be constructed 15 feet closer to the bird refuge than the existing track. However, the permanent railroad track would be moved approximately 20 feet from the refuge, and the toe of the fill slope would also be farther away from the refuge.

The distance from the railroad to the pedestrian path inside the refuge varies between 40 feet to 80 feet. The distance from the railroad to the pond in the refuge is approximately 125 feet. Bird nesting habitat is outside of the area that is regularly exposed to higher noise levels and degraded air quality created by the 18 to 24 trains passing by the property each day and the constant vehicle activity on U.S. 101. The

Natural Environment Study[10] determined there would be no permanent impacts to breeding habitat resulting from construction within the railroad right-of-way. Work in the railroad right-of-way would occur between September 1 and February 15 to avoid temporary impacts to nesting birds.

Next to the bird refuge, U.S. 101 is six lanes wide. The existing noise conditions in the area are heavily influenced by U.S. 101 traffic volumes. Noise measurements taken near the bird refuge as part of the noise study prepared for the Milpas Avenue to Hot Springs Project[11] forecast ambient noise readings of about 60 dBA within 100 feet of the highway by 2025. According to the South Coast 101 HOV Noise Addendum[12] prepared for this project, there would be no perceptible changes to noise as a result of predicted increases in traffic conditions (design year 2040).

In addition to highway traffic, according to the Memorandum Updating the Noise Study and Vibration Report for the South Coast 101 HOV Project[13], from 50 feet away, a train on a structure will create 85 dBA of noise as it passes by and from the same distance, a train at grade will create 75 dBA of noise. The higher noise levels created by intermittent trains are already occurring in the vicinity of the refuge due to close proximity of the Los Patos railroad structure. Train noise contributes to the ambient noise level in the project area.

The distance from the railroad to the pedestrian path inside the refuge varies between 40 feet to 80 feet. The distance from the railroad to the pond in the refuge is approximately 125 feet. Where the railroad would be about 15 feet closer to the bird refuge, the noise level would increase by only 0.7 dBA, for an overall 82.7 dBA.

For temporary construction noise impacts, construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced over distance at a rate of 6 dBA per doubling of distance.[14] The noise levels associated with project construction (less than 70 to 90 dBA) would be similar to the intermittent noise level already experienced in the project vicinity due to railroad activities (83 to 90 dBA). The

[10] South Coast 101 HOV Natural Environment Study, prepared January 2012
[11] Noise Study Report prepared for the Milpas Avenue to Hot Springs Project (2002)
[12] Memorandum Updating the Noise Study and Vibration Report for the South Coast 101 HOV Project, January 2012
[13] Memorandum Updating the Noise Study and Vibration Report for the South Coast 101 HOV Project, January 2012
[14] Memorandum Updating the Noise Study and Vibration Report for the South Coast 101 HOV Project, January 2012

distance from the construction area combined with the already-high noise levels in the U.S. 101 corridor and railroad and the use of the following Caltrans' standard minimization measures during construction would further offset any perceptible changes in noise levels.

The noise study[15] prepared for the project shows a construction noise level of 85 dBA at 50 feet or 82 dBA at 100 feet from the construction work. Doubling the distance from the noise source produces a 3-dBA noise decrease. The temporary noise levels caused by construction equipment would be lower than the typical noise from the passing trains. When the railroad (the shoofly) is temporarily relocated 15 feet closer to the bird refuge, the periodic noise level generated by passing trains would increase by only 0.7 dBA or to a level of 82.7 dBA.[16] The distance of the refuge from the construction area combined with the already high noise levels in the U.S. 101 corridor and railroad operation and the use of Caltrans' standard minimization measures during construction would offset any perceptible changes in dust and noise levels.

The following measures are Caltrans standard practice to address noise impacts: 1) Each internal combustion engine, used for any purpose on the job, or related to the job, is required to be equipped with a muffler of a type recommended by the manufacturer; 2) If possible, avoid use of impact pile driving for bridge demolition/reconstruction unless a less noise intrusive pile installation technique can be used, such as vibratory pile driving or CIDH piling; 3) Use and relocate temporary barriers, if needed, to protect sensitive receptors from excessive construction noise generated by small items such as compressors, generators, pneumatic tools, and jackhammers.

Caltrans standard measures to minimize dust include: 1) Use of water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. Increased watering should take place whenever wind speeds exceed 15 miles per hour (daily watering can typically reduce dust by 50 percent); 2) Minimize disturbed areas and reduce onsite vehicle speeds to 15 miles per hour or less; 3) Equipment and materials storage sites should be located as far away as possible from residential and public park areas, schools, and other possible sensitive receptors; 4) If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with

[15] South Coast 101 HOV Noise Study Report, March 2010
[16] Memorandum Updating the Noise Study and Vibration Report for the South Coast 101 HOV Project, January 2012

soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetation, or spreading soil binders until the area is paved or otherwise developed so that dust generation does not occur.

With required noise minimization measures in place during construction, there would be no perceptible difference from what currently exists along the highway and railroad rights-of-way. With implementation of the proposed project, the public would continue to be able to use the property in the manner intended. The project will not cause a constructive use of the Andrée Clark Bird Refuge because the proximity impacts will not substantially impair the protected activities, features, or attributes of the refuge.

Montecito Country Club and Golf Course, 920 Summit Road, Santa Barbara, CA—Off Hot Springs Road, about 100 feet from the U.S. 101 ramp, this facility contains a privately owned golf course and country club. The property is privately owned and is not open to the public. Consistent with Attachment 3 of the January 1, 2004, Programmatic Agreement among the Federal Highway Administration, the Advisory Council for Historic Preservation, the California State Historic Preservation Officer and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, As It Pertains to the Administration of the Federal-Aid Highway Program in California, the Montecito Country Club was not included within the project Area of Potential Effects because the project lacks the potential to directly or indirectly cause alternations in the character or use of a historic property. Although the clubhouse (by a well-known architect) has been identified as being eligible for possible designation as a Structure of Merit and is included on the City's Potential Historic Resources List (updated October 8, 2013), the provisions of Section 4(f) are not triggered.

Santa Barbara Polo and Racquet Club, Max Fleischmann Polo Fields, 3375 Foothill Road, Carpinteria, CA—This property is next to the highway. The fields and club are privately owned and are not available to the public. The cultural resource aspect of the polo and racquet club has already been duly considered under Section 106 of the National Historic Preservation Act. The resource was previously determined eligible for listing in the National Register of Historic Places. However, consistent with Attachment 3 of the January 1, 2004, Programmatic Agreement among the Federal Highway Administration, the Advisory Council for Historic

Preservation, the California State Historic Preservation Officer and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, As it Pertains to the Administration of the Federal-Aid Highway Program in California, the resource was not included within the project Area of Potential Effects because the project lacks the potential to directly or indirectly cause alterations in the character or use of the historic property. Therefore, the provisions of Section 4(f) are not triggered.

Lookout Park, intersection of Evans and Wallace Avenues, Summerland, CA— This small park is next to U.S. 101 and the railroad, on the cliffs overlooking Summerland Beach. The property is owned by Santa Barbara County and is open to the public. Lookout Park provides coastal access and serves as a community park with picnic areas, play structure, volleyball court, and restrooms. The parking lot is used by people who want beach access as well as those who want to take advantage of the views of the Santa Barbara Channel.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Lookout Park property.

The property is located just off of the Evans Avenue southbound off-ramp after crossing the railroad tracks. The parking lot is the first point you reach. Construction work associated with widening the highway would occur approximately 500 feet away. Noise levels and dust associated with construction would be minimized by standard construction measures and would offset any perceptible changes in dust and noise levels.

Caltrans standard practices to address noise impacts are: 1) Each internal combustion engine, used for any purpose on the job, or related to the job, is required to be equipped with a muffler of a type recommended by the manufacturer; 2) If possible, avoid use of impact pile driving for bridge demo/reconstruction unless a less noise intrusive pile installation technique can be used, such as vibratory pile driving or CIDH piling; 3) Use and relocate temporary barriers, if needed, to protect sensitive receptors from excessive construction noise generated by small items such as compressors, generators, pneumatic tools, and jackhammers.

Caltrans standard measures to minimize dust include: 1) Use of water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. Increased watering should take place whenever wind speeds exceed 15 miles per hour (daily watering can typically reduce dust by 50 percent); 2)

Minimize disturbed areas and reduce onsite vehicle speeds to 15 miles per hour or less; 3) Equipment and materials storage sites should be located as far away as possible from residential and public park areas, schools, and other possible sensitive receptors; 4) If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetation, or spreading soil binders until the area is paved or otherwise developed so that dust generation does not occur.

With implementation of the proposed project, the public would continue to be able to use the property in the manner intended. The project will not cause a constructive use of Lookout Park because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park.

Oceanview Park, Via Real and Greenwell Avenue, east side of Summerland, CA—The linear neighborhood park began as an open space easement for the development of the Summerland Cottages and Summerland Villas. Once construction was completed, the land was deeded to the County of Santa Barbara to use as a park for nearby residents and the general public. Since the park is a relatively recent addition to the area, it is important to note that when the park was established (about the year 2000), the highway was in its present-day configuration; noise levels were not much different than existing conditions. The park's features include picnic tables, walking paths, and bird watching. Views from the park and the two residential developments offer prime ocean views, one of the reasons a soundwall is not recommended at this location. Blocking this view would substantially change the context of the area. A high value is placed on the prime ocean views at this location. In the vicinity of the park, the project's preferred alternative adds a third lane toward the median of the existing highway; no outside widening would occur near Oceanview Park. So, the highway would not be any closer to the park than it is now. When noise level readings were taken for the proposed project, several receptor locations were identified in the park, including some that were in close proximity to the highway. Several receptor locations in the park were modeled to determine existing and proposed noise levels. Most receptors in the park are expected to experience a maximum 2- or 3-decibel level increase in noise levels—an increase that would be barely perceptible to the human ear. One noise receptor (R 49.2) in the park was identified as severe because the predicted noise levels with the project would

reach 75 decibels. This noise receptor is at the most southwestern edge of the park. The existing noise level identified for receptor 49.2 is 72 decibels; predicted noise levels with the project would rise to 75 decibels.

Soundwalls were recommended to protect severe receptors where the walls would not conflict with floodways or prime ocean views. Where these conflicts existed (in this instance, due to view blockage), and a soundwall is not recommended, additional options are provided to pursue added noise attenuation for severe receptors. Typical residential measures include those that can reduce interior sound such as window treatments or soundwalls on private property. With an outdoor park setting, treatment options are limited. For a soundwall to provide park visitors any noise attenuation, it would have to be constructed along the county road right-of-way using a clear panel material that doesn't obstruct views. The wall would not be placed on park property. Discussions with the County of Santa Barbara are planned to determine whether there is an interest in having a soundwall constructed its roadway, which includes taking on the maintenance responsibilities. A clear panel wall would be considered to retain existing views.

With implementation of the proposed project, the residents and public would continue to be able to use the property in the manner intended. The project would not cause a constructive use of Oceanview Park because the proximity impacts would not substantially impair the protected activities, features, or attributes of the park.

Carpinteria Salt Marsh, Located on Ash Avenue, off of 3rd Street, Carpinteria, CA—Access to the marsh is along Ash Avenue, within a residential development. The area that is accessible to the public is over 650 feet away from any work associated with the project.

The overall marsh itself parallels the highway and railroad track and is approximately 100 feet from the highway. The estuary totals 230 acres, 120 of which are owned by the University of California Santa Barbara (UCSB) as the Salt Marsh Reserve. Access to the University of California Santa Barbara Salt Marsh Reserve is limited and controlled. The Salt Marsh Nature Park is owned and operated by the City of Carpinteria and is open to the public. The Land Trust for Santa Barbara owns 40 acres of the estuary and provides managed public access. There is a public trail, pedestrian bridge, and a restoration area. The marsh is the largest remnant of the native ecosystem in the region and has the highest occurrence of special-status species in the

area according to the South Coast 101 HOV Natural Environment Study[17]. 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.

Santa Monica and Franklin creeks drain into the marsh. These two drainages contain concrete-lined channels that will not be altered by the project. Best management practices would be selected to minimize pollutant discharges to surface waters, minimize stormwater discharge rates and volumes, and recharge groundwater. A formal stormwater drainage plan would be developed after the preferred alternative is selected and before the project enters the design phase. Standard Caltrans temporary construction site and permanent design pollution prevention and permanent stormwater treatment best management practices would be used during and after construction to control potential discharges of pollutants to surface water: 1) Approved work windows—Work in creek channels would occur between May 1 and October 31, unless creek channels dry up earlier than May 1. At Arroyo Paredon, Romero (Picay) and San Ysidro creeks, work would be limited to June 1 through October 31 to avoid impacts to migrating steelhead trout or tidewater goby. 2) Stream diversions—Diversions may be necessary in some creeks. Dewatering and diversion plans would be developed and submitted to appropriate regulatory agencies for review. 3) Wetland disturbance—Temporary disturbances to existing wetlands during construction would be avoided to the maximum extent feasible. Where temporary disturbances to wetlands are unavoidable, reasonable measures to maintain the original grade and soil characteristics should be used to prevent permanent wetland loss. 4) Construction and waterways—Construction equipment, parking areas and stockpiles would be located in upland locations that are at least 100 feet from all waterways, wetlands, and riparian areas.

Work associated with the project is a minimum of 650 feet away from where the public can access the marsh. With implementation of the proposed project, the public would continue to be able to use the property in the manner intended. The proposed project will not cause a constructive use of the Carpinteria Salt Marsh because the proximity impacts will not substantially impair the protected activities, features, or attributes of the salt marsh.

Multipurpose sidewalk (path) near the Cabrillo Boulevard structure—There is a joint use path (pedestrian and bicycle) project currently proposed by the Santa

[17] South Coast 101 HOV Natural Environment Study (January 2012)

Barbara County Association of Governments. The path, which is actually a sidewalk, would be constructed prior to the South Coast 101 HOV project. The path would close gaps to the sidewalk/path that begins at the existing Cabrillo Boulevard Roundabout and connects to similar facilities along the Andrée Clark Bird Refuge, leading to the beach. The final design of the Cabrillo Boulevard interchange will be designed to minimize impacts to the multipurpose sidewalk (path). There is a mutual understanding on the part of the Santa Barbara County Association of Governments and Caltrans that slight modifications to curb cuts and other sidewalk elements will be necessary when the interchange is built. Any features that could be disturbed during the HOV project would be replaced. Necessary path modifications will vary by the interchange configuration selected and will be refined during the design phase with input from the City of Santa Barbara.

There are identified exceptions to the time requirement for Section 4(f) approval. One of these identified exceptions provides "trails, paths, bikeways, and sidewalks that occupy a transportation facility right-of-way without limitation to any specific location within that right-of-way, so long as the continuity of the trail, path, bikeway, or sidewalk is maintained" (23 CFR 774.13 (f)(3). In this situation, the continuity will be maintained for the sidewalk since only slight modifications to the sidewalk and curbs will occur when the interchange is reconfigured. Access for bikes and pedestrians will remain open during construction of the interchange.

Historic Resources

Based on recent evaluations and reevaluations, Caltrans determined that there is one archaeological resource and 11 historic properties within the Section 106 Area of Potential Effects (APE) for the South Coast 101 HOV Lanes project that are eligible for the National Register.

Archaeological Resource

Archaeological Site P-42-003943, commonly known as Via Real Redeposited Midden, is a relatively dense shell midden exposed in a ditch cut bank in an undisclosed location within the project limits. The redeposited midden is extensive, both horizontally and vertically, and contains a rich assemblage of artifacts and subsistence remains reflecting use of local terrestrial, estuary, near-shore, and deep water habitats. Although this property is eligible for listing in the National Register of Historic Places under Criterion D for its potential to answer important research questions on regional history, this site provides information only and is not subject to Section 4(f) protection.

Historic Properties

Through field investigations, archival research, and analysis discussed in detail in Section 2.1.7, Cultural Resources and the Finding of Adverse Effect, Caltrans identified and discussed 11 historic properties within the Area of Potential Effects. The State Office of Historic Preservation concurred with the eligibility determinations documented in the 2010 Historic Property Survey Report (see Appendix D).

Floyd Hickey House, 2492 Lillie Avenue in Summerland—This Folk Victorian style residence built about 1889 faces south across Lillie Avenue toward the freeway with the Pacific Ocean in the distance. The property is eligible for listing in the National Register under Criterion B for its association with one of Summerland's earliest oil production promoters and entrepreneurs, and under Criterion C as an important example of a type, period, and method of construction.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Floyd Hickey House property. The property is on the opposite side of the frontage road from the highway.

The project work at this location would include widening the freeway in each direction from two to three lanes. A 2,300-foot-long, 16-foot-high soundwall is being considered near this property in the state right-of-way. Neither the widening nor the addition of a soundwall will have any direct effect on the property because no permanent or temporary occupancy would occur.

Contributing features are the characteristics of the residence that reflect the Folk Victorian style, including its wood frame construction, simplicity in design and lack of elaborate detail. The proposed project will not affect the historic property because it will not diminish the integrity of the property's significant historic features. The setting and historic views do not contribute to its historic significance. Because the existing setting surrounding the parcel has already been compromised and is already dominated by the freeway and because the setting does not contribute to the historic property's significance, the introduction of additional visual elements within the U.S. 101 right-of-way (whether those elements are additional freeway lanes or soundwalls) would have no effect on the characteristics that qualify the Floyd Hickey House for the National Register. Although there remains the possibility that the project may introduce some new audible elements, any resultant increases in traffic noise levels would not diminish the integrity of the significant historic features of the property, which do not include the setting or surroundings. Additionally, the proposed project

will not affect the property as a result of vibration generated during construction. The residence is located beyond the calculated "minimum safe from damage" distance threshold of 64 feet[18].

The proposed project will not cause a constructive use of the Floyd Hickey House because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

Lillis-Sloan House, 2480 Lillie Avenue, Summerland, CA—This Folk Victorian residence built about 1889 faces south across Lillie Avenue toward the freeway and the Pacific Ocean in the distance. The property is eligible for listing in the National Register under Criterion B for its association with John C. Lillis, one of Summerland's earliest oil production promoters and entrepreneurs, and under Criterion C as an important example of a type, period, and method of construction.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Lillis-Sloan property.

The project work at this location would include widening the freeway in each direction from two to three lanes. A 2,300-foot-long, 16-foot-high soundwall is being considered near this property in the state right-of-way. Neither the widening nor the addition of a soundwall will have any effect on the property because no permanent or temporary occupancy would occur.

The proposed project will not affect the historic property because it will not diminish the integrity of the property's significant historic features. The setting and historic views do not contribute to its historic significance. Because the existing setting surrounding the parcel has been compromised and are already dominated by the freeway, and because the setting does not contribute to the historic property's significance, the introduction of additional visual elements within the U.S. 101 right-of-way (whether those elements are additional freeway lanes or soundwalls) would have no effect on the characteristics that qualify the Lillis-Sloan House for the National Register. Although there remains the possibility that the project may introduce some new audible elements, any resultant increases in traffic noise levels would not diminish the integrity of the significant historic features of the property, which do not include the setting or surroundings. Additionally, the proposed project will not affect the property as a result of vibration generated during construction. The

[18] South Coast 101 HOV Lane Vibration Study, February 2011

residence is located beyond the calculated "minimum safe from damage" distance threshold of 64 feet.

The proposed project will not cause a constructive use of the Lillis-Sloan House because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

McIntyre House, 2274 Lillie Avenue, Summerland, CA—This residence, built about 1890, was moved to its present parcel from elsewhere in town in 1926. The residence is eligible for listing in the National Register under Criterion C as a good representative of the vernacular Cottage House type, built by and for the predominantly working class families who were among Summerland's earliest settlers.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the McIntyre House property.

The project work at this location would include widening the freeway in each direction from two to three lanes. A 1,400-foot-long, 16-foot-high soundwall is being considered near this property in the state right-of-way. Neither the widening nor the addition of a soundwall will have any effect on the property because no permanent or temporary occupancy would occur.

The proposed project will not affect the historic property because it will not diminish the integrity of the property's significant historic features. The setting and historic views do not contribute to its historic significance. As a moved property, it has already lost integrity of location, and the setting, feeling, and association have been compromised as a result of profound changes taken place in Summerland. Because the setting surrounding the parcel has been compromised and does not contribute to the historic property's significance, the introduction of additional visual elements within the U.S. 101 right-of-way (whether those elements are additional freeway lanes or soundwalls) would have no effect on the characteristics that qualify the McIntyre House for the National Register.

Although there remains the possibility that the project may introduce some new audible elements, any resultant increases in traffic noise levels would not diminish the integrity of the significant historic features of the property, which do not include the setting or surroundings. Additionally, the proposed project will not affect the property

as a result of vibration generated during construction. The residence is located well beyond the calculated "minimum safe from damage" distance threshold of 64 feet.

The proposed project will not cause a constructive use of the McIntyre House because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

Stuart and Laura Darling House, 2225 Lillie Avenue, Summerland, CA—This residence built in 1900 has a rear elevation that faces south toward the freeway and the Pacific Ocean in the distance. The property is eligible for listing in the National Register under Criterion B for its association with an important individual in Summerland's history, machinist and blacksmith Stuart Darling; it is also eligible under Criterion C as an important local example of the Folk Victorian style.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Stuart and Laura Darling property.

The project work at this location would include widening the freeway in each direction from two to three lanes. A 1,400-foot-long, 16-foot-high soundwall is being considered in the state right-of-way. Neither the widening nor the addition of a soundwall will have any effect on the property because no permanent or temporary occupancy would occur.

The proposed project will not affect the historic property because it will not diminish the integrity of the property's significant historic features. Because the existing setting surrounding the parcel has been compromised and is already dominated by the freeway, and because the setting does not contribute to the historic property's significance, the introduction of additional visual elements within the U.S. 101 right-of-way (whether those elements are additional freeway lanes or soundwalls) would have no effect on the characteristics that qualify the Stuart and Laura Darling House for the National Register.

Although there remains the possibility that the project may introduce some new audible elements, any resultant increases in traffic noise levels would not diminish the integrity of the significant historic features of the property, which do not include the setting or surroundings. Additionally, the proposed project will not affect the property as a result of vibration generated during construction. The residence is located well beyond the calculated "minimum safe from damage" distance threshold of 64 feet.

The proposed project will not cause a constructive use of the Stuart and Laura Darling House because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

George and Agnes Becker House, 108 Pierpont Avenue, Summerland, CA—This property, popularly known as "the Big Yellow House," was originally built in 1900 as a one-story Stick style private residence for the Beckers. The home, which faces south across Ortega Hill Road toward the freeway and the Pacific Ocean in the distance, was remodeled to the Prairie style and expanded to two stories in 1914. It was later converted into a restaurant. The property is eligible for listing in the National Register under Criterion C as a very good example of Prairie style architecture, Summerland's only example of this style. Contributing elements of the property are the two-story main residence as it appeared in 1914, including the characteristics that reflect the Prairie style.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the George and Agnes Becker property.

The project work at this location would include widening the freeway in each direction from two to three lanes. A 1,400-foot-long, 16-foot-high soundwall is being considered in the state right-of-way. Neither the widening nor the addition of a soundwall will have any effect on the property because no permanent or temporary occupancy would occur.

The proposed project will not affect the historic property because it will not diminish the integrity of the property's significant historic features. Because the existing setting surrounding the parcel has been compromised and is already dominated by the freeway, and because the setting does not contribute to the historic property's significance, the introduction of additional visual elements within the U.S. 101 right-of-way (whether those elements are additional freeway lanes or soundwalls) would have no effect on the characteristics that qualify the George and Agnes Becker House for the National Register.

Although there remains the possibility that the project may introduce some new audible elements, any resultant increases in traffic noise levels would not diminish the integrity of the significant historic features of the property, which do not include the setting or surroundings. Additionally, the proposed project will not affect the property as a result of vibration generated during construction. The residence is located beyond the calculated "minimum safe from damage" distance threshold of 64 feet.

The proposed project will not cause a constructive use of the George and Agnes Becker property because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

Martin/Bushnell-Donnelly House, 2465 Banner Avenue, Summerland—This residence built in 1890 and designed in the Queen Anne style is eligible for listing in the National Register under Criterion C for this project only. The residence is significant at the local level, and its period of significance is 1890 to 1907, the approximate date range in which the residence was built to its current configuration.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Martin/Bushnell-Donnelly property.

The project work at this location would include widening the freeway in each direction from two to three lanes. A 2,300-foot-long, 16-foot-high soundwall is being considered in the state right-of-way. Neither the widening nor the addition of a soundwall will have any effect on the property because no permanent or temporary occupancy would occur.

The proposed project will not affect the historic property because it will not diminish the integrity of the property's significant historic features. Because the existing setting surrounding the parcel has been compromised and is already dominated by the freeway, and because the setting does not contribute to the historic property's significance, the introduction of additional visual elements within the U.S. 101 right-of-way (whether those elements are additional freeway lanes or soundwalls) would have no effect on the characteristics that qualify the Martin/Bushnell-Donnelly House for the National Register.

Although there remains the possibility that the project may introduce some new audible elements, any resultant increases in traffic noise levels would not diminish the integrity of the significant historic features of the property, which do not include the setting or surroundings. Additionally, the proposed project will not affect the property as a result of vibration generated during construction. The residence is located well beyond the calculated "minimum safe from damage" distance threshold of 64 feet.

The proposed project will not cause a constructive use of the Martin/Bushnell-Donnelly House because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

Dwight and Hattie Kempton House, 2290 Varley Street, Summerland, CA—This residence, a modest Folk Victorian residence built circa 1895, is eligible for listing in the National Register under Criterion B for its association with an important individual in local history. The residence is significant at the local level, and the period of significance is circa 1895 to 1906, the time span in which Dwight Kempton, an oil operator and entrepreneur, lived in the house and made it his principal place of business.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Dwight and Hattie Kempton property.

The project work at this location would include widening the freeway in each direction from two to three lanes. A 1,400-foot-long, 16-foot-high soundwall is being considered in the state right-of-way. Neither the widening nor the addition of a soundwall will have any effect on the property because no permanent or temporary occupancy would occur.

The proposed project will not affect the historic property because it will not diminish the integrity of the property's significant historic features. Because the existing setting surrounding the parcel has been compromised and is already dominated by the freeway, and because the setting does not contribute to the historic property's significance, the introduction of additional visual elements within the U.S. 101 right-of-way (whether those elements are additional freeway lanes or soundwalls) would have no effect on the characteristics that qualify the Dwight and Hattie Kempton House for the National Register.

Although there remains the possibility that the project may introduce some new audible elements, any resultant increases in traffic noise levels would not diminish the integrity of the significant historic features of the property, which do not include the setting or surroundings. Additionally, the proposed project will not affect the property as a result of vibration generated during construction. The residence is located well beyond the calculated "minimum safe from damage" distance threshold of 64 feet.

The proposed project will not cause a constructive use of the Dwight and Hattie Kempton property because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

J. Warren Darling House, 2236 Lillie Avenue, Summerland, CA—This is a Folk Victorian residence built in 1890 that is eligible for listing in the National Register

under Criterion B as the surviving property that best represents the achievements of a significant individual; it is also eligible under Criterion C for the purposes of this project only. The residence is significant at the local level, and the period of significance is 1890 to 1913, the time span in which J. Warren Darling owned and lived in the house. As a blacksmith, machinist, and manufacturer of pumping equipment, Darling played a central role in the development of Summerland's oil industry and economy during its heyday.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the J. Warren Darling property.

The project work at this location would include widening the freeway in each direction from two to three lanes. A 1,400-foot-long, 16-foot-high soundwall is being considered in the state right-of-way. Neither the widening nor the addition of a soundwall will have any effect on the property because no permanent or temporary occupancy would occur.

The proposed project will not affect the historic property because it will not diminish the integrity of the property's significant historic features. Because the existing setting surrounding the parcel has been compromised and is already dominated by the freeway, and because the setting does not contribute to the historic property's significance, the introduction of additional visual elements within the U.S. 101 right-of-way (whether those elements are additional freeway lanes or soundwalls) would have no effect on the characteristics that qualify the Darling House for the National Register.

Although there remains the possibility that the project may introduce some new audible elements, any resultant increases in traffic noise levels would not diminish the integrity of the significant historic features of the property, which do not include the setting or surroundings. Additionally, the proposed project will not affect the property as a result of vibration generated during construction. The residence is located well beyond the calculated "minimum safe from damage" distance threshold of 64 feet.

The proposed project will not cause a constructive use of the J. Warren Darling property because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

Ortega-Masini Adobe, 129 Sheffield Drive, Montecito, CA—Designated as a Santa Barbara County Landmark, this is an early-to-mid-nineteenth century, two-story

adobe residence with a prominent cantilevered balcony on its main façade. The property is eligible for listing in the National Register under Criterion A for its association with "early settlement in coastal Santa Barbara during the Mexican period," and under Criterion C as a rare Santa Barbara example of a Monterey-style two-story adobe.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Ortega-Masini Adobe property.

The project work at this location would include widening the freeway in each direction from two to three lanes and a 12-foot-high soundwall along the north shoulder of U.S. 101 next to the northbound Sheffield Drive on-ramp. In addition, the existing left-side southbound ramps would be removed and replaced with right-side southbound ramps at grade and replace the existing two-lane structure with two separate three lane structures. The new Sheffield Interchange structures would match the height of the existing elevated structure. The soundwall and structures would not be visible from the Ortega-Masini Adobe because the parcel is surrounded by thick, mature vegetation.

The introduction of visual elements from the proposed project, namely the proposed soundwall on the north side of U.S. 101 and the reconstructed Sheffield Drive interchange, will not adversely affect the Ortega-Masini Adobe property because it will not change the character of the physical features within the setting that contribute to its historic significance. Although somewhat diminished as a result of surrounding developments after the period of significance, the Ortega-Masini Adobe retains integrity of setting, feeling, and association. These contributive elements would not be affected by the proposed project because the work will occur within the already-altered freeway setting. The freeway at this location is elevated and obscures all coastal views from the parcel. Also, intervening vegetation effectively shields the historic property, blocking all sightlines between the interior of the parcel and the proposed project elements. The introduction of additional visual elements (whether those elements are additional freeway lanes, soundwalls, or a new interchange structure) within the U.S. 101 right-of-way would therefore have no effect on the characteristics that qualify the Ortega-Masini Adobe for the National Register.

Additionally, the proposed project will not affect the property as a result of vibration generated during construction. The residence is located beyond the calculated "minimum safe from damage" distance threshold of 179 feet (Vibration Report).

The proposed project will not cause a constructive use of the Ortega-Masini Adobe property because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

Danielson-Katenkamp House, 1637 Posolipo Lane, Montecito, CA—This residence was built in 1912 and moved to its present location in 1955. The residence is eligible for listing in the National Register under Criterion C for its architectural distinction as a finely crafted example of Arthur B. Benton's Chalet design. The property is significant at the local level, and its period of significance is 1912, the year it was built.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Danielson-Katenkamp property.

The project work at this location would include widening the freeway in each direction from two to three lanes, building a new at-grade bridge at Oak Creek, and erecting a 10-foot-high soundwall along the north U.S. 101 right-of-way line. The soundwall would be placed on the opposite side of the freeway from the residence.

The introduction of visual elements, namely the addition of HOV lanes on the north and south sides of U.S. 101, the construction of a new at-grade bridge, and a proposed soundwall on the north side of U.S. 101, would not affect the property because the setting and historic views do not contribute to its historic significance. The property was determined eligible for its architectural merits (Criterion C) and has a one-year period of significance (1912), its date of construction. As a moved property, it has already lost integrity of location, setting, feeling, and association; the property derives its significance from the building's intact aspects of design, materials, and workmanship.

Additionally, the proposed soundwall would be located on the opposite side of the freeway and out of view from the residence, which is screened by heavy tree cover and an existing 12-foot-high soundwall on the freeway (north) side of the parcel line. Because the setting surrounding the parcel has already been compromised and does not contribute to the historic property's significance, the introduction of additional visual elements (whether those elements are additional freeway lanes, soundwalls, or a new at-grade bridge) within the U.S. 101 right-of-way would have no effect on the characteristics that qualify the Danielsen-Katenkamp House for the National Register. Additionally, the proposed project would not affect the Danielson-Katenkamp House

as a result of vibration generated during construction. The residence is located well beyond the calculated "minimum safe from damage" distance threshold of 64 feet.

The proposed project will not cause a constructive use of the Danielson-Katenkamp property because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic home.

Montecito Inn, 1295 Coast Village Road, Montecito, CA—This Spanish Revival hotel was built in 1928 along what was then the main state highway, also known as the Coast Road. The property is eligible for listing in the National Register under Criterion A for its association with the Santa Barbara area's tourism and hotel construction boom in the 1920s, and the trend of providing roadside accommodations tailored specifically to motor tourists. It is also eligible under Criterion C as an important work by a master designer, architect/engineer Edward L. Mayberry of Los Angeles, and as a distinctive example of a type, period, and method of construction, representing post-earthquake Spanish Revival commercial architecture in Montecito. The Montecito Inn is eligible at the local level of significance.

The proposed project does not require a permanent physical occupancy or temporary occupancy of any of the Montecito Inn property.

The project work at this location would include widening the freeway in each direction from two to three lanes and erecting an approximately 500-foot-long, 12-foot-tall soundwall on the south U.S. 101 right-of-way line. The soundwall would be placed on the opposite side of the freeway from the property.

The introduction of visual elements from the proposed project, namely the proposed soundwall on the south side of U.S. 101, would not affect the Montecito Inn property because it would not change the character of the physical features within the setting that contribute to its historic significance. Although somewhat diminished as a result of surrounding developments after the period of significance, particularly construction of the U.S. 101 freeway at the rear of the building, the Montecito Inn retains integrity of setting, feeling, and association. These intact aspects of integrity are best preserved at the inn's public façades, which front on Coast Village Road and Olive Mill Road.

The project work would not affect the setting because it would occur within the existing freeway corridor, which is located behind and well below the grade of the inn. This element of the inn's setting has already been altered and does not contribute

to the significance of the historic property. Because the specific setting in which the proposed construction will occur has already been compromised, the introduction of additional visual elements (whether those elements are additional freeway lanes or soundwalls) within the U.S. 101 right-of-way would have no effect on the characteristics that qualify the Montecito Inn for the National Register. Additionally, the project would not affect the Montecito Inn as a result of vibration or noise generated during construction. The Montecito Inn is located well beyond the calculated "minimum safe from damage" distance threshold.

The proposed project will not cause a constructive use of the Montecito Inn property because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic hotel.

Appendix C Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
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March 2013

NON-DISCRIMINATION
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

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Appendix D State Historic Preservation Officer Correspondence

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

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4 November 2010

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street , Suite 100
Sacramento, CA 95816

05-SB-101
PM 1.4/12.3
EA 05-0N7000/No. 0500000225

RE: Determination of Eligibility for the South Coast 101 High Occupancy Vehicle (HOV) Lanes Project, Santa Barbara County, California

Dear Mr. Donaldson,

The California Department of Transportation (Caltrans) is initiating consultation with the State Historic Preservation Officer (SHPO) for the undertaking titled the South Coast 101 High Occupancy Vehicle (HOV) Lanes Project. This consultation is undertaken in accordance with the January 2004 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (hereafter, the Programmatic Agreement).

Enclosed you will find a three volume Historic Property Survey Report (HPSR, Joslin 2010) for the proposed undertaking. The document fulfills three responsibilities under Section 106 of the National Historic Preservation Act. These include determination of the Area of Potential Effects (APE), the identification of cultural resources located within the APE, and the evaluation of properties for eligibility to the National Register of Historic Places (NRHP). Under the Programmatic Agreement, Caltrans is responsible for ensuring the appropriateness of the Area of Potential Effects (APE) (Stipulation VIII.A) and the adequacy of historic property identification efforts (Stipulation VIII.B). We are consulting with you at the present time under Stipulation VIII.C.5 of the Programmatic Agreement, which requires that we seek your concurrence on Caltrans' determination of NRHP eligibility for potential historic properties.

Project Description
The California Department of Transportation (Caltrans) in cooperation with Santa Barbara County Association of Governments (SBCAG) proposes a High Occupancy Vehicle (HOV) Lane Project between 0.22 miles south of the Bailard Avenue overcrossing (PM 1.4) in the

City of Carpinteria to Sycamore Creek (PM 12.3) in the City of Santa Barbara (Figures 1, 2a and 2b). The Area of Potential Effects (APE) is depicted in Figure 3, Sheets 1-24.

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. 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. A more detailed project description can be found on pages 1-3 of the enclosed HPSR.

Resources Identified
Consultation and identification efforts located nine prehistoric archaeological resources and 106 built-environment properties within the APE (See HPSR Figure 3, Sheets 1-24).

Forty-one of the 106 built-environment resources were **previously** evaluated for the NRHP by consensus determination between the Federal Highway Administration (FHWA) and the SHPO (Scott 1992; Pavlik 2000) (See HPSR Attachment G, FHWA921006A:1993; FHWA000801A:2000, 2008; FHWA000605A: 2000, 2004). Of those 41 resources, six properties that were previously found to meet the criteria for listing in the NRHP are located within the Architectural APE of the current South Coast 101 HOV Project. These include: the Summerland Residential Historic District, the Summerland Presbyterian Church, the McIntyre House, the Becker House, the Eisenberg House, and the Ortega-Masini Adobe. The remaining 35 properties were found not to meet the criteria for listing in the NRHP. Because of the lapse of time since the Scott (1992) study, additional evaluations (Carr 2010; JRP 2009, 2010) document the current condition of the previously surveyed properties within the APE and reassess the previous evaluations. The results of these reevaluated properties are summarized in the *Findings* section of this transmittal letter, Pages 3-11.

Identification efforts located nine archaeological resources. These include: three previously recorded sites (CA-SBA-18, SBA-19, and SBA-2179/H), and six unrecorded redeposited middens and shell scatters. The six redeposited resources include a well-developed midden used as road fill (Via Real Redeposited Midden: P-42-003943), a light accumulation of shellfish mixed into the shoulder of a frontage road (Casitas Pass Road Redeposited Shell Scatter: P-42-0033942) and four redeposited sparse and mixed shell deposits (Toro Creek Redeposit, Arroyo Paredon Redeposit, El Estero Redeposit 1, and El Estero Redeposit 2).

Pursuant to Stipulation VIII.C of the Programmatic Agreement, the seven archaeological resources and an additional 65 built-environment properties were formally evaluated for NRHP eligibility in accordance with 36 CFR 800.4(c)(1). The current studies identified no evidence of CA-SBA-18 and SBA-19 within the current APE, and therefore, no eligibility determinations are required. The evaluation documents are in Attachment E (Kaijankoski et al. 2009) and Attachments H-J (Carr 2010; JRP Historical Consulting 2009, 2010), respectively, of the enclosed HPSR (Joslin 2010).

All other resources identified within the APE are exempt from formal evaluation pursuant to Programmatic Agreement Stipulation VIII.C.1 and Attachment 4 ("Properties Exempt from Evaluation").

Findings
Caltrans is requesting your concurrence on the following resources Pursuant to Stipulation VIII.C.5 of the Programmatic Agreement.

1. As assigned by the Federal Highway Administration (FHWA) pursuant to 23 U. S. C. 327, Caltrans has determined that the following property, prehistoric deposit P-42-003943, the Via Real Redeposited Midden, within the current project APE is eligible for listing in the NRHP. Although the midden was moved from its original location, it is not mixed with road fill or other non-archaeological sediments, and appears to represent a single component deposit, evidenced by four radiocarbon dates. All dates are relatively close in age (4010, 3760, 3750, and 3160 calBP), falling within the latter half of the Early Period (6300-2700 calBP). Given these characteristics, the Via Real Redeposited Midden retains a significant amount of research value and is considered eligible for listing in the NRHP under Criterion D for potential to yield information important to prehistory. Particularly, the site has the data potential to answer research questions such as: Chronological Ordering of the Deposit, Social or Work Organization during the Millingstone/Early Period Transition, and Maritime Adaptations during the late Holocene.

Prehistoric Resource Determined Eligible for the NRHP.

Site Identification Name, Number	Figure 3 APE Map Sheet No.	Post Mile
Via Real Redeposited Midden, P-42-003943[a]	10	5.7-5.8

Note: [a]The midden appears to be from CA-SBA-6, the Higgins site.

2. As assigned by FHWA pursuant to 23 U. S. C. 327, Caltrans has determined that the following six properties — the area of one previously recorded siteswithin the APE and five sparse, redeposited prehistoric shell scatters —evaluated during the current undertaking are not eligible for the NRHP. The area of CA-SBA-2179/H in the APE consists of a mixed and sparse scatter of marine shell, naturally occurring chert cobbles, and historic roadside material. A small isolated area of dark organic soil was observed near a culvert in the area of a fiber optics cable; however, the soil did not contain dietary materials or artifacts, was mixed with gravel and fill soils, and appears to have been redeposited from another location. These findings indicate that the site was essentially destroyed by construction of the highway and railroad. All that remains is a narrow strip of land about three-to-four meters wide that lacks any materials suitable for analysis, containing sparse historic material that has no integrity and no known association. The current studies identified no evidence of CA-SBA-18 and SBA-19 within the current APE, and therefore, no eligibility determinations are required. Deposits associated with CA-SBA-18 and -19 are not within the current APE.

Prehistoric Resources Determined Not Eligible for the NRHP Based on Research and Surveys.

Site	Figure 3 APE Map Sheet No.	Post Mile
CA-SBA-2179/H	17-18	10.0-10.3

Prehistoric Resources Determined Not Eligible for the NRHP during Extended Phase I Testing.

Resource Identification Name, Number	Subsurface Exploration Area No.	Figure 3 APE Map Sheet No.	Post Mile
Casitas Pass Road Redeposited Shell Scatter, P-42-0033942	11	3	2.7
El Estero Redeposit 1	8	7	4.28
El Estero Redeposit 2	8	7	4.57
Arroyo Paredon Redeposit	7	9	5.15
Toro Creek Redeposit	5	12	6.74

3. The following three historic-period, built-environment properties previously evaluated by Scott (1992) were found eligible for the NRHP (FHWA921006A:1993) and confirmed eligible as a result of the current study without modification of eligibility criteria (JRP 2009).

Properties Previously Determined Eligible for the NRHP and Confirmed Eligible as a Result of the Current Study, without Modification of Eligibility Criteria.

Name Address	APN	National Register Eligibility Criteria	Figure 3 APE Map Sheet No.	APE Map Reference No. (JRP 2009/ Scott 1992)
McIntyre House 2274 Lillie Ave. Summerland	005-175-003	C	15	36/S-18
Ortega-Masini Adobe 129 Sheffield Rd. Montecito	007-350-010	A, C	17	43/M-1
Danielson / Katenkamp House 1637 Posilipo Rd. Montecito	007-373-001	C	18	51/M-38

4. Three historic-period, built-environment properties previously evaluated by Scott (1992) were found eligible for the NRHP (FHWA921006A:1993) and were confirmed eligible as a result of the current study with modification of eligibility criteria (JRP 2009).

Properties Previously Determined Eligible for the NRHP and Confirmed Eligible as a Result of the Current Study, but with Modification of Eligibility Criteria.

Name Address	APN	National Register Eligibility Criteria	Figure 3 APE Map Sheet No.	APE Map Reference No. (JRP 2009/Scott 1992)
Floyd Hickey House 2492 Lillie Ave. Summerland	005-194-006	JRP 2009: B,C Scott 1992: A,B	15	22/S-2

Lillis-Sloan House 2480 Lillie Ave. Summerland	005-194-004	JRP 2009: B,C Scott 1992: A,B	15	24/S-4
Becker House 108 Pierpont Summerland	005-173-001	JRP 2009: C Scott 1992: A,B,C	15	42/S-19

5. One historic-period property previously evaluated by Scott (1992) was found ineligible for the NRHP (FHWA921006A:1993). The current study, however, found Montecito Inn eligible for listing in the NRHP (JRP 2009).

Properties Previously Determined Not Eligible for the NRHP But Determined Eligible as a Result of the Current Study.

Name Address	APN	National Register Eligibility Criteria	Figure 3 APE Map Sheet No.	APE Map Reference No. (JRP 2009/Scott 1992)
Montecito Inn 1295 Coast Village Rd. Montecito	009-293-007	A, C	20	63/M-14

6. The following four historic-period, built-environment properties were evaluated as part of the current study and found to be eligible for the NRHP (JRP 2009, 2010).

Properties Determined Eligible for the NRHP as a Result of the Current Study.

Name Address	APN	National Register Eligibility Criteria	Figure 3 APE Map Sheet No.	APE Map Reference No. (JRP 2009, 2010)
Darling House 2225 Lillie Ave. Summerland	005-172-003	B, C	15	40
Martin / Bushnell-Donnelly House 2465 Banner Ave. Summerland	005-193-001; 005-193-008	C	15	71
Dwight and Hattie Kempton House 2290 Varley St. Summerland	005-174-016	B, C	15	87
J. Warren Darling House 2236 Lillie Ave. Summerland	005-171-006	B	15	88

7. The following 28 historic-period, built-environment properties within the current architectural APE were previously evaluated and determined to be ineligible for listing in the NRHP. Carr (2010) and JRP (2009, 2010) have confirmed that all 28 of these properties are not eligible.

Properties Previously Determined Not Eligible for the NRHP and Confirmed Not Eligible as a Result of the Current Study.

Name Address	APN	Figure 3 APE Map Sheet No.	APE Map Reference No. (Carr 2010;JRP 2009, 2010/Scott 1992)
Castillo House 1094 Cramer Rd. Carpinteria	004-036-022	6	13/ C-11
Alaya House 1097 Cramer Rd[a] Carpinteria	004-036-005	6	14/ C-10
Memorial Oaks US 101 right-of-way between Toro Canyon Rd. and Nidever Rd.	-	11-12	19/ S-19
Reeves House 2476 Lillie Ave. Summerland	005-194-003	15	25/S-5
2440 Lillie Ave. Summerland	005-192-005	15	28/S-6
2430 Lillie Ave. Summerland	005-192-004	15	29/S-7
Summerland WWI Monument/Lillie Avenue Park Lillie Ave.[b] Summerland	005-186-005	15	32/S-20
Beals House 2329 Lillie Ave. Summerland	005-183-009	15	33/S-15
2325 Lillie Ave. Summerland[c]	005-183-008	15	34/S-16
1641 Posilipo Ln. Montecito	007-373-003	18	49/M-39
Montecito Parkway US 101 between Sheffield Dr. and Olive Mill Rd.	-	17-20	53/ M-40
Urquhart House 1380 Virginia Rd. Montecito	009-301-005	20	55/M-31
1374-1376 Virginia Rd. Montecito	009-301-006	20	56/M-30
Alagio House 1360 Virginia Rd. Montecito	009-301-008	20	58/M-29
1350 Virginia Rd. Montecito	009-301-009	20	59/M-27
1346 Virginia Rd. Montecito	009-301-010	20	60/M-26
75 Olive Mill Rd. Montecito	009-294-002	20	64/M-22

Bischoff House 1283 Coast Village Circle Montecito	009-293-006	20	65/M-18
Brownie Apartments 2380 Lillie Ave. Summerland	005-185-007	17	75/S-10
Summerland Post Office; Summerland Nursery 2350-2360 Lillie Ave. Summerland	005-185-001	17	76/S-11& S-12
Summerland Beach Cafe 2294 Lillie Ave. Summerland	005-175-008	17	86/S-17
Baer House 1424 La Vereda Ln. Montecito	009-251-005	20	96/M-13
John H Moore House 1390 Virginia Rd. Montecito	009-301-004	20	98/M-32
Kudo Nursery / Florists 1433 S Jameson Ln. Montecito	009-320-019	20	101/M-33
Richard and Florence Demory House 1447 S Jameson Ln. Montecito	009-331-020	20	102/M-34
1465 S Jameson Ln. Montecito	009-331-004	20	103/M-35
40 & 50 Los Patos Way[d] Santa Barbara	017-391-001	23	104/P-43, -44
Norris King Davis Residence 111 Arroqui St. Montecito	007-350-019	17	105/M-2

Note- Carr (2010) reevaluated Map Reference Nos. 96, 98, 101-105; [a]Scott (1992) evaluated the older of the two residences originally located on this parcel and found it ineligible. The newer residence, constructed in 1950, was exempt from evaluation at that time. By the time JRP revisited the parcel, the older residence had been demolished. The newer residence was evaluated by JRP and found ineligible for the NRHP. [b]This World War I monument was originally erected on the south side of US 101, on Wallace Avenue near Lookout Park, in 1918. It was moved to its current location in 1998. Although it has been determined ineligible for the NRHP, it is officially designated Santa Barbara County Historic Landmark Number 35 and constitutes a historic resource under CEQA. [c]Also includes 2315 Lillie Avenue. [d]Previously evaluated by Pavlik (2000).

8. One historic district and four individual historic-period, built-environment properties previously determined eligible for listing in the NRHP were determined not eligible as a result of the current study.

Properties Previously Determined Eligible for the NRHP but Determined Not Eligible as a Result of the Current Study.

Name Address	APN	Figure 3 APE Map Sheet No.	APE Map Reference No. (Carr 2010;JRP 2009/Scott 1992)
Summerland Residential Historic District[a]			
2496 Lillie Ave.[b]	005-194-007	15	21/S-1
2492 Lillie Ave.[c]	005-194-006	15	22/S-2
2484 Lillie Ave.[b]	005-194-005	15	23/S-3
2480 Lillie Ave.[c]	005-194-004	15	24/S-4
Summerland			
2496 Lillie Ave.[b] Summerland	005-194-007	15	21/S-1
2484 Lillie Ave.[b] Summerland	005-194-005	15	23/S-3
Presbyterian Church 2400 Lillie Ave. Summerland	005-192-001	15	30/S-9
Eisenberg House 135 La Vuelta Rd. Montecito	007-340-010	18	95/M-5

Note-[a]Summerland Residential Historic District (APE Map Reference No. 20) properties are now considered under separate JRP Map Reference Nos. 21 through 24. The current study determined that the four properties do not constitute a historic district. [b]Two properties were found ineligible (JRP Reference Nos. 21 and 23) and [c] two were found to be individually eligible (Reference Nos. 22 and 24).

9. A total of 61 properties were evaluated by current studies found not eligible for listing in the NRHP as a result of the Carr (2010) and JRP (2009, 2010) evaluations.

Properties Determined Not Eligible for the NRHP as a Result of the Current Study.

Name Address	APN	Figure 3 APE Map Sheet No.	APE Map Reference No. (Carr 2010;JRP 2009, 2010)
1314 Sterling Ave. Carpinteria	003-542-015	5	1
1313 Sterling Ave. Carpinteria	003-542-016	5	2
1317 Sterling Ave. Carpinteria	003-542-17	5	3
1324 June Ave. Carpinteria	003-552-039	5	4
1314 June Ave. Carpinteria	003-552-038	5	5
1313 June Ave. Carpinteria	003-552-037	5	6
1312 Post Ave. Carpinteria	003-552-028	5	7
1311 Post Ave. Carpinteria	003-552-027	5	8
1310 Delta St. Carpinteria	003-552-018	5	9

1309 Delta St. Carpinteria	003-552-017	5	10
1310 Chaney Ave. Carpinteria	003-552-008	5	11
1311 Chaney Ave. Carpinteria	003-552-007	5	12
1373 Cramer Circle Carpinteria	003-103-011 and 003-103-008	5	15
4484 Carpinteria Ave. Carpinteria	004-036-004	5	16
4400 Carpinteria Ave. Carpinteria	003-211-013	6	17
1043 Plum St. Carpinteria	003-210-001	6	18
Summerland County Water District Bldg. 2450 Lillie Ave. Summerland	005-194-001	15	26
2448 Lillie Ave. Summerland	005-192-006	15	27
2375 Lillie Ave. Summerland	005-186-004	15	31
2285 Lillie Ave. Summerland	005-177-005	15	35
2262 Ortega Hill Rd. Summerland	005-176-001	15	37
Texaco Service Station 2245 Lillie Ave. Summerland	005-172-011	15	38
2230 Hardinge Ave. Summerland	005-172-007	15	39
2211 Lillie Ave. and 2220 Hardinge Ave. Summerland	005-172-002	15	41
1950/1960 N Jameson Ln. Montecito	007-350-009	17	44
126 Loureyro Rd. Montecito	007-350-011	17	45
127 Loureyro Rd. Montecito	007-350-038	17	46
100 Arroqui Rd. Montecito	007-350-039	17	47
1645 Posilipo Rd. Montecito	007-373-004	18	48
1639 Posilipo Rd. Montecito	007-373-002	18	50
1635 Posilipo Rd. Montecito	007-371-004	18	52
1394 Danielson Rd. Montecito	009-301-001	20	54

South Coast 101 HOV Lanes Project, Santa Barbara 9

1368/1370 Virginia Rd. Montecito	009-301-007	20	57
1340/1342 Virginia Rd. Montecito	009-301-011	20	61
1332 A- C Virginia Rd. Montecito	009-301-012	20	62
Southern Pacific Coast Line -Between Linden Avenue Crossing in Carpinteria and Calle Cesar Chavez Crossing in Santa Barbara	-	6-24	66
Garrapata Creek Culvert U.S. 101 at Garrapata Crk Carpinteria	-	11	67
2500 Lillie Ave. Summerland	005-204-023	15	68
2487 Banner Ave. Summerland	005-193-009	15	69
2485 Banner Ave. Summerland	005-193-003	15	70
2440 Varley St. Summerland	005-191-005	15	72
130 Valencia Rd. Summerland	005-191-006	15	73
2385 Varley St. Summerland	005-185-003	15	74
136 Colville St. Summerland	005-184-001	15	77
2340 Varley St. Summerland	005-181-005	15	78
2335 Varley St. Summerland	005-182-005	15	79
2322 Varley St. Summerland	005-181-006	15	80
2315 Varley St. Summerland	005-182-002	15	81
2314 Varley St. Summerland	005-181-009	15	82
120 Hollister St. Summerland	005-182-001	15	83
2304 Varley St. Summerland	005-181-008	15	84
2296 Varley St. Summerland	005-174-008	15	85
2228 Lillie Ave. Summerland	005-171-007	15	89
2196 Harding Ave. Summerland	005-122-042	16	90
2192 Harding Ave. Summerland	005-122-005	16	91

2176 Ortega Hill Rd. Summerland	005-122-044	16	92
Summerland by the Sea Mobile Home Park 2155 Ortega Hill Rd. Summerland	005-121-012	16	93
1041 Plum St. Carpinteria	003-210-002	6	94
1620 N Jameson Ln Montecito	007-333-004	19	97
1396 Danielson Rd. Montecito	009-301-002	20	99
1403 S Jameson Ln. Montecito	009-304-012	20	100

Note-Carr (2010) evaluated Map Reference Nos. 94-100.

10. The following historic period resource is not eligible for listing in the NRHP but is a historic resource under CEQA (JRP 2009).

Properties Determined Not Eligible for the NRHP That Are Historic Resources Under CEQA.

Name Address	APN	Eligibility Criteria	Figure 3 APE Map Sheet No.	APE Map Reference No. JRP 2009/Scott 1992
Summerland World War I Monument/ Lillie Avenue Park Lillie Ave. Summerland	005-186-005	5S1	15	32/S-20

Note: Information on the resources located on this parcel is incorrect in the Santa Barbara County Assessor records. A field check verified that APN 005-184-005, located west of APN 005-184-004, is actually occupied by the Summerland World War I Monument; APN 005-184-004 is occupied by the Carpinteria-Summerland Fire Department.

Summary

We look forward to receiving your response on the eligibility determinations of the above listed resources within 30 days of your receipt of this HPSR submittal, in accordance with Stipulation VIII.C.5.a of the Programmatic Agreement. A separate Finding of Effect document will be submitted at a later date after an alternative is selected.

The California Department of Transportation is transmitting the HPSR for the South Coast 101 HOV Lanes Project as the NEPA lead agency under the provisions of the Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California's Participation in the Surface Transportation Project Delivery Pilot Program that became effective on July 1, 2007.

The MOU was signed pursuant to Section 6005 of the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), allowing the Secretary of Transportation to assign, and the State of California to assume, FHWA's

responsibilities under NEPA, as well as consultation and coordination responsibilities under other Federal environmental laws.

Therefore, as a project covered under the Pilot Program MOU, FHWA has assigned and Caltrans has assumed FHWA responsibility for environmental review, consultation, and coordination on the South Coast 101 HOV Lanes Project. Please direct all future correspondence on this project to Caltrans.

This letter and the attached documentation are concurrently being distributed to the Caltrans Cultural Studies Office (CSO) (MOU; Programmatic Agreement Stipulation VIII.C.5). Thank you very much for your assistance with the South Coast 101 HOV Lanes Project. If you need any additional information, please feel free to contact archaeologist Terry L. Joslin (phone: (805) 549-3778; e-mail: Terry_Joslin@dot.ca.gov).

Sincerely,

Valerie A. Levulett

Valerie A. Levulett
Technical Studies Branch Chief and Heritage Resource Coordinator
District 5, San Luis Obispo

Attachment: Historic Property Survey Report for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, California, Volumes 1-3 (Joslin 2010)

Cc: Anmarie Medin, Caltrans, CSO

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

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January 26, 2011 Reply To: FHWA101108A

Valerie Levulett
Technical Studies Branch Chief and Heritage Resource Coordinator
Caltrans District 5, San Luis Obispo
50 Higuera Street
San Luis Obispo, CA 93401-5415

Re: Determinations of Eligibility for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, CA

Dear Ms. Levulett:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has determined that the following properties are not eligible for the National Register of Historic Places (NRHP):

- CA-SBA-2179/H
- Casitas Pass Road Redeposited Shell Scatter, P-42-0033942
- El Estero Redeposit 1
- El Estero Redeposit 2
- Arroyo Paredon Redeposit
- Toro Creek Redeposit
- 1094 Cramer Rd, Carpinteria
- 1097 Cramer Rd, Carpinteria
- Memorial Oaks, US 101 ROW between Toro Canyon Rd and Nidever Rd
- 2476 Lillie Ave, Summerland
- 2440 Lillie Ave, Summerland
- 2430 Lillie Ave, Summerland
- Summerland WW I Monument/Lillie Ave Park, Lillie Ave, Summerland
- 2329 Lillie Ave, Summerland
- 2325 Lillie Ave, Summerland
- 1641 Posilipo Ln, Montecito
- Montecito Parkway, US 101 between Sheffield Drive and Olive Mill Road
- 1380 Virginia Rd, Montecito
- 1374-1376 Virginia Rd, Montecito
- 1360 Virginia Rd, Montecito
- 1350 Virginia Rd, Montecito
- 1346 Virginia Rd, Montecito
- 75 Olive Mill Rd, Virginia Rd, Montecito
- 1283 Coast Village Circle, Virginia Rd, Montecito
- 2380 Lillie Ave, Summerland
- 2350-2360 Lillie Ave, Summerland
- 2294 Lillie Ave, Summerland
- 1424 La Vereda Ln, Montecito
- 1390 Virginia Rd, Montecito
- 1433 S Jameson Ln, Montecito
- 1447 S Jameson Ln, Montecito

- 1465 S Jameson Ln, Montecito
- 40 & 50 Los Patos Way, Santa Barbara
- 111 Arroquoi St, Montecito
- Summerland Residential Historic District**
  - 2496 Lillie Ave, Summerland**
  - 2492 Lillie Ave, Summerland**
  - 2484 Lillie Ave, Summerland**
  - 2480 Lillie Ave, Summerland**
- 2496 Lillie Ave, Summerland**
- 2484 Lillie Ave, Summerland**
- 2400 Lillie Ave, Summerland**
- 135 Vuelta Rd, Montecito**
- 1314 Sterling Ave, Carpinteria
- 1313 Sterling Ave, Carpinteria
- 1317 Sterling Ave, Carpinteria
- 1324 June Ave, Carpinteria
- 1314 June Ave, Carpinteria
- 1313 June Ave, Carpinteria
- 1312 Post Ave, Carpinteria
- 1311 Post Ave, Carpinteria
- 1310 Delta St, Carpinteria
- 1309 Delta St, Carpinteria
- 1310 Chaney Ave, Carpinteria
- 1311 Chaney Ave, Carpinteria
- 1373 Cramer Circle, Carpinteria
- 4484 Carpinteria Ave, Carpinteria
- 4400 Carpinteria Ave, Carpinteria
- 1043 Plum Street, Carpinteria
- 2450 Lillie Ave, Summerland
- 2448 Lillie Ave, Summerland
- 2375 Lillie Ave, Summerland
- 2285 Lillie Ave, Summerland
- 2262 Ortega Hill Rd, Summerland
- 2245 Lillie Ave, Summerland
- 2230 Hardinge Ave, Summerland
- 2211 Lillie Ave and 2220 Hardinge Ave, Summerland
- 1950/1960 N Jameson Ln, Montecito
- 126 Loureyro Rd, Montecito
- 127 Loureyro Rd, Montecito
- 100 Arroqui Rd, Montecito
- 1645 Posilpo Rd, Montecito
- 1639 Posilpo Rd, Montecito
- 1635 Posilpo Rd, Montecito
- 1394 Danielson Rd, Montecito
- 1368/1370 Virginia Rd, Montecito
- 1340/1342 Virginia Rd, Montecito
- 1332 A-C Virginia Rd, Montecito
- Southern Pacific Coast Line – between Linden Avenue Crossing in Carpinteria and Calle Cesar Chavez Crossing in Santa Barbara
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- 2485 Banner Ave, Summerland
- 2440 Varley St, Summerland
- 130 Valencia Rd, Summerland
- 2385 Varley St, Summerland
- 136 Colville St, Summerland
- 2340 Varley St, Summerland
- 2335 Varley St, Summerland
- 2322 Varley St, Summerland
- 2315 Varley St, Summerland
- 2314 Varley St, Summerland
- 120 Hollister St, Summerland
- 2304 Varley St, Summerland
- 2296 Varley St, Summerland
- 2228 Lillie Ave, Summerland
- 2196 Harding Ave, Summerland
- 2192 Harding Ave, Summerland
- 2176 Ortega Hill Rd, Summerland
- 2155 Ortega Hill Rd, Summerland
- 1041 Plum St, Carpinteria
- 1620 N Jameson Ln, Montecito
- 1396 Danielson Rd, Montecito
- 1403 S Jameson Ln, Montecito

***This determination reflects a change in National Register status for this property.*

Based on my review of the submitted documentation, I concur.

Caltrans has found that the following properties are eligible for the NRHP:

- **Via Real Redeposited Midden, P-42-003943 –** Although the midden was moved from its original location, it is not mixed with road fill or other non-archeological sediments, and appears to represent a single component deposit, as evidenced by four radiocarbon dates. All dates are relatively close in age, falling within the latter half of the Early Period (6300-2700 calBP). The site retains a significant amount of research value and is eligible for the NRHP under Criterion D for its research potential. **I concur.**

- **McIntyre House, 2274 Lillie Ave, Summerland –** The McIntyre House is eligible under Criterion C at the local level of significance as a good representative of the vernacular cottage house type, built by and for the predominantly working-class families who were among Summerland's earliest settlers. The period of significance is circa 1890. **I concur.**

- **Ortega-Masini Adobe, 129 Sheffield Rd, Montecito –** The Ortega-Masini Adobe is eligible for the NRHP under Criteria A and C at the local level of significance. Under Criterion A the building is significant for its association with early settlement in coastal Santa Barbara during the Mexican period. Under Criterion C the building is significant as a rare Santa Barbara example of a Monterey-style two story adobe. The period of significance is 1820-1880. **I concur.**

- **Danielson/Katenkamp House, 1637 Posilipo Rd, Montecito –** The Danielson/Katenkamp house is eligible for the NRHP under Criterion C at the local level of significance as a finely crafted example of architect Arthur B. Benton's Chalet design. The period of significance is 1912. **I concur.**

- **Floyd Hickey House, 2492 Lillie Ave, Summerland –** The Floyd Hickey House was determined eligible in 1992 under Criteria A and B. Under Criterion A the property was considered eligible "for its association with Summerland's Spiritualist beginnings and the peak years of the community's oil and kelp industries (1888-1920)." It was also considered a contributor to the Summerland Residential Historic District. For the current study Caltrans has determined that while the building dates to an early period of settlement and development in Summerland, the house is not strongly or directly associated with Spiritualist colonization, development of the oil industry, or any other significant trend in Summerland history. While the property is associated with Floyd J. Hickey, a successful oil entrepreneur during this period, its significance better fits Criterion B, properties eligible for their associations with lives of people significant in our past. **I concur.**

  Under Criterion B the property is eligible at the local level of significance for its association with Floyd J Hickey, one of Summerland's earliest oil production promoters and entrepreneurs. He directly contributed to Summerland's success in the oil industry, at a time when the community experienced prominence in a statewide market. The period of significance is circa 1900-1905. **I concur.**

Under Criterion C the property is eligible at the local level of significance as an intact and early example of Folk Victorian residence in Summerland. The period of significance is the date of construction, circa 1889. **I concur.**

- **Lillis-Sloan House, 2480 Lillie Avenue, Summerland** – The Lillis-Sloan House was determined eligible in 1992 under Criteria A and B. Under Criterion A the property was considered eligible "for its association with Summerland's Spiritualist beginnings and the peak years of the community's oil and kelp industries (1888-1920)." It was also considered a contributor to the Summerland Residential Historic District. For the current study Caltrans has determined that while the building dates to an early period of settlement and development in Summerland, the house is not strongly or directly associated with Spiritualist colonization, development of the oil industry, or any other significant trend in Summerland history. While the property is associated with J.C. Lillis, a successful oil entrepreneur during this period, its significance better fits Criterion B, properties eligible for their associations with lives of people significant in our past. **I concur.**

  Under Criterion B the property is eligible at the local level of significance for its association with J.C. Lillis, one of Summerland's earliest oil production promoters and entrepreneurs. The house is the only known residence associated with J.C. Lillis during his significant, productive years. The period of significance is circa 1896-1905. **I concur.**

  Under Criterion C the property is eligible at the local level of significance as a rare, early, relatively unaltered example of a Folk Victorian residence in Summerland. The period of significance is the date of construction, circa 1889. **I concur.**

- **Becker House, 108 Pierpont Avenue, Summerland** – The Becker House was determined eligible in 1992 under Criteria A, B, and C. Under Criterion A the property was considered eligible for its association with Summerland's oil industry (1890-1920). After reexamination Caltrans has determined that due to a remodel that occurred between 1912 and 1914, the period of significance for the Becker House can start no earlier than 1914. The oil industry had long since passed its peak at this time which makes any important associations with this property unlikely. Therefore the property no longer meets eligibility requirements under Criterion A. **I concur.**

  Under Criterion B the property was considered eligible for its association with George F. Becker, one of Summerland's most influential oil producers (1900-1920). Upon reexamination it appears that Becker arrived in Summerland in 1900 and purchased the oil interests of H.L. Williams and started an oil company, one of many at the time. Becker's interest in oil occurred after the oil boom years and he does not appear important within this context. Therefore the property no longer meets eligibility requirements under Criterion B. **I concur.**

  Under Criterion C the property is eligible at the local level as a rare example of Prairie Style architecture in Summerland. The period of significance is 1914, the year that the conversion from Stick to Prairie style was completed. **I concur.**

- **Montecito Inn, 1295 Coast Village Road, Montecito** – The Montecito Inn is eligible for the NRHP at the local level of significance under Criteria A and C. Under Criterion A the Montecito Inn is an important example of hotel development during the late 1920s, especially pertaining to the automobile tourism industry. The Inn is also eligible under Criterion C as an important work by architect/engineer Edward Mayberry. It also is an early example of post-earthquake Spanish Revival commercial architecture in Montecito. With regards to integrity, although the Inn has been added onto throughout the years, these modifications are minor given the size of the Inn itself and do not detract from the significance of the property. **I concur.**

- **Darling House, 2225 Lillie Avenue, Summerland** – The Darling House is eligible for the NRHP at the local level of significance under Criterion B for its association with Stuart Darling, a machinist and blacksmith during the oil boom years. Darling played a central role in the industry and local economy. The Darling Brothers' shop produced machinery used by the oil operations in town, and because the machinery was manufactured locally, it was cheaper and easier to procure than equipment manufactured in Santa Barbara or elsewhere. The period of significance is 1900-1930. **I concur.**

  Caltrans has also determined the property to be eligible under Criterion C at the local level as a rare and relatively unaltered example of a Folk Victorian, and of late-nineteenth century architecture in Summerland. **Given the current photographs and description, I do not have enough information at this time to either agree or disagree with this determination. In the interests of expediting consultation for this project I would be willing to discuss with Caltrans the possibility of considering this property eligible under Criterion C for the purposes of this project.**

- **Martin/Bushnell-Donnelly House, 2465 Banner Avenue, Summerland** – The Martin/Bushnell-Donnelly House is eligible for the NRHP under Criterion C at the local level of significance as one of the best examples of the Victorian/Queen Anne style in Summerland. The period of significance is 1890 to 1907. **Given the current photo documentation I am not comfortable in either agreeing or disagreeing with this determination at this time. In the interests of expediting consultation for this project I would be willing to discuss with Caltrans the possibility of considering this property eligible under Criterion C for the purposes of this project.**

- **Dwight and Hattie Kempton House, 2290 Varley Street, Summerland** – The Dwight and Hattie Kempton House is eligible for the NRHP at the local level of significance under Criterion B for its association with Dwight Kempton, an individual important in the local history of Summerland. Kempton was a consistent presence in the oil industry during the boom years, not only helping to trigger the rush, but also directly contributing to the success of the industry and growth of the local economy. The residence at 2290 Varley Street, which was not only his residence during this period but also served as his professional office, is the known surviving

property that best represents his achievements. The period of significance is circa 1895 to 1906. **I concur.**

Please note that for this property there is a discrepancy between the letter for this project and the Historic Property Survey report. The letter states that the property is also eligible under Criterion C while the DPR 523 states that the property is not eligible under Criterion C. Given the current discrepancy I will not comment on this finding at this time.

- **J. Warren Darling House, 2236 Lillie Avenue, Summerland** - The J. Warren Darling House is eligible for the NRHP at the local level of significance under Criterion B for its association with Warren Darling, a machinist and blacksmith during the oil boom years. Darling played a central role in the industry and local economy. The Darling Brothers' shop produced machinery used by the oil operations in town, and because the machinery was manufactured locally, it was cheaper and easier to procure than equipment manufactured in Santa Barbara or elsewhere. The period of significance is 1890-1913. **I concur.**

  Caltrans has also determined the property to be eligible under Criterion C at the local level as a rare, early, and unaltered example of Folk Victorian architecture in Summerland. **Given the current photo documentation I am not comfortable in either agreeing or disagreeing with this determination at this time. In the interests of expediting consultation for this project I would be willing to discuss with Caltrans the possibility of considering this property eligible under Criterion C for the purposes of this project.**

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
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February 2, 2011

Dr. Susan K. Stratton
Office of Historic Preservation
Department of Parks and Recreation
1725 23rd Street, Suite 100
Sacramento, CA 95816-7053

FHWA101108A

RE: Determinations of Eligibility for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, California

Dear Dr. Stratton:

Thank you for your letter of January 26, 2011, providing your comments regarding the eligibility determinations documented in the Historic Property Survey Report for the South Coast 101 High Occupancy Vehicle Lanes Project. We very much appreciate your careful review of this large and complex document evaluating scores of properties over a ten-mile highway corridor.

Our comments today concern the following three properties:

- Stuart and Laura Darling House, 2225 Lillie Avenue, Summerland
  Caltrans proposed eligibility for the National Register under Criteria B and C
- Martin/Bushnell/Donnelly House, 2465 Banner Street, Summerland
  Caltrans proposed eligibility for the National Register under Criterion C
- J. Warren Darling House, 2236 Lillie Avenue, Summerland
  Caltrans proposed eligibility under Criteria B and C

On pages 5 and 6 of your January 26, 2011, letter, you stated that, given the photo documentation provided, you were not comfortable either agreeing or disagreeing with Caltrans' eligibility determinations for these three properties. To resolve this issue in a timely manner, you stated your willingness to discuss the possibility of assuming eligibility under Criterion C for the purposes of this project. In my subsequent telephone conversation with Natalie Lindquist on January 31, 2011, we further explored this option, and our project team has also discussed it.

We are hereby notifying you that we accept your offer to assume National Register eligibility under Criterion C, for the purposes of this project only. Thank you for your willingness to resolve this obstacle in a manner that allows us to proceed with our Section 106 consultation. We will be transmitting a Finding of Effect document for this project within two weeks.

Sincerely,

VALERIE A. LEVULETT
Central Region Technical Studies Branch Chief and District 5 Heritage Resources Coordinator

cc: Jill Hupp, Caltrans Cultural Studies Office

"Lindquist, Natalie"
<nlindquist@parks.ca.gov>
02/16/2011 03:51 PM

To Val Levulett <val_levulett@dot.ca.gov>
cc
bcc
Subject RE: SB-101 HOV Concurrence on Eligibility

Val,

The letter looks good to me and reflects our earlier conversation.

Natalie Lindquist

From: Val Levulett [val_levulett@dot.ca.gov]
Sent: Wednesday, February 16, 2011 9:19 AM
To: Lindquist, Natalie
Cc: Jill Hupp
Subject: Fw: SB-101 HOV Concurrence on Eligibility

Hi Natalie: Can you confirm that you agree with the letter attached.
----- Forwarded by Val Levulett/D05/Caltrans/CAGov on 02/16/2011 09:18 AM -----

Val Levulett/D05/Caltrans/CAGov
02/07/2011 02:40 PM

To nlindquist@parks.ca.gov
cc Jill Hupp/HQ/Caltrans/CAGov@DOT
Subject Fw: SB-101 HOV Concurrence on Eligibility

Please let me know that you received. Thank you.

Val Levulett/D05/Caltrans/CAGov
02/03/2011 08:58 AM

To nlindquist@parks.ca.gov
cc Jill Hupp/HQ/Caltrans/CAGov@DOT
Subject SB-101 HOV Concurrence on Eligibility

Dear Natalie:

Attached is a letter that documents our conversation on January 31, 2011. Caltrans accepts your offer to assume National Register eligibility under Criterion C, for purposes of this project only, for three of the properties identified for the SB-101 HOV project. Please let me know is this will suffice, since we anticipate submitting the effects document within the next couple of weeks. Your assistance with this project is greatly appreciated.

(See attached file: sb101hovconcurletter.pdf)

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

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3 March 2011

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street , Suite 100
Sacramento, CA 95816

05-SB-101
PM 1.4/12.3
EA 05-0N7000/No. 0500000225
FHWA101108A

RE: Submittal of the Finding of Adverse Effect for the South Coast 101 High Occupancy Vehicle (HOV) Lanes Project, Santa Barbara County, California

Dear Mr. Donaldson,

The California Department of Transportation (Caltrans) is continuing consultation with the State Historic Preservation Officer (SHPO) for the undertaking titled the South Coast 101 High Occupancy Vehicle (HOV) Lanes Project. This consultation is undertaken in accordance with the January 2004 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (hereafter, the Programmatic Agreement).

Project Description
The California Department of Transportation (Caltrans), in cooperation with the Santa Barbara County Association of Governments (SBCAG), proposes a High Occupancy Vehicle (HOV) Lanes Project between 0.22 miles south of the Bailard Avenue overcrossing (PM 1.4) in the City of Carpinteria and Sycamore Creek (PM 12.3) in the City of Santa Barbara.

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 would reconstruct interchanges at Sheffield Drive and Cabrillo Boulevard. 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 within the existing public right of way.

Findings – Eligibility

Consultation and identification efforts identified 12 properties within the Area of Potential Effect (Table 1) that are eligible for the National Register of Historic Places: one prehistoric midden and 11 built-environment resources (Joslin 2010). On 26 January 2011, the State Historic Preservation Officer concurred with Caltrans' eligibility determinations, with the exception of proposed eligibility under National Register Criterion C for the Stuart and Laura Darling House (Map Reference No. 40), the Martin/Bushnell-Donnelly House (Map Reference No. 71), and the J. Warren Darling House (Map Reference No. 88). The State Historic Preservation Officer proposed, and Caltrans accepted, making these three residences eligible under Criterion C for the purposes of the South Coast 101 HOV Lanes Project only. Concurrence was reached on February 16, 2011.

Table 1. Properties in the Current APE That Have Been Identified by the Current Study as National Register-Eligible Properties.

Name	Address	APN	Figure 3 APE Map Sheet	Map Reference No. (JRP 2009, 2010)	NRHP Eligibility Criteria
Via Real Redeposited Midden, P-42-003943	SB 101 PM 5.7-5.8	–	10	–	D
Floyd Hickey House	2492 Lillie Ave. (Summerland)	005-194-006	15	22	B, C
Lillis-Sloan House	2480 Lillie Ave. (Summerland)	005-194-004	15	24	B, C
McIntyre House	2274 Lillie Ave. (Summerland)	005-175-003	15	36	C
Stuart and Laura Darling House	2225 Lillie Ave. (Summerland)	005-172-003	15	40	B, C*
Becker House	108 Pierpont St. (Summerland)	005-173-001	16	42	C
Ortega-Masini Adobe	129 Sheffield Rd. (Montecito)	007-350-010	17	43	A, C
Danielson /Katenkamp House	1637 Posilipo Rd. (Montecito)	007-373-001	18	51	C

Name	Address	APN	Figure 3 APE Map Sheet	Map Reference No. (JRP 2009, 2010)	NRHP Eligibility Criteria
Montecito Inn/ Montecito Hotel	1295 Coast Village Rd. (Montecito)	009-293-007	20	63	A, C
Martin / Bushnell-Donnelly House	2465 Banner Ave. (Summerland)	005-193-001; 005-193-008	15	71	C*
Dwight and Hattie Kempton House	2290 Varley St. (Summerland)	005-174-016	15	87	B
J. Warren Darling House	2236 Lillie Ave. (Summerland)	005-171-006	15	88	B, C*

**For the purposes of the current project only, per SHPO concurrence, February 16, 2011*

One additional historic-period built-environment resource, the Summerland World War I Monument, was also identified in the project Area of Potential Effect (Table 2). The resource was determined not to be eligible for listing in the National Register, but as Santa Barbara County Landmark No. 35 the monument constitutes a historical resource for the purposes of CEQA.

Table 2. Properties in the Current APE That Are Historical Resources for the Purposes of CEQA

Name	Address	APN	Figure 3 APE Map Sheet	Map Reference No. (JRP 2009, 2010)
Summerland World War I Monument (Santa Barbara County Landmark #35)	Lillie Avenue	–	15	32

Caltrans has concluded that the South Coast 101 HOV Lanes Project will have an adverse effect on one historic property, the Via Real Redeposited Midden (P-42-003943), and will not affect either the eleven National Register-eligible architectural properties or the historical resource for the purposes of CEQA. Caltrans therefore proposes a Finding of Adverse Effect for the undertaking, pursuant to Programmatic Agreement Stipulation XI, 36 CFR 800.6(a), and 36 CFR 800.6(b)(1), and seeks concurrence from the SHPO on this finding.

Summary

We look forward to receiving your response within 30 days of your receipt of this Finding of Adverse Effect, in accordance with Stipulation X.C.2 of the Programmatic Agreement. A separate Memorandum of Agreement and Data Recovery Plan will be submitted at a later date.

The California Department of Transportation is transmitting the Finding of Adverse Effect for the South Coast 101 HOV Lanes Project as the NEPA lead agency under the provisions of the Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California's Participation in the Surface Transportation Project Delivery Pilot Program that became effective on July 1, 2007.

The MOU was signed pursuant to Section 6005 of the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), allowing the Secretary of Transportation to assign, and the State of California to assume, FHWA's responsibilities under NEPA, as well as consultation and coordination responsibilities under other Federal environmental laws.

Therefore, as a project covered under the Pilot Program MOU, FHWA has assigned and Caltrans has assumed FHWA responsibility for environmental review, consultation, and coordination on the South Coast 101 HOV Lanes Project. Please direct all future correspondence on this project to Caltrans.

This letter and the attached documentation are concurrently being distributed to the Caltrans Cultural Studies Office (CSO) and will also be provided to the members of the Chumash community with whom we are currently in consultation (MOU; Programmatic Agreement Stipulation VIII.C.5).

Thank you very much for your assistance with the South Coast 101 HOV Lanes Project. If you need any additional information, please feel free to contact archaeologist Terry L. Joslin (phone: (805) 549-3778; e-mail: Terry_Joslin@dot.ca.gov).

Sincerely,

Valerie A. Levulett
Technical Studies Branch Chief and Heritage Resource Coordinator
District 5, San Luis Obispo

Enclosure:
Finding of Adverse Effect for the South Coast 101 HOV Lanes Project, Santa Barbara County, California

Cc: Anmarie Medin, Caltrans, CSO

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

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April 7, 2011 Reply To: FHWA101108A

Valerie Levulett
Technical Studies Branch Chief and Heritage Resource Coordinator
Caltrans District 5, San Luis Obispo
50 Higuera Street
San Luis Obispo, CA 93401-5415

Re: Finding of Effect for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, CA

Dear Ms. Levulett:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has found that the above project will have an adverse effect on the Via Real Redeposited Midden (P-42-003943), a property that has been determined eligible for the National Register of Historic Places (NRHP). The project will not affect the other eleven NRHP eligible properties located within the area of potential effect.

Based on my review of the submitted documentation, I concur.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY — Edmund G Brown Jr., Governor

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October 3, 2011

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street , Suite 100
Sacramento, CA 95816

05-SB-101 PM 1.4/12.3
EA 05-0N7000
ID No. 05-0000-0225
FHWA101108A

RE: Submittal of Revised Finding of Adverse Effect for the South Coast 101 High Occupancy Vehicle (HOV) Lanes Project, Santa Barbara County, California

Dear Mr. Donaldson:

The California Department of Transportation (Caltrans) is continuing consultation with the State Historic Preservation Officer (SHPO) for the undertaking titled the South Coast 101 High Occupancy Vehicle (HOV) Lanes Project. This consultation is undertaken in accordance with the January 2004 Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (hereafter, the Programmatic Agreement).

The enclosed revised Finding of Effect document incorporates minor changes made necessary by recent changes during the preparation of the Draft Environmental Document and project mapping. Earlier project mapping showed the locations of soundwalls either as a "proposed soundwall location" or as a location where a soundwall was "originally proposed but dropped from further consideration." After internal Caltrans review, the project mapping for the Draft Environmental Document has been revised to depict the locations of all soundwalls that have been proposed. The project mapping now differentiates these various soundwall locations as either "recommended for construction" or "not recommended for construction."

The Area of Potential Effects mapping that accompanied the previous Finding of Adverse Effect document submitted to the SHPO in March 2011 similarly identified each "proposed soundwall location" as well as locations where soundwalls were "originally proposed but dropped from further consideration." It should be noted, however, that the previous Finding of Adverse Effect document clearly stated that – based on their specific eligibility criteria and their particular settings – none of the historic properties identified within the project Area of Potential Effects have the potential to be affected either by the presence or absence of soundwalls. On April 7, 2011, the SHPO concurred with the Finding of Adverse Effect, the adverse effect being confined

to one prehistoric archaeological site, the Via Real Redeposited Midden (P-42-003943). Copies of the March 3, 2011, transmittal letter and the April 7, 2011, concurrence letter are enclosed.

We are submitting this revised Finding of Adverse Effect to maintain consistency between the Draft Environmental Document and this technical document in the discussions pertaining to the soundwalls. The current mapping that accompanies this revised Finding of Adverse Effect now follows the Draft Environmental Document in identifying soundwall locations as either "recommended for construction" or "not recommended for construction."

The conclusions of the Finding of Adverse Effect, however, have not changed; they are the same findings with which the SHPO concurred on April 7, 2011: Caltrans has concluded that the South Coast 101 HOV Lanes Project will have an adverse effect on one historic property, the Via Real Redeposited Midden (P-42-003943), and will not affect either the eleven National Register-eligible architectural properties or the historical resource for the purposes of CEQA. Caltrans therefore proposes a Finding of Adverse Effect for the undertaking, pursuant to Programmatic Agreement Stipulation XI, 36 CFR 800.6(a), and 36 CFR 800.6(b)(1), and seeks a reaffirmation of concurrence from the SHPO on this finding.

We look forward to receiving your response within 30 days of your receipt of this revised Finding of Adverse Effect, in accordance with Stipulation X.C.2 of the Programmatic Agreement. A separate Memorandum of Agreement and Data Recovery Plan will be submitted following circulation of the Draft Environmental Document and receipt of public comment.

The California Department of Transportation is transmitting this revised Finding of Adverse Effect for the South Coast 101 HOV Lanes Project as the NEPA lead agency under the provisions of the Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California's Participation in the Surface Transportation Project Delivery Pilot Program that became effective on July 1, 2007.

The MOU was signed pursuant to Section 6005 of the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), allowing the Secretary of Transportation to assign, and the State of California to assume, FHWA's responsibilities under NEPA, as well as consultation and coordination responsibilities under other Federal environmental laws. Therefore, as a project covered under the Pilot Program MOU, FHWA has assigned and Caltrans has assumed FHWA responsibility for environmental review, consultation, and coordination on the South Coast 101 HOV Lanes Project. Please direct all future correspondence on this project to Caltrans.

This letter and the attached documentation are concurrently being distributed to the Caltrans Cultural Studies Office. Thank you for your assistance with the South Coast 101 HOV Lanes Project. If you need any additional information, please feel free to contact me at (916) 653-6187, or by e-mail at anmarie_medin@dot.ca.gov.

Sincerely,

ANMARIE MEDIN
Chief
Cultural Studies Office
Division of Environmental Analysis

Enclosures:
- Revised Finding of Adverse Effect for the South Coast 101 HOV Lanes Project, Santa Barbara County, California
- Caltrans transmittal letter, March 3, 2011
- SHPO concurrence letter, April 7, 2011 (FHWA101108A)

cc: Valerie Levulett, D-5

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., Governor

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November 16, 2011 Reply To: FHWA101108A

Valerie Levulett
Chief, Central Coast Technical Studies Branch
Heritage Resource Coordinator
Caltrans District 5, San Luis Obispo
50 Higuera Street
San Luis Obispo, CA 93401-5415

Re: Revised Finding of Adverse Effect for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, CA

Dear Ms. Levulett:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has submitted revised area of potential effect maps in order to be consistent with their environmental document. Although the maps have been revised Caltrans still finds that the project will have an adverse effect on the Via Real Redeposited Midden (P-42-003943). Based on review of the submitted documentation, I concur.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

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December 6, 2012

Ms. Carol Roland-Nawi
State Historic Preservation Officer
1725 23rd St, Suite 100
Sacramento, CA 95816

05-SB-101
05-0000-0225 (0N700)
South Coast 101 HOV

Attn: Susan Stratton

Subject: Draft Memorandum of Agreement (MOA) and Data Recovery Plan for the South Coast 101 HOV Lanes Project, Santa Barbara County, California (FHWA101108A)

Dear Ms. Roland-Nawi

The California Department of Transportation (Caltrans) is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the South Coast 101 HOV Lanes Project (Undertaking). This consultation is being undertaken in accordance with the January 1, 2004 Federal-Aid Highway Programmatic Agreement (PA). Caltrans is continuing consultation as part of its National Environmental Policy Act assignment of federal responsibilities by the Federal Highway Administration pursuant to 23 USC 327, effective October 1, 2012.

On November 16, 2011 the SHPO concurred with Caltrans finding that the above referenced undertaking will have an adverse effect on the Via Real Archaeological Redeposited Midden (P-42-003943), which Caltrans has determined, in consultation with the SHPO, to be eligible for inclusion in the National Register of Historic Places under Criterion D.

Caltrans proposes to resolve the adverse effect by entering into a Memorandum of Agreement (MOA) in accordance with Stipulation XI of the PA. A draft MOA and accompanying Data Recovery and Plan are enclosed for your review. For your convenience, electronic versions will be transmitted shortly.

Caltrans is continuing consultation with the Santa Ynez Band of Chumash Indians (Vincent Armenta- Tribal Chairperson), and interested representatives of the local Chumash community.

Thank you for your continued assistance with this undertaking. If you have any questions, please contact Todd Jaffke at (916) 654-3567/ todd_jaffke@dot.ca.gov, or District 5 archaeologist Terry Joslin at 805.549.3778 or terry.joslin@dot.ca.gov.

"Caltrans improves mobility across California"

Sincerely,

ANMARIE MEDIN
Chief,
Cultural Studies Office
Division of Environmental Analysis

Enclosure: *Draft Memorandum of Agreement and Data Recovery Plan for the Via Real Redeposited Midden in the vicinity of Serena, South Coast 101 HOV Lanes Project, Santa Barbara County, California*

cc: Todd Jaffke HQ, Terry Joslin D-5

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

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May 2, 2013

Carol Roland-Nawi Ph.D.
State Historic Preservation Officer
1725 23rd St, Suite 100
Sacramento, CA 95816

05-SB-101
05-0000-0225 (0N700)
South Coast 101 HOV

Attn: Susan Stratton

Subject: Revised Draft Memorandum of Agreement (MOA) and Treatment and Data Recovery Plan for the South Coast 101 HOV Lanes Project, Santa Barbara County, California (FHWA101108A)

Dear Ms. Roland-Nawi,

The California Department of Transportation (Caltrans) is continuing consultation with the State Historic Preservation Officer (SHPO) regarding the South Coast 101 HOV Lanes Project (Undertaking). This consultation is being undertaken in accordance with the January 1, 2004 Federal-Aid Highway Programmatic Agreement (PA). Caltrans is continuing consultation as part of its National Environmental Policy Act assignment of federal responsibilities by the Federal Highway Administration pursuant to 23 USC 327.

On November 16, 2011 the SHPO concurred with Caltrans finding that the above referenced undertaking will have an adverse effect on the Via Real Archaeological Redeposited Midden (P-42-003943), which Caltrans has determined, in consultation with the SHPO, to be eligible for inclusion in the National Register of Historic Places under Criterion D.

Caltrans proposes to resolve the adverse effect by entering into a Memorandum of Agreement (MOA) in accordance with Stipulation XI of the PA. A draft MOA and accompanying Data Recovery Plan were provided for your review on December 6, 2012. We received comments from Trevor Pratt (January 14, 2013) and all comments were incorporated into the attached revised draft documents. Thank you for your comments as well as the quick response reviewing the documents.

Since your review of the draft MOA and Data Recovery Plan design revisions in the vicinity of the midden have shifted the Preferred Alternative, Alternative 1, toward the median in an effort to minimize potential impacts to the Via Real Redeposited Midden. The National Register property is located 6 feet below the surface of Highway 101, outside of the State right of way along the Via Real frontage road, and current construction excavation will not exceed 3 feet. An Environmentally Sensitive Area (ESA) will be established and maintained around the estimated site limits. Although we do not anticipate impacts to the redeposited midden or that any other archaeological deposits of significance are present, Caltrans has determined it is prudent to consider that the remote possibility of discoveries during construction may still exist. We have therefore revised the documents and have incorporated new language to address not only any impacts to the Via Real Redeposited Midden but also any potential discoveries of similar property types during construction. The attached Treatment and Data Recovery Plan proposes additional construction monitoring in the vicinity of the Via Real Redeposited Midden and in areas of high archaeological sensitivity that were not accessed during the Extended Phase I excavations.

The revised MOA and Treatment and Data Recovery Plan is an advance plan that allows Caltrans to proceed on a predetermined course of action, providing direction for any contingency involving buried archaeological resources encountered during construction. The original draft MOA and Data Recovery Plan, was approved by representatives of the Chumash community and the State Historic Preservation Officer. Caltrans is seeking your approval in the Revised Treatment Plan and MOA, which includes a decision matrix to accommodate the appropriate handling of less-than significant scattered finds that are likely to occur. The MOA and Treatment and Data Recovery Plan also outline steps that will be taken in the unlikely event that a significant find is made during project construction.

Caltrans is concurrently consulting with the Santa Ynez Band of Chumash Indians (Vincent Armenta- Tribal Chairperson), and interested representatives of the local Chumash community. Their comments on the November 2012 draft MOA and accompanying Data Recovery Plan are incorporated into the revised draft documents that they are now reviewing.

As schedule is always a concern, we are requesting any additional comments at your earliest convenience and seek to execute the MOA in June, 2013.

Thank you for your continued assistance with this undertaking. If you have any questions, please contact Todd Jaffke at (916) 654-3567/ todd jaffke@dot.ca.gov, or District 5 archaeologist Terry Joslin at 805.549.3778 /terry.joslin@dot.ca.gov.

Sincerely,

ANMARIE MEDIN
Chief, Cultural Studies Office
Division of Environmental Analysis

Enclosure: *Revised* Memorandum of Agreement and Treatment and Data Recovery Plan for the Via Real Redeposited Midden for the South Coast 101 HOV Lanes Project, Santa Barbara County, California

cc: Todd Jaffke HQ, Terry Joslin D-5

PROGRAMMATIC AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE SOUTH COAST 101 HOV LANES PROJECT, U.S.
ROUTE 101, SANTA BARBARA COUNTY, CALIFORNIA

WHEREAS, the Federal Highway Administration (FHWA) has assigned, and the California Department of Transportation (Caltrans) has assumed FHWA responsibility for environmental review, consultation, and coordination pursuant to 23 USC 327, which became effective on October 1, 2012 and applies to this undertaking; and

WHEREAS, Caltrans has determined that the South Coast 101 HOV Lanes Project in Santa Barbara County, California (Undertaking) will have an adverse affect on the Via Real Archaeological Redeposited Midden (P-42-003943), which Caltrans has determined in consultation with the State Historic Preservation Officer (SHPO) to be eligible for the National Register of Historic Places (National Register) and is therefore a historic property as defined at 36 CFR § 800.16(1)(1); and

WHEREAS, Caltrans has consulted with the SHPO pursuant to Stipulations X.C.1 of the January 2004 *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA), and, where the PA so directs, in accordance with 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C Section 470(f) et seq.), as amended (NHPA), regarding the Undertaking's effects on historic properties, and has notified the Advisory Council on Historic Preservation (ACHP) of the adverse effect finding pursuant to 36 CFR § 800.6(a)(1) and per their letter dated August 23, 2012 the ACHP has elected not to participate; and

WHEREAS, Caltrans has thoroughly considered alternatives to the Undertaking, has determined that implementation of the Undertaking may result in an adverse effect to the Via Real Archaeological Redeposited Midden (P-42-003943) and may adversely affect previously unidentified properties within the Undertaking's area of potential effects , and has further determined that it will resolve the adverse effect of the Undertaking on the subject historic properties through the execution and implementation of this Programmatic Agreement (PA); and

WHEREAS, Caltrans District 5 has participated in the consultation process and has been invited to concur in this PA; and

WHEREAS, Caltrans has consulted with the Santa Ynez Band of Chumash Indians (with Vincent Armenta as Tribal Chairperson), and with Chumash individuals and groups (with Gilbert Unzueta, Patrick Tumamait, Frank Arredondo, John Ruiz, and Michael Codero as Coastal Band of the Chumash Nation Chairperson) regarding the Undertaking and its potential adverse effect on the subject historic property; and have invited them to concur in this PA; and

NOW, THEREFORE, Caltrans and the SHPO agree that, upon Caltrans' decision to proceed with the Undertaking, Caltrans shall ensure that the Undertaking is implemented in accordance with the following stipulations in order to take into account the potential effect of the Undertaking on historic properties, and further agrees that these stipulations shall govern the Undertaking and all of its parts until this PA expires or is terminated.

STIPULATIONS

Caltrans shall ensure that the following stipulations are carried out:

I. AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the Undertaking is depicted in Attachment A to this PA.). Attachment A set forth hereunder may be amended through consultation among the PA parties without amending the PA.

II. TREATMENT OF HISTORIC PROPERTIES

A. Caltrans shall ensure that any adverse effects of the Undertaking on the Via Real Archaeological Redeposited Midden (P-42-003943) and effects to any similar as yet unidentified properties discovered during construction are resolved by implementing the April 2013 *Treament and Data Recovery Plan for the South Coast 101 HOV Lanes Project, Santa Barbara County, California* (Treatment and Data Recovery Plan) that is Attachment B to this PA. The Via Real Archaeological Redeposited Midden (P-42-003943) is eligible for inclusion in the National Register of Historic Places under Criterion D. Data recovery is prescribed for archaeological deposits contributing to the National Register eligibility of the historic property Via Real Archaeological Redeposited Midden (P-42-003943) within the Undertaking's construction area of direct impact (ADI).

B. The location of the eligible portion of the Via Real Redeposited Midden (P-42-003943) outside the ADI can be avoided during construction through the establishment and enforcement of an Environmentally Sensitive Area (ESA). The location shall be designated an ESA during construction and protected with exclusionary fencing pursuant to Stipulation X.B.2.a.ii and Attachment 5 of the Programmatic Agreement. The Via Real Redeposited Midden (P-42-003943) area outside of the ADI shall be depicted on construction plans and will be designated an ESA with no access allowed during construction. Additionally, the District 5 Environmental Construction Liaison will have a copy of the plan on file and maintain contact with the resident engineer, construction contractor, and archaeologist on ESA compliance.

C. Any party to this PA may propose to amend the Data Recovery Plan. Such amendment will not require amendment of this PA. Consultation on Data Recovery Plan Amendments will be no longer than 30 days in duration. Disputes regarding amendments proposed hereunder shall be addressed through further consultation among the PA parties, and a reasonable time frame for such consultation shall be established by Caltrans. If the dispute is resolved within this time frame, the PA parties shall proceed in accordance with the terms of that resolution. If the dispute is not resolved within this time frame, Caltrans shall render a final decision regarding the dispute and the PA parties shall proceed in accordance with the terms of that decision.

D. Caltrans will not authorize the execution of any Undertaking activity that may adversely affect (36 CFR § 800.16(i)) historic properties in the undertaking's APE without implementing the procedures that the Data Recovery Plan prescribes.

III. REPORTING REQUIREMENTS AND RELATED REVIEWS

A. Within 30 days after Caltrans has determined that all fieldwork required under Stipulation II. has been completed, Caltrans will ensure preparation, and concurrent distribution to the

other PA parties, for review and comment, a brief letter report that summarizes the field efforts and the preliminary findings that result from them.

B. Within 12 months after Caltrans has determined that all fieldwork required by Stipulation II.A has been completed, Caltrans will ensure preparation, and subsequent concurrent distribution to the other PA parties, for review and comment, a draft technical report that documents the results of implementing and completing the Data Recovery Plan. The other PA parties will be afforded 30 days following receipt of the draft technical report to submit any written comments to Caltrans. Failure of these parties to respond within this time frame shall not preclude Caltrans from authorizing revisions to the draft technical report, as Caltrans may deem appropriate. Caltrans will provide the other PA parties with written documentation indicating whether and how the draft technical report will be modified in accordance with any comments received from the other PA parties. Unless any PA party objects to this documentation in writing to Caltrans within 30 days following receipt, Caltrans may modify the draft technical report, as Caltrans may deem appropriate. Thereafter, Caltrans may issue the technical report in final form and distribute this document in accordance with paragraph C of this stipulation.

C. Copies of the final technical report documenting the results of Data Recovery Plan implementation will be distributed by Caltrans to the other PA parties, to the Central Coast Information Center of the California Historic Resources Information System (CHRIS), and to the Coastal Band of the Chumash Nation, the Santa Ynez Band of Chumash Indians, and Chumash individuals and groups participating in the consultation process.

IV. NATIVE AMERICAN CONSULTATION

Caltrans has consulted with the Santa Ynez Band of Chumash Indians (with Vincent Armenta as Tribal Chairperson), and Chumash individuals and groups (with Gilbert Unzueta, Patrick Tumamait, Frank Arredondo, John Ruiz, and Michael Cordero as Coastal Band of the Chumash Nation Chairperson) regarding the proposed undertaking and its effects on historic properties and have invited them to concur in this PA. Caltrans will continue to consult with the Santa Ynez Band of Chumash Indians, and Chumash individuals and groups and will afford them, should they so desire, the opportunity to participate in the implementation of this PA and the Undertaking. Should the Santa Ynez Band of Chumash Indians, and Chumash individuals and groups agree, individually, to participate as an PA party, as herein set forth, Caltrans will make an effort to reach consensus with them regarding the manner in which they may participate in the implementation of this PA, and regarding any time frames or other matters that may govern the nature, scope, and frequency of such participation. Caltrans shall ensure that the Santa Ynez Band of Chumash Indians, and Chumash individuals and groups receive copies of all draft and final technical documents regardless of whether they decline or choose to participate as parties to this PA.

V. TREATMENT OF HUMAN REMAINS OF NATIVE AMERICAN ORIGIN

The PA parties agree that human remains and related items discovered during the implementation of the terms of the PA and of the Undertaking will be treated in accordance with the requirements of §7050.5(b) of the California Health and Safety Code. If, pursuant to §7050.5(c) of the California Health and Safety Code, the county coroner/medical examiner determines that the human remains are or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of §5097.98 (a)-(d) of the California Public Resources Code. The discovery of human remains may constitute the discovery of a historic property, and as such, should be consulted upon pursuant to Stipulation VI in addition to the provisions of this stipulation.

VI. DISCOVERIES AND UNANTICIPATED EFFECTS

If Caltrans determines during the implementation of the Data Recovery Plan or after construction of the Undertaking has commenced, that either the implementation of the Data Recovery Plan or the Undertaking will affect a previously unidentified property that may be eligible for the National Register, or affect a known historic property in an unanticipated manner, Caltrans shall address the discovery or unanticipated effect in accordance with the Data Recovery Plan. If a property type that is categorically different from that covered in the Data Recovery Plan will be affected, Caltrans shall address the discovery or unanticipated effect in accordance with 36 CFR § 800.13(b). Caltrans at its discretion may hereunder and in accordance with 36 CFR § 800.13(c), assume any discovered property to be eligible for inclusion in the National Register.

VII. ADMINISTRATIVE PROVISIONS

A. STANDARDS

1. **Definitions**. The definitions provided at 36 CFR § 800.16 are applicable throughout this PA.

2. **Professional Qualifications**. Caltrans will ensure that only individuals meeting the *Secretary of the Interior's Professional Qualification Standards* (48 CFR 44738-39) in the relevant field of study carry out or review appropriateness and quality of the actions and products required by Stipulations I, II, III, V, and VI in this PA. However, nothing in this stipulation may be interpreted to preclude Caltrans or any agent or contractor thereof from using the properly supervised services of persons who do not meet the PQS.

3. **Documentation Standards.** Written documentation of activities prescribed by Stipulations I, II, III, and VI of this PA shall conform to *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 CFR 44716- 44740) as well as to applicable standards and guidelines established by the SHPO.

4. **Curation and Curation Standards.** Caltrans shall ensure that, to the extent permitted under § 5097.98 and § 5097.991 of the California Public Resources Code, the materials and records resulting from the activities prescribed by this PA are curated in accordance with 36 CFR § 79.

B. CONFIDENTIALITY

The PA parties acknowledge that the historic properties covered by this PA are subject to the provisions of § 304 of the NHPA and § 6254.10 of the California Government Code (Public Records Act), relating to the disclosure of archaeological site information and, having so acknowledged, will ensure that all actions and documentation prescribed by this PA are consistent with said sections.

C. RESOLVING OBJECTIONS

1. Should any party to this PA object at any time in writing to the manner in which the terms of this PA are implemented, to any action carried out or proposed with respect to implementation of the PA (other than the Undertaking itself), or to any documentation prepared in accordance with and subject to the terms of this PA, Caltrans shall immediately notify the other PA parties of the objection, request their comments on the objection within

15 days following receipt of Caltrans' notification, and proceed to consult with the objecting party for no more than 30 days to resolve the objection. Caltrans will honor the request of the other parties to participate in the consultation and will take any comments provided by those parties into account.

2. If the objection is resolved during the 30-day consultation period, Caltrans may proceed with the disputed action in accordance with the terms of such resolution.

3. If at the end of the 30-day consultation period, Caltrans determines that the objection cannot be resolved through such consultation, then Caltrans shall forward all documentation relevant to the objection to the ACHP, including Caltrans' proposed response to the objection, with the expectation that the ACHP will, within 30 days after receipt of such documentation:

   a. Advise Caltrans that the ACHP concurs in Caltrans' proposed response to the objection, whereupon Caltrans will respond to the objection accordingly. The objection shall thereby be resolved; or

   b. Provide Caltrans with recommendations, which Caltrans will take into account in reaching a final decision regarding its response to the objection. The objection shall thereby be resolved; or

   c. Notify Caltrans that the objection will be referred for comment pursuant to 36 CFR § 800.7(c) and proceed to refer the objection and comment. Caltrans shall take the resulting comments into account in accordance with 36 CFR § 800.7(c)(4) and Section 110(1) of the NHPA. The objection shall thereby be resolved.

4. Should the ACHP not exercise one of the above options within 30 days after receipt of all pertinent documentation, Caltrans may proceed to implement the response. The objection shall thereby be resolved.

5. Caltrans shall take into account any of the ACHP's recommendations or comments provided in accordance with this stipulation with reference only to the subject of the objection. Caltrans' responsibility to carry out all actions under this PA that are not the subject of the objection shall remain unchanged.

6. At any time during implementation of the measures stipulated in this PA, should a member of the public raise an objection in writing pertaining to such implementation to any signatory party to this PA, that signatory party shall immediately notify Caltrans. Caltrans shall immediately notify the other signatory parties in writing of the objection. Any signatory party may choose to comment in writing on the objection to Caltrans. Caltrans shall establish a reasonable time frame for this comment period. Caltrans shall consider the objection, and in reaching its decision, Caltrans will take all comments from the other signatory parties into account. Within 15 days following closure of the comment period, Caltrans will render a decision regarding the objection and respond to the objecting party. Caltrans will promptly notify the other signatory parties of its decision in writing, including a copy of the response to the objecting party. Caltrans' decision regarding resolution of the objection will be final. Following issuance of its final decision, Caltrans may authorize the action subject to dispute hereunder to proceed in accordance with the terms of that decision.

7. Caltrans shall provide all parties to this PA, and the ACHP, if the ACHP has commented, and any parties that have objected pursuant to Section C.6 of this stipulation, with a copy of its final written decision regarding any objection addressed pursuant to this stipulation.

8. Caltrans may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with the terms of this stipulation.

D. AMENDMENTS

Any signatory party to this PA may propose that this PA be amended, whereupon all signatory parties shall consult for no more than 30 days to consider such amendment. The amendment will be effective on the date a copy signed by all of the original signatories is filed with the ACHP. If the signatories cannot agree to appropriate terms to amend the PA, either signatory may terminate the agreement in accordance with Stipulation VII.F, below.

E. TERMINATION

1. If this PA is not amended as provided for in Section D of this stipulation, or if either signatory proposes termination of this PA for other reasons, the signatory party proposing termination shall, in writing, notify the other PA parties, explain the reasons for proposing termination, and consult with the other parties for at least 30 days to seek alternatives to termination. Such consultation shall not be required if Caltrans proposes termination because the Undertaking no longer meets the definition set forth in 36 CFR § 800.16(y).

2. Should such consultation result in an agreement on an alternative to termination, the signatory parties shall proceed in accordance with the terms of that agreement.

3. Should such consultation fail, the signatory party proposing termination may terminate this PA by promptly notifying the other PA parties in writing. Termination hereunder shall render this PA without further force or effect.

4. If this PA is terminated hereunder, and if Caltrans determines that the Undertaking will nonetheless proceed, then Caltrans shall comply with the requirements of 36 CFR 800.3-800.6 or request the comments of the ACHP, pursuant to 36 CFR 800.

F. DURATION OF THE PA

1. Unless terminated pursuant to Section E of this stipulation, or unless it is superseded by an amended PA, this PA will be in effect following execution by the signatory parties until Caltrans, in consultation with the other signatory parties, determines that all of its stipulations have been satisfactorily fulfilled.

2. The terms of this PA shall be satisfactorily fulfilled within 15 years following the date of execution by the signatory parties. If Caltrans determines that this requirement cannot be met, the PA parties will consult to reconsider its terms. Reconsideration may include continuation of the PA as originally executed, amendment of the PA, or termination. In the event of termination, Caltrans will comply with Section E. 4 of this stipulation if it determines that the Undertaking will proceed notwithstanding termination of this PA.

3. If the Undertaking has not been implemented within ten (10) years following execution of this PA, this PA shall automatically terminate and have no further force or effect. In such event, Caltrans shall notify the other signatory parties in writing and, if it chooses to continue with the Undertaking, shall reinitiate review of the Undertaking in accordance with 36 CFR Part 800.

G. EFFECTIVE DATE

This PA will take effect on the date that it has been executed by Caltrans and the SHPO.

EXECUTION of this PA by Caltrans and the SHPO, its filing with the ACHP in accordance with 36 CFR §800.6(b)(l)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36 CFR §800.6(c), that this PA is an agreement with the ACHP for purposes of Section 110(1) of the NHPA, and shall further evidence that Caltrans has afforded the ACHP an opportunity to comment on the Undertaking and its effects on historic properties, and that Caltrans has taken into account the effects of the Undertaking on historic properties.

PROGRAMMATIC AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE SOUTH COAST 101 HOV LANES PROJECT,
U.S. ROUTE 101, SANTA BARBARA COUNTY, CALIFORNIA

SIGNATORY PARTIES:

California Department of Transportation

By Katrina C. Pierce — 6/14/13
Katrina C. Pierce, Chief — Date
Division of Environmental Analysis

California State Historic Preservation Officer

By Carol Roland-Nawi — 6-20-13
Carol Roland-Nawi, PhD. — Date
State Historic Preservation Officer

**PROGRAMMATIC AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE SOUTH COAST 101 HOV LANES PROJECT, U.S.
ROUTE 101, SANTA BARBARA COUNTY, CALIFORNIA**

CONCURRING PARTIES:

California Department of Transportation

By _____ 6/25/2013
Timothy Gubbins, District Director — Date
District 5, San Luis Obispo

**PROGRAMMATIC AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE SOUTH COAST 101 HOV LANES PROJECT, U.S.
ROUTE 101, SANTA BARBARA COUNTY, CALIFORNIA**

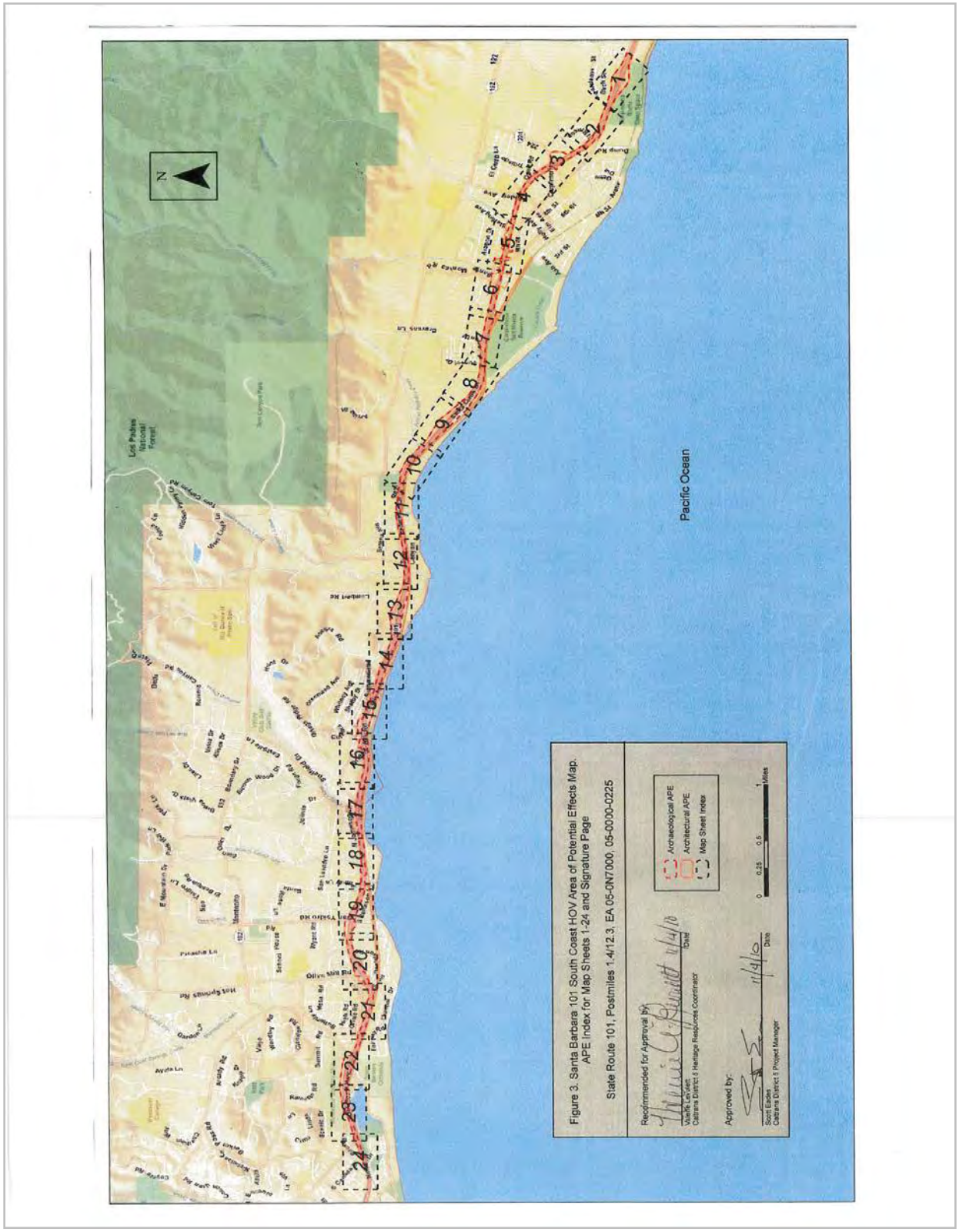
CONCURRING PARTIES:

Chumash Consultant

By Patrick Tumamait — 6-17-13
Patrick Tumamait — Date

ATTACHMENT A

Area of Potential Effects Map.


Pacific Ocean
Los Padres National Forest
Figure 3. Santa Barbara 101 South Coast HOV Area of Potential Effects Map.
APE index for Map Sheets 1-24 and Signature Page
State Route 101, Postmiles 1.4/12.3, EA 05-0N7000, 05-0000-0225
Archaeological APE
Architectural APE
Map Sheet Index
Miles
Recommended for Approval by:
Approved by:
Scott Eades
Caltrans District 5 Project Manager
Date

ATTACHMENT B

Treatment and Data Recovery Plan for the South Coast 101
High Occupancy Vehicle Lanes Project, Santa Barbara County, California
(Joslin and Hildebrandt 2013)

TREATMENT AND DATA RECOVERY PLAN FOR SOUTH COAST 101 HIGH OCCUPANCY VEHICLE LANES PROJECT, SANTA BARBARA COUNTY, CALIFORNIA

05-SB-101, Post Miles 1.4-12.3
Project 05-0000-0225 (05-0N700)

By:

Terry L. Joslin, Principal Investigator
California Department of Transportation
Environmental Branch, District 5
50 Higurea Street
San Luis Obispo, California 93401

William R. Hildebrandt, Principal Investigator
Far Western Anthropological Research Group, Inc.
2727 Del Rio Place, Suite A
Davis, California, 95618

June 2013

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APPENDICES

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I. INTRODUCTION

The South Coast 101 High Occupancy Vehicle (HOV) Lanes Project proposes to widen U.S. 101 from just south of the Bailard Avenue overcrossing (Post Mile 1.4) in the City of Carpinteria to Sycamore Creek (Post Mile 12.3) in the City of Santa Barbara, California (Figure 1). Three build alternatives and a no-build alternative are proposed. Each build alternative would add a single HOV lane in both the northbound and southbound directions and reconstruct interchanges at Sheffield Drive and Cabrillo Boulevard. 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.

The nature of the undertaking and involvement of federal funds requires compliance with: (1) Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800, revised 2004); and (2) the California Environmental Quality Act (CEQA; Public Resources Code, Section 21000 et seq.), which mandate federal and California public agencies to consider the effects of projects on historic properties. Compliance with Section 106 is being carried out in accordance with the 1 January 2004, *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (the Programmatic Agreement).

Caltrans conducted extensive background research documenting previous construction activities within the project Area of Potential Effects (APE) to assess the likelihood of finding any original ground or areas that had not been previously disturbed. A thorough archaeological survey was made of the project area, and a detailed geoarchaeological model was developed to identify the most likely areas for any buried archaeological material not evidenced on the surface (Hildebrandt and Darcangelo 2009). The geoarchaeological model was used to direct the Extended Phase 1 testing of seven locations with a high potential for buried archaeological resources (an additional four were inaccessible) (Kaijankoski et al. 2009).

These studies identified a redeposited midden (Via Real Redeposited Midden [P-42-0039430]) within the project APE (Figure 2). The Via Real Redeposited Midden is 40 to 50 centimeters thick, extends about 120 meters along the adjacent frontage road, and contains a rich assemblage of artifacts and subsistence remains. It appears to have been quarried from an extensive archaeological site located near the mouth of Carpinteria Creek; the midden materials were imported as frontage road fill in a single documented construction event. The redeposited midden was nonetheless determined to be significant and eligible for listing in the National Register because it represents a single, Early Period deposit containing valuable information regarding early human occupation on the coast. Design revisions in the vicinity of the midden have shifted the Preferred Alternative, Alternative 1, toward the median in an effort to minimize potential impacts to the Via Real Redeposited Midden. Therefore, an Environmentally Sensitive Area (ESA) will be designated around the estimated site limits (see Appendix E).

Nothing of significance was found at any of the other tested locations, only sparse scatters of redeposited midden soil mixed with historic debris and lacking contextual integrity. These detailed studies undertaken by Caltrans are the first of this type and extent to be conducted on this stretch of coastline. Due to extensive pre-construction research, thorough field studies, and the fact that the HOV 101 construction project is limited to the existing right of way (all of which has been highly disturbed by prior construction of

the existing mainline roadway and structures and by utilities installation), we do not anticipate that any other archaeological deposits of significance are present. It is prudent, however, to consider the remote possibility of discoveries during construction.

The project design team has modified the construction plans to minimize impacts to the redeposit, shifting the Preferred Alternative into the median in an effort to minimize potential impacts to the midden. The depth of construction excavation will not exceed 3 feet in the vicinity of the Via Real Redeposited Midden deposit that was found eligible for listing in the National Register of Historic Places. Additionally, the northbound lanes of Highway 101were built on 5 feet of fill at this location, which would place the redeposit approximately 6 feet below the surface of the northbound lanes. In consultation with the Caltrans Headquarters Cultural Studies Office, we have prepared a Finding of Adverse Effect, a Programmatic Agreement to resolve adverse effects, and a Treatment Plan to address potential impacts to the Via Real Redeposited Midden but also to any potential discoveries during construction – remote as these two possibilities may be.

The Treatment Plan is an advance plan that allows Caltrans to proceed on a predetermined course of action, providing direction for any contingency involving buried archaeological resources encountered during construction. The Treatment Plan, approved by Chumash representatives and by the State Historic Preservation Officer, includes a decision matrix to accommodate the appropriate handling of the insignificant scattered finds that are likely to occur, without causing substantial construction delays. The Treatment Plan and Programmatic Agreement also outline steps that will be taken in the unlikely event that a significant find is made during project construction.

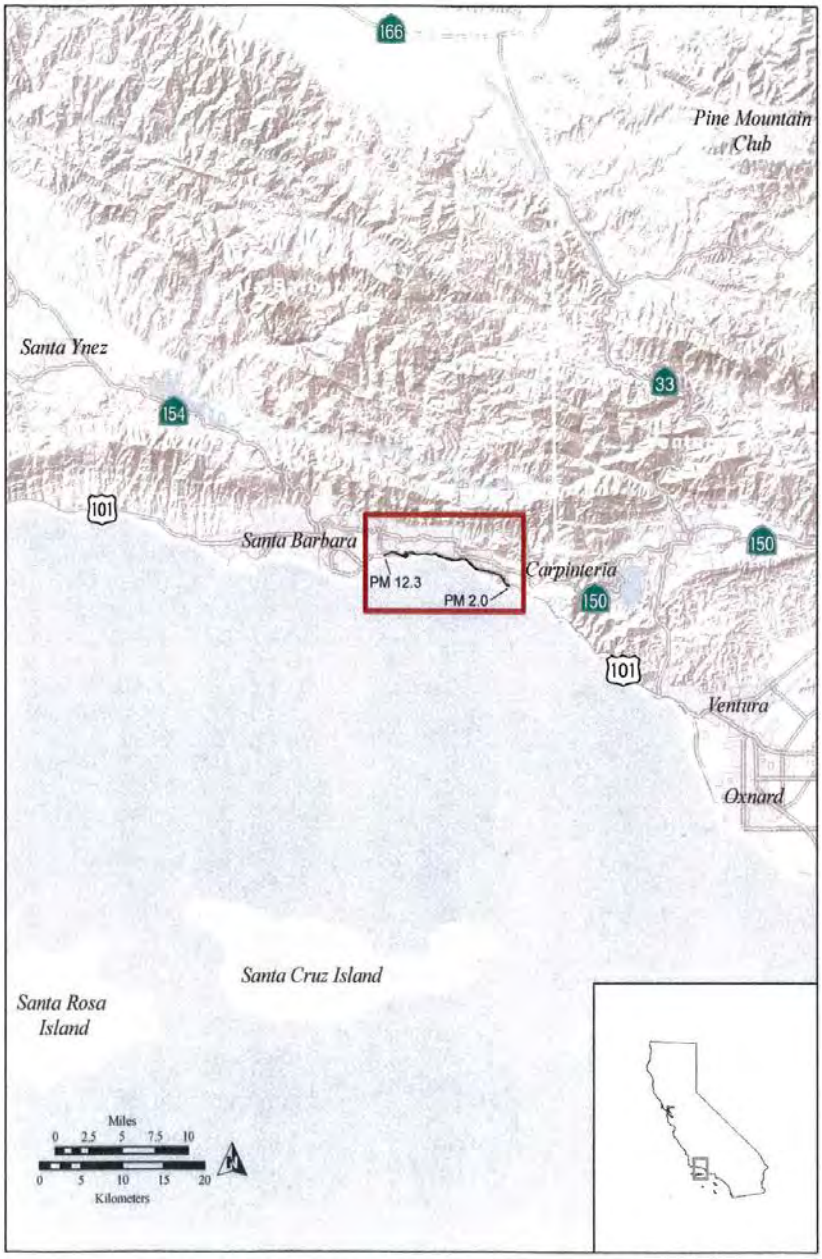

Figure 1. Project Vicinity and Location of the South Coast 101 HOV Lanes Project.

Confidential Information- Not for Public Circulation.

II. SUMMARY OF ARCHAEOLOGICAL STUDIES

Extensive pre-construction studies have been conducted to identify cultural resources within the project area. Far Western Anthropological Research Group, Inc. (Far Western) conducted a records search, geoarchaeological research, and intensive archaeological survey, and JRP Historical Consulting (JRP) conducted historic research in support of the project. This section provides a review of these studies and summarizes their findings, before focusing on the Via Real Redeposited Midden (P-42-003943).

RECORDS SEARCH

A records search was conducted at the Central Coast Information Center, University of California, Santa Barbara prior to the initiation of fieldwork (20 May 2008). This included a review of all cultural resources records and reports within 0.5 miles of the Survey Area. Primary reference materials included USGS 7.5-minute base maps (showing previously recorded sites, isolates, and survey areas), site records, report files, and the *Directory of Properties in the Historical Properties Data Files*. The latter includes smaller inventories such as the *National Register of Historic Places—Listed Properties and Determined Eligible Properties, California Register of Historical Resources, California Points of Historical Interest*, and *California Historical Landmarks*. Steve Wee and colleagues at JRP Historical Consulting also provided historic-period maps and verbal descriptions of potentially important areas within and adjacent to the Survey Area. Additional research entailed examination of available primary and secondary documentary records to elucidate historic patterns of human settlement and land use within the study area (see Hildebrandt and Darcangelo 2009).

The records search showed that 100% of the current project area has been surveyed. Due to the incomplete nature of some of these surveys, the passage of time, and the different study methods; however, we decided that a full, intensive reconnaissance of the project was warranted. Previously recorded sites and surveys were mapped to guide the survey and to assist with developing an archaeological sensitively model.

PREVIOUS CONSTRUCTION ACTIVITIES IN THE SURVEY AREA

Previous construction activities have altered intact landforms in the current project area. These include highway construction (including associated underground utilities), railroad construction, and oilfield developments. The following provides a summary of the detailed analyses in Hildebrandt and Darcangelo (2009:73-82).

A history of road building activities was summarized from *As Built Plans* for the project area. These plans were reviewed, and the construction activities were organized into six categories based on depth of cut and fill, and limited amounts of soil removal (Table 1). Significantly, the analysis demonstrates that only 9.4% of the project area is at original grade, while 30.9% has been cut or soil removed (Table 1).

Table 1. Previous Road Disturbance in the Project Area.

CONSTRUCTION TYPE	DEPTH OF ACTIVITY	PERCENTAGE OF THE SURVEY AREA
Deep Cut	>5 feet	16.32
Minor Cut	<5 feet	14.42
Top Soil Removal	Minor	4.13
Minor Fill	<7 feet	38.0
Deep Fill	>7 feet	18.46
Original Grade	None	8.66

Modification of the project area also includes a wide range of underground utilities, oil fields, and railroad construction. Utilities through the project corridor, on both sides of the highway, include fiber optic, sewer, water, and gas lines. Oil field developments, however, are largely relevant to only one previously recorded site within the project area, in the Summerland vicinity. Railroad construction has also caused significant damage to the original ground surfaces along portions of Summerland project area.

ARCHAEOLOGICAL SURVEY

As noted, the project area is situated within a narrow corridor in which landforms have been highly modified by development. Intensive survey has identified only one previously recorded site (CA-SBA-2179/H), four isolated finds (considered ineligible per the Programmatic Agreement), one redeposited midden (the Via Real Redeposited Midden), and a disturbed scatter of shell within the project APE. All that remains of site SBA-2179/H is a narrow strip of land containing a limited amount of flaked stone debitage associated with historic-period roadside debris.

These survey results are significant. Although 100% of the project area has been previously surveyed by multiple, large-scale undertakings, as well as the current survey, no intact cultural resources have been identified.

GEOARCHAEOLOGY SENSITIVITY RESEARCH

As part of the archaeological survey report for this project, a detailed geoarchaeological sensitivity assessment was developed to determine the areas of the APE that have the greatest potential to contain buried prehistoric archaeological sites (Hildebrandt and Darcangelo 2009; Kaijankoski et al. 2009). This assessment took into account factors that encouraged or discouraged human use or occupation of certain landforms (e.g., geomorphic setting and distance to water), combined with those that affected the subsequent preservation (i.e., erosion or burial) of those landforms. The main goals were to: (1) identify Holocene-age depositional landforms; (2) estimate and rank the potential of specific landform-deposits to contain buried archaeological sites; and (3) delineate areas where buried sites may potentially be identified by Extended Phase I subsurface explorations.

SENSITIVITY ASSESSMENT FOR PREHISTORIC RESOURCES

The study found that the landscape along the Santa Barbara coastline has been altered and shaped by a complex sequence of region-wide environmental changes. Over the past 15,000 years, the region has experienced the widespread effects of sea-level rise, repeated flooding, erosion of the uplands, and deposition in the lowlands. Relatively short episodes of landform instability (i.e., erosion/deposition) and longer periods of landform stability (i.e., soil formation) were accompanied by localized changes in the size and position of stream and river channels, and presumably in the types and distributions of associated plant and animal habitats and human settlements.

It is well known that prehistoric archaeological sites in California are most often located on relatively level landforms near fresh water sources (e.g., spring, stream, river, estuary), which are often where two or more environmental zones are present (Jones 1991). Landforms with this combination of variables are frequently found at or near the contact between a floodplain and a higher and older geomorphic surface, such as an alluvial fan or stream terrace (Hansen et al. 2004:5). Further, a geoarchaeological study determined that most previously unidentified buried sites tend to be located close to present stream channels (generally <100-200 meters, [<328-656 feet]), as well as abandoned stream channels (Rosenthal and Meyer 2004:76).

The geoarchaeological sensitivity assessment relied on digital data from the Soil Survey Geographic Database (Natural Resource Conservation Service 2005), supplemented with information from existing soil surveys, geological investigations, and archaeological studies reviewed for the project. By analyzing the type of soils mapped at the surface, it was possible to distinguish landforms that are too old and eroded to contain buried archaeological remains (i.e., Pre-Holocene), from Holocene-age depositional landforms with the potential to contain them. The sensitivity factors outlined above were then combined with the mapping results to estimate the relative level of sensitivity for buried archaeological sites throughout the APE.

The sensitivity study identified eleven discrete areas in the APE that were judged to have a moderate to very high potential to contain buried sites, mainly because they contain one or more Holocene-age depositional landform(s) located along or near one or more water source(s) (Figure 3). The eleven areas, in addition to the factors contributing to the sensitivity assessment and their estimated sensitivity, are summarized in Table 2. While these areas together cover only a small portion of the APE, they are consistently located at or near creek crossings where deep and/or extensive construction-related earth-disturbances are most often required.

Table 2. Summary of Potential for Buried Sites in the Area of Potential Effects.

Area No.	Name	No. Trenches	Buried Soils Present	Intact/Buried Cultural Deposit Present	Redeposited Cultural Materials	Buried Site Potential	Test Results
111	Calis Family Residence	4	No	No	No	Very low	Nothing found
112	Matanza Site	10	Yes	No	No	Low	Nothing found
1	Old Montecito Channel	6	Yes	No	No	Low	No buried deposits
2	Montecito Creek	5	Yes	No	No	Moderate to High	No buried deposits (couldn't excavate near creek)
3	Oak/Ysidro Creeks	0	-	-	-	High	Not tested due to access difficulties and safety concerns
4	Romero Creek	0	-	-	-	High	Not tested due to access difficulties and safety concerns
5	Toro Creek	7	Yes	No	Yes	Low	Thin layer of shell midden within artificial fill; no artifacts
6	Garrapata Creek	0	-	-	-	High	Not tested due to access difficulties and safety concerns
7	Arroyo Paredon	11	Yes	No	Yes	Low	Thin layer of shell midden within artificial fill; no artifacts.
8	El Estero	4	Yes	No	Yes	Low	Thin layer of shell midden within artificial fill; no artifacts; 1.15-meter-thick mix of shell and artificial fill; no artifacts
9	Santa Monica Creek	3	Yes	No	No	Low	No buried deposits
10	Franklin Creek	0	-	-	-	Low	Not tested due to access difficulties and safety concerns
11	Carpinteria Creek	11	Yes	No	No	Low	No buried deposits

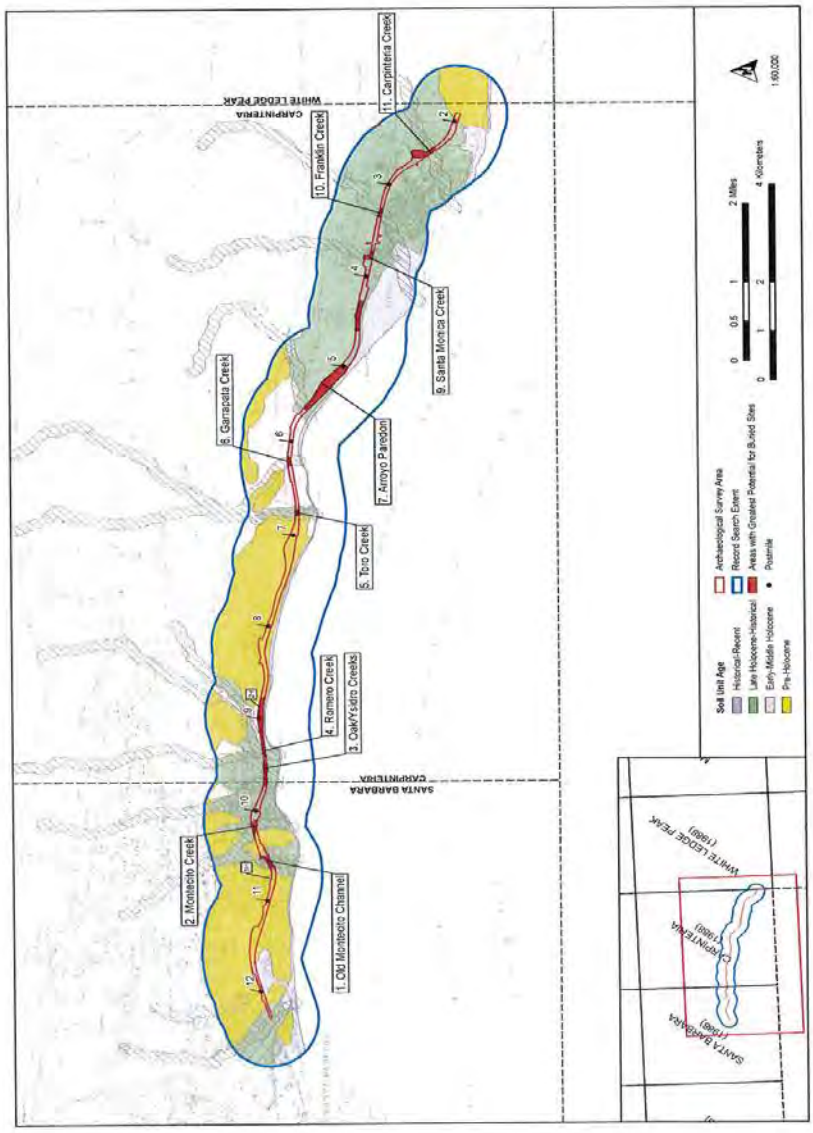

Figure 3. Extent and Age of Landforms in and near the Project Area.

TESTING THE GEOARCHAEOLOGICAL SENSITIVITY MODEL

Extended Phase I testing for the project was conducted at nine locations within the APE determined sensitive for buried prehistoric and historic archaeological resources (Kaijankoski et al. 2009). This effort included excavation of 47 backhoe trenches (totaling 245.2 cubic meters) and a detailed analysis of exposed sediments. Additional backhoe testing (14 trenches totaling 60.3 cubic meters) occurred at two locations determined to be sensitive for historic-period resources, an 1869 residence and an 1820-1870s Matanza (slaughter) area (Hildebrandt and Darcangelo 2008).

Seven of the eleven locations within the APE were determined sensitive for buried prehistoric archaeological sites (Table 2). Results from nearby trenches suggest that untested areas 3, 4, and 6 have a high sensitivity for buried sites if the underlying natural deposits have not been substantially disturbed. Area 10 is likely not sensitive due to the presence of very thick alluvial deposits dating to the latest Holocene, as found in nearby Area 9.

While the exploratory trenches did not encounter intact archaeological sites, Holocene-age depositional landforms containing one or more buried soils were identified in many areas where they were predicted to occur, thus confirming the accuracy and utility of the initial sensitivity study. No intact prehistoric or historic-period resources were identified during trenching; however, a series of redeposited prehistoric sites was discovered at six locations (Table 2). Five of these locations are highly disturbed and, due to their lack of integrity and low density of artifacts and subsistence remains, it is concluded that they lack the research potential to be eligible for the National Register under Criterion D. The SHPO concurred with the eligibility determination (Attachment A, FHWA101108A). A sixth location was the Via Real Redeposited Midden.

VIA REAL REDEPOSITED MIDDEN

SURVEY

The Via Real Redeposited Midden (P-42-003943) was discovered during the survey phase of the current project (see site record in Appendix B; Hildebrandt and Darcangelo 2009). It is a relatively dense shell midden exposed in a ditch cutbank located on the northeast side of frontage road Via Real (U.S. Route 101 Post Mile 5.7- 5.8; Figures 3 and 4). The midden is between 20 and 50 cm below the road base, or 30 to 60 cm below the top of the asphalt. Associated artifacts include several cobble/core tools, handstones, Monterey chert and quartzite debitage, and fire-affected rock. Subsistence remains include shellfish (estuary and outer coast) and marine and terrestrial mammal bone. The soil matrix is an indurated silty-sand which has left heavy clay skins on all constituents.

During site recording, it appeared that Via Real was built on top of an intact midden. A closer inspection of the profile, however, showed that the sub-midden deposit is a yellowish, silty-clay full of broken cobbles and gravel. The natural sediments at this relatively low-lying location are composed of fine-grained floodplain deposits lacking large rocks. This suggests that both the sub-midden and midden deposits were brought into this location and used as frontage road fill. U.S. 101 is built on about five feet of fill in this location (Figure 4).

Based on the visible extent of the midden, if cultural materials extend across Via Real, they would equal about 600 cubic meters of deposit (120 x 10 x 0.5 meters). The midden is probably not related to nearby site CA-SBA-12, briefly noted by Rogers (1929:65) as a shallow seasonal camp with no midden which lies about 250 meters south of U.S. 101. Another possible source considered for the redeposited midden is

site CA-SBA-16 on the top of Ortega Hill, just north of the project area; however, it does not contain the faunal-rich deposit observed at the Via Real location (Macko and Erlandson 1980:40; Rogers 1929:71-72).

Despite review of historic highway construction records and photographs, it is difficult to ascertain the precise location of the borrow source for the Via Real midden. A review of contractor Sam Hunter's final report in 1928 for the *Construction of the State Highway from Carpinteria to Montecito in the County of Santa Barbara* found some clues about the midden's point of origin. The report states that Hunter obtained fill, which was rich with natural asphalt, from the L. M. Higgins property from December 1926 to April 1927, so we considered this the source location. This idea was strengthened as the Higgins property is also the location of CA-SBA-6, which was called the Higgins site by Rogers (1929:46-48). It was a large midden site associated with asphaltum seeps, and Rogers (1929:47, Plate 1) provides a photograph of a large borrow pit showing a stratigraphic profile of the archaeological deposit that had been removed. Rogers (1929:46) also mentions the site is a "…dense kitchen midden that reaches in places to a depth of four feet," which matches the dense faunal constituents of the Via Real midden.

Further evidence suggests that between 1950 and 1952 the State of California Division of Highways acquired additional property for a larger state highway and associated frontage road which would later be named Via Real (Appendix C). In 1952 the state highway expressway and Via Real (from Padaro Lane to Nidever Road) were constructed. The existing two-lane state highway was converted to southbound lanes, with two new northbound lanes added. Via Real was constructed as a 20-foot-wide road, and several feet of fill were required. Imported base material was used from the same borrow source as the 1928 location mentioned above, as well as "…an oil sand deposit located adjacent to the beach approximately ½ mile south of Carpinteria State Park…" (Evans 1949:12).

TESTING

To develop a better understanding of the composition and age of the deposit, a small testing program was conducted at the Via Real Redeposited Midden during Extended Phase I studies along the current project area (Kaijankoski et al. 2009; Figure 3). Six soil samples were obtained from the cutbank, ranging between 10 and 28 liters in size. One sample was collected southwest of the datum (S15), one adjacent to the datum (N0), and four from areas to the northwest (N30, N45, N65, and N85; Figure 4). All six samples were washed through 1/8-inch screen and catalogued at the Far Western laboratory facilities in Davis. All but sample N0 (collected and processed for the initial survey stage) were washed through 1/16-inch mesh. Each recovered item was separated by material and artifact type, measured and weighed, and the condition of the artifact recorded. Recovered materials were cataloged according to artifact type, sample, and relevant organizational criteria.

Table 3. Radiocarbon Results from the Via Real Redeposited Midden.

Lab No.	Unit	Depth (CM)	Species	^{14}C BP	Cal BP[a]	2-Sigma Range
OS-73425	N0	30-60	*Mytilus californianus*	3550 ± 30	3155	2919-3363
OS-73428	N0	30-60	*Haliotis* spp.	4040 ± 25	3747	3522-3974
OS-73427	N0	30-60	*Chione undatella*	4050 ± 30	3759	3527-3991
OS-73426	N0	30-60	*Tivela stultorum*	4240 ± 30	4014	3774-4270

Notes: National Ocean Sciences AMS Facility; [a]Median probability; Delta reservoir marine correction factor of 239 ± 80 based on weighted mean determined from shellfish studies in the Santa Barbara region.

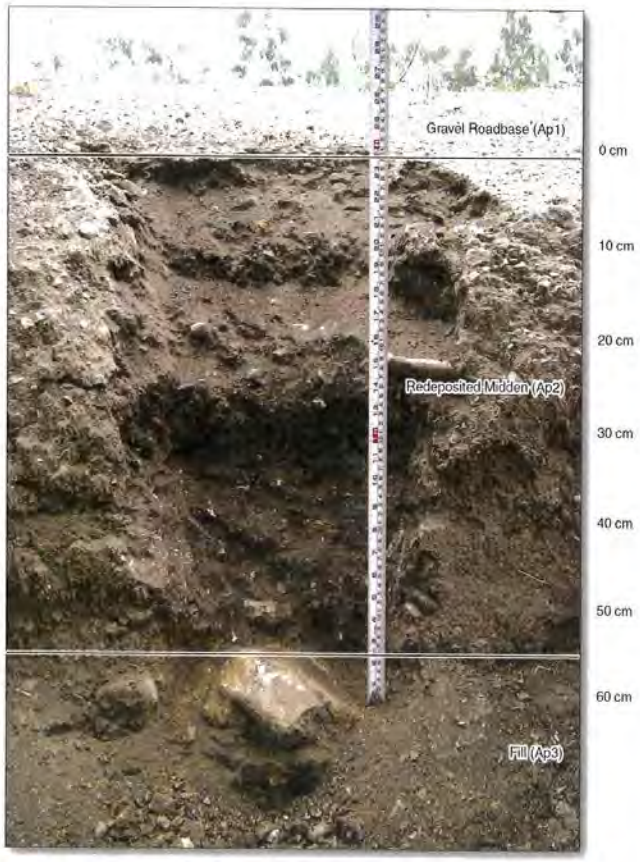

Figure 5. Stratigraphic Profile of the Via Real Redeposited Midden.

Table 4. Archaeological Findings from the Via Real Redeposited Midden.

	Sample Location—Trench No.						Total
	S15	N0[a]	N30	N45	N65	N85	
Debitage (count)	35	19	6	3	10	8	81
Bone (count)							
Mammal	33	9	9	6	3	5	65
Fish	1	-	-	1	1	-	3
Fish (1/16-inch)	21	-	15	18	12	12	78
Bone Total	55	9	24	25	16	17	146
Shellfish (grams)	422.3	364.9	90.8	98.8	81.9	41.8	1,100.5
Sample Size (liters)	19	28	10	10	10	10	87
Estimate for a 1-x-1-meter unit to 50 centimeters deep							
Debitage (count)	928	342	300	150	500	400	437
Bone (count)	1,458	162	1,200	1,250	800	850	953
Shell (grams)	11,191	6,568	454	4,940	4,095	2,080	5,571

Notes: [a]1/16-inch fraction was not generated from this survey sample.

Herrings and pacific sardine are the most common taxa represented in the identifiable fish bone assemblage, and this dominance remains constant across all samples (Table 5). Sardines form large schools, spawn in pelagic environments, and never come inside the kelp beds, so their presence reflects the use of watercraft and sophisticated netting technology. Drums/croakers are also significantly present, and are commonly found in estuaries or near the kelp beds. Surf perch and silversides, present in small numbers, can also be found in shallow, near-shore waters. Members of the latter group (e.g., grunion) form large schools in deep-water habitats but can also be found in large numbers when spawning on the sandy beach. Rays and skates, represented by a single bone, are species typically caught in estuary habitats (Salls 1988).

The mammal bones are quite fragmentary but can easily be divided into two size classes: large (otter/deer-sized and larger) and small (rabbit and smaller). Small mammal (70.8%) is more abundant than large mammal (29.2%) within the combined sample (Table 6); a significant number of both groups are burnt. Given the low volume of the soil samples (totaling about 0.08 cubic meters), a larger excavation sample would certainly produce an interesting assemblage.

Table 5. Fish Bone Count from the Via Real Redeposited Midden.

	S15	N0[a]	N30	N45	N65	N85	TOTAL
Herrings (Clupeidae)	-	-	2	5	4	2	13
Pacific Sardine (*Sardinops sagax*)	5	-	1	2	3	4	15
Drum or Croaker (Sciaenidae)	3	-	1	2	-	-	6
Silversides (Atherinidae)	-	-	-	-	2	-	2
Surfperches (Embiotocidae)	-	-	-	-	1	-	1
Rays and Skates (Rajiformes)	-	-	-	1	-	-	1
Ray-Finned Fishes	9	-	7	7	3	4	30
TOTAL	17	-	11	17	13	10	68

Notes: [a] 1/16-inch fraction was not generated from this sample.

Table 6. Mammal Bone Count From the Via Real Redeposited Midden.

	S15	N0[a]	N30	N45	N65	N85	TOTAL
LARGE MAMMAL							
Burnt	6	1	2	1	-	2	12
Unburnt	2	3	1	-	-	1	7
Total Large Mammal	8	4	3	1	-	3	19
SMALL MAMMAL							
Burnt	12	2	-	-	1	1	16
Unburnt	13	3	6	5	2	1	30
Total Small Mammal	25	5	6	5	3	2	46
TOTAL	33	9	9	6	3	5	65

Notes: [a] 1/16-inch fraction was not generated from this sample.

The shellfish remains reflect a similar range of habitats (Tables 7 and 8). Four of the six soil samples were analyzed (S15, N0, N30, and N65), and include species identifications from both the 1/4-inch and 1/8-inch mesh. With the exception of N0, where almost half of the sample is composed of estuary species, the samples are dominated by open rocky coast species, particularly California mussel. Estuary species are the next most important, and are dominated by little neck and Venus clams. Finally, Pismo clam represents the open sandy coast (Morris et al. 1980).

Table 7. Shellfish Remains (in grams) from the Via Real Redeposited Midden.

Common Name (Latin Name)	S15			N0			N30			N65			Total
	1/4-in	1/8-in	Total	1/4-in	1/8-in	Total	1/4-in	1/8-in	Total	1/4-in	1/8-in	Total	
Open Rocky Coast													
California mussel (*Mytilus californianus*)	15.6	118	133.6	107.6	51.6	159.2	15.3	151.6	166.9	14.8	98.4	113.2	572.9
Platform mussel (*Septifer bifurcatus*)	0.4	1.2	1.6	0.1	0.4	0.5	0.2	0.4	0.6	0.1	0.8	0.9	3.6
Barnacle (*Balanus* spp.)	0.6	0.7	1.3	-	0.4	0.4	-	0.4	0.4	-	1.2	1.2	3.3
Chiton (*Mopalia* spp.)	0.6	0.9	1.5	2.7	-	2.7	0.1	0.4	0.5	0.3	4.0	4.3	9.0
Gumboot chiton (*Cryptochiton stelleri*)	-	-	-	0.8	-	0.8	-	-	-	-	-	-	0.8
Leaf barnacle (*Pollicipes polymerus*)	1.2	0.6	1.8	0.1	0.4	0.5	-	1.2	1.2	-	0.4	0.4	3.9
Periwinkle (*Littorina* spp.)	-	-	-	-	-	-	-	0.4	0.4	-	-	-	0.4
Sea urchin (*Strongylocentrotus purpuratus*)	0.1	-	0.1	-	-	-	-	-	-	-	-	-	0.1
Limpet (*Lottia* spp.)	-	0.2	0.2	-	-	-	-	0.4	0.4	-	0.4	0.4	1.0
Rock snail (*Ocenebra* spp.)	-	-	-	1.2	-	1.2	-	-	-	-	-	-	1.2
Abalone (*Haliotis* spp.)	-	-	-	1.1	-	1.1	-	-	-	-	-	-	1.1
Turban snail (*Lithopoma* spp.)	1.3	0.1	1.4	-	-	-	-	-	-	-	-	-	1.4
Giant rock scallop (*Hinnites multirugosus*)	-	-	-	2.1	-	2.1	-	-	-	-	-	-	2.1
Subtotal	19.8	121.7	141.5	115.7	52.8	168.5	15.6	154.8	170.4	15.2	105.2	120.4	600.8
Open Sandy Coast													
Pismo clam (*Tivela stultorum*)	38.2	1.0	39.2	21.1	0.4	21.5	0.5	1.2	1.7	3.8	3.2	7	69.4
Estuary/Bay													
Pacific gaper clam (*Tresus nuttalli*)	-	0.3	0.3	-	-	-	0.1	-	0.1	9.2	-	9.2	9.6
Pacific littleneck clam (*Protothaca staminea*)	15.1	8.5	23.6	61	2.4	63.4	16.6	11.6	28.2	6.3	7.6	13.9	129.1
Venus clam (*Chione* spp.)	15.8	1.1	16.9	94.1	-	94.1	7.8	-	7.8	14.1	1.2	15.3	134.1
Sand clam (*Macoma* spp.)	-	0.3	0.3	3.5	0.4	3.9	-	0.4	0.4	3.1	1.2	4.3	8.9
Basket cockle (*Clinocardium nuttalli*)	-	-	-	0.8	-	0.8	-	0.4	0.4	-	0.4	0.4	1.6
California oyster (*Ostrea lurida*)	0.4	0.3	0.7	2.1	0.4	2.5	0.2	0.4	0.6	-	0.4	0.4	4.2
Washington clam (*Saxidomus nuttalli*)	-	0.2	0.2	12.2	0.8	13	5.4	1.2	6.6	-	-	-	19.8
Subtotal	31.3	10.7	42.0	173.7	4.0	177.7	30.1	14.0	44.1	32.7	10.8	43.5	307.3
Indeterminate													
Crab (*Cancer*)	-	0.1	0.1	0.2	-	0.2	0.5	0.4	0.9	-	-	-	1.2
Unidentified	-	3.6	3.6	0.7	0.4	1.1	0.8	2.8	3.6	-	1.6	1.6	9.9
Subtotal	-	3.7	3.7	0.9	0.4	1.3	1.3	3.2	4.5	-	1.6	1.6	11.1
Total	89.3	137.1	226.4	311.4	57.6	369	47.5	173.2	220.7	51.7	111.8	172.5	988.6

Notes: The 1/8-inch 25% samples from N0, N30, and N65 have been adjusted (multiplied by four); in—inch.

Table 8. Shellfish Habitat Proportions from the Via Real Redeposited Midden.

	S15		N0		N30		N65	
	WEIGHT	% OF SAMPLE	WEIGHT	% OF SAMPLE	WEIGHT	% OF SAMPLE	WEIGHT	% OF SAMPLE
Open Rocky	141.5	63.5%	168.5	45.9%	170.4	78.8%	120.4	70.5%
Open Sandy	39.2	17.6%	21.5	5.8%	1.7	0.8%	7.0	4.1%
Estuary/Bay	42.0	18.9%	177.7	48.3%	44.1	20.4%	43.5	25.4%
TOTAL	222.7	100.0%	367.7	100.0%	216.2	100.0%	170.9	100.0%

Notes: Weight in grams.

III. BACKGROUND

The following section provides contextual information to help analyze and interpret the Via Real Redeposited Midden excavation findings as well as potential discoveries during construction. It begins with a review of the modern environmental setting, followed by brief discussions of the archaeological and ethnographic contexts. A more detailed review can be found in the project Extended Phase I archaeological investigation report (Kaijankoski et al. 2009). The review provides information necessary to develop a series of research questions that will ultimately be used to better understand site constituents. Due to the prehistoric focus of this study a historic-era context is not included.

ENVIRONMENT

Via Real Redeposited Midden is situated on a broad coastal plain that faces south towards the Santa Barbara Channel. The coastal terrace was probably formed between 80,000 and 130,000 years ago during the last major interglacial period of the Pleistocene (Erlandson 1994; Schell and Crose 1984) and was uplifted into its current position by more recent tectonic activity. It is bounded on the north by the Santa Ynez Mountains and dissected by multiple streams that drain in a southerly direction to the sea.

Local climate is quite mild due to the moderating influence of the Pacific Ocean and the Santa Ynez Mountains, the latter providing a buffer from more extreme climatic conditions of the interior. Most rainfall occurs during winter (averaging 17 inches per year), while temperatures remain rather constant throughout the year, averaging 56 °F in winter and 63 °F in summer (Johnson 1977; Smith 1952). These conditions produce a terrestrial habitat once dominated by a coastal sagebrush community, which includes a mosaic of open grassland and shrubs composed primarily of sagebrush and coyote brush (Küchler 1977). Southern oak forest and chaparral communities cover the mountain slopes to the north, while the major drainages support a lush association of riparian plants including cottonwood, sycamore, willow, and coast live oak. This habitat diversity provided local, indigenous people with a range of important plant and animal foods, including acorns and small seed crops (e.g., wild grasses, red maids, goosefoot, chia), as well as small and large game (e.g., rabbits and deer).

Approximately 300 meters from the modern coastline is a rich marine coastal ecosystem characterized by long stretches of sandy beach, interspersed with areas of rocky intertidal habitat, and a productive estuary in the prehistoric past. All these areas produce shellfish and variable amounts of small inshore fishes, while certain species of sharks and rays could have been obtained from estuaries that once occupied the mouths of many streams. Kelp beds are relatively close to shore along this coast, supporting a rich concentration of many species of fish (e.g., various rock fishes and perches). Schooling fishes like sardines and their predators (e.g., mackerel) could be acquired just beyond the kelp, while larger pelagic fishes like tuna could have been caught farther out with the proper boating and fishing technology and skill.

The rich and varied marine resource base, combined with the abundance of acorns and small seeded foods, allowed local Chumash populations to reach some of the highest densities observed in California.

PREHISTORY

This review of Santa Barbara coastal prehistory is organized into five time periods summarized in Table 7 and briefly discussed in this section. This chronological sequence is largely based on the original work of King (1990), with the pre-6300 cal BP nomenclature modified to be more consistent with recent publications. All of the age ranges correspond to calibrated radiocarbon dates, so they often have different start and end dates from the uncalibrated radiocarbon dates that have been commonly published in the past.

Table 9. Chronological Sequence for the Santa Barbara Channel Area.

Geological Period	Cultural Period	cal BP[a]	14C BP	cal BC/AD
Late Holocene	Late Period	Post-900	Post-1000	Post-AD 1050
Late Holocene	Middle Period	2700-900	2600-1000	750 BC-AD 1050
Middle Holocene	Early Period	6300-2700	5500-2600	4350-750 BC
Early Holocene	Millingstone Period	10,000-6300	9000-5500	8050-4350 BC
Pleistocene/Holocene	Pleistocene/Holocene Transition	13,000-10,000	11,000-9000	11,050-8050 BC

Notes: [a] Calibration based on Stuiver et al. (2006) version 5.0.2.

Pleistocene/Holocene Transition (13,000-10,000 cal BP)

Although much has been written about an initial, pre-Clovis coastal entry into California during the Late Pleistocene (e.g., Erlandson 2002; Erlandson et al. 2007; Jones et al. 2002), there is no firm evidence for pre-Clovis occupation (greater than 13,500 cal BP) on the Santa Barbara coast. Clovis-style projectile points are sporadically scattered across California, but are found in large concentrations only at China Lake (Mojave Desert), Tulare Lake (San Joaquin Valley), and Borax Lake (North Coast Ranges). Unfortunately, these sites have not been firmly dated, nor have the projectile points been found in direct association with faunal remains or other subsistence debris. Nevertheless, if the California sample of Clovis points is coeval with well-dated assemblages elsewhere in North America (i.e., mostly between 13,200 and 12,800 cal BP; Waters and Stafford 2007), then people were at least distributed across a wide range of habitats during this early interval, including at least one location along the Santa Barbara coast about 20 kilometers east of Point Conception (SBA-1951; Glassow et al. 2007).

Except for the date of about 12,900 cal BP on the Arlington skeleton from Santa Rosa Island (Johnson et al. 2000), and a series of sites on San Miguel Island dating to about 12,000 cal BP (Erlandson et al. 2011), widespread evidence for occupation in California (including the coast) begins around 11,000 to 10,500 cal BP (Rosenthal and Fitzgerald 2012). These early sites are found on the slopes of the Sierra Nevada (Gabbott Meadows, Clarks Flat, the Sky Rocket locality), along the coast ranges (Metcalf Creek, Cross Creek), along the outer coast (Pismo Beach, Diablo Canyon, Lodge Hill), and on the northern Channel Islands (Daisy Cave, Simonton Cove).

Although Holocene sea level rise may have obliterated much of an earlier, pre-Clovis archaeological record (Erlandson et al. 2007), it is important to remember that sea level rise continued to be a major issue until about 6000 cal BP, creating significant preservation problems between 10,500 and 6000 cal BP as well. The archaeological record improves significantly after 10,500 cal BP. One of the main reasons the post 10,500 cal BP record is visible is that:

> …people were mobile enough to have carried materials suitable for radiocarbon assay (largely shellfish) away from the shore to places safe from inundation. Although shorelines were further out in the Late Pleistocene than during the Early Holocene, to say that earlier people (pre-10,500 cal BP) did not have sufficient levels of mobility to create a visible archaeological record on protected land surfaces necessarily argues for higher degrees of coastal sedentism during the Pleistocene. [Hildebrandt 2007:387]

None of the prevailing models of Late Pleistocene settlement organization argues for high degrees of sedentism, so the ultimate solution to this problem is to intensively survey Pleistocene land surfaces along the coast next to places where the subsurface topography (bathymetry) is quite steep. Pleistocene surfaces (or buried soils of the target age) could hold an ancient site deposit, and sea level rise would have covered less horizontal space across a steep submarine slope than along a low gradient plain, increasing the likelihood

that shellfish would be transported to a protected location. Although much of the current project area is situated on ancient Pleistocene surfaces, it also lies adjacent to rather shallow waters where the Pleistocene shore would have been relatively far from the current beach (Kaijankoski et al. 2009).

MILLINGSTONE PERIOD (10,000-6300 CAL BP)

This period is best known along the southern coast of California, but its manifestations are increasingly being recognized throughout central California as well (Fitzgerald and Jones 1999; Jones et al. 2007). It was first identified in the Santa Barbara area by Rogers (1929) and called the Oak Grove culture. Most assemblages along the coast include high densities of handstones, millingslabs, and core/cobble tools, as well as relatively dense concentrations of shellfish (Glassow 1996). More than 40 years ago, Warren (1967:235) made the following observations:

> Collecting of seeds was nearly as important to the economy as shellfish collecting, and perhaps more so. The numerous millingslabs and shell middens are prime indicators of these activities at these sites. Fishing and the hunting of land or sea mammals all appear relatively unimportant to the economy… These observations seem to be substantiated by the relatively rare occurrences of hunting and fishing equipment in Milling Horizon sites.

These basic conclusions have been largely verified by more recent excavations along the Santa Barbara coast where Erlandson's (1994) analysis of faunal remains from a variety of sites indicates that Millingstone peoples depended largely on shellfish for protein, with hunting and fishing making significantly lower contributions to the diet, particularly when compared to later time periods (Glassow et al. 2007). Erlandson's analysis of the structure and composition of these early deposits (some including human burials) led him to conclude that a relatively sedentary settlement system was in place. This hypothesis has been challenged by several researchers (e.g., Jones 1996; Jones and Richman 1995; McGuire and Hildebrandt 1994) who use data from a variety of inland contexts to argue for a larger subsistence-settlement system. Evidence from the Cross Creek site (SLO-1797), although located farther north in San Luis Obispo County, clearly supports this notion, as this interior Millingstone Period site includes estuary shellfish, showing mobility between interior and coastal habitats (Fitzgerald 2000; Jones et al. 2002).

The absence of hunting gear and large terrestrial mammals in most Millingstone sites led McGuire and Hildebrandt (1994, 2004) to conclude that there was little gender differentiation in the organization of work, with men and women working together gathering subsistence resources such as small game and near-shore fishes, plant foods, and other sessile items like shellfish. Glassow et al. (2007:196), in contrast, suggest that "males produced sites that were difficult to recognize or date as they would have been hunting camps occupied for short periods of time where little organic material useable for radiocarbon dating would have been left behind." But if logistical hunting was important, as Glassow argues, then temporally diagnostic projectile points should exist at the hunting camps like they do in many other parts of California (McGuire et al. 2007; Stevens 2005). Moreover, projectile points should occur in male graves dating to this interval, which they don't (McGuire and Hildebrandt 1994), and at least some portion of the large game skeleton should make it back to the residential base, which also doesn't seem to be the case (Erlandson 1994).

Sites falling into this time period on the northern Channel Islands are quite different from those on the mainland, as they lack milling equipment. Important deposits have been found on San Miguel, Santa Rosa, and Santa Cruz islands. According to Glassow et al. (2007), human subsistence was dependent on shellfish, but pinnipeds, fish, and birds also contributed to the diet. Bone gorge hooks have been found at two island sites (Daisy Cave and Punta Arena), and may represent the earliest fishhooks in North America. Cordage fragments

have also been found, perhaps signaling the use of nets (Erlandson et al. 2007). Faunal remains from these sites indicate a dependence on shellfish and fish obtained from near-shore and kelp bed habitats. This early intensification of fishing technology in island settings was probably due to a lack of terrestrial mammals like rabbits and deer, and the low productivity of plant foods. It appears that "utilization of seeds that were milled into flour was not practiced by the islanders at this time, perhaps because appropriate seed-bearing plants were not as abundant on the islands" (Glassow et al. 2007:195). The low frequency of pinnipeds at these early sites is somewhat surprising given their large body size (Kennett 2005), but it probably indicates that their rookeries and haulouts were on offshore rocks or islands not easily accessible to the early islanders who tended to stay in near-shore contexts.

EARLY PERIOD (6300-2700 CAL BP)

Although artifact assemblages dominated by handstones and millingslabs persist into the Early Period in many interior settings, several major changes in subsistence technology are evidenced along the Santa Barbara coast. The most important of these include the introduction of mortars and pestles and an increase in the frequency of large, side-notched projectile points. Rogers (1929) originally attributed this adaptive shift to the arrival of the "Hunting Culture," which appeared to represent a population more reliant on acorns and hunting both terrestrial and marine mammals. Several additional scholars have also linked this shift to the intrusion of a new people into the area, including populations from western Alaska (Harrison 1964), the Mojave Desert (Warren 1968), and the Channel Islands (Lathrop and Troike 1984). Glassow (1997) and Erlandson (1997), in contrast, argue that there is little archaeological evidence for a population replacement, and attribute the changes to technological shifts initiated by local people.

Later work by Mikkelsen et al. (2000) led to a revival of some of Warren's original ideas (Levulett et al. 2002). Glassow's analysis of radiocarbon-dated components from the northern Santa Barbara Channel region indicates that human populations may have reached a peak around 6000 to 5000 cal BP, probably correlating with a period of cooler sea water temperatures and increased marine productivity (Glassow 1997; Glassow et al. 2007). Mikkelsen et al. (2000) note that this increase in population along the central and southern coast (particularly around estuaries), correlates with a period of Middle Holocene desiccation in the interior, and evidence for depopulation across much of the western Great Basin (Grayson 1993). Although there is little direct evidence for the arrival of a specific ethno-linguistic group from the desert into the Santa Barbara area (e.g., desert Pinto points look nothing like those found in coastal Hunting Culture assemblages), Mikkelsen et al. (2000) argue that a major re-structuring of regional populations took place, resulting in greater population pressure in those areas where Middle Holocene drought conditions had a lesser effect on local resource productivity.

Mikkelsen et al. (2000) proposed that the growing coastal populations focused on estuary habitats, such as Goleta Slough, which reached maximum levels of productivity during the Middle Holocene, and served as outstanding sources of protein (e.g., shellfish, sharks/rays, small schooling fishes). These habitats provided little in the way of carbohydrates, perhaps requiring an increase in the use of other resources such as acorns, which are evidenced by the emergence of mortar-pestle technology. Glassow (1997) takes a somewhat different perspective on this issue, arguing that the presence of these tools does not necessarily indicate intensive use of acorns, and could alternatively represent the exploitation of wetland bulb resources located upstream at the heads of the estuaries (e.g., bull rush roots).

The presence of paleoestuary habitats along the mainland coast did not last forever, however. This is particularly the case along the western coast where, unlike Goleta Slough, the old embayments have been entirely silted in by terrestrial alluvium. Although it is difficult to know exactly when this occurred in the local area (Masters and Aiello 2007), Hildebrandt and Jones (1999) found a shellfish assemblage at Arroyo Quemado

(north of the current project area) dominated by rocky intertidal species dating between 4560 and 3380 cal BP. This finding probably indicates that paleoestuaries were significantly diminished along this stretch of coast by this time.

Adaptations on the islands remain distinct from the mainland, as side-notched points are essentially absent and mortars and pestles are quite rare. Dolphin hunting becomes important for the first time, and offshore species of fish first begin to show up in the record. Both of these findings led Glassow et al. (2007:199) to conclude that watercraft were used more intensively than before, perhaps due to technological improvements in their design, but there is no direct archaeological evidence currently available to verify these potential changes. Additional evidence for an improved maritime technology includes greater commerce across the channel, with shell beads and ornaments moving from the island to the mainland, and hair pins made from deer metapodials being transported the other direction (Glassow et al. 2007:199). Finally, a greater emphasis on status differentiation is indicated at a series of cemeteries, where items of wealth were differentially spread across the population more than was the case earlier in time.

MIDDLE PERIOD (2700-900 CAL BP)

One of the most outstanding aspects of the Middle Period record throughout California is the significant increase in the number and size of archaeological sites on the landscape. Glassow's (1996) analysis of this temporal interval within the Santa Barbara region indicates that expansion of the archaeological record was probably due to major changes in the subsistence economy, which ultimately led to changes in the organization and distribution of settlements. Beginning around 3200 to 2600 cal BP:

> …the rate of cultural change appears to have accelerated. Sites serving as residential bases generally contain much denser midden refuse than before, often giving the soil matrix a sooty character. This may indicate that these residential bases were occupied for longer periods of time during the annual cycle. Bones of marine mammals and fish are often in relatively high densities in site deposits, implying fishing and sea mammal hunting were becoming more important. [Glassow 1996:22]

Increases in sedentism and logistical hunting and fishing during the Middle Period have also been recognized by Hildebrandt et al. (2010) within northern Chumash territory, but these trends have been contested by Jones and Codding (2010) who argue that adaptation remained rather constant until after 1200 cal BP when a greater use of the marine environment occurred.

A greater emphasis on fishing and sea mammal hunting on the Santa Barbara Channel is attributed to the introduction of circular shell fishhooks at about 2600 cal BP (King 1990), and use of barbed harpoons and plank canoes after 1500 cal BP, the latter evidenced by canoe drills and asphaltum plugs (Arnold 2007; Gamble 2002; King 1990). These technological innovations led to expanded use of the marine environment from both the islands (Glassow 1993a, 1993b; Kennett 2005; Perry 2003) and the mainland (Erlandson and Rick 2002a, 2002b; Glassow 1992) which is clearly evidenced by increased frequencies of pelagic taxa such as tuna and swordfish in a variety of Middle Period archaeological sites (Bernard 2004; Davenport et al. 1993; King 1990).

Several researchers have suggested that expanded use of the local fishery created high population densities along the coast and on the Channel Islands (Glassow 1996; Lambert 1993). Higher degrees of sedentism are inferred from the discovery of semi-subterranean houses and ceremonial structures, as well as more formalized cemeteries (Erlandson 1997; Erlandson and Rick 2002a, 2002b; Gamble and Russell 2002). It has also been proposed that these demographic changes along the coast resulted in more intensive occupation of the interior, and that interior settlements quickly engaged in a series of sophisticated trade

networks designed to move seed resources to the coast in exchange for a variety of marine foods (Hildebrandt 2004; Horne 1981; Macko 1983).

According to King (1990), these developments were accompanied by major changes in sociopolitical organization. Based on an analysis of mortuary patterns from sites on both the mainland and islands, he proposed that there was a change from egalitarian to non-egalitarian social organization at about 3200 cal BP.

> The shift from a relatively egalitarian to a non-egalitarian society at the end of the Early Period is here interpreted as resulting in a decrease in importance of the economic system as a means of attaining political power, as inherited wealth and political titles increased in importance. Effort which was previously spent in maintaining a relatively egalitarian exchange system was increasingly being spent to validate the power of political leadership… These leaders presumably controlled both the stores of food and wealth objects which were used in exchanges between groups. [King 1990:96]

A slightly different perspective regarding the development of sociopolitical complexity during the Middle Period has been proposed by L. King (1982) who argued that stratified social relationships were tightly linked to the development of the plank canoe. Due to the high costs of building and maintaining plank canoes, only a limited number of individuals had the resources to produce them. Ownership of canoes allowed this small elite group of people to control exchange relationships between the mainland and the islands, thereby acquiring greater wealth than the general population. With intensified fishing and inter-group exchange supporting mainland and island sedentism (Arnold 1995, 2001; Kennett 2005), Erlandson and Rick (2002a:181) have argued that the fundamental aspects of Chumash society emerged at this time.

According to Arnold (1995), the plank canoe was also critical for the acquisition of highly valued pelagic fishes. Beyond the procurement and transport of basic subsistence commodities, she notes that the capture of these taxa was probably:

> …highly valued and linked with elevated status because of the expense associated with their procurement; that is, they can be acquired only through the use of large, far reaching boats, sometimes at substantial risk. Procurement and consumption of such resources comes to symbolize rank and wealth, as does the ownership of boats, and the activities associated with these harvests. [Arnold 1995:735]

Some of the most highly valued resources obtained from the sea were large pelagic fish like tuna and swordfish. Davenport et al. (1993) review several Chumash myths involving swordfish and, not surprisingly, these animals first appear in the archaeological record in significant numbers at around 1500 cal BP, which is correlated with the introduction of the plank canoe and barbed harpoon (Bernard 2004; Hildebrandt and McGuire 2002). The importance of swordfish is also illustrated by Rogers' discovery of a swordfish dancer burial dating to the Middle Period, where the skull and beak of a swordfish was placed over the head of the man along with a cape of abalone ornaments that represented the scales of the fish (Davenport et al. 1993).

The origin of the plank canoe (*tomol* or *tomolo*) has been the subject of intense debate over the last few years. Jones and Klar (2005) have argued that ancient Polynesians traveling from Hawaii introduced the canoe technology to the local area. They take this position because the word *tomolo* does not appear to be a native Chumash term, but is quite similar to Polynesian words for tree and trunk. They also cite the presence of a unique compound fishhook in Chumash sites that is similar to those found in Hawaii. Arnold's (2007) review of the cultural historic-period record of Hawaii, however, shows that it was not occupied until

around 1200 to 1100 cal BP, 300 to 400 years after the plank canoe came into use in California (Gamble 2002). Based on these findings, she concludes that the plank canoe was a local, independent development, with little or no influence from outlying areas. Jones and Klar (2009) responded to this critique by arguing that the settlement history of Hawaii is far from certain, as is the exact age of the original plank canoe on the Santa Barbara Channel.

LATE PERIOD (POST-900 CAL BP)

Maritime adaptations continued to intensify along the Santa Barbara coast during the Late Period, leading to the development of large permanent coastal villages (Gamble 1995) and expansion of the large-scale trade network between the islands, mainland coast, and interior. According to Arnold (1987, 2004), this system reached a higher level of complexity around 650 cal BP, when it became necessary to supplement the diet of islanders with foods from the mainland. Enterprising individuals on the islands developed a means to solve these problems by creating a more controlled and centralized exchange system. This was made possible through development of *Olivella* bead money which facilitated the exchange of food, goods, and other valuables. Island people, particularly those on Santa Cruz Island, were in excellent position to specialize in bead money production because the necessary raw materials (i.e., high quality chert for drills, *Olivella* shell for beads) were only available in appreciable amounts on the Island.

> Control over the bead money production system provided island canoe owners, traders, and leaders with the leverage they needed to procure mainland food and goods. Individuals who commissioned or controlled the labor of money-making and canoe building specialists possibly manipulated these valuable products in order to rise in power and wealth. [Arnold 1987:11-12]

According to Glassow et al. (2007), the emergence of several large Late Period villages along the Santa Barbara mainland coast probably indicates that populations reached their peak densities during this interval. These increased densities were the result of the improving technological systems outlined above, particularly those applied to the marine environment, as well as inter-village exchange networks. Site SBA-1731 is one of the most important mainland villages for which archaeological data are available. It is located at Corral Canyon, only ten miles east of the current project area, and produced a faunal assemblage dominated by marine mammals and fish, no doubt reflecting the use of ocean-going canoes. It differs from all other known mainland sites by having evidence for *Olivella* bead production, indicating that it was also an important center for exchange (Erlandson and Rick 2002a).

Johnson (2000) has added some important insights to this discussion, proposing that the Chumash system of economic exchange served to buffer climate-induced subsistence stress through the efficient distribution of resources from differing environmental zones. His analysis of mission register data and the Late Period archaeological record indicates that politically independent households and villages were often linked together through a system of inter-group marriage with matrilocal residence. These groups produced goods that were distributed throughout the region to supplement areas where the productivity of subsistence resources was temporally depressed. This system of exchange contributed to the development of several large permanent settlements throughout the region, including those along the mainland coast within and adjacent to the current project area.

ETHNOGRAPHY

At the time of European contact, Chumash territory extended along the coast from San Luis Obispo County, south to Malibu Canyon, and west to encompass the northern Channel Islands. Six language groups have been identified within this territory. The project area lies within the lands of the Barbareño, which .covered the narrow coastal plain from Point Conception to Punta Gorda in Ventura County. Historical documentation of the Barbareño is available in the diaries and accounts of early explorers, and the baptismal records from Mission Santa Barbara (Gamble 1991, 2008; Grant 1978; Johnson 1982). Johnson (1988) identifies 21 villages along the coastal strip.

Larger villages of 500 to 800 people sometimes had more than one chief living there, while some of the smaller settlements had none. The villages included several houses and usually a larger sweathouse. Houses were built by driving poles into the ground and arching them toward the center where they were tied. The frame was covered with thickly woven grasses and reeds, and the houses often had plastered floors, reed floor mats, mattresses, and room dividers (Gamble 1995; Grant 1978). Cemeteries were situated well away from the living area, as were shrines which often occupied adjoining hilltops where shell bead offerings were commonly made (Grant 1978).

Chumash skill at building the plank canoe is well known. The larger villages had multiple canoes, which were often correlated with the size and importance of the village. The Chumash were also expert at making wooden plates, bowls, boxes, mortars, and knife handles. They used steatite to make cooking slabs, ollas, bowls, and other items, and a variety of utilitarian and artistic items were made from shell and bone. The quality of their coiled baskets is also renowned (Hudson and Blackburn 1982).

Due to the high level of ecological diversity within the region, a great deal of trade took place between Chumash settlements. Food items, medicines, manufactured goods, and raw materials moved from one village to the next, and much of this exchange was facilitated through the use of shell bead money (Arnold and Munns 1994; King 1990). According to Gamble (1991, 2008), multiple forms of exchange took place, some of the most important during inter-community gatherings that were organized by political leaders who controlled a system of centralized redistribution (Hudson et al. 1978). Trade between the islands and mainland was facilitated by canoe transport that was also regulated by high status individuals. Much of this activity focused on the production of stone drills and shell beads on the islands, and the control of canoe transport back and forth from the mainland where the beads were exchanged for mainland foods and raw materials. Due to the broad scope of these relationships, hereditary chiefly families ultimately developed power over multiple communities (Arnold and Graesh 2004).

Most prominent political leaders lived in the largest mainland coastal towns which were not only optimally placed to control the flow of goods to and from the islands but also from the interior. Similar to canoe transport between the mainland and the islands, control of this system facilitated the development of wealth and power among a limited number of individuals. These relationships were not always peaceful, as Johnson's (2004) analysis of the historic-period records shows warfare was endemic among the Chumash. He found that the majority of Spanish diaries comment on feuding between the mainland villages. Most of these problems stemmed from conflicts over hunting, gathering, and fishing territories, or failure to participate in the inter-village gatherings, retribution for suspected witchcraft, and revenge for attacks that occurred in the past.

IV. RESEARCH DESIGN

The majority of research along the Santa Barbara Channel coast has focused on explaining how complex hunter-gatherer-fisher societies developed (Erlandson 1993, 1997; Erlandson et al. 2008; Gamble 2008; Glassow 1991, 1996; Glassow et al. 2007; King 1990; Munn et al. 2004). Information recovered from potential project area midden deposits with good chronological ordering will assist with understanding initial cultures and the emergence of cultural complexity. Chronological ordering of the deposit is the first goal, as precise dating and associated artifacts and subsistence remains are critical to understanding the occupational history of a deposit and a necessary precondition for addressing outstanding research issues. Research objectives that might be addressed by data collected from potential midden deposits include: Fluctuations in Coastal Environments and their Influence on Subsistence and Settlement Strategies; Gender Differentiated Social Organization during the Millingstone/Early Period Transition; and Development of Early Period Fisheries.

CHRONOLOGICAL ORDERING OF THE DEPOSIT

Understanding cultural chronology involves recognizing temporally discrete archaeological components and ordering archaeological phenomena over time. For the Santa Barbara region, there are defined regional temporal sequences that can be helpful in ordering sites and assemblages in time (King 1990). Such temporal divisions are useful for organizing the archaeological record, but they are also quite coarse-grained in that small, incremental changes may be obscured by lumping large swaths of time of variable length into "periods" of uncertain cultural or behavioral meaning. Established sequences also encourage archaeologists to assign materials to a cultural period and then consider their work done, effectively using the sequence "as a framework upon which to mount their data rather than as a model to be evaluated" (Hull and Moratto 1999:xv). For this reason, it is desirable if archaeological components can be assigned absolute dates, ranges of dates, and some measure of confidence in those ranges. This permits the maximum flexibility in making local and regional comparisons to help address archaeological questions.

DATA REQUIREMENTS

To contribute to cultural chronology, a site must possess relevant data, such as time-sensitive artifacts and material suitable for radiocarbon or obsidian hydration dating, preferably from intact stratigraphic contexts but they can also identify single component mixed contexts. The presence of dateable material alone is rarely sufficient to contribute to regional chronology because unless the resulting dates can be associated with a useful archaeological assemblage including, but not limited to, stone tools or other artifacts, floral and faunal remains, and/or features, it is unlikely to provide any new information.

FLUCTUATIONS IN COASTAL ENVIRONMENTS AND THEIR INFLUENCE ON SUBSISTENCE AND SETTLEMENT STRATEGIES

Paleoenviromental data indicate that the sea level rose substantially during the early Holocene, resulting in the development of estuaries along many coastal canyons. The drowning of these canyons increased the productivity of the intertidal by increasing the length of coastline access and creating shallow, protected habitats rich in vertebrate and invertebrate resources (Erlandson 1994). As sea levels stabilized about 5500 cal BP, many estuaries began to infill with stream sediments and began to decrease in productivity. Along the California coast the rate of estuary sedimentation varied, with large estuaries such as Goleta Slough in Santa Barbara County persisting through the Holocene.

DATA REQUIREMENTS

Analysis of faunal assemblages, when used in conjunction with existing local collections, can assist with understanding long-term historic ecology, from the expansion of estuaries to their maximum extent during the Middle Holocene and subsequent silting-in process. At the Goleta Slough, Colten (1989) suggests this process can be identified by measuring temporal and spatial shifts in the density and diversity of shellfish species and the location of sites (i.e., those located along the maximum extent of the slough or closer to the open coast near the outlet to the sea). Multicomponent sites along the slough demonstrate that the percentage of Washington clam *(Saxidomus nuttali)* decreases over time, while proportions of Venus clam *(Chione* spp.) increase (Lebow et al. 2003). Comparing intra-regional faunal collections can provide significant insights on coastal environmental changes and adaptations to these fluctuations.

Shellfish collections can indicate the primary resource foci of occupants, whether open rocky coast or estuary/bay environments—the most common are California mussel *(Mytilus californianus)* from more exposed rocky intertidal locations, and Pacific littleneck clam *(Protothaca staminea)* and Venus clam from more protected sandy bottom environments. Data from larger shellfish samples can be contrasted with the invertebrate analyses of larger, principal residential sites occupied at a similar time. Also, indications of changes in coastal adaptations can be explored by using the shellfish collection to compare with assemblages obtained from sites dating to different time periods of occupation and locations. The diversity of shell recovered from moderate to high density shell middens in the project area can address long-term historic ecology and their affect on coastal adaptations along the Santa Barbara Channel. Midden deposits containing approximately 50 grams of shell per cubic meter can provide the necessary data to infer evidence of changing shellfish collection patterns over time.

GENDER DIFFERENTIATED SOCIAL ORGANIZATION DURING THE MILLINGSTONE /EARLY PERIOD TRANSITION

One of the most significant changes identified within the south-central coast archaeological record is the shift from the Millingstone adaptations to those associated with the Early Period. The Millingstone Period was characterized by artifact assemblages dominated by handstones and millingslabs. Faunal assemblages are dominated by small game, shellfish, and a limited use of near-shore fishes, with little task specialization within the group. Mortars and pestles and large side-notched projectile points become a major part of the Early Period assemblage, and probably signal a more intensive use of local plant foods (e.g., corms, seeds, and acorns), and a greater emphasis on hunting large game (Hildebrandt and McGuire 2002). Glassow et al. (2007), using data largely from the Channel Islands, suggest that the presence of dolphin bone in several sites indicates a greater investment in boating technology earlier than previously thought. This probable change in organization and technological sophistication is potentially important as it signals the beginning of more complex social relationships than would continue to develop through time.

This hypothesis has recently come to the forefront of California studies. Jones et al. (2008) have argued that large game hunting actually stayed static over time along much of the San Luis Obispo County coast based on data from the Diablo Canyon site (CA-SLO-2), and conclude that prehistoric hunting strategies were largely the result of local environmental contingencies. Hildebrandt et al. (2010) have responded to Jones et al. (2008) by summarizing long term trans-Holocene data from 19 sites along the central coast. The trend demonstrates that, contrary to the CA-SLO-2 findings, there was a significant increase in large game hunting during the Early Period in most locations, consistent with the greater investment in hunting technology (i.e., the proliferation of large side-notched points in Early Period assemblages).

DATA REQUIREMENTS

Unfortunately, the greater dependence on acorns and the rise of large game hunting is simply a hypothesis for the local area, as we have very little subsistence data from the Santa Barbara mainland during this critical period of time (most of the information generated by Hildebrandt et al. [2010] comes from areas north and south of the project area). With the exception of the work of Levulett et al. (2002) along the margins of CA-SBA-54, faunal and floral remains are essentially absent from Early Period sites (e.g., CA-SBA-53 and CA-SBA-54) excavated by Harrison (1964) along the shores of Goleta Slough, nor are there any data available from the work of Rogers (1929). As a result, the recovery and analyses of floral and faunal remains from the project area middens has the potential to illuminate changes in regional social organization and subsistence strategies. Due to the paucity of data on Early Period sites, the presence of dietary remains in middens, particularly those rich in charcoal, will provided baseline information to address subsistence adaptations and shifts in social organization during the Millingstone and Early Period.

THE DEVELOPMENT OF EARLY PERIOD FISHERIES

In the Santa Barbara Channel region, an increase in the relative importance of marine fish suggests an intensified focus on fishing over time. Less is known, however, of the precursors to this focus on fishing, as there are limited fish assemblages from earlier periods. Much like the fluctuations in shellfish collection, patterns of prehistoric fishing indicate changes in habitat use, environmental fluctuations, and technological change. Along mainland Santa Barbara, most researchers think that fishing was of minor importance until the Middle Period, when the introduction of circular shell fishhooks, barbed harpoons, and plank canoes allowed for exploitation of offshore species (Glassow 1996). But Early Period components at CA-SBA-53 and CA-SBA-54 show a surprisingly high frequency of fish bone, including mackerel, barracuda, and sardines (Colten 1991; Levulett et al. 2002; Rick and Glassow 1999). Although these findings have largely gone unrecognized, these fish occur beyond the kelp zone and indicate the use of boats and netting technology, and probably show that fish played a more significant role in the diet than commonly thought.

DATA REQUIREMENTS

Improved understanding of the evolution of fishing technology on the open coastline south of the Goleta Slough can come from the discovery of remnant midden deposits, even small ones if they are single component in nature. If they contain fish bone, and the mix of species is consistent with those from Goleta Slough, local researchers will need to re-think traditional models about Early Period adaptations. Irrespective of the actual findings, species variability can inform a great deal about the range of technology used for catching fish, including nets, hook-and-line, harpoons, and watercraft. Information on the diversity and density of species present are required to demonstrate fishing habitats and provide inferences on tackle and technology. To determine the significance of fish species, data derived from the taxonomic identification of fish remains will be summarized as Number of Identified Specimens (NISP), Minimum Number of Individuals (MNI), and raw bone weight. Such findings, when combined with analyses of other fish collections from adjacent sites, will further our knowledge of fishing patterns along the Santa Barbara Channel.

PREHISTORIC RESOURCE TYPES

If a site is encountered during construction activities or during any new surveys, it then becomes necessary to evaluate its eligibility to the National Register. Having presented prehistoric research issues and identified data required to address them, we can translate these data requirements into the kinds of resources that could exist within the study area to better determine site eligibility.

Three types of deposits are possible in the APE. The least likely are intact shell middens. More probable are redeposited midden deposits. Based on extensive studies within the project area, two types of redeposited middens may be encountered. The first are those like the Via Real Redeposited Midden that contain a rich assemblage of artifacts and subsistence remains that are not mixed with road fill or other non-archaeological sediments. The research potential of these rich middens are considered National Register-eligible as they can contribute information on the research issues addressed above. The second are thin lenses of midden inter-layered with road fill, midden and road fill mixed together into a single matrix, or sparse shell scatters lacking midden. Due to their lack of integrity, low density of artifacts and subsistence remains, and lack of temporally diagnostic tools, these resources lack the research potential to be eligible for the National Register.

V. CONSTRUCTION MONITORING AND TREATMENT OF DISCOVERIES

This section summarizes construction monitoring and protocol if resources are identified during construction or if the Via Real Redeposited Midden (which has no identified southern boundary) is inadvertently impacted. Due to the extensive pre-construction studies, the narrow project area limited to the existing right of way, avoidance of the National Register site, and the highly disturbed urban environment (i.e., highway and structure construction and utilities installation), we do not anticipate finding archaeological deposits of significance. However, should test/data recovery excavations be necessary during construction, excavation methods will be phased and exploratory, focusing on first identifying the absence or presence of a deposit and, when encountered, recovering a representative sample; the methods described would also apply to the Via Real Redeposited Midden.

A. CONSTRUCTION MONITORING

The long-term project construction schedule (10 – 15 years) will be divided into four to five segments. From south to north, these include: Carpenteria, First County Segment North, Summerland, Montecito, and City of Santa Barbara.

Extended Phase I testing (Kaijankoski et al. 2009) examined seven of 11 locations within the project APE that were identified as having high sensitivity for buried resources; four locations could not be accessed (Montecito Creek, Oak/Ysidro Creeks, Romero Creek, and Garrapata Creek; see Table 1). It is recommended that two full-time cultural resource specialists, an archaeologist and Barbareño Chumash representative, monitor construction activities in high sensitivity areas, when they extend below fill at these four locations, and at the Redeposited Midden site location (Appendix F).

B. MANAGEMENT OF RESOURCES DISCOVERED DURING MONITORING

If any archaeological deposits are identified during construction monitoring, they will most likely be redeposited midden; however, there is some possibility that intact deposits (historic or prehistoric) could still be present.

If a deposit is identified, all work will stop in the immediate vicinity and the archaeologist will contact the Resident Engineer and notify him/her of the discovery. The monitor will first delineate the archaeological deposit, and map and GPS the observed artifacts/deposits. If sidewall profiles are viewable, the examined deposit will be photographed and sketched. After observing and documenting the deposit, the archaeologist, in consultation with the Chumash representative will evaluate the site type (i.e., redeposit midden with data potential, thin lens of midden inter-layered with construction fill, intact midden). A preliminary eligibility determination will be developed, and recommendations for mitigation prepared. Based on the nature of the resources, a select sample of the deposit will be screened, and, if newly identified, a site summary will be prepared to allow for quick, complete recordation of pertinent data for documenting site type, eligibility, and recommendations for mitigation. The data will be recorded on a field form, that will systematically document all discoveries.

The first step in this process will be to determine whether or not the deposit retains integrity, which is based largely on the presence of a relatively intact stratigraphic profile and the lack of intrusive historic debris, or is a relatively "intact" redeposited midden, similar to the Via Real Redeposited Midden. If the resource reveals a great deal of stratigraphic mixing and the obvious intrusion of modern materials, it will not be considered eligible for the National Register, and monitoring for human bone will be the only additional work conducted at that location. If the deposit does retain integrity (either directly or redeposited), the next step is to determine site type and conduct

an inventory of its constituents, and visual inspection of spoils from the trencher. Most important for redeposited sites is to determine if they are single component which would make them potentially eligible; this would entail inspection of subsurface exposures and radiocarbon dating of shell samples from across the depth of the deposit.

The field documentation will be prepared by the field archaeologist/monitor and submitted to the Caltrans Principal Investigator for approval within 24 hours of the discover.

If the deposit is a midden, and the Caltrans Principal Investigator and field archaeologist agree upon the eligibility of the midden deposit based upon the data thresholds provided in Chapter IV of this Treatment Plan, Caltrans shall proceed with that determination of eligibility. The SHPO and Barbareño Chumash consultation group will be concurrently notified of the determination within 48 hours of approval by the Caltrans Principal Investigator.

If the Caltrans Principal Investigator and field archaeologist disagree upon the eligibility of the midden deposit or if the Barbareño Chumash consultation group object to the determination made above, Caltrans shall consult with the SHPO regarding eligibility of the deposit. If the cultural deposit is not prehistoric midden, Caltrans shall consult with the SHPO and the Barbareño Chumash consultation group regarding eligibility of the deposit, as the research design in Chapter IV does not address other resource types.

After the integrity and National Register eligibility of a resource has been verified, and if considered to be National Register-eligible, it will be necessary to undertake data recovery to help resolve the adverse effects associated with project construction, as avoidance is not an option in the narrow area of direct impact (ADI). Excavation volume will be determined based on midden constituents and size of deposit in the ADI, and will follow field and laboratory methods for data recovery excavations as described below.

C. PREFIELD PREPARATION

Before the initiation of excavations, several tasks require completion:

- Because the project area is heavily modified, a detailed review of existing land-use history and pre-excavation geomorphology studies will be integral in guiding the excavation program should unanticipated sites be discovered. Geoarchaeological research will continue to model the potential sensitivity for buried deposits in the area, build on the geoenvironmental setting (geology, topography, and hydrology), and further document the paleoenvironment and landscape change in the current study area (Hildebrandt and Darcangelo 2009; Kaijankoski et al. 2009).
- Underground utilities will be defined. USA utilities alert (1-800-227-2600) will be contacted, after the area of work is marked with white paint, three to four days prior to fieldwork.
- A safety plan will be developed and a safety meeting will be held prior to the commencement of field studies. All field personnel will wear sturdy field shoes, hard hats, and green shirts or safety vests while working in the project right-of-way and will comply with any other safety requirements identified (e.g., vehicle parking, traffic control). During the daily course of fieldwork, Caltrans maintenance personnel will work closely with the crew to insure proper safety.

D. EXCAVATIONS

If a resource is identified during construction, and determined eligible in Section B, above, excavation work will be focused on the location of deposit within the direct impact area. Based on the nature of the discovery, the qualified archaeologist will formulate a specific work plan, potentially including mechanical and had excavation described below, and consult with the Caltrans Principal Investigator. Once formulated, the SHPO and Chumash consultation group will be notified of the course of action, and given

48 hours to object to the proposed work plan. Disagreements to the work plan will be resolved through the objection procedures in the PA.

A backhoe may be used to systematically remove sterile fill soils to expose the buried deposit, determine the presence or absence of cultural materials, and guide the establishment of hand excavation units as safety allows. Trenches will be approximately 1.5 meters wide, 3 meters in length, and up to 3 meters in depth. The effort of mechanical excavation will be determined in the field based on the nature of the midden deposit. Lengths greater than three meters may be excavated as appropriate. Units and trenches will be placed on a grid system at regular intervals across the midden area. The number of trenches will be determined based on extent of the deposit and extent of impact. The Chumash consultant will be kept apprised of these strategies. All trenches will be excavated using a smooth edge bucket and will be sampled, drawn (as appropriate), photographed, and covered with steel plates if left open overnight. Spoils from backhoe trenching will be sampled through 1/8-inch mesh dry screens and wet screened, as appropriate, in consultation between the Caltrans Principal Investigator and the Consultant's Field Director. When the extent of a cultural deposit is identified during initial excavations, the data recovery program will shift to more detailed excavation methods, with a maximum of twenty cubic meters of cultural soils excavated, and an additional five cubic meters of reserve volume used if necessary based on consultation. The exact volume will be determined in the field by the Caltrans Principal Investigator, in collaboration with the consultant.

Field strategies will include control units of appropriate size, excavated in ten- and twenty-centimeter levels, depending on the extent, density, and depth of identified intact midden; if it is a redeposited, single component site, such as the Via Real Midden, it could be excavated as one stratigraphic level. At least one sidewall from each excavation unit will be drawn depicting changes in soils, bioturbation, and site constituents. Control units will be placed in areas identified as containing the most representative deposit and the best sample of cultural constituents based on initial Extended Phase I results (Kaijankoski et al. 2009). Soils recovered from excavation units will be screened through 1/8-inch mesh. Due to safety concerns, it may be necessary to move the middens samples outside the ADI to a secure location to screen.

The Caltrans contractor will prepare a contour map for the site that meets professional standards. The map will depict the location of all excavation units, collected artifacts, and any surface and/or subsurface features, as well as prominent topographic features, vegetation, and hydrology. The contractor will be responsible for GPS recording; data collection will be performed with a Trimble Pathfinder Pro XR or XRS GPS unit. The contractor will use the Caltrans data dictionary for routine mapping identifiers, and information specific to Caltrans. In addition, a primary datum will be established at the site (outside the ADI) and indicated on the site map, and a permanent datum will be established at the conclusion of fieldwork. The permanent datum will be an aluminum cap set on rebar, provided by Caltrans, and engraved with the site number and date and GPSed.

Column samples will be collected from selected control units or in bulk samples to retrieve fine-grained constituents like fish bone from horizontal contexts. All column samples will be wet-screened through 1/8- and 1/16-inch graduated screens. Bulk flotation (10 liter) samples for plant macro-fossil analysis will also be taken from the component deposits, as it is assumed there will be no feature contexts.

Collected artifacts will be limited to formed tools or items of specific research value (e.g., obsidian debitage). Each collected item will be mapped in situ, assigned a sequential number, and placed in a labeled field bag. Photo documentation will include a photo log, unit profiles, artifact locations, and site overviews.

E. DISCOVERY OF HUMAN REMAINS

Prior to construction, procedures for the treatment of human remains will be discussed and agreed upon with the Chumash consultation group. If human remains are encountered during excavations, Caltrans will be responsible for complying with the provisions of Public Resources Code (PRC) Sections 5097.98 and 5097.99, and California Health and Safety Code 7050.5, as amended by Assembly Bill 2641. Upon discovery and recognition of human remains, excavation in the immediate area will be halted and the County Coroner will be contacted to determine if the remains are subject to his/her authority. Caltrans will comply with any restrictions or procedures for excavation, treatment, and respectful handling of human remains that are established in consultation with the Most Likely Descendent (MLD) designated by the Native American Heritage Commission.

F. LABORATORY ANALYSIS

All materials recovered during excavations will be washed in the laboratory. Prehistoric materials will be classified, sorted, counted, measured, weighed, and tabulated according to unit, level, component, and any other relevant organizational structure.

Time Sensitive Materials

Time sensitive artifacts (e.g., beads, projectile points) will be classified following the typological scheme for the Santa Barbara Channel region, and summarized by unit and depth. This information (in conjunction with other data) will be used to assess depositional integrity and define temporal components.

Flaked Stone Tools

The flaked stone analysis will define the pattern(s) of stone tool acquisition, use, and discard at a site. Functional and morphological attributes will be identified. Each item will be separated by material and artifact type (e.g., projectile point, casual flake tool). Each artifact will be measured and weighed, and the condition of artifact (e.g., whole, end, margin) noted. The distribution of each tool type will be summarized by trench and general provenience.

Debitage

A technological analysis of any collected debitage will be conducted. Reconstruction of tool manufacturing techniques (e.g., direct free hand percussion, pressure flaking), repair, and material acquisition strategies will be provided. All debitage will be counted, weighed, and sorted by material type. The technological analysis will include separation of debitage into various categories (e.g., primary reduction, early biface thinning).

Battered and Ground Stone Artifacts

Battered and ground stone artifacts will be separated into functional categories (e.g., handstone, pestle, mortar, and hammerstone). Tool morphology will be described, including measurements, modifications, and fragment type.

Shell and Bone Artifacts

Shell and bone artifacts will be separated into functional categories (e.g., awl, fishhook). Tool morphology will be described, including measurements, modifications, and fragment type. All items will be summarized according to trench and general provenience.

Obsidian Source Determination and Hydration Studies

Obsidian samples, including formal tools and debitage, will be subjected to X-Ray Fluorescence Spectroscopy and a obsidian hydration study. The data will be used, along with time-sensitive artifacts, to assess depositional integrity.

Radiocarbon Studies

Material of sufficient size (e.g., shell or charcoal) will be submitted to Beta Analytic, Inc. for radiocarbon dating. Direct dating of select temporally significant shell beads is also proposed if they are encountered. All dates will be corrected for isotope fractionation, and shell dates will be corrected and calibrated with the appropriate Stuiver et al. (2006) correction factor (e.g., 225 ± 35 years). Dating of soil strata is also anticipated through radiocarbon analysis.

Faunal Analysis — Mammal and Bird

All faunal specimens of sufficient size will be identified to genus, species, element, age, weight, cultural modification (e.g., burnt, cut), cultural modification, and intrusive categories. All bone will be tabulated (number/weight) according to trench and general provenience. Elements will be summarized as numbers of identifiable specimens per species.

Faunal Analysis — Fish Bone Analysis

All fish bone from the control units and column samples will be analyzed and classified according to skeletal element and taxonomic groups. The analysis will summarize the fish species identified in a sample of the site deposit, reconstruct the prehistoric marine habitat exploitation, and the fishing technological organization.

Faunal Analysis — Shellfish

Invertebrate remains from the 20-x-20-centimeter column samples will be analyzed by a qualified shell analyst. All shell will be weighed and tabulated according to taxonomic group. The analysis will identify the importance of species to the occupant's diet and the habitat(s) targeted for collecting.

Floral Remains

The recovery of flotation samples will be limited to selected midden contexts. Soil samples will be processed by a floral analyst, as follows: after recording the soil sample volume to the nearest 0.1 liter, the matrix will be agitated in water and the buoyant light fraction materials skimmed and decanted through 1/24-inch window mesh (0.38 millimeters). The non-buoyant heavy fraction will be washed through 1/8-inch and 1/16-inch window mesh (1.0 millimeters). Light fractions will be sorted and examined to 0.5-millimeter grade at 10X. All floral remains will be sorted (charred to non-charred) and, if possible, identified to genus and species level.

VI. DOCUMENTATION, SCHEDULING, AND PERSONNEL QUALIFICATIONS

After excavations are completed at cultural deposits during discovered construction, a notice of completion of field studies will be submitted to the Barbareño Chumash community and the SHPO within a week. All cultural resources data will be entered into the Caltrans Cultural Resources Database. Caltrans will provide the consultant with a current template of the Database front-end in Access, as well as a back-end file. All DPR 523 forms will be entered in this format. Caltrans will provide guidance on how the final products and documentation will be a distributed. These may include the following: (1) the consultant's backend file; (2) JPG images of any photographs used in the DPR forms, labeled by trinomial or primary number; and (3) PDF versions of all records entered into the Database, labeled by trinomial or primary number; (4) PDF and hard copies of draft and final study reports. Caltrans will be responsible for distribution of documentation as per the project PA.

REPORT PREPARATION

EXCAVATION REPORT

Archaeological excavations will be documented in draft and final technical reports. Report content, organization, and illustrative materials will conform to professional standards and follow the format specified in the *Caltrans Environmental Handbook, Volume 2, Cultural Resources*. The report will include a description of the proposed project; a background section discussing regional history, archaeology, and ethnography; expanded research questions; a description of fieldwork; a presentation and discussion of cultural materials recovered, and results of laboratory analysis; a synthesis of site information incorporating research from the immediate area as well as the larger regional context; discoveries during construction will include an assessment of site significance and statement of management recommendations; and an appendix with analytical data and site records. A high standard of review, editing, and production will be applied to all documentation. Once representatives of the Barbareño Chumash community and any colleagues have reviewed and commented on the draft, the consultant will produce a final technical report that incorporates any comments.

MONITORING REPORT

At the end of monitoring construction segments a monitoring report will be prepared. The documents will summarize all monitoring activities based on Post Mile, activities inspected, and the monitoring results. The monitoring report will be provided to representatives of the Barbareño Chumash community for their review and comment.

TIME SCHEDULE

If required, data recovery excavations at the Via Real Redeposited Midden or newly identified resources that have not been evaluated will occur within a week of discovery, dependent on safety, weather, and conditions encountered in the field. A schedule for the excavation of new discoveries will be developed in accordance with the construction plan. We anticipate excavations will be completed within a week to ten days, depending on the extent of the discovery and the area or impact. Processing and cataloguing of site materials will be contiguous with fieldwork and will continue upon completion of the field studies.

If samples are relatively robust, it is estimated that a span of from four to six weeks will be required to complete artifact analyses and special studies. The draft excavation report will be completed six months

from the close of fieldwork. The final report will be prepared within a month of receiving comments from the Barbareño. Within two weeks of the submittal of the final excavation report, the project collection will be delivered to the Department of Anthropology, University of California, Santa Barbara Repository for Archaeological and Ethnographic Collections.

A negative monitoring report will be submitted within one month of the end of monitoring if no resources are identified. If one or more resources are identified, a single technical report will be prepared.

All reports will be provided to the Chumash community and will be on file at the Central Coast Information Center, Department of Anthropology, University of California, and the Caltrans Environmental Planning Branch, San Luis Obispo.

PERSONNEL QUALIFICATIONS

All studies will be conducted by archaeologists who meet the professional qualification standards in Archaeology and Historic Preservation, Secretary of the Interior's Standards and Guidelines (Federal Register 48:190, September 29, 1983) and the Caltrans Professionally Qualified Staff Standards (Programmatic Agreement, Attachment 1). The Caltrans and the consultant Principal Investigators will be responsible for coordinating all work and decision-making. Crews will consist of a field director (M.A. or M.S. degree and over five years of experience leading excavations), crew chief (M.A. or B.A. level, with over five years excavation experience), soils scientist (minimum of M.A. or M.S. degree), and human osteologist (minimum of an M.A. or M.S. degree), with oversight by the Principal Investigator. During construction monitoring, the field archaeologist (M.A. or M.S. degree and over five years of experience leading excavations) will exceed the Secretary of the Interior's Standards and Guidelines for prehistoric archaeology. The archaeologist will be responsible for the initial eligibility determination and will collaborate with the Caltrans Principal Investigator on all and treatment of discoveries and determinations. The Lab Director (minimum of M.A. and over ten years of experience) will oversee all cataloguing, analysis, and special studies (the latter in consultation with the Principal Investigators and will coordinate with the Caltrans Field Director). Barbareño Chumash consultants and monitors who have knowledge of and experience with the archaeology of the area will be consulted and collaborated with for the duration of these studies.

VII. CURATION

All recovered materials will be curated at the Department of Anthropology, University of California, Santa Barbara Repository for Archaeological and Ethnographic Collections. If required, data recovery Via Real Redeposited Midden collections will be accessioned with existing collections. If materials are identified during new discoveries, they will be accessioned, as appropriate, under a separate accession number. Policies for the Perpetual Curation of Archaeological Collections, Procedures for the Submission of Archaeological Collections for Curation, and Acknowledgement of Procedures for Submission and Polices for Perpetual Curation of Archaeological Collections will be followed. These policies and procedures are listed below:

http://www.anth.ucsb.edu/repo/POLICIES4PERPETCURATN.pdf
http://www.anth.ucsb.edu/repo/SubmProcedures_2008.pdf
http://www.anth.ucsb.edu/repo/AcknowledgmentForm.pdf

IX. NATIVE AMERICAN COORDINATION

Under Caltrans procedures, and as per Section 106, 36 CFR 800.3(f)(2), a reasonable and good-faith effort has been made to identify any members of the Chumash community who may have knowledge of resources or may attach religious and cultural significance to the properties in the project area. The Barbareño Chumash community will continue to be consulted for the duration of the project.

In 2008, Caltrans District 5 Native American Coordinator Terry L. Joslin initiated consultation with the Barbareño Chumash community during preparation of the pre-construction project cultural resource studies. The list of interested Chumash representatives includes individuals and groups identified by the Native American Heritage Commission, as well as individuals identified by John Johnson, Curator of Anthropology at the Santa Barbara Museum of Natural History, who have known Barbareño ancestry. The consultation list was also expanded to include members of the Barbareño and Samala (Santa Ynez) who have previously contacted Caltrans and wish to be kept informed about projects within a specific geographic area.

Consultation with Barbareño Chumash representatives included exchanging letters and telephone calls, sending copies of cultural resource reports and study summaries, holding meetings and field reviews, and ensuring that Native American monitors were present during field excavations. The following provides a summary of consultation effort for the project.

- On August 18, 2008, Caltrans initiated consultation by sending a letter to members of the Chumash community asking if they would like to be consulted. The letter provided a description of the project and initial results of previous studies.
- The next phase of consultation entailed sending copies of the draft archaeological evaluation proposal and analysis of locations with sensitivity for buried archaeological deposits (September 10, 2008) for their review. This second letter also advised the consulting group that a project meeting and field review would be held in October 2008. After the proposal was sent, a follow-up call ensured receipt of the document, answered initial questions, and provided an opportunity to propose dates for a field review meeting. All individuals on the consultation list were called, and in many cases they provided additional information on sites within the study area.
- On October 15, 2008, a project field meeting and information gathering was held near the survey area at Lookout County Park, Summerland, with members of the Chumash community. Chumash representatives Janet Garcia, Freddie Romero, Patrick Tumamait, Gilbert Unzueta, Frank Arredondo, and John Ruiz attended. Additionally, Caltrans Project Manager Scott Eades, Caltrans Archaeologist Christina MacDonald, and Caltrans Archaeologist and District Native American Coordinator Terry Joslin discussed the project, alternatives, and studies conducted to date. Also during the meeting we received verbal comments on the testing proposal and additional information on sites and studies that are adjacent to the current project area. All participants noted the importance of testing for potential buried archaeology sites at the identification stage. The discussion also addressed the need for Native American monitors during the archaeological studies and ground disturbing activities. All consultants were concerned about the designation of the Most Likely Descendant (MLD), as multiple individuals and groups have ties to specific locations along the Santa Barbara coast. It was agreed that we should not have a formal burial agreement or designate an MLD prior to fieldwork because we are not certain that human remains will be encountered. Instead, a draft copy of the Caltrans District 5 treatment of human remains/burial policies (which conforms to Public Resources Code 5097.9 through 5097.99, as amended by AB 2641), and the California Health and Safety Code 7050.5 would be sent to all

participants at the meeting for their review and comment. Following the meeting, verbal comments made by the consultants were integrated into the draft testing report.

- The day after the meeting, October 16, 2008, a copy of the project draft human remains/burial polices was submitted to the participants for review and comment. No comments were received.
- After incorporating written comments on the proposal from the Santa Ynez Band of Chumash Indians Elders Council (Romero 2008) a copy of the final testing proposal (Meyer et al. 2009) was sent to the Chumash consultants (February 6, 2009). In the same package, all individuals also received a copy of the Archaeological Survey Report (Hildebrandt and Darcangelo 2009).
- During the February 24-27, 2009 Extended Phase I archaeological excavations, Patrick Tumamait performed the duties of monitoring at all test locations. Daily monitoring record forms were completed and are in the project archaeological file.
- After completion of the Extended Phase I archaeological excavations, a letter report providing an initial summary of the backhoe trenching program and a project update was sent to all Chumash consultants (April 20, 2009).
- On August 26, 2009, a letter detailing the excavations and recommended National Register of Historic Places findings and copies of the supporting draft evaluation report (August 2009) were sent to all members of the Chumash consultation group. Comments were received from Freddie Romero and Patrick Tumamait regarding the Via Real Redeposited Midden and were incorporated into the final document.
- Upon completion of the final archaeological evaluation report in November 2009, all individuals and groups in the consultation group received a letter summarizing the study results and a copy of the final report (December 22, 2009).
- On March 3, 2011, copies of the Finding of Adverse Effect for the Santa Barbara 101 South Coast High Occupancy Vehicle (HOV) Lanes Project, Santa Barbara County, were provided to the consultation group. The transmittal letter provided a review of the archaeological study findings and an update on the project schedule.
- On November 28, 2012, copies of the draft Memorandum of Agreement (MOA) and Data Recovery Plan at the Via Real Redeposited Midden (P-42-003943) for the Santa Barbara 101 South Coast High Occupancy Vehicle Project, Santa Barbara County were sent to the Chumash consultation group. Comments were received from Freddie Romero and Patrick Tumamait and are incorporated into this revised document.
- After the project agreement documents were revised to a Programmatic Agreement (PA) and Treatment and Data Recovery Plan, the Chumash community were again provided copies of the documents. Although several members of the consultation group called with project questions, no comments were received on the documents.

CONSTRUCTION MONITORING AND DATA RECOVERY FIELD STUDIES

Members of the Chumash consultation group have been provided with a copy of this data recovery plan, and have been asked to participate as signatories to the PA. Copies of cultural resources reports and study summaries will be provided for their review and comment, and they will be invited to participate as consultants and monitors during field excavations and project construction.

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Appendix A.

State Historic Preservation Officer Consultation

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., Governor

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January 26, 2011 Reply To: FHWA101108A

Valerie Levulett
Technical Studies Branch Chief and Heritage Resource Coordinator
Caltrans District 5, San Luis Obispo
50 Higuera Street
San Luis Obispo, CA 93401-5415

Re: Determinations of Eligibility for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, CA

Dear Ms. Levulett:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has determined that the following properties are not eligible for the National Register of Historic Places (NRHP):

- CA-SBA-2179/H
- Casitas Pass Road Redeposited Shell Scatter, P-42-0033942
- El Estero Redeposit 1
- El Estero Redeposit 2
- Arroyo Paredon Redeposit
- Toro Creek Redeposit
- 1094 Cramer Rd, Carpinteria
- 1097 Cramer Rd, Carpinteria
- Memorial Oaks, US 101 ROW between Toro Canyon Rd and Nidever Rd
- 2476 Lillie Ave, Summerland
- 2440 Lillie Ave, Summerland
- 2430 Lillie Ave, Summerland
- Summerland WW I Monument/Lillie Ave Park, Lillie Ave, Summerland
- 2329 Lillie Ave, Summerland
- 2325 Lillie Ave, Summerland
- 1641 Posilipo Ln, Montecito
- Montecito Parkway, US 101 between Sheffield Drive and Olive Mill Road
- 1380 Virginia Rd, Montecito
- 1374-1376 Virginia Rd, Montecito
- 1360 Virginia Rd, Montecito
- 1350 Virginia Rd, Montecito
- 1346 Virginia Rd, Montecito
- 75 Olive Mill Rd, Virginia Rd, Montecito
- 1283 Coast Village Circle, Virginia Rd, Montecito
- 2380 Lillie Ave, Summerland
- 2350-2360 Lillie Ave, Summerland
- 2294 Lillie Ave, Summerland
- 1424 La Vereda Ln, Montecito
- 1390 Virginia Rd, Montecito
- 1433 S Jameson Ln, Montecito
- 1447 S Jameson Ln, Montecito

- 1465 S Jameson Ln, Montecito
- 40 & 50 Los Patos Way, Santa Barbara
- 111 Arroquoi St, Montecito
- Summerland Residential Historic District**
  - 2496 Lillie Ave, Summerland**
  - 2492 Lillie Ave, Summerland**
  - 2484 Lillie Ave, Summerland**
  - 2480 Lillie Ave, Summerland**
- 2496 Lillie Ave, Summerland**
- 2484 Lillie Ave, Summerland**
- 2400 Lillie Ave, Summerland**
- 135 Vuelta Rd, Montecito**
- 1314 Sterling Ave, Carpinteria
- 1313 Sterling Ave, Carpinteria
- 1317 Sterling Ave, Carpinteria
- 1324 June Ave, Carpinteria
- 1314 June Ave, Carpinteria
- 1313 June Ave, Carpinteria
- 1312 Post Ave, Carpinteria
- 1311 Post Ave, Carpinteria
- 1310 Delta St, Carpinteria
- 1309 Delta St, Carpinteria
- 1310 Chaney Ave, Carpinteria
- 1311 Chaney Ave, Carpinteria
- 1373 Cramer Circle, Carpinteria
- 4484 Carpinteria Ave, Carpinteria
- 4400 Carpinteria Ave, Carpinteria
- 1043 Plum Street, Carpinteria
- 2450 Lillie Ave, Summerland
- 2448 Lillie Ave, Summerland
- 2375 Lillie Ave, Summerland
- 2285 Lillie Ave, Summerland
- 2262 Ortega Hill Rd, Summerland
- 2245 Lillie Ave, Summerland
- 2230 Hardinge Ave, Summerland
- 2211 Lillie Ave and 2220 Hardinge Ave, Summerland
- 1950/1960 N Jameson Ln, Montecito
- 126 Loureyro Rd, Montecito
- 127 Loureyro Rd, Montecito
- 100 Arroqui Rd, Montecito
- 1645 Posilpo Rd, Montecito
- 1639 Posilpo Rd, Montecito
- 1635 Posilpo Rd, Montecito
- 1394 Danielson Rd, Montecito
- 1368/1370 Virginia Rd, Montecito
- 1340/1342 Virginia Rd, Montecito
- 1332 A-C Virginia Rd, Montecito
- Southern Pacific Coast Line – between Linden Avenue Crossing in Carpinteria and Calle Cesar Chavez Crossing in Santa Barbara
- Garrapata Creek Culvert, US 101 at Garrapata Creek, Carpinteria
- 2500 Lillie Ave, Summerland
- 2487 Banner Ave, Summerland
- 2485 Banner Ave, Summerland
- 2440 Varley St, Summerland
- 130 Valencia Rd, Summerland
- 2385 Varley St, Summerland
- 136 Colville St, Summerland
- 2340 Varley St, Summerland
- 2335 Varley St, Summerland
- 2322 Varley St, Summerland
- 2315 Varley St, Summerland
- 2314 Varley St, Summerland
- 120 Hollister St, Summerland
- 2304 Varley St, Summerland
- 2296 Varley St, Summerland
- 2228 Lillie Ave, Summerland
- 2196 Harding Ave, Summerland
- 2192 Harding Ave, Summerland
- 2176 Ortega Hill Rd, Summerland
- 2155 Ortega Hill Rd, Summerland
- 1041 Plum St, Carpinteria
- 1620 N Jameson Ln, Montecito
- 1396 Danielson Rd, Montecito
- 1403 S Jameson Ln, Montecito

***This determination reflects a change in National Register status for this property.*

Based on my review of the submitted documentation, I concur.

Caltrans has found that the following properties are eligible for the NRHP:

- **Via Real Redeposited Midden, P-42-003943** – Although the midden was moved from its original location, it is not mixed with road fill or other non-archeological sediments, and appears to represent a single component deposit, as evidenced by four radiocarbon dates. All dates are relatively close in age, falling within the latter half of the Early Period (6300-2700 calBP). The site retains a significant amount of research value and is eligible for the NRHP under Criterion D for its research potential. **I concur.**

- **McIntyre House, 2274 Lillie Ave, Summerland –** The McIntyre House is eligible under Criterion C at the local level of significance as a good representative of the vernacular cottage house type, built by and for the predominantly working-class families who were among Summerland's earliest settlers. The period of significance is circa 1890. **I concur.**

- **Ortega-Masini Adobe, 129 Sheffield Rd, Montecito –** The Ortega-Masini Adobe is eligible for the NRHP under Criteria A and C at the local level of significance. Under Criterion A the building is significant for its association with early settlement in coastal Santa Barbara during the Mexican period. Under Criterion C the building is significant as a rare Santa Barbara example of a Monterey-style two story adobe. The period of significance is 1820-1880. **I concur.**

- **Danielson/Katenkamp House, 1637 Posilipo Rd, Montecito** – The Danielson/Katenkamp house is eligible for the NRHP under Criterion C at the local level of significance as a finely crafted example of architect Arthur B. Benton's Chalet design. The period of significance is 1912. **I concur.**

- **Floyd Hickey House, 2492 Lillie Ave, Summerland** – The Floyd Hickey House was determined eligible in 1992 under Criteria A and B. Under Criterion A the property was considered eligible "for its association with Summerland's Spiritualist beginnings and the peak years of the community's oil and kelp industries (1888-1920)." It was also considered a contributor to the Summerland Residential Historic District. For the current study Caltrans has determined that while the building dates to an early period of settlement and development in Summerland, the house is not strongly or directly associated with Spiritualist colonization, development of the oil industry, or any other significant trend in Summerland history. While the property is associated with Floyd J. Hickey, a successful oil entrepreneur during this period, its significance better fits Criterion B, properties eligible for their associations with lives of people significant in our past. **I concur.**

  Under Criterion B the property is eligible at the local level of significance for its association with Floyd J Hickey, one of Summerland's earliest oil production promoters and entrepreneurs. He directly contributed to Summerland's success in the oil industry, at a time when the community experienced prominence in a statewide market. The period of significance is circa 1900-1905. **I concur.**

Under Criterion C the property is eligible at the local level of significance as an intact and early example of Folk Victorian residence in Summerland. The period of significance is the date of construction, circa 1889. **I concur.**

- **Lillis-Sloan House, 2480 Lillie Avenue, Summerland** – The Lillis-Sloan House was determined eligible in 1992 under Criteria A and B. Under Criterion A the property was considered eligible "for its association with Summerland's Spiritualist beginnings and the peak years of the community's oil and kelp industries (1888-1920)." It was also considered a contributor to the Summerland Residential Historic District. For the current study Caltrans has determined that while the building dates to an early period of settlement and development in Summerland, the house is not strongly or directly associated with Spiritualist colonization, development of the oil industry, or any other significant trend in Summerland history. While the property is associated with J.C. Lillis, a successful oil entrepreneur during this period, its significance better fits Criterion B, properties eligible for their associations with lives of people significant in our past. **I concur.**

  Under Criterion B the property is eligible at the local level of significance for its association with J.C. Lillis, one of Summerland's earliest oil production promoters and entrepreneurs. The house is the only known residence associated with J.C. Lillis during his significant, productive years. The period of significance is circa 1896-1905. **I concur.**

  Under Criterion C the property is eligible at the local level of significance as a rare, early, relatively unaltered example of a Folk Victorian residence in Summerland. The period of significance is the date of construction, circa 1889. **I concur.**

- **Becker House, 108 Pierpont Avenue, Summerland** – The Becker House was determined eligible in 1992 under Criteria A, B, and C. Under Criterion A the property was considered eligible for its association with Summerland's oil industry (1890-1920). After reexamination Caltrans has determined that due to a remodel that occurred between 1912 and 1914, the period of significance for the Becker House can start no earlier than 1914. The oil industry had long since passed its peak at this time which makes any important associations with this property unlikely. Therefore the property no longer meets eligibility requirements under Criterion A. **I concur.**

  Under Criterion B the property was considered eligible for its association with George F. Becker, one of Summerland's most influential oil producers (1900-1920). Upon reexamination it appears that Becker arrived in Summerland in 1900 and purchased the oil interests of H.L. Williams and started an oil company, one of many at the time. Becker's interest in oil occurred after the oil boom years and he does not appear important within this context. Therefore the property no longer meets eligibility requirements under Criterion B. **I concur.**

  Under Criterion C the property is eligible at the local level as a rare example of Prairie Style architecture in Summerland. The period of significance is 1914, the year that the conversion from Stick to Prairie style was completed. **I concur.**

- **Montecito Inn, 1295 Coast Village Road, Montecito** – The Montecito Inn is eligible for the NRHP at the local level of significance under Criteria A and C. Under Criterion A the Montecito Inn is an important example of hotel development during the late 1920s, especially pertaining to the automobile tourism industry. The Inn is also eligible under Criterion C as an important work by architect/engineer Edward Mayberry. It also is an early example of post-earthquake Spanish Revival commercial architecture in Montecito. With regards to integrity, although the Inn has been added onto throughout the years, these modifications are minor given the size of the Inn itself and do not detract from the significance of the property. **I concur.**

- **Darling House, 2225 Lillie Avenue, Summerland** – The Darling House is eligible for the NRHP at the local level of significance under Criterion B for its association with Stuart Darling, a machinist and blacksmith during the oil boom years. Darling played a central role in the industry and local economy. The Darling Brothers' shop produced machinery used by the oil operations in town, and because the machinery was manufactured locally, it was cheaper and easier to procure than equipment manufactured in Santa Barbara or elsewhere. The period of significance is 1900-1930. **I concur.**

  Caltrans has also determined the property to be eligible under Criterion C at the local level as a rare and relatively unaltered example of a Folk Victorian, and of late-nineteenth century architecture in Summerland. **Given the current photographs and description, I do not have enough information at this time to either agree or disagree with this determination. In the interests of expediting consultation for this project I would be willing to discuss with Caltrans the possibility of considering this property eligible under Criterion C for the purposes of this project.**

- **Martin/Bushnell-Donnelly House, 2465 Banner Avenue, Summerland** – The Martin/Bushnell-Donnelly House is eligible for the NRHP under Criterion C at the local level of significance as one of the best examples of the Victorian/Queen Anne style in Summerland. The period of significance is 1890 to 1907. **Given the current photo documentation I am not comfortable in either agreeing or disagreeing with this determination at this time. In the interests of expediting consultation for this project I would be willing to discuss with Caltrans the possibility of considering this property eligible under Criterion C for the purposes of this project.**

- **Dwight and Hattie Kempton House, 2290 Varley Street, Summerland** – The Dwight and Hattie Kempton House is eligible for the NRHP at the local level of significance under Criterion B for its association with Dwight Kempton, an individual important in the local history of Summerland. Kempton was a consistent presence in the oil industry during the boom years, not only helping to trigger the rush, but also directly contributing to the success of the industry and growth of the local economy. The residence at 2290 Varley Street, which was not only his residence during this period but also served as his professional office, is the known surviving

property that best represents his achievements. The period of significance is circa 1895 to 1906. **I concur.**

Please note that for this property there is a discrepancy between the letter for this project and the Historic Property Survey report. The letter states that the property is also eligible under Criterion C while the DPR 523 states that the property is not eligible under Criterion C. Given the current discrepancy I will not comment on this finding at this time.

- **J. Warren Darling House, 2236 Lillie Avenue, Summerland** - The J. Warren Darling House is eligible for the NRHP at the local level of significance under Criterion B for its association with Warren Darling, a machinist and blacksmith during the oil boom years. Darling played a central role in the industry and local economy. The Darling Brothers' shop produced machinery used by the oil operations in town, and because the machinery was manufactured locally, it was cheaper and easier to procure than equipment manufactured in Santa Barbara or elsewhere. The period of significance is 1890-1913. **I concur.**

  Caltrans has also determined the property to be eligible under Criterion C at the local level as a rare, early, and unaltered example of Folk Victorian architecture in Summerland. **Given the current photo documentation I am not comfortable in either agreeing or disagreeing with this determination at this time. In the interests of expediting consultation for this project I would be willing to discuss with Caltrans the possibility of considering this property eligible under Criterion C for the purposes of this project.**

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY
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April 7, 2011

Reply To: FHWA101108A

Valerie Levulett
Technical Studies Branch Chief and Heritage Resource Coordinator
Caltrans District 5, San Luis Obispo
50 Higuera Street
San Luis Obispo, CA 93401-5415

Re: Finding of Effect for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, CA

Dear Ms. Levulett:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has found that the above project will have an adverse effect on the Via Real Redeposited Midden (P-42-003943), a property that has been determined eligible for the National Register of Historic Places (NRHP). The project will not affect the other eleven NRHP eligible properties located within the area of potential effect.

Based on my review of the submitted documentation, I concur.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY
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November 16, 2011

Reply To: FHWA101108A

Valerie Levulett
Chief, Central Coast Technical Studies Branch
Heritage Resource Coordinator
Caltrans District 5, San Luis Obispo
50 Higuera Street
San Luis Obispo, CA 93401-5415

Re: Revised Finding of Adverse Effect for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, CA

Dear Ms. Levulett:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has submitted revised area of potential effect maps in order to be consistent with their environmental document. Although the maps have been revised Caltrans still finds that the project will have an adverse effect on the Via Real Redeposited Midden (P-42-003943). Based on review of the submitted documentation, I concur.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Appendix B.

Via Real Redeposited (P-42-003943) Midden Site Records

Confidential Information- Not for Public Circulation.

Appendix C.

Constructions Photographs and As Built Plans in the Vicinity of the Via Real Redeposited Midden Location. From the Final Report for the Construction of the State Highway Between 0.5 Mile East of Arroyo Parida and Ortega Hill in the County of Santa Barbara, July 1, 1953.

Confidential Information- Not for Public Circulation.

Appendix D.

Environmentally Sensitive Area Designation

Confidential Information- Not for Public Circulation.

Appendix E.

Archaeological Monitoring Locations

Confidential Information- Not for Public Circulation.

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY Edmund G. Brown, Governor

DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3111
FAX (805) 549-3329
TDD (805) 549-3259

Flex your power!
Be energy efficient!

20 November 2013

Dr. Carol Roland-Nawi
State Historic Preservation Officer
1725 23rd St, Suite 100
Sacramento, CA 95816

05-SB-101
05-0000-0225 (0N700)
South Coast 101 HOV

Attn: Kimberley Tanksley

Subject: Signature Pages for the South Coast 101 HOV Lanes Project Agreement (PA), Santa Barbara County, California (FHWA101108A)

Dear Ms. Tanksley,

Enclosed please find the final signature pates for the South Coast 101 HOV Lanes Project Agreement (PA) and Treatment and Data Recovery Plan for your files. These pages were also submitted to the ACHP.

Thank you for your continued assistance with this undertaking. If you have any questions, please contact me at 805.549.3778 /terry.joslin@dot.ca.gov of Todd Jaffke at (916) 654 3567/todd jaffke@dot.ca.gov.

Sincerely,

Terry L. Joslin, Ph.D.
Archaeologist and Native American Coordinator

Enclosure: South Coast 101 HOV Lanes Project Programmatic Agreement Signatory and Concurring Parties Pages.

"Caltrans improves mobility across California"

PROGRAMMATIC AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE SOUTH COAST 101 HOV LANES PROJECT,
U.S. ROUTE 101, SANTA BARBARA COUNTY, CALIFORNIA

SIGNATORY PARTIES:

California Department of Transportation

By Katrina C. Pierce 6/14/13
Katrina C. Pierce, Chief Date
Division of Environmental Analysis

California State Historic Preservation Officer

By Carol Roland-Nawi 6-20-13
Carol-Roland-Nawi, PhD. Date
State Historic Preservation Officer

PROGRAMMATIC AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE SOUTH COAST 101 HOV LANES PROJECT, U.S.
ROUTE 101, SANTA BARBARA COUNTY, CALIFORNIA

CONCURRING PARTIES:

Chumash Consultant

By Patrick Tumamait — 6-17-13
Patrick Tumamait — Date

PROGRAMMATIC AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE SOUTH COAST 101 HOV LANES PROJECT, U.S.
ROUTE 101, SANTA BARBARA COUNTY, CALIFORNIA

CONCURRING PARTIES:

California Department of Transportation

By _____ 6/25/2013
Timothy Gubbins, District Director — Date
District 5 / San Luis Obispo

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN, Jr., Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENVIRONMENTAL ANALYSIS, MS 27
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 653-7507
FAX (916) 653-7757
TTY (916) 653-4086

Flex your power!
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November 27, 2013

Ms. Carol Legard
FHWA Liaison
Office of Federal Agency Programs
Advisory Council on Historic Preservation
1100 Pennsylvania Avenue NW, Suite 803
Washington, DC 20004

Dear Ms. Legard:

Subject: Submittal of signed Programmatic Agreement for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, California

The California Department of Transportation (Caltrans) and the California State Historic Preservation Officer have executed a Programmatic Agreement (PA) for the above referenced project. In accordance with 36 CFR 800.6(b)(1)(iv), Caltrans is submitting a signed copy for the Advisory Council on Historic Preservation's files.

While a number of the Native Americans invited to concur in the PA have not yet signed, Caltrans will continue to afford them the opportunity to participate in the implementation of the undertaking should they so desire.

Caltrans is transmitting this documentation as part of its NEPA assignment of federal responsibilities by the Federal Highway Administration (FHWA) pursuant to 23 USC 327.

If you have any questions, please contact Todd Jaffke at (916) 654-3567 or todd_jaffke@dot.ca.gov. Thank you.

Sincerely,

ANMARIE MEDIN
Chief
Cultural Studies Office
Division of Environmental Analysis

"Caltrans improves mobility across California"

Enclosure: *Programmatic Agreement Between the California Department of Transportation and the California State Historic Preservation Officer Regarding the South Coast 101 HOV lanes Project, U.S. Route 101, Santa Barbara County, California.*

c: TJaffke – CSO; TJoslin – D-5;

Preserving America's Heritage

December 24, 2013

Anmarie Medin
Chief, Cultural Studies Office
Division of Environmental Analysis
Department of Transportation
1120 N Street
Sacramento, CA 94274-0001

Ref: *Proposed South Coast 101 HOV Lanes Project, U.S. Route 101*
Santa Barbara County, California

Dear Ms. Medin:

The Advisory Council on Historic Preservation (ACHP) has received the Programmatic Agreement (PA) for the above referenced project. In accordance with Section 800.6(b)(1)(iv) of the ACHP's regulations, the ACHP acknowledges receipt of the PA. The filing of the PA, and execution of its terms, completes the requirements of Section 106 of the National Historic Preservation Act and the ACHP's regulations.

We appreciate your providing us with a copy of the PA and will retain it for inclusion in our records regarding this project. Should you have any questions or require additional assistance, please contact Ms. Najah Duvall-Gabriel at (202) 606-8585 or via e-mail at ngabriel@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004
Phone:202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov

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Appendix E Floodplain Mapping

Note: These maps have been updated since the draft environmental document was released. A letter of map revision (LOMR) was submitted by a private resident in the vicinity of Oak and Romero Creeks; this LOMR was approved by the Federal Emergency Management Agency (FEMA) on December 4, 2012.

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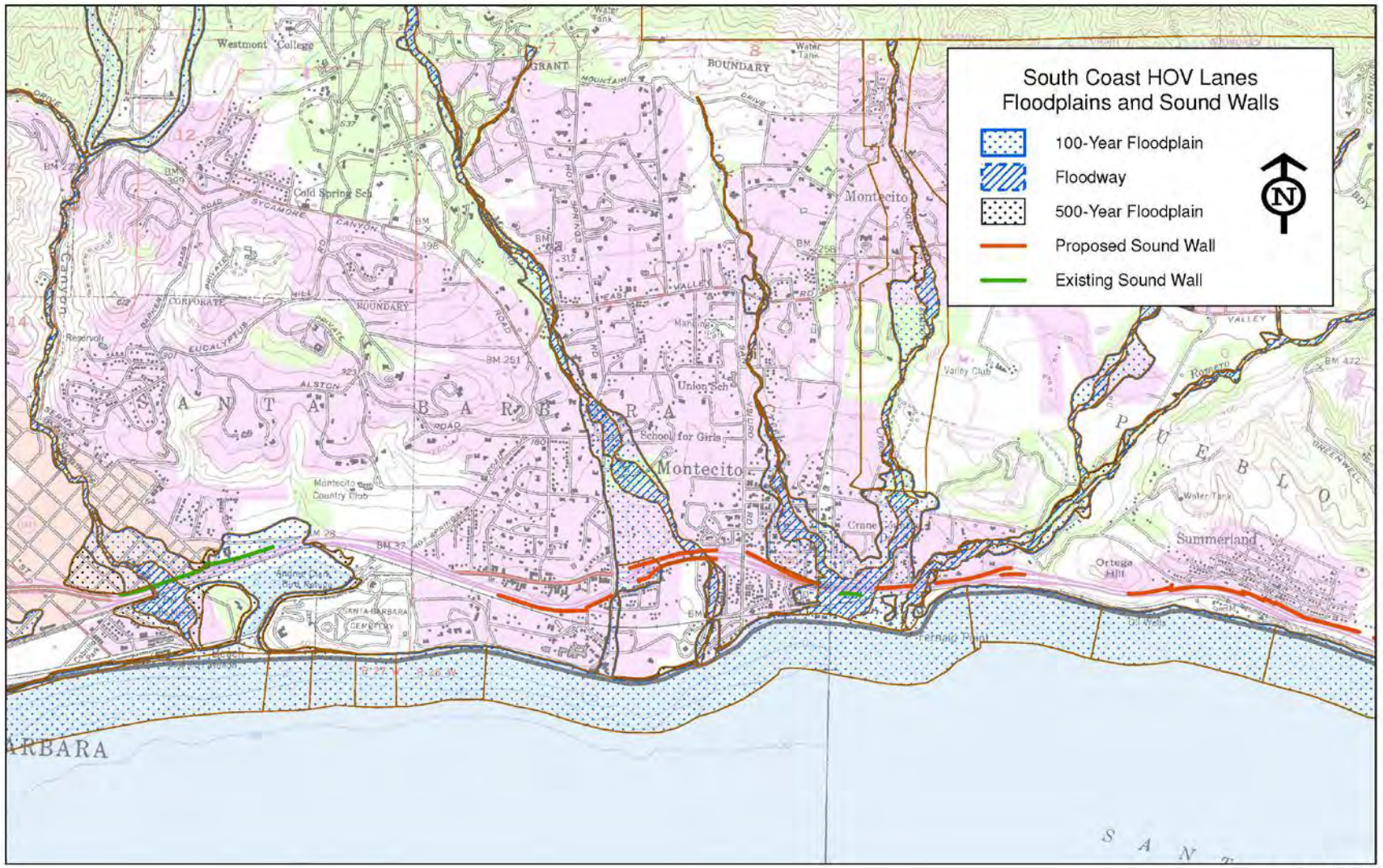
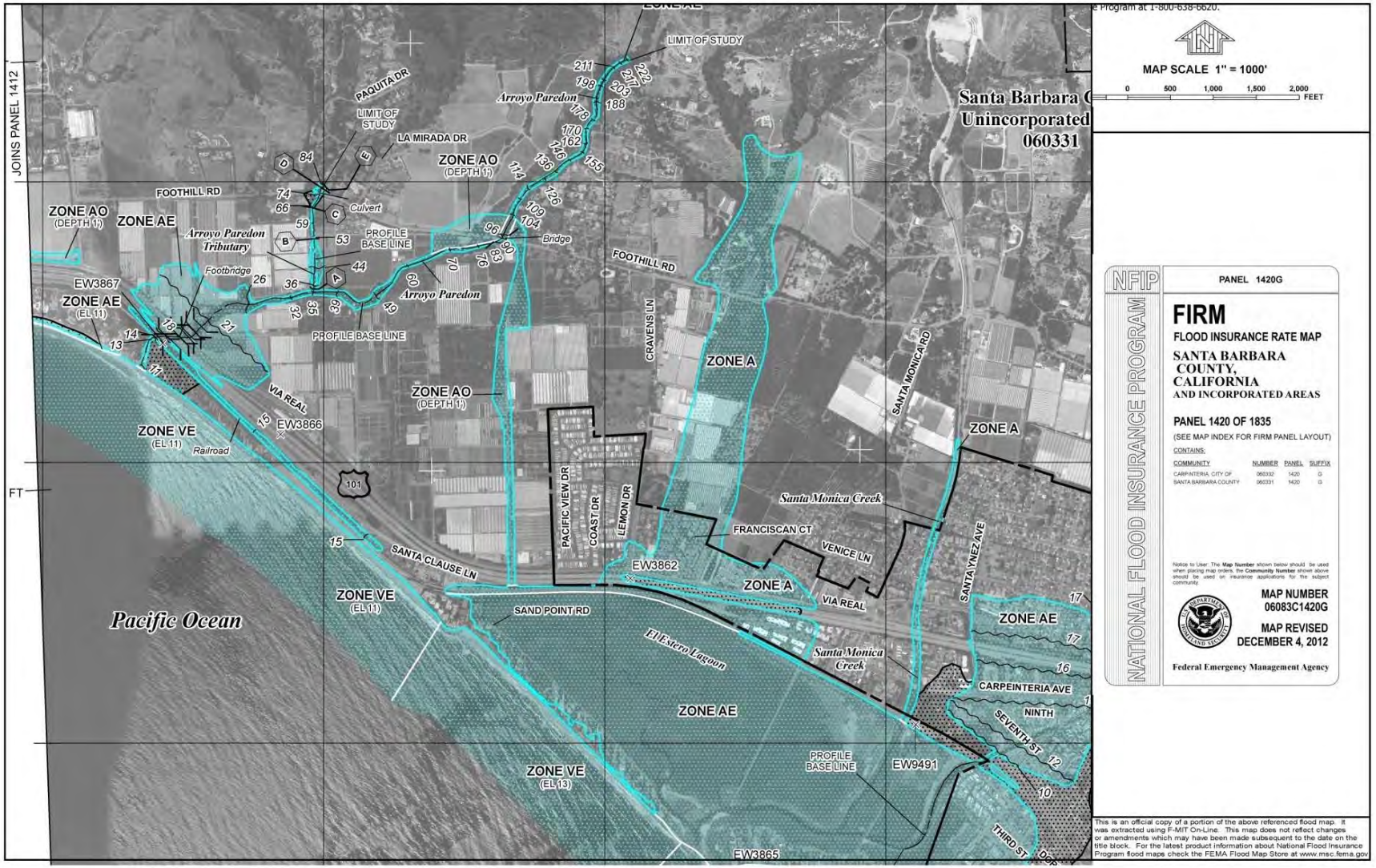
ATTACHMENT A



ATTACHMENT B


ZONE A
ZONE AE
ZONE VE
(EL 13)
(EL 11)
Santa Monica Creek
Franklin Creek
City of
Carpinteria
060332
SAND POINT RD
El Estero Lagoon
PACIFIC VIEW DR
COAST DR
LEMON DR
FRANCISCAN CT
VENICE LN
VIA REAL
SANTA YNEZ AVE
AZALEA DR
ANITA ST
STERLING DR
TOMAL DR
LIMU DR
LINHERE DR
MEADOW VIEW LN
ALVARADO ST
FOOTHILL RD
EL CARRO LN
PACIFIC VILLAGE
NIPOMO DR
CAMINO TRILLADO
OGAN RD
STAR PINE RD
CARPINTERIA AVE
NINTH
SEVENTH ST
HOLLY AVE
ELM AVE
LINDEN AVE
VALLECITO RD
CASITAS PASS RD
EIGHTH ST
PALM AVE
OLIVE AVE
OAK AVE
THIRD ST
DORRANCE WY
PROFILE BASE LINE
EW3862
EW9491
EW3865
EW3859
EW3858
EW3856
Fifth Street Footbridge
CALLE ARENA
CALLE OCHO
FOURTH ST
RAILROAD
101
MAP SCALE 1" = 1000'
0 500 1,000 1,500 2,000 FEET
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 1420G
FIRM
FLOOD INSURANCE RATE MAP
SANTA BARBARA COUNTY, CALIFORNIA
AND INCORPORATED AREAS
PANEL 1420 OF 1835
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CARPINTERIA, CITY OF 060332 1420 G
SANTA BARBARA COUNTY 060331 1420 G
MAP NUMBER
06083C1420G
MAP REVISED
DECEMBER 4, 2012
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov


JOINS PANEL 1412
LIMIT OF STUDY
PAQUITA DR
Arroyo Paredon
LIMIT OF STUDY
LA MIRADA DR
ZONE AO
(DEPTH 1')
FOOTHILL RD
ZONE AO
(DEPTH 1')
ZONE AE
Culvert
Arroyo Paredon
Tributary
PROFILE
BASE LINE
Bridge
Footbridge
EW3867
ZONE AE
(EL 11)
Arroyo Paredon
PROFILE BASE LINE
FOOTHILL RD
CRAVENS LN
ZONE A
SANTA MONICA RD
ZONE AO
(DEPTH 1')
ZONE VE
(EL 11)
VIA REAL
EW3866
Railroad
PACIFIC VIEW DR
COAST DR
LEMON DR
Santa Monica Creek
FRANCISCAN CT
VENICE LN
ZONE A
SANTA YNEZ AVE
SANTA CLAUSE LN
EW3862
ZONE VE
(EL 11)
SAND POINT RD
Pacific Ocean
El Estero Lagoon
Santa Monica
Creek
ZONE AE
CARPEINTERIA AVE
NINTH
SEVENTH ST
ZONE VE
(EL 13)
PROFILE
BASE LINE
EW9491
THIRD ST
EW3865
Santa Barbara C
Unincorporated
060331
MAP SCALE 1" = 1000'
0 500 1,000 1,500 2,000 FEET
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 1420G
FIRM
FLOOD INSURANCE RATE MAP
SANTA BARBARA
COUNTY,
CALIFORNIA
AND INCORPORATED AREAS
PANEL 1420 OF 1835
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CARPINTERIA, CITY OF 060332 1420 G
SANTA BARBARA COUNTY 060331 1420 G
MAP NUMBER
06083C1420G
MAP REVISED
DECEMBER 4, 2012
Federal Emergency Management Agency
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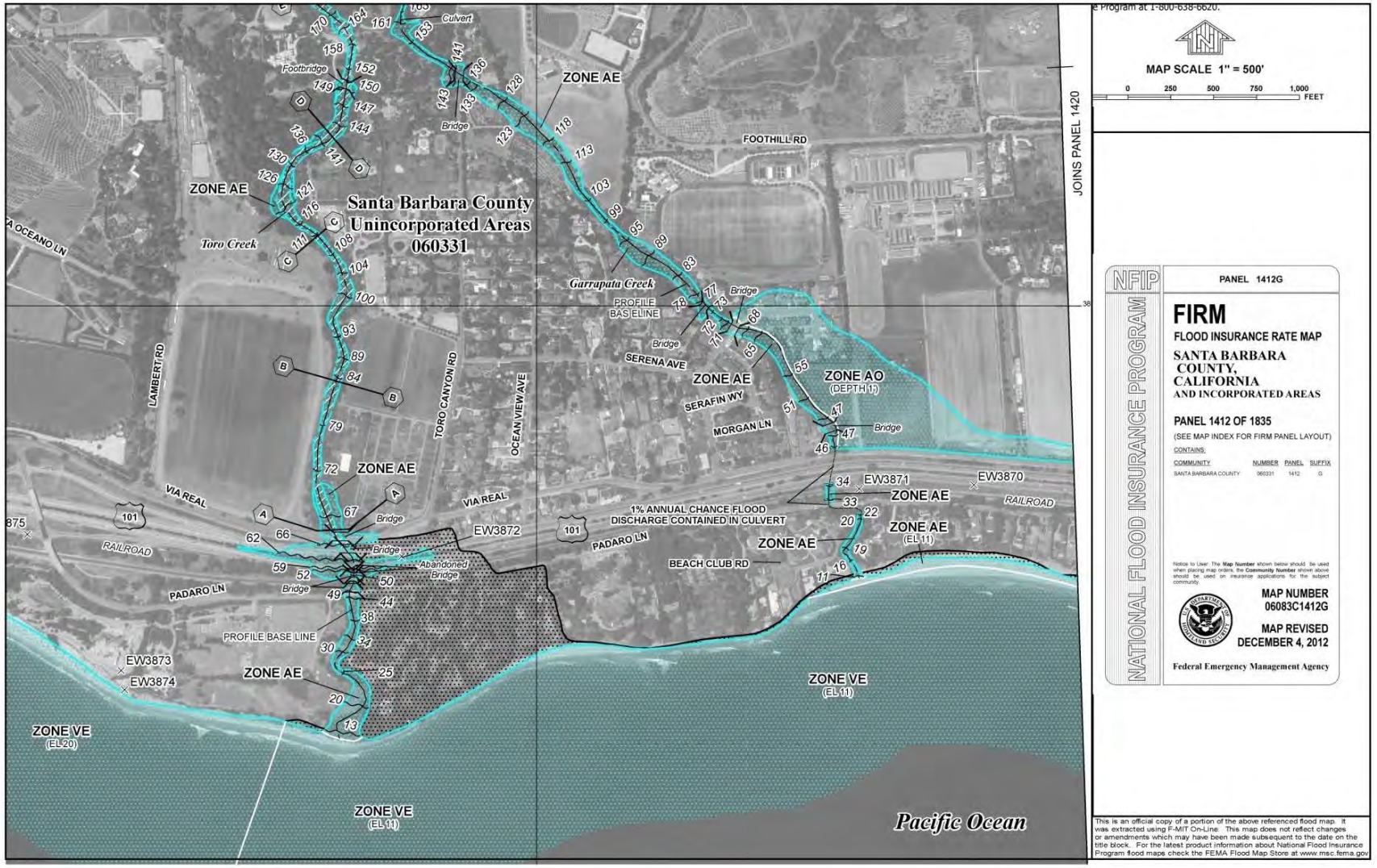
Santa Barbara County
Unincorporated Areas
060331
Toro Creek
Garrapato Creek
Pacific Ocean
ZONE AE
ZONE AO
(DEPTH 1)
ZONE VE
(EL 11)
ZONE VE
(EL 20)
1% ANNUAL CHANCE FLOOD
DISCHARGE CONTAINED IN CULVERT
PROFILE BASE LINE
FOOTHILL RD
SERENA AVE
SERAFIN WY
MORGAN LN
BEACH CLUB RD
PADARO LN
VIA REAL
LAMBERT RD
TORO CANYON RD
OCEAN VIEW AVE
RAILROAD
Culvert
Footbridge
Bridge
Abandoned Bridge
EW3870
EW3871
EW3872
EW3873
EW3874
JOINS PANEL 1420
MAP SCALE 1" = 500'
0 250 500 750 1,000 FEET
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 1412G
FIRM
FLOOD INSURANCE RATE MAP
SANTA BARBARA COUNTY, CALIFORNIA
AND INCORPORATED AREAS
PANEL 1412 OF 1835
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
SANTA BARBARA COUNTY 060331 1412 G
MAP NUMBER
06083C1412G
MAP REVISED
DECEMBER 4, 2012
Federal Emergency Management Agency
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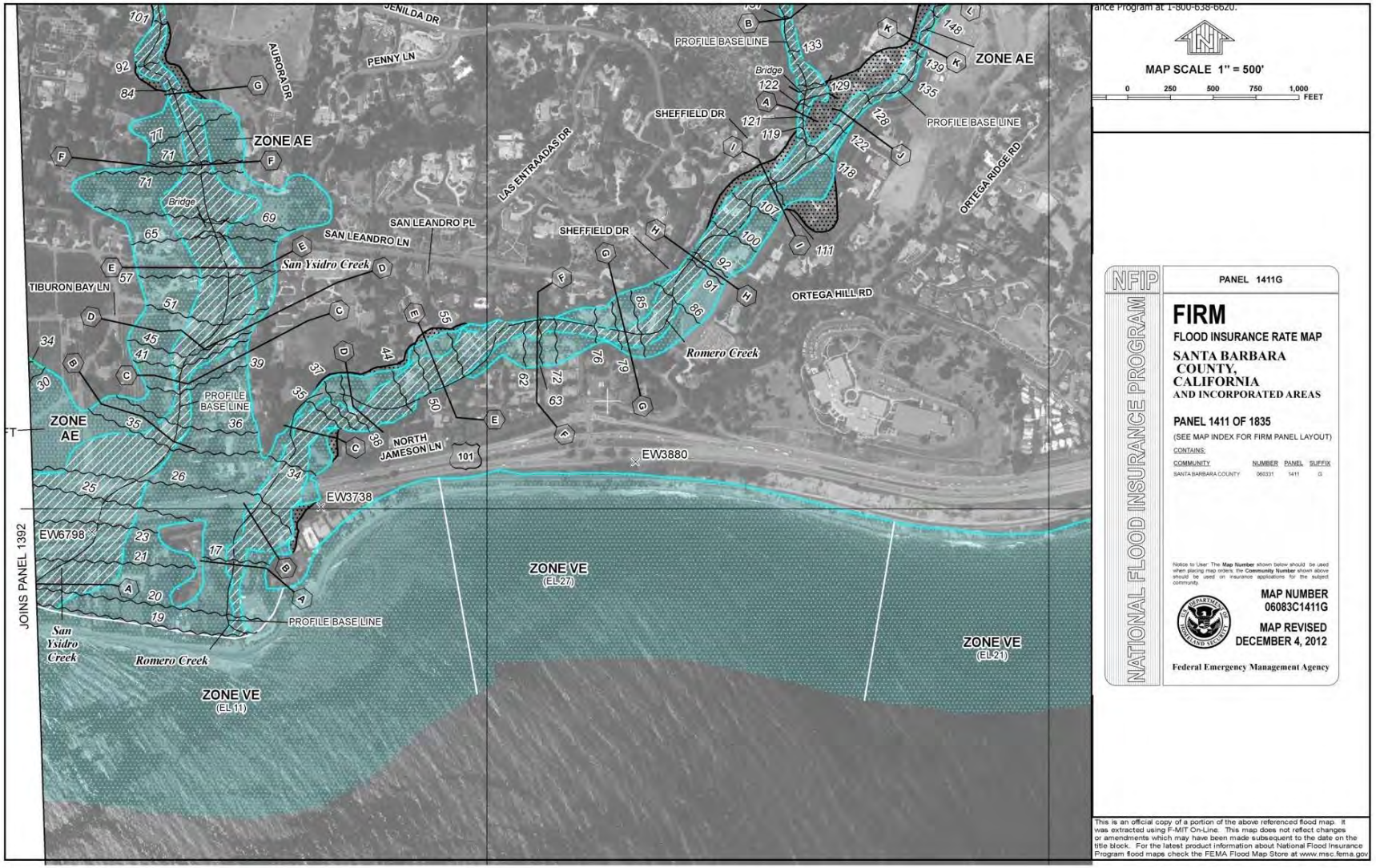
ZONE AE
ZONE VE
(EL 27)
ZONE VE
(EL 21)
ZONE VE
(EL 11)
PROFILE BASE LINE
San Ysidro Creek
Romero Creek
SHEFFIELD DR
ORTEGA HILL RD
ORTEGA RIDGE RD
LAS ENTRADAS DR
PENNY LN
AURORA DR
SAN LEANDRO LN
SAN LEANDRO PL
TIBURON BAY LN
NORTH JAMESON LN
EW3880
EW3738
EW6798
JOINS PANEL 1392
Bridge
MAP SCALE 1" = 500'
0 250 500 750 1,000 FEET
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 1411G
FIRM
FLOOD INSURANCE RATE MAP
SANTA BARBARA COUNTY, CALIFORNIA
AND INCORPORATED AREAS
PANEL 1411 OF 1835
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
SANTA BARBARA COUNTY 060331 1411 G
MAP NUMBER
06083C1411G
MAP REVISED
DECEMBER 4, 2012
Federal Emergency Management Agency
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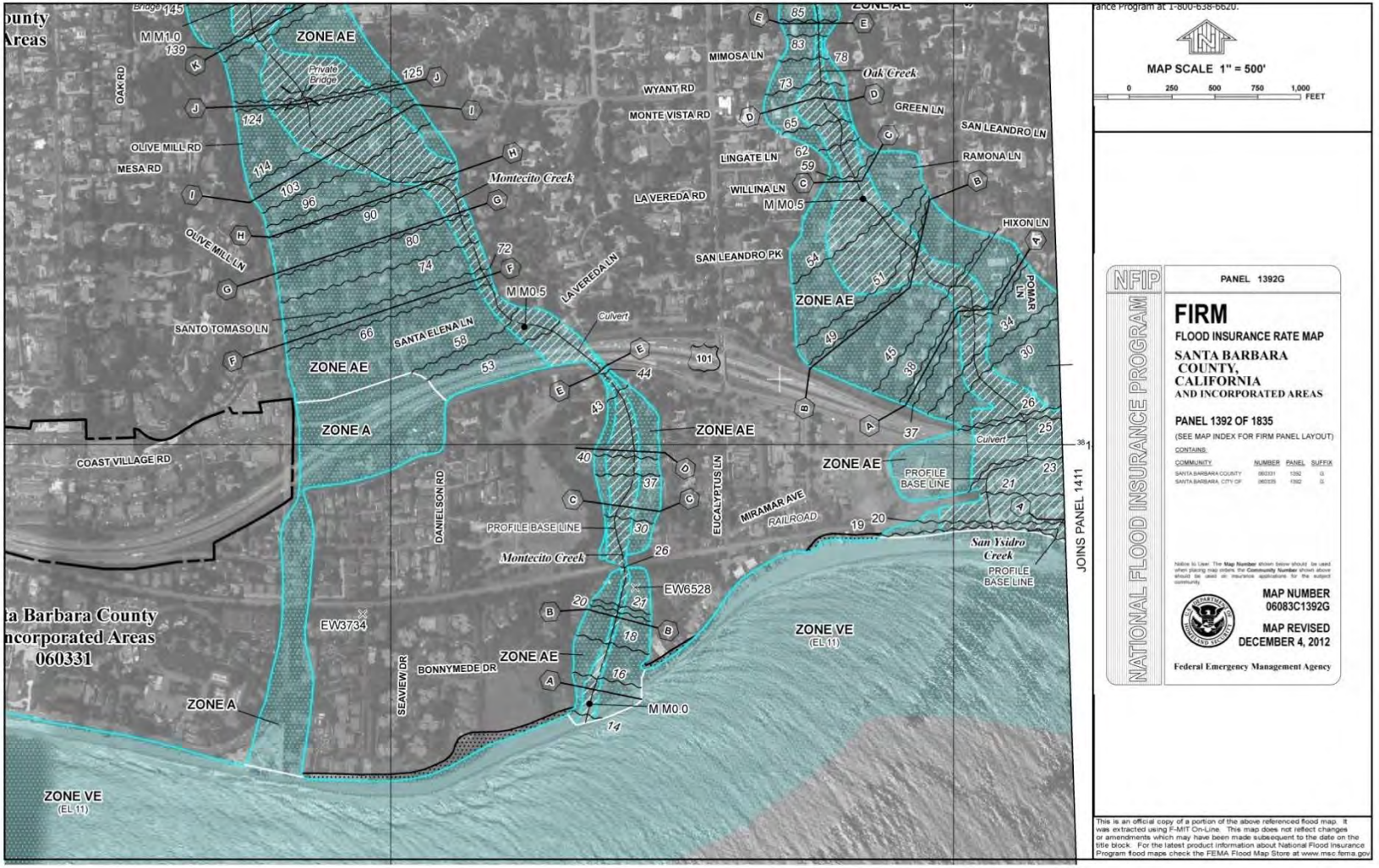
ZONE AE
ZONE A
ZONE VE
(EL 11)
Montecito Creek
San Ysidro Creek
Oak Creek
Culvert
PROFILE BASE LINE
RAILROAD
M M1.0
M M0.5
M M0.0
EW6528
EW3734
OAK RD
OLIVE MILL RD
MESA RD
OLIVE MILL LN
SANTO TOMASO LN
SANTA ELENA LN
COAST VILLAGE RD
DANIELSON RD
SEAVIEW DR
BONNYMEDE DR
MONTE VISTA RD
WYANT RD
MIMOSA LN
GREEN LN
LINGATE LN
WILLINA LN
LA VEREDA RD
LA VEREDA LN
SAN LEANDRO LN
SAN LEANDRO PK
RAMONA LN
HIXON LN
POMAR LN
EUCALYPTUS LN
MIRAMAR AVE
JOINS PANEL 1411
Santa Barbara County
Incorporated Areas
060331
MAP SCALE 1" = 500'
0 250 500 750 1,000 FEET
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 1392G
FIRM
FLOOD INSURANCE RATE MAP
SANTA BARBARA COUNTY, CALIFORNIA
AND INCORPORATED AREAS
PANEL 1392 OF 1835
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
SANTA BARBARA COUNTY 060331 1392 G
SANTA BARBARA, CITY OF 060335 1392 G
MAP NUMBER
06083C1392G
MAP REVISED
DECEMBER 4, 2012
Federal Emergency Management Agency
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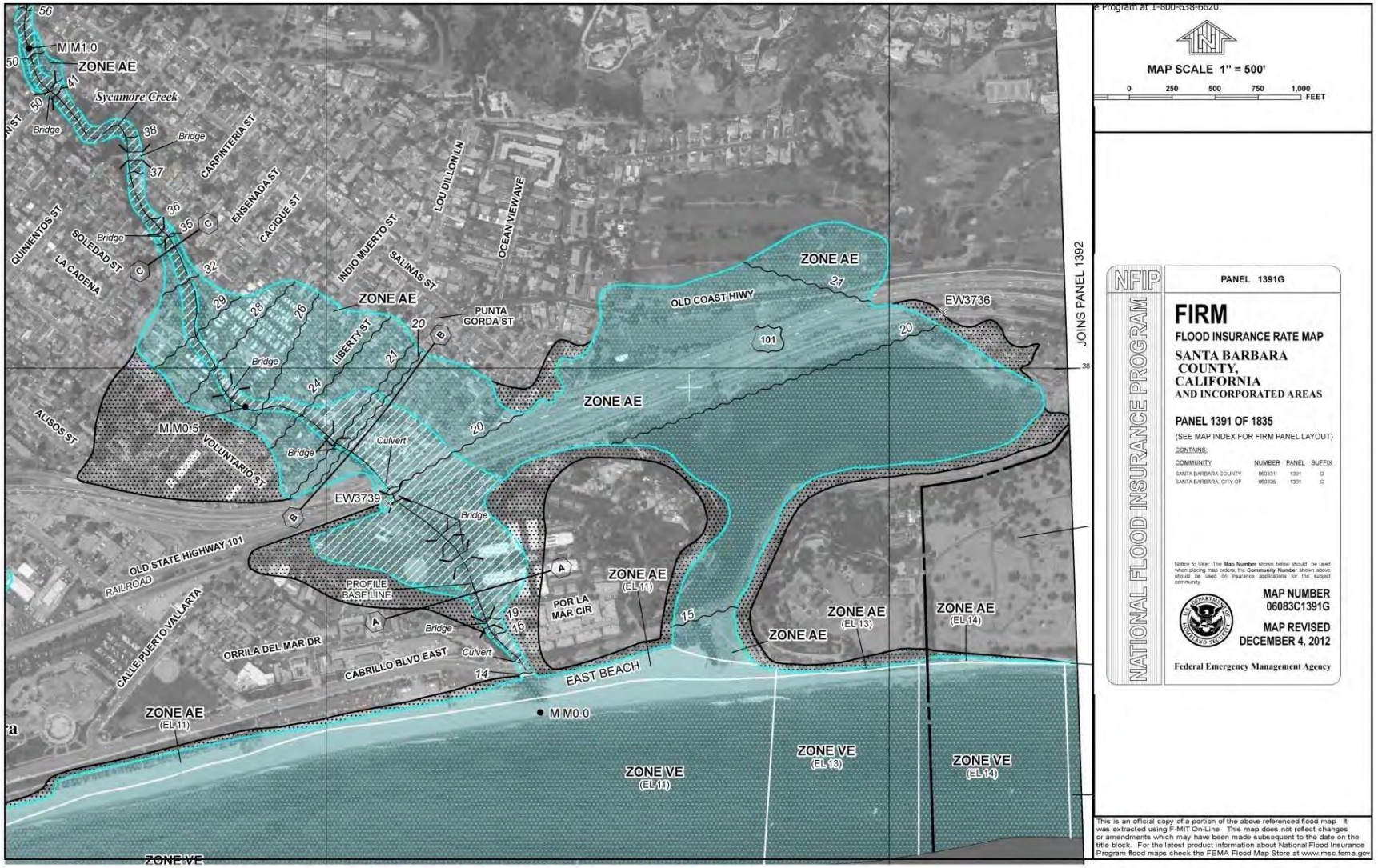
MAP SCALE 1" = 500'
0 250 500 750 1,000 FEET
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 1391G
FIRM
FLOOD INSURANCE RATE MAP
SANTA BARBARA COUNTY, CALIFORNIA
AND INCORPORATED AREAS
PANEL 1391 OF 1835
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
SANTA BARBARA COUNTY 060331 1391 G
SANTA BARBARA, CITY OF 060335 1391 G
MAP NUMBER
06083C1391G
MAP REVISED
DECEMBER 4, 2012
Federal Emergency Management Agency
JOINS PANEL 1392
Sycamore Creek
M M1.0
M M0.5
M M0.0
ZONE AE
ZONE VE
ZONE AE (EL 11)
ZONE AE (EL 13)
ZONE AE (EL 14)
ZONE VE (EL 11)
ZONE VE (EL 13)
ZONE VE (EL 14)
CARPINTERIA ST
ENSENADA ST
CACIQUE ST
QUINIENTOS ST
SOLEDAD ST
LA CADENA
INDIO MUERTO ST
SALINAS ST
LOU DILLON LN
OCEAN VIEW AVE
PUNTA GORDA ST
LIBERTY ST
OLD COAST HWY
EW3736
EW3739
ALISOS ST
VOLUNTARIO ST
OLD STATE HIGHWAY 101
RAILROAD
PROFILE BASE LINE
POR LA MAR CIR
ORRILLA DEL MAR DR
CALLE PUERTO VALLARTA
CABRILLO BLVD EAST
EAST BEACH
Bridge
Culvert
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix F Minimization and/or Mitigation Summary

This section contains a compilation of all of the minimization and mitigation measures for the proposed project. Some of these measures have been integrated into the project scope throughout the project development process. Certain measures are viewed as mitigation, others are performed as standard practice on all Caltrans jobs, and others are measures that have been integrated into the project scope throughout the project development process.

Consistency with State, Regional, and Local Plans

- For Alternative 1 (preferred alternative), Alternative 2, and Alternative 3, conflicts with local coastal policies are expected to occur for visual resources, biological resources, wetland buffers and landscaping. Avoidance and/or mitigation measures to minimize impacts would be required for visual resources (see Section 2.1.6), wetlands (see Section 2.3.2), and landscaping impacts (see Section 2.1.6) to comply with study area planning documents that call for the retention of vegetative character and wetland setbacks. Because the project cannot meet the wetland buffer limits established by the Local Coastal Plans for the City of Carpinteria and County of Santa Barbara, a Local Coastal Plan Amendment would be required for each of these jurisdictions prior to initiating the coastal development permit process.

Coastal Zone

- Because the proposed project is located within several coastal jurisdictions, Coastal Development Permits are required from the Cities of Carpinteria and Santa Barbara along with the County of Santa Barbara. Prior to applying for the coastal development permits, amendments to the Local Coastal Plans prepared for the City of Carpinteria and County of Santa Barbara are required due to policy inconsistencies between the proposed project and their local coastal plans. In addition to the coastal development permit, the City of Carpinteria requires a Conditional Use Permit. Additional measures to minimize impacts may be required for visual resources, wetlands, and landscaping as conditions of the Coastal Development Permits.

Parks and Recreation

- During construction, at least two lanes in each direction would remain open for peak-period travel. U.S. 101 mainline lane closures would occur mainly during off-peak hours to minimize construction-related travel impacts within the corridor. Construction of the build alternatives would be done with measures taken to avoid public access impacts to park and recreational facilities, with alternate routes made available for use during construction. Construction-related disruptions would be minimized through development and implementation of a Traffic Management Plan.

Traffic and Transportation/Pedestrian and Bicycle Facilities

- Coordinate with local jurisdictions as needed to minimize disruptions to traffic, pedestrians, and bicyclists associated with local and state road construction projects in the corridor. Refer to Construction Impacts under Traffic Circulation (including pedestrian and bicycle) for further details regarding a required Transportation Congestion Management Plan.
- Where the project proposes local-street changes, all modified pedestrian facilities would comply with the Americans with Disabilities Act.
- All existing bike or pedestrian facilities would be retained or replaced as needed.

Visual

- All soundwalls shall include aesthetic treatment such as texture and/or color to blend with the community character.
- To avoid blocking prime ocean views, soundwalls are not recommended for installation in the following Summerland locations:
    - Along northbound U.S. 101 from about 200 feet west of Greenwell Road to the Summerland Fire Station.
    - Along northbound U.S. 101 about 0.2 mile east of Greenwell Road to approximately Greenwell Road.
    - Along U.S. 101 from the Evans Avenue undercrossing to the Evans Avenue northbound on-ramp.
    - Along northbound U.S. 101 from the beginning of the Evans Avenue northbound on-ramp to approximately 50 feet west of the beginning of the Evans Avenue northbound on-ramp.

- To balance the need for noise attenuation and maintaining partial ocean views, a clear panel should be used along the top portion (10 feet or more above the ground) of a proposed soundwall in Summerland at the following location:
    - Along northbound U.S. 101, from about 50 feet west of the beginning of the Evans Avenue northbound on-ramp to about 650 feet west of the beginning of the Evans Avenue northbound on-ramp.
- All proposed concrete barriers shall include aesthetic treatment such as texture and/or color appropriate for the setting.
- Drainage structures visible from public areas shall be designed to visually blend-in with the setting as much as possible.
- Changes to existing bridge structures shall reflect the visual character of the existing structures in terms of materials, color, style, and the existing human scale of the area.
- Open-style bridge railings shall be used on all new or modified bridge structures, except at locations where solid barriers would be needed to provide added noise attenuation.
- If new traffic management system elements such as radar, cameras, and other equipment are added to the project, all visible components shall be located in the least obtrusive locations possible and colored to reduce visibility.
- Aesthetic treatments and design such as textured surfaces, architectural relief, and color application shall be incorporated into all new bridge structures.
- Any new signage would be located so that it minimizes view blockage of the Pacific Ocean to the greatest extent feasible, considering the necessary function of the sign.
- All new lighting shall minimize excess light and glare by careful placement of the poles, height and position of luminaires, and shielded lenses where feasible.
- All areas where existing ramps and other paved surfaces are removed and where new landscaping is proposed shall be made suitable for planting.
- Existing trees and shrubs shall be preserved to the greatest extent possible.
- Existing healthy palm trees that would be affected by the project shall be transplanted to other areas within the project.

- Planting shall be included with all soundwalls to the greatest extent possible.
- Planting shall be included with all retaining walls to the greatest extent possible.
- New landscaping shall minimize view blockage of the Pacific Ocean.
- Plants with the potential of becoming skyline trees would be used as much as possible without blocking views of the Pacific Ocean.
- Existing Memorial Oaks shall be preserved to the greatest extent feasible, respective of the selected project alternative.
- All new oak trees planted as part of this Memorial Oak tree mitigation measure shall be propagated from the existing Memorial Oak trees.
- All new non-oak planting in the vicinity of the Memorial Oaks would be species that are easily differentiated from the Memorial Oaks in terms of their visual character (form, size, color, and or texture).
- Concrete median barrier and new soundwalls in the immediate vicinity of the Memorial Oaks would include aesthetic treatment unique to the Memorial Oaks area.
- The landscaping plan would include historically successful plant species throughout the corridor.
- All aesthetic planting shall use larger container-size plant material where appropriate. Trees shall be planted, at minimum, from 15-gallon containers.
- All permanent storm water treatment measures would be designed to visually fit with the ornamental or natural landscaped roadsides to the greatest extent feasible considering their intended function. Swales, ditches and basins shall appear as natural as possible. Built structures would be architecturally treated, colored or hidden from view with planting.
- If required, new access-denial fencing along the southbound on- and off-ramp at Los Patos Way and Hermosillo Drive would be ornamentally treated.

Cultural Resources

Although we do not anticipate impacts to the redeposited midden, Caltrans nevertheless deems it prudent to consider the remote possibility of discoveries during construction. The June 20, 2013 Programmatic Agreement includes the following

stipulations in the unlikely event that archaeological resources are encountered during construction:

Treatment of Historic Properties

A. Caltrans shall ensure that any adverse effects of the Undertaking [i.e., the South Coast 101 HOV Lanes project] on the Via Real Redeposited Midden (P-42-003943) and effects to any similar as yet unidentified properties discovered during construction are resolved by implementing the [June] 2013 *Treatment and Data Recovery Plan for the South Coast 101 HOV Lanes Plan Project, Santa Barbara County, California* (Treatment and Data Recovery Plan) that is Attachment B to the [Programmatic Agreement, see Appendix D, Volume II]. The Via Real Redeposited Midden (P-42-003943) is eligible for inclusion in the National Register of Historic Places under Criterion D. Data recovery is prescribed for archaeological deposits contributing to the National Register eligibility of the historic property Via Real Redeposited Midden (P-42-003943) within the Undertaking's construction area of direct impact.

B. The location of the eligible portion of the Via Real Redeposited Midden (P-42003943) outside the [Area of Direct Impact] can be avoided during construction through the establishment and enforcement of an Environmentally Sensitive Area (ESA). The location shall be designated an [Environmentally Sensitive Area] during construction and protected with exclusionary fencing pursuant to Stipulation X.B.2.a.ii and Attachment 5 of the Programmatic Agreement. The Via Real Redeposited Midden (P-42-003943) area outside of the [Area of Direct Impact] shall be depicted on construction plans and will be designated an [Environmentally Sensitive Area] with no access allowed during construction. Additionally, the District 5 Environmental Construction Liaison will have a copy of the plan on file and maintain contact with the resident engineer, construction contractor, and archaeologist on [Environmentally Sensitive Area] compliance.

C. [This stipulation addresses procedures for amending the Data Recovery Plan and resolving disputes; See Appendix D (Volume II), State Historic Preservation Officer Correspondence, for complete text].

D. Caltrans will not authorize the execution of any Undertaking activity that may adversely affect (36 CFR §800.16(l)) historic properties in the Undertaking's APE without implementing the procedures that the Data Recovery Plan prescribes.

Additional Programmatic Agreement stipulations relate to reporting requirements and to ongoing Native American consultation (see Appendix D, State Historic Preservation Officer Correspondence for complete text), and to the following:

Treatment of Human Remains of Native American Origin

The [Programmatic Agreement] parties agree that human remains and related items discovered during the implementation of the terms of the [Programmatic Agreement] and of the Undertaking will be treated in accordance with the requirements of §7050.5(b) of the California Health and Safety Code. If, pursuant to §7050.5(c) of the California Health and Safety Code, the county coroner/medical examiner determines that the human remains are or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of §5097.98(a)-(d) of the California Public Resources Code. The discovery of human remains may constitute the discovery of a historic property, and as such, should be consulted upon pursuant to Stipulation VI in addition to the provisions of this stipulation.

Discoveries and Unanticipated Effects

If Caltrans determines during the implementation of the Data Recovery Plan or after construction of the Undertaking has commenced, that either the implementation of the Data Recovery Plan or the Undertaking will affect a previously unidentified property that may be eligible for the National Register, or affect a known historic property in an unanticipated manner, Caltrans shall address the discovery or unanticipated effect in accordance with 36 CFR §800.13(b). Caltrans at its discretion may hereunder and in accordance with 36 CFR §800.13(c) assume any discovered property to be eligible for inclusion in the National Register.

Hydrology and Floodplain

- Based on the hydraulic engineer's recommendation, portions of the proposed soundwalls crossing the floodway for Romero (Picay) Creek and the combined floodway for San Ysidro and Oak creeks were dropped from consideration to avoid raising the base flood elevations. This decision was based on the hydraulic engineer's determination that soundwall modifications would not prevent a significant impact to flood flows expected within the floodway.

- Soundwalls within the combined floodplain for Romero, San Ysidro and Oak creeks and the extended portion of the soundwall in the Romero Creek floodway would incorporate floodgates to convey flood flows and would not raise base flood elevations.

- The easterly proposed soundwall at Cravens Lane would have floodgates or be staggered to convey flood flows. The wall would not raise base flood elevations.
- The soundwall in the Arroyo Paredon Creek floodplain would include flood passage to accommodate flood flows.
- Both soundwalls in the Montecito Creek floodplain would be designed to pass flood flows.

Water Quality/Storm Water

Due to the fairly degraded and urbanized nature of most drainage systems throughout the project corridor, many potential opportunities exist for upgrading deficiencies or enhancing impaired beneficial uses within the project corridor. The potential impacts to water quality from the proposed project would not be considered adverse due to the design, permitting, and site-specific conditions of the project.

Permanent Design Measures

- **Riparian Shade Canopy—**Re-vegetation along affected creeks would be designed to optimize the shade canopy where feasible and not conflict with current flood control practices.
- **Permanent Storm Water Treatment Best Management Practices—** Because this project proposes to add more than 1 acre of new impervious surfaces permanent storm water treatment best management practices will be incorporated into this project to the maximum extent practicable. Treatment best management practice techniques would concentrate on the use of biofiltration swales (stable grass-lined ditches) to convey surface runoff, and biofiltration strips to intercept overland flow. Currently, infiltration devices are not proposed as part of the project due to high groundwater levels in most locations. If site specific locations indicate low groundwater and soils are determined to be appropriate for infiltration, infiltration devices would then be evaluated for installation.
    - All existing vegetated locations to remain along the project limits would be evaluated for viability as bio-strips and documented to quantify effectiveness of reductions of particulate runoff. In addition, the following locations would be used for building new bio-strips and bio-swales to intercept runoff. If subsurface conditions are appropriate, these same locations would also be used for infiltration purposes. Preliminary locations are shown in Table F.1.

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Table F1 Preliminary Locations for Biostrips and Bioswales

Biostrip	Bioswale	Treatment Begin (post mile)	Treatment End (post mile)	Treatment Location	Impervious Tributary Area (Acres)	Tributary Watershed	Water Quality Flow from Impervious Area (cfs)	Tributary Begin	Tributary End	Tributary Shed
	X	1.60	1.70	Southbound	8.19	Carpinteria Creek	2.023	1.27	1.74	NB & SB
	X	2.30	2.40	Northbound	9.94	Carpinteria Creek	2.455	1.74	2.44	NB & SB
X		3.31	3.48	Southbound	1.07	Franklin Creek	0.264	3.31	3.48	SB
X		3.31	3.53	Northbound	1.39	Franklin Creek	0.343	3.31	3.53	NB
X		3.55	3.60	Southbound	0.32	Franklin Creek	0.079	3.55	3.60	SB
X		3.66	3.76	Southbound	0.63	Santa Monica Creek	0.156	3.66	3.76	SB
X		3.68	3.92	Northbound	1.63	Santa Monica Creek	0.403	3.68	3.92	NB
X		3.77	3.94	Southbound	1.07	Salt Marsh	0.264	3.77	3.94	SB
X		3.95	4.28	Northbound	2.24	Salt Marsh	0.553	3.95	4.28	NB
X		4.32	4.62	Northbound	2.04	Salt Marsh	0.504	4.32	4.62	NB
X		4.18	4.33	Southbound	0.95	Salt Marsh	0.235	4.18	4.33	SB
X		4.70	5.10	Northbound	2.72	Salt Marsh	0.561	4.70	5.10	NB
X		5.71	6.24	Southbound	3.34	Pacific Ocean	0.825	5.71	6.24	SB
X		5.96	6.24	Northbound	1.90	Pacific Ocean	0.469	5.96	6.24	NB
	X	6.70	6.80	Northbound	2.27	Toro Creek	0.561	6.9	7.26	NB
X		6.91	7.10	Southbound	1.20	Toro Creek	0.296	6.91	7.10	SB
X		7.05	7.22	Southbound	1.07	Toro Creek	0.264	7.05	7.22	SB
X		7.26	7.46	Southbound	1.26	Pacific Ocean	0.311	7.26	7.46	SB
X		7.50	7.73	Southbound	1.45	Greenwell Creek	0.358	7.50	7.73	SB
					Total 44.68 acres					

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- **Bridge(s)—**For all creeks requiring replacement or widening of existing bridges, new bridges would be designed to maintain or reduce the existing water velocity under the bridge. Bridge replacement would take place at the following creeks: Arroyo Paredon, Toro Canyon, Romero (Picay), Oak, and San Ysidro. Bridges would be widened at Franklin and Santa Monica creeks. The Toro Canyon Creek bridge would be designed to accommodate the 100-year flood. At Romero, San Ysidro and Oak creeks, the 100-year flow is not carried by the channel or the bridges upstream and downstream of the highway. Santa Barbara County Flood Control has plans to improve the capacity of the channel and bridges from North Jameson Road to the ocean. The U.S. 101 bridges would be designed to pass the 100-year flow but would be blocked to match current capacities within the reach until the capacity in the entire reach has been improved. Due to nearby constraints at Arroyo Paredon Creek, the 100-year flow cannot be handled. The county has no plans to improve capacity at this creek. Consequently, the bridge would be designed to pass the maximum flow possible, which is close to a 25-year flow. The proposed bridge would be partially blocked to maintain existing conditions until capacity improvements are made up- and downstream.
- **Hydrology**—Storm water runoff from the highway would be managed to maintain sheet flow to adjacent grasslands and wetlands, to the maximum extent feasible. The concentration of storm water flow would be minimized where feasible. Dikes and the concrete lining of drainage swales would be eliminated if feasible after considering the necessary function of each facility.
- **Litter—**During construction, litter on the highway would be removed periodically as part of regular maintenance procedures.
- **Culverts—**The size and alignment of culverts, for all areas requiring culvert installation, will be designed to minimize influencing the hydrology of the project site to the maximum extent practicable.
- Wetlands—For wetlands that cannot be avoided, mitigation wetlands would be created on- or off-site to ensure no net loss of wetlands. Refer to Volume I, Section 2.3.2 for more details.
- Design and Treatment Best Management Practices—Storm water best management practices would be selected and designed during the design phase of this project. Best management practices would be selected to minimize

pollutant discharges to surface waters, minimize storm water discharge rates and volumes, and recharge groundwater. A formal storm water drainage plan would be developed during the design process of this project.

- Invasive Plants—All invasive plants that could adversely affect water quality and associated beneficial uses would be removed from specific work areas within creek channels and prevented from spreading, to the extent feasible. Invasive vegetation may also be removed from restoration and mitigation areas.
- Refer to the Construction Impacts section for minimization measures listed under temporary water quality impacts.

Geology

- Slopes—All new cut slopes would be excavated with slopes of 2:1 or flatter whenever feasible. Any affected existing paved top-of-cut ditches would be replaced in kind. Top-of-cut ditches are used to minimize the potential for erosion by intercepting off-site drainage that would otherwise flow down the slope face. No new cut slopes are proposed that would intercept any large off-site areas draining toward the slopes.
- Embankments—New embankments and widened embankments would be built with slopes of 2:1 or flatter if feasible. Steeper slopes could be considered if the embankments are built of select material that meets the geotechnical unit specifications. The embankment material, regardless of slope steepness, must also meet the landscape architecture unit criteria for erosion control. The steeper slopes require more intensive landscape designs and tend to be less cost effective in terms of erosion control design.
- The project design would incorporate Caltrans standards and construction methods to minimize potential risks associated with strong ground shaking and potential liquefaction hazards.

Paleontology

Specific mitigation measures considered for possible incorporation into the project's Paleontological Mitigation Plan are included in the Construction Impact Measures, on page F-28 and F-29 of this appendix.

Hazardous Waste

- Once specific excavation limits are established during the design phase of the project, soil sampling will be performed to determine lead concentrations

from automobile emissions to characterize the soil to be excavated for this project. Typically, excavated lead-contaminated soil must be hauled to a Class I disposal facility to be disposed of as a California hazardous waste, which results in increased roadway excavation costs. The Department of Toxic Substances Control issued a variance from state hazardous waste control law that allows Caltrans to reuse this lead-contaminated soil within the state highway corridor in accordance with the conditions of the variance. The aerially deposited lead contaminated soil may be used in the construction of new on-ramps and off-ramps or for the widening of fill sections.

In June 2009, the Department of Toxic Substances Control adopted a Negative Declaration under the California Environmental Quality Act documenting that the proposed actions and the implementation of the variance for the re-use of aerially deposited lead-containing soils within the state right-of-way will not present a significant threat to human health or the environment. Public notice was provided and public meetings were held. The U.S. 101 corridor was identified in the Negative Declaration as an area where the variance could be used.

- Consistent with Policy HAZ-S-1 of the Summerland Community Plan, if any abandoned oil wells are discovered, State Department of Conservation, Division of Oil and Gas abandonment removal procedures would be followed.

- Thermoplastic striping is routinely removed as part of highway reconstruction. Caltrans would include special provisions in the construction contract that require these materials be removed in accordance with all applicable laws and regulations.

- Before demolishing any asbestos-containing structures, the contractor would comply with all applicable Santa Barbara County Air Pollution Control District regulations. Any asbestos removal would be done by following all applicable laws and regulations. In addition, as stated in the National Elimination System for Hazardous Air Pollutants, a notification would be filed.

Air Quality

The project would provide air quality improvements by reducing low speed and long-idle conditions resulting from severely congested freeway operations. Mainline congestion will be significantly reduced and the overall efficiency of the facilities

within the corridor would be improved. These improvements would all be considered long-term air quality benefits, and thus, minimization measures.

The following project design features would be incorporated into the project to minimize operational air emissions:

- The project would preserve mature vegetation as a means of minimizing adverse air quality impacts to the maximum degree feasible. The project design will minimize removal of existing trees, especially mature trees.
- Project design would allow consideration for maximizing vegetative plantings throughout urban areas.
- The project would plant disturbed areas with a variety of native and drought-tolerant trees and shrubs in ratios sufficient to replace the air quality and cooling benefits of trees removed by construction of the project. Additional trees would be planted as space allows to further increase those benefits. Riparian planting would also be included to maintain shade along creek corridors.
- The project would seed slopes, drainage channels, and other disturbed areas with native and drought-tolerant shrubs, perennials and grasses.
- The project would incorporate recycling and waste-diversion techniques by promoting the reuse of materials such as steel, road base, concrete, asphalt-concrete, and so on to the extent feasible (Deputy Directive 17 *Recycling Asphalt Concrete*).
- Measures would be included that propose to conserve energy and nonrenewable resources, including removing and reusing existing thrie-beam barrier wherever possible. Also, when possible, guide signs within the project limits would be reset.
- Refer to the Air Quality-related construction impact measures listed on page F-32 and F-33 for the list of minimization measures for PM_{10} and Ozone Precursor (nitrous oxides and reactive organic compounds).

Noise

Based on the studies completed to date, Caltrans has considered noise abatement at 27 locations. Of the 27 soundwalls being considered, only 14 met reasonable and feasibility requirements. The considered noise barriers vary in height from 8 to 16 feet and range in length from 499 to 2,169 feet. Calculations based on preliminary

design data indicate that the barriers would reduce noise levels by 5 to 12 decibels for benefited receptors. If, during final design, conditions have substantially changed, noise abatement may be revised. The final decision for noise abatement would be made upon completion of the project final design, the soundwall voting process and the coastal development permit process.

Refer to the noise-related construction impacts on pages F-33 and F-34 for the list of minimization measures for noise impacts during construction.

Biology

Natural Communities

Riparian

- All work in riparian areas would be confined to the Caltrans right-of-way and delineated temporary construction easements.
- All build alternatives would avoid the mature sycamore trees that provide shade to the San Ysidro Creek bridge outlet and the coast live oak trees that shade the culvert outlet at Garrapata Creek.
- Prior to any ground-disturbing activities, environmentally sensitive area fencing would be installed around the drip line of the trees to be protected. Where feasible, fencing will be established at least 5 feet from the drip line of trees to be protected.
- To avoid affecting nesting birds in riparian vegetation, no clearing activities would occur between February 15 and September 1. 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 habitat and needs of the species.
- Impacts to native riparian vegetation would be offset by replacement planting within the project limits as follows: Replanting plans for creek locations should be reviewed by Santa Barbara Flood Control to ensure that plantings would not impede flows within creek channels to avoid flooding. The following ratios will be used: 3:1 for willows; 3:1 for coast live oaks or western sycamore greater than 6 inches in diameter at breast height. Monterey cypress and Monterey pine trees would be replaced in kind. Plantings would be detailed in the Caltrans landscape architecture landscape planting plan. (Note: Although higher replacement ratios

are sometimes appropriate, the state right-of-way along the creeks is actively managed by the county flood control, and the fact that the trees would be maintained in the right-of-way makes this an appropriate number for this project.)

- At Greenwell Creek, permanent impacts to riparian vegetation would be offset by enhancement of 0.145 acre of the creek located south of U.S. 101. Non-native plants (ice plant, arundo 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 rock slope protection along creek banks, to reduce erosion and enhance riparian habitat available for wildlife. Invasive plants castor bean and arundo 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 replanted with native riparian species, including willow and sycamore.
- 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 would occur at other appropriate locations within the state right-of-way. All riparian plantings would be monitored to ensure successful re-vegetation at six months after implementation and then once a year for three years. Removal of existing stands of invasive giant reed (arundo) on the south banks of Arroyo Paredon Creek and at Greenwell Creek would be included in the Caltrans landscape plans.

Coast Live Oaks

- Existing trees and shrubs would be preserved to the greatest extent possible.
- All oaks and other native trees greater than 6 inches in diameter at breast height to remain in the project vicinity would be delineated on design plans. Prior to any ground-disturbing activities, environmentally sensitive area fencing would be installed around the drip line of the trees to be protected. Where feasible, fencing will be established at least 5 feet from the drip line of trees to be protected.
- To avoid affecting nesting birds that might use the landscaped portions of the right-of-way, tree removal would not occur between February 15 and September 1. If tree removal is required during the nesting season, a qualified biologist would conduct a focused survey for active bird nests in the trees to be removed. If any active migratory bird nests are found, Caltrans shall coordinate with the California Department of Fish and Wildlife to determine an appropriate buffer based on the habits and needs of the species.

- Impacts to native oak trees greater than 6 inches diameter at breast height shall be offset by replacement planting within the project limits. Replacement plantings shall be achieved using a 3:1 ratio for each 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 right-of-way make this an appropriate number for this project. Replacement plantings will be detailed in the Caltrans landscape architecture Landscape Planting Plan. Oak tree plantings would be monitored to ensure successful re-vegetation 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.

Wetlands

All design alternatives have been modified to minimize effects to wetlands.

Table F.2 presents compensatory mitigation for permanent impacts at a 3:1 ratio for each alternative. Restoration in areas of temporary impacts would also be required.

Table F.2 Compensatory Mitigation for Permanent Wetland Impacts (acres)

Wetland Type	Alternative 1	Alternative 2	Alternative 3
U.S. Army Corps of Engineers and Coastal Zone Wetlands	0.003	0.036	0.003
Coastal Zone Wetlands	0.687	1.209	0.687

Source: Addendum Natural Environmental Study, July 2014; "South Coast 101 HOV Project"

The U.S. Army Corps of Engineers and the California Coastal Commission have a "no net loss of wetlands" policy and require compensatory mitigation for wetlands impacts. Impacts would be minimized at all jurisdictional areas. Wetlands impacts would be offset by constructing seasonal wetlands onsite to the extent practicable. All design alternatives were modified to minimize effects to wetlands.

- Human-made wetlands (roadside drainage features) would be replaced with more human-made wetlands. Sites chosen for mitigation would be within the project limits where feasible. 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 right-of-way to replace most or all of the coastal zone wetland losses onsite with vegetated ditches or bio-swales. Grasses and other low-growing vegetation would provide the greatest filtering capacity. Plantings should include native species such as horsetail, sedge, mugwort, marsh baccharis, and blackberry

- Caltrans expects to mitigate at a 3:1 ratio for permanent impacts to coastal zone and Army Corps wetlands. The compensation ratio required for impacts is based on resource agency recommendations as well as the function and quality of wetland habitat that needs to be replaced. With the exception of creeks, coastal wetlands to be affected by the project are manmade drainage features adjacent to U.S. 101 that are periodically disturbed for maintenance purposes.

- Offsite mitigation is proposed in the Carpinteria Salt Marsh if all mitigation cannot occur onsite. 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. 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 would focus on enhancing the function and habitat value of this important natural resource.

- All human-made 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. would be re-graded, as needed, to reflect their pre-existing state. Unlined channels would be stabilized according to the Caltrans National Pollution Discharge Elimination System statewide storm water permit. Caltrans would hydroseed roadside banks with native seed mix where practicable to benefit water quality by decreasing runoff and sedimentation into waterways.

- Areas that experience temporary impacts to creeks would be re-graded, as needed, to reflect their pre-existing state. All partially modified creek channels are within the active floodplain and would quickly reestablish with vegetation naturally; however, vegetation in these creek reaches would continue to be subject to maintenance by Santa Barbara County Flood Control. Native vegetation would be planted on creek banks above other waters of the U.S. where it does not conflict with flood control practices. Planting at creeks would occur in accordance with local coastal plans and would be detailed in the Caltrans landscape architecture Landscape Planting Plan.

- Removal of the concrete channel lining in Toro Canyon Creek would allow the restoration of up to 0.105 acre of creek bottom through state right-of-way. The restored channel would increase filtration capacity and groundwater recharge.

- The longer bridge spans at Arroyo Paredon Creek will be three feet wider than the current condition, resulting in a net gain of an additional 0.012 acre of natural creek bed. Expanded channels would increase filtration capacity and lower peak water velocities for migrating steelhead trout.

- At Greenwell Creek, impacts to other waters of the U.S. would be offset by enhancement of 0.145 acre of the creek south of U.S. 101. Concrete-sack and other fill material would be removed from the channel bed. Non-native plants (iceplant, arundo, and castor bean) would be removed from banks in the work area. To reduce erosion and enhance riparian habitat available for wildlife, bio-engineering techniques that incorporate arroyo willows and other native plants would be applied in and above rock slope protection along creek banks to reduce erosion and enhance riparian habitat available for wildlife. Invasive plants castor bean and arundo occur in the proposed work area and are listed on the California Invasive Plant council's Invasive Plant Inventory. Areas where non-native invasive plants are removed would be replanted with native riparian species such as 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 with native species for erosion control.

- During construction the following measures would be adhered to:

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

    - Stream diversions may be necessary at some creeks. Dewatering and diversion plans would be developed and submitted to the appropriate regulatory agencies for review.

    - Construction equipment, stockpiles, etc., would be located in upland locations that are at least 100 feet from all waterways, wetlands and riparian areas.

Migratory Birds

- To avoid impacts to nesting birds, 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 the California Department of Fish and Wildlife to determine an appropriate buffer based on the habits and needs of the species. The nest would not be removed until the young have fledged and nesting is complete.
- The Caltrans Standard Specifications for Bird Protection would be included with the project's contract.
- Non-standard Specifications for nesting swallows would be included with the project's Plans and Specifications. If construction activities occur on these structures during the swallow nesting season (March to August), 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 assessing the structure using netting or actively discourage nesting.

Double-crested Cormorants

- An environmentally sensitive area (ESA) would be established around the stand of eucalyptus trees that support active cormorant nests. The environmentally sensitive area will be delineated on project plans and demarcated in the field with environmentally sensitive area fencing prior to the start of work at this location. No equipment or personnel would be allowed within the environmentally sensitive area.
- Construction activities within 300 feet of the environmentally sensitive area, including clearing and grubbing, would be limited to September 15 through March 1 to avoid affecting 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 environmentally sensitive area during this period, a qualified biologist would be required to monitor active nests during construction work.

Threatened and Endangered Species

Steelhead Trout

- The project would temporarily affect designated critical habitat for the Southern California steelhead trout distinct population segments where U.S.

101 crosses Arroyo Paredon, Romero, and San Ysidro creeks. Temporarily affected portions of critical habitat are expected to recover to pre-project conditions using detailed grading plans, riparian area replanting, and other minimization measures. Permanent, beneficial effects of the project at Arroyo Paredon Creek will result in a gain of 0.012 acre of unlined creek bed. Widening of the creek channel by 3 feet under the highway at Arroyo Paredon Creek will result in decreased velocities at peak flows, improving conditions for migrating steelhead trout. Longer bridge spans at Romero (Picay) Creek and San Ysidro Creek would result in wider unlined channels and lower velocities at peak flow once the downstream facilities have been upgraded. Additional mitigation measures in creeks that support steelhead trout include a 3:1 ratio for replanting the riparian vegetation removed during construction. An existing stand of arundo (giant reed grass, an invasive plant), at Arroyo Paredon Creek would also be removed.

The following are other measures that would be incorporated into the build alternative:

- All work activities within or next to critical habitat creeks would take place only during the low flow period between June 1 and October 31 to avoid affecting migrating steelhead trout, unless creek channels dry earlier than June 1.
- Preconstruction educational meetings discussing steelhead and other sensitive species would be required for construction personnel prior to work in creeks.
- Water diversions will be required at Arroyo Paredon and Romero (Picay) creeks. San Ysidro Creek is typically dry at the state highway crossing by May 1 each year and remains dry until November. If water is flowing at San Ysidro Creek between June 1 and October 31, a water diversion will be required.
- Only qualified personnel authorized under a Biological Opinion shall participate in activities associated with the capture, handling, relocation and monitoring of steelhead trout. The names and credentials of personnel who want to conduct these activities shall be supplied to the National Oceanic and Atmospheric Administration National Marine Fisheries Service for its review and approval at least 15 day prior to the onset of these activities.
- Prior to construction activities, the project area shall be surveyed for the presence of special-status species, including tidewater goby and steelhead trout. Additional surveys shall be conducted upstream and downstream from

the area of direct impact in order to identify appropriate habitat for temporary fish relocation. Fish barriers shall be installed temporarily, and individuals inside the area of direct impact shall be relocated within the creek by a Service-approved fisheries biologist, as authorized under a Biological Opinion.

- During the de-watering effort, if present, steelhead trout shall be removed prior to draining the site. After barriers are constructed, steelhead trout shall be captured, transported in buckets, and released in the most appropriate habitat immediately adjacent to the dewatered area. Handling time for steelhead trout shall be minimal.
- Upon completion of construction activities each year, flow barriers shall be removed in a manner that allows flow to resume with the least disturbance to the substrate.
- All disturbance to potential steelhead trout habitat, including riparian vegetation and jurisdictional waters, shall be minimized with the use of environmentally sensitive area fencing, and all soil exposed as a result of project construction shall be revegetated using native-plant hydroseeding or live planting methods.
- If the stream substrate is altered, the substrate shall be graded or otherwise returned to preconstruction conditions or better after the work is completed.
- Any heavy equipment used in or near the creek channel shall be removed from the channel at the end of each workday.
- All material and debris related to bridge demolition and construction shall be removed from the creek channel bed and riparian zone as soon as possible and prior to November 1.
- Caltrans shall provide the final design and grading plans of the proposed actions in Arroyo Paredon, Romero, and San Ysidro creeks to the National Marine Fisheries Service within 14 calendar days prior to the beginning of construction so the Service may review and provide comments. Caltrans shall revise and resubmit the plans to the National Marine Fisheries Service within 30 calendar days of receiving the Service's comments. Caltrans must receive final National Marine Fisheries Service agreement with the design and grading plans prior to implementation of the proposed action.
- Caltrans shall obtain a topographical survey of the stream channel at each site within 30 calendar days following completion of the proposed action and

submit the results to the National Marine Fisheries as soon as they become available.

Tidewater Goby

- 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 arundo, an invasive non-native plant, at Arroyo Paredon Creek.
- The window of work for construction within or next to Arroyo Paredon Creek shall be during the low-flow period between June 1 and October 31 to reduce the potential harassment and mortality of tidewater gobies.
- Preconstruction educational meetings that discuss the tidewater goby shall be required for construction personnel prior to work in Arroyo Paredon 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 conduct these activities shall be supplied to the U.S. Fish and Wildlife Service for its review and approval at least 15 days prior to the onset of these activities.
- If water is to be pumped from work sites, pump intakes will be completely screened with wire mesh no larger than 5 millimeters to adequately prevent tidewater gobies from entering the pump system.
- During de-watering efforts, as many tidewater gobies as possible, if present, will be removed prior to draining the site. After barriers are constructed, tidewater gobies shall be captured, transported in buckets, and released into the most appropriate habitat immediately adjacent to the de-watered area. If a beach seine is used, it must be pulled to shore in a deliberate manner with care being taken to avoid rolling the lead line inward. The number of tidewater gobies will be estimated prior to release. All debris and aquatic and emergent vegetation in the pumped area must be carefully inspected for tidewater gobies. As the work site is de-watered, remaining pools will be inspected for tidewater gobies. As many gobies as possible should be captured using dip nets and other appropriate tools and moved as described above. Handling time for tidewater gobies shall be as minimal as practicable.
- Upon completion of construction activities each year, flow barriers will be removed in a manner that would 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 environmentally sensitive area fencing, and all soil exposed as a result of the project shall be revegetated using native-plant hydroseeding or live planting methods.
- If the substrate of the stream is altered during work activities, the substrate shall be graded or otherwise returned to preconstruction conditions or better after the work is completed.

Invasive Species

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

- Only certified noxious weed-free erosion control materials and fill 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.

Construction Impacts

Utilities

Coordination between Caltrans and service providers would strive to ensure that utility services are not disrupted. Preconstruction utility location would be required in conjunction with service providers to avoid disruption of any utility service. Before and during construction, all utilities in conflict with the proposed project would be relocated, avoided, or protected in place. The design team would continue to minimize the need for utility relocations and reconstruction.

Traffic and Transportation/Pedestrian and Bicycle Facilities

A traffic management plan will be developed before building the project. Measures would be taken to avoid impacts to emergency services with alternate routes made available for use during construction. During all temporary closures, detour routes will be provided for vehicles, pedestrians, and bicycles. Caltrans plans to work closely with County Public Works with regard to a construction traffic management plan for neighborhood streets surrounding the Sheffield Drive interchange and with City of Santa Barbara Public Works with regard to a construction traffic management plan for neighborhood streets surrounding the Cabrillo Boulevard interchange. At the

completion stage of the project, Caltrans will evaluate local streets to determine to what extent repair or repaving is necessary and to ensure that the project meets the ADA requirements. The plan would consider phasing and scheduling associated with other construction projects in the corridor to minimize delays to the driving public.

The Traffic Management Plan for this project may include the following items:

- Public Awareness Campaign—Flyers, brochures, press releases, web site, and advertising as required informing travelers of the project.
- Construction Zone Enhanced Enforcement Plan (COZEEP)—Additional California Highway Patrol officers would be assigned to the construction zone during peak travel times to ensure construction zone safety.
- Temporary facilities—Changeable message signs and ramp-detour notices would alert travelers to road closures, detours and other pertinent information.
- Temporary access--Access would be provided to residences and businesses as necessary.
- Emergency services—Emergency services would be notified before any required roadway or highway lane closures.
- Maintenance schedule—The maintenance of traffic and sequencing of construction would be planned and scheduled to minimize traffic delays.
- Detour signs—When ramps are closed, detour signs would direct traffic to the nearest available ramp.

Cultural Resources

Caltrans concluded in a Finding of Adverse Effect (February 2011) and in a Revised Finding of Adverse Effect (September 2011) that the proposed project would have an adverse effect on the National Register-eligible Via Real Redeposited Midden. Caltrans has conducted extensive studies to characterize the location, extent, and composition of the midden deposit. Background research documented previous construction activities within the project Area of Potential Effects to assess the likelihood of finding any original ground or areas that had not been previously disturbed. The current South Coast 101 HOV Lanes project is limited to the existing state right-of-way—all of which has been highly disturbed by prior construction of the existing mainline highway and structures, as well as by utilities installation.

A thorough archaeological survey was made of the project area, and a detailed geoarchaeological model was developed to identify and test the most likely areas for any buried archaeological deposits. These comprehensive studies suggest that the National Register-eligible portion of the site is not only located below the level of proposed U.S. 101 construction but is also located outside the state right-of-way — and therefore outside the Area of Direct Impact. Although Caltrans does not anticipate impacts to the redeposited midden, we nevertheless deem it prudent to consider the remote possibility of discoveries during construction.

- Avoidance, minimization and mitigation measures for cultural resources will be carried out through the implementation of the June 20, 2013 *Programmatic Agreement Between the California Department of Transportation and the California State Historic Preservation Officer Regarding the South Coast 101 HOV Lanes Project, U.S. Route 101, Santa Barbara County, California* and the appended *Treatment and Data Recovery Plan for the South Coast 101 High Occupancy Vehicle Lanes Project, Santa Barbara County, California (See Appendix D, State Historic Preservation Officer Correspondence).*
- The eligible portion of the Via Real Redeposited Midden, located outside the Area of Direct Impact, will be protected during construction by the establishment and enforcement of an Environmentally Sensitive Area with exclusionary fencing. The Environmentally Sensitive Area will be depicted on construction plans, with no access allowed during construction. Additionally, the District 5 Environmental Construction Liaison will have a copy of the plan on file and maintain contact with the resident engineer, construction contractor, and archaeologist on Environmentally Sensitive Area compliance.
- Caltrans will prepare a technical report documenting the results of the implementation of the Data Recovery Plan. Copies of the report will be distributed by Caltrans to the State Historic Preservation Officer, the Central Coast Information Center of the California Historic Resources Information System, and to the Coastal Band of the Chumash Nation, the Santa Ynez Band of Chumash Indians, and Chumash individuals and groups participating in the consultation process.
- If Caltrans determines, during the implementation of the Data Recovery Plan, that the plan or project will affect a previously unidentified property that is categorically different from that covered in the plan, Caltrans shall address the discovery in accordance with Code of Federal Regulations Section 800.13(b).

- If human remains are discovered, State Health and Safety Code Section 7050.5(b) states that further disturbances and activities must cease in any area or nearby area suspected to overlie remains, and the county coroner would be contacted. Pursuant to State Health and Safety Code 7050.5(c), if the county coroner/medical examiner determines that the human remains are or may be of Native American origin, the Native American Heritage Commission will be contacted and the discovery will be treated in accordance with the provisions of California Public Resources Code 5097.98(a)-(d). The Native American Heritage Commission will notify the Most Likely Descendent. The District 5 or construction personnel who discovered the remains will contact the cultural resource specialist who will then work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

Water Quality/Storm Water

Standard temporary construction site and permanent design pollution prevention and permanent storm water treatment best management practices (BMPs) would be used during and after construction of the project to control potential discharges of pollutants to surface water. Best management plans should be designed with the goal of controlling general gross pollutants and/or sedimentation/siltation, depending on location. The required storm water pollution prevention plan would address all the best management plans necessary to prevent water quality impacts during construction of the project. In addition, buffers from sensitive resources such as wetlands and riparian corridors will be established throughout the project area.

Rain-event action plans and the sampling and analysis requirements would require adequate best management plans prior to any predicted rain event, along with sampling every storm water discharge location three times a day to meet specific sediment and pH-level requirements. The following measures include several that overlap with discussions in Sections 2.3.1 (Natural Communities), 2.3.2 (Wetlands and Other Waters), and 2.3.4 (Threatened and Endangered Species).

- Approved work windows—Work in creek channels shall occur between May 1 and October 31, unless creek channels dry up earlier than May 1. At Arroyo Paredon, Romero (Picay) and San Ysidro creeks, work shall be limited to June 1 through October 31 to avoid impacts to migrating steelhead trout or tidewater goby. Refer to Section 2.3.4 for more detailed information.

- Stream diversions—Diversions may be necessary in some creeks. De-watering and diversion plans will be developed and submitted to appropriate regulatory agencies for review.
- Wetland disturbance—Temporary disturbances to existing wetlands during construction shall be avoided to the maximum extent feasible. Where temporary disturbances to wetlands are unavoidable, reasonable measures to maintain the original grade and soil characteristics shall be used to prevent permanent wetland loss.
- Construction and waterways—Construction equipment, parking areas and stockpiles shall be located in upland locations that are at least 100 feet from all waterways, wetlands, and riparian areas.

Paleontology

The build alternatives are all constrained by the existing right-of-way and the laterally extensive geologic formations. Mitigation measures, specifically monitoring, salvage of fossil specimens, and data recovery during construction excavation for this project would result in the reduction of the potential adverse impact.

Paleontological mitigation for the project would require the following:

- Prior to submittal of design plans for the Coastal Development Permit process, a qualified principal paleontologist (holds an M.S. or Ph.D. in paleontology or geology, and is familiar with paleontological procedures and techniques) must be retained to review the plans. The principal paleontologist or an assigned project paleontologist would review the construction plans with proposed excavation sites and the prepared Paleontological Evaluation Report to determine which, if any, project component would involve earth-moving activities at depths sufficient to warrant monitoring and the corresponding development of a Paleontological Monitoring Plan. If monitoring is deemed necessary, the principal paleontologist would review the construction schedule to develop a monitoring schedule and compile accompanying costs. This information would be used to prepare a site-specific Paleontological Monitoring Plan, if one is determined necessary for reducing adverse environmental impacts on paleontological resources to an insignificant level.
- A nonstandard special provision for paleontology mitigation must be included in the construction contract special provisions if monitoring has been determined to be necessary based on the final project design. The provision

would advise the construction contractor of the requirement to cooperate with the paleontological salvage.

- The Paleontological Mitigation Plan would include monitoring locations and procedures for data collection as indicated below:
  - Recording pertinent geographic and stratigraphic information
  - Recovery methods for both macrofossil and microfossil remains
  - Stabilization (preservation) methods for the specimens
  - Provisions for the remains to be accessioned into the collections of an appropriate repository such as the Los Angeles County Museum or University of California Museum of Paleontology
  - Preparation of a final report detailing the results of the mitigation program
- The qualified principal paleontologist would be present at pre-grading meetings to consult with grading and excavation contractors.
- Before the start of excavation, the principal paleontologist would conduct an employee environmental awareness training session for all persons involved in earth-moving for the project.
- A paleontological monitor, under the direction of the qualified principal paleontologist, would be onsite to inspect cuts for fossils at all times during original disturbance of sensitive geologic formations. Once excavation is under way, the intensity of monitoring may be reduced in areas that are not producing fossils.
- When fossils are discovered, the paleontologist (or paleontological monitor) would recover them. Construction work in these areas may be halted or diverted to allow recovery of fossil remains in a timely manner.
- Bulk sediment samples would be recovered from fossiliferous horizons and processed for micro vertebrate remains as determined necessary by the principal paleontologist.
- Fossil remains collected during the monitoring and salvage portion of the mitigation program would be cleaned and prepared to the point of identification (not exhibition), sorted and cataloged.

- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, would then be deposited in an appropriate and Caltrans-approved scientific institution with paleontological collections.
- A final report would be completed that outlines the results of the mitigation program and would be signed by the Principal Paleontologist and Professional Geologist.

Air Quality

Caltrans Standard Specification sections pertaining to dust control and dust palliative applications is a required part of all construction contracts and would effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 14 "Air Pollution Control" and Section 10 "Dust Control," require the contractor to comply with all California Air Resources Board and Santa Barbara County Air Pollution Control District rules, ordinances, and regulations.

Santa Barbara County Air Pollution Control District requires certain measures for all projects involving earth-moving activities. The first measure listed in the bullet below is required for all projects involving earth-moving activities regardless of the project size or duration. The measures are based on policies adopted in the 1979 Air Quality Action Plan for Santa Barbara County. Proper implementation of all of these measures, as necessary, is assumed to reduce fugitive dust emissions to an acceptable level and is strongly recommended for all projects involving earth moving.

PM_{10} Measures

- During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency would be required whenever the wind speed exceeds 15 miles per hour. Reclaimed water would be used whenever possible. However, reclaimed water should not be used in or around crops for human consumption.
- Minimize amount of disturbed area and reduce onsite vehicle speeds to 15 miles per hour or less.
- Equipment and materials storage sites would be located as far away as possible from residential and public park areas, schools, and other possible sensitive receptors.

- Gravel pads must be installed at all access points to prevent tracking mud onto public roads. Wheels and undercarriages of construction equipment should be washed off before leaving individual project sites. Placement of automatic wheel washing equipment at all site exit points is recommended.
- If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days would be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site would be tarped from the point of origin.
- After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, re-vegetation, or spreading soil binders until the area is paved or otherwise developed so that dust generation does not occur.
- In areas where the application of water may be impractical or not feasible, the use of chemical-based dust suppressants would be considered. Recommended areas include unpaved roads used for construction purposes, project parking areas, and equipment staging areas. The use of dust suppressants also should be considered for areas that may be susceptible to wind erosion after working hours, on weekends, or during holidays.
- Any dust, mud, or other debris tracked out from project sites onto public roads should be cleaned up immediately, with total site cleanup (including public access roads) occurring no less than daily. The use of wet vacuum street sweepers is recommended.
- The contractor or builder would designate a person to monitor the dust control program and to order increased watering, as necessary to prevent transportation of dust offsite. The individual's duties would include holiday and weekend periods when work may not be in progress. The name and telephone number of such a person would be provided to the Santa Barbara County Air Pollution Control District prior to land use clearance for map recordation and land use clearance for finish grading for the structure.
- Caltrans and its contractors would provide notification of demolitions to the Santa Barbara County Air Pollution Control District to ensure compliance with federal and local asbestos removal requirements. Notifications of demolitions must be made regardless of asbestos content and must be made prior to the start date of demolition activities.

Ozone Precursor (Nitrous Oxides and Reactive Organic Compounds)

As of June 15, 2008, fleet owners are subject to Sections 2449, 2449.1, 2449.2, and 2449.3 in Title 13, Article 4.8, Chapter 9, of the California Code of Regulations to reduce diesel particulate matter and criteria pollutant emissions from in-use off-road diesel-fueled vehicles.

The following measures shall be adhered to during project grading and construction to reduce nitrous oxides and small particulate matter ($PM_{2.5}$) emissions from construction equipment:

- All portable construction equipment shall be registered with the state's portable equipment registration program or permitted by the Santa Barbara County Air Pollution Control District by September 18, 2008.
- Diesel construction equipment meeting the California Air Resources Board's (CARB) Tier 1 emission standards for off-road heavy-duty diesel engines shall be used. Equipment meeting Tier 2 or higher emission standards will be used to the maximum extent feasible.
- The engine size of construction equipment shall be the minimum practical size.
- The number of construction equipment vehicles operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
- Construction equipment shall be maintained in tune per the manufacturer's specifications.
- Construction equipment operating onsite shall be equipped with two- to four-degree engine timing retard or pre-combustion chamber engines.
- Catalytic converters shall be installed on gasoline-powered equipment, if feasible.
- Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by the Environmental Protection Agency or California Air Resources Board (Air Board) shall be installed on equipment operating onsite.
- Diesel-powered equipment would be replaced by electric equipment whenever feasible.

- Idling of heavy-duty diesel trucks during loading and unloading shall be limited to 5 minutes; auxiliary power units will be used whenever possible.

- To the extent possible, route and schedule construction traffic to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

- Gasoline-dispensing equipment shall have local air district permits, be certified by the Air Board, and operated in accordance with local air district rules and the Air Board certification requirements. Periodic maintenance and testing are specified under the Air Board executive order that was issued for the certification and by many local air district rules. Equipment repairs and testing must be performed by trained personnel with proper certifications by the manufacturers and, depending on the air pollution control district, by the International Code Council. In addition, local air pollution control districts generally require records of all repair and testing activities to be maintained onsite.

Noise

During the construction phases of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. No adverse noise impacts from construction are anticipated because construction noise would be minimized by the following measures:

- Caltrans will consider constructing the permanent noise barriers before beginning project construction so that the barriers can reduce construction noise transmission to adjacent residents and other land uses. When it would not interfere with other construction activities, recommended permanent soundwalls would be built during the first phase of construction to protect sensitive receptors from subsequent construction noise, dust, light, and glare.

- Advanced Notice: The resident engineer shall notify the District 5 Public Information Officer to place notice of the proposed project in local news media in advance of construction. The notice will give estimated dates of construction and mention potential noise impacts.

- Public Relations: A telephone shall be installed in the Public Information Officer’s office to receive noise complaints. The telephone number shall be publicized in local newspapers, and by letter to residences near the construction area.

- Construction activities would be minimized near any residential areas during evening, nighttime, weekend, and holiday periods. Noise impacts are typically minimized when construction activities are performed during daytime hours. When possible, noisier construction tasks exceeding 87dBA within 50 feet of residential areas would be limited to weekdays from 7:00 a.m. to 5:00 p.m. It should be noted, however, that some nighttime construction is necessary to avoid major traffic disruption.

- In the case of construction noise complaints by the public, the construction manager would be notified and the specific noise-producing activity may be changed, altered, or temporarily suspended. District noise staff would be consulted if specific noise-producing activities cannot be adequately reduced in the field.

- All equipment would have sound-control devices no less effective than those provided on the original equipment. All equipment shall operate with muffled exhaust.

- When feasible, the use of loud sound signals such as back-up warning buzzers or alarms would be avoided in favor of light warnings. The exception would be those cases required by safety laws for the protection of personnel.

- As directed by the Caltrans resident engineer, the contractor will implement appropriate additional noise mitigation measures such as notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

- Temporary barriers would be used, if needed, to protect residential areas from excessive construction noise generated by such items as compressors, generators, pneumatic tools, and jackhammers. Noise barriers can be made of heavy plywood, moveable insulated sound blankets, or other best available control techniques.

- Each internal combustion engine, used for any purpose on the job, or related to the job, must be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine will be operated on the jobsite without an appropriate muffler.

Vibration

- Avoiding the adverse vibration effects caused by planned construction activities and subsequent highway operations involves informing the public of the potential for these effects and using physical methods to reduce vibration impacts. Information disseminated to the public about the kinds of equipment and expected noise levels and durations would help to forewarn potentially affected neighbors about the temporary inconvenience. In these cases, a general description of the variation of noise levels during a typical construction day would be included.

- All of the structures that fall within the established buffer zones would have site-specific low-vibration construction methods employed to ensure there are no structural impacts caused by construction-induced vibration. Mobile homes, however, do not have rigid foundations and are built to withstand the type of vibration typical of soundwall construction. There is little potential for vibration-related impacts to these structures.

- A Vibration Reduction Plan would be prepared to address potential effects of construction vibration. In all cases where properties fall within the established buffer zones, impacts from vibration would be avoided by using alternative construction methods near susceptible structures. Elsewhere, minimization measures to reduce the effects would be developed and included in the plan.

- Every attempt should be made to reduce the adverse vibration effects from construction activities through the use of modern techniques, procedures, and products. The following steps would be taken in development of the location-specific Vibration Reduction Plan:

    - Identify potential problem areas surrounding the localized project work area.
    - Determine existing conditions before construction begins.
    - Notify nearby residents and property owners that a vibration-generating activity is imminent.
    - Inform the public about the project and potential vibration-related consequences.
    - Schedule work to reduce adverse effects.
    - Design construction activities to reduce vibration.

- Monitor and record vibration from the activity if necessary.
- Respond to and investigate complaints.

- To reduce the effects of construction vibration from pile driving, structure demolition, and pavement breaking for vibration sensitivity zones at 100-foot and 300-foot intervals, the following measures would be included in the Vibration Reduction Plan:
  - Through the local news media and by mail, notify residents within 300 feet of areas where construction activities and pavement breaking would take place at least two weeks in advance of the proposed activity. Residents may wish to secure fragile items that could be damaged by shaking.
  - Arrange for motel rooms for residents living adjacent to the proposed activity when protracted vibrations approaching 0.20 inch per second are expected at their residences at night.
  - Monitor and record peak particle velocities near identified sensitive receptors while the highest vibration-producing activities are taking place (see Appendix A in the Vibration Study).
  - Use rubber-tired vehicles instead of tracked vehicles, when possible, near vibration-sensitive areas.
  - Assure that asphalt paving and bridge forms are smoothed to specified tolerances, especially where there is heavy truck traffic near residences.
  - Perform activities most likely to propagate objectionable vibrations during the day, or at least before most residents retire for the night.
  - Restrict pavement breaking to daylight hours.
  - Conduct pile driving, as much as possible, during daylight hours.
  - Phase demolition, earth-moving, and ground-disturbing operations so as not to occur in the same time period. Unlike noise, the total vibration level produced could be substantially less when each vibration source operates separately.
  - Use of Standard-Plan cast-in-drill-hole piles, trench footings, or spread footings are the preferred foundations for locations requiring low-intensity vibration construction (Peak Particle Velocity not to exceed).

Carpinteria

Northbound - Post Mile 3.31to 3.46 <0.25 in/sec at buildings
Northbound - Post Mile 3.66 to 3.73 <0.50 in/sec at buildings
Northbound - Post Mile 3.73 to 3.76 <0.25 in/sec at buildings
Northbound - Post Mile 3.76 to 3.79 <0.50 in/sec at buildings
Southbound - Post Mile 3.68 to 3.72 <0.25 in/sec at buildings
Southbound - Post Mile 3.72 to 3.74 <0.50 in/sec at buildings
Southbound - Post Mile 3.74 to 3.78 <0.25 in/sec at buildings
Southbound - Post Mile 3.90 to 3.95 <0.25 in/sec at buildings
Southbound - Post Mile 3.95 to 4.05 <0.50 in/sec at buildings

Summerland

Northbound - Post Mile 7.84 to 7.89 <0.25 in/sec at buildings
Northbound - Post Mile 7.89 to 7.94 <0.25 in/sec at buildings
Northbound - Post Mile 8.05 to 8.18 <0.25 in/sec at buildings
Northbound - Post Mile 8.20 to 8.24 <0.25 in/sec at buildings
Northbound - Post Mile 8.41 to 8.44 <0.50 in/sec at buildings
Northbound - Post Mile 8.47 to 8.53 <0.50 in/sec at buildings

Sheffield

Northbound - Post Mile 9.09 to 9.14 <0.25 in/sec at buildings
Northbound - Post Mile 9.19 to 9.23 <0.25 in/sec at buildings

Montecito/Santa Barbara

Southbound - Post Mile 9.56 to 9.59 <0.25 in/sec at buildings
Northbound - Post Mile 9.67 to 9.72 <0.25 in/sec at buildings
Northbound - Post Mile 10.18 to 10.20 <0.25 in/sec at buildings
Southbound - Post Mile 10.12 to 10.59 <0.25 in/sec at buildings
Southbound - Post Mile 10.59 to 10.64 <0.50 in/sec at buildings

Cumulative Impacts

Refer to the specified pages in this appendix for appropriate measures to address the following concerns relative to cumulative impacts:

Traffic and Transportation and Pedestrian/Bicycle - See pages F-2 and F-25

Water Quality and Storm Water Runoff - See pages F-7, F-8, F-9, F-11, F-27, and F-28

Biological Resources:

Wetlands - See pages F-17, F-18, and F-19

Threatened and Endangered Species - See pages F-21, F-22, and F-23

Visual/Aesthetics

The following minimization and mitigation measures, combined with proposed project features such as replacement landscaping and aesthetic treatments to walls, would lessen the adverse cumulative visual change to the corridor. However, because of the alteration of scale, increase of hard surface, and loss of vegetative character, substantial adverse visual cumulative impacts would remain.

- All soundwalls shall include aesthetic treatment such as texture and/or color to blend with the community character.
- To avoid blocking prime ocean views, it is recommended the following soundwalls not be built in Summerland:
  - Along northbound U.S. 101 from about 200 feet west of Greenwell Road to the Summerland Fire Station
  - Along northbound U.S. 101 about 0.2 mile east of Greenwell Road to approximately Greenwell Road
  - Along northbound U.S. 101 from the Evans Avenue undercrossing to the Evans Avenue northbound on-ramp
  - Along northbound U.S. 101 from the beginning of the Evans Avenue northbound on-ramp to about 50 feet west of the beginning of the Evans Avenue northbound on-ramp
- To balance the need for noise attenuation and maintaining partial ocean views, a clear panel should be used along the top portion (10 feet or more above the ground) of a proposed soundwall in Summerland at the following location:
  - Along northbound U.S. 101, from about 50 feet west of the beginning of the Evans Avenue northbound on-ramp to about 650 feet west of the beginning of the Evans Avenue northbound on-ramp

- All proposed concrete barriers shall include aesthetic treatment such as texture and/or color appropriate for the setting.
- Drainage structures visible from public areas shall be designed to visually blend in with the setting as much as possible.
- Changes to existing bridge structures shall reflect the visual character of the existing structures in terms of materials, color, style, and the existing human scale of the area.
- Open-style bridge railing shall be used on all new or modified bridge structures, except at locations where solid barriers are needed to provide added noise attenuation.
- If new traffic management system elements such as radar, cameras, and other equipment are added to the project, all visible components shall be located in the least obtrusive locations possible and colored to reduce visibility.
- Aesthetic treatments and design such as textured surfaces, architectural relief, and color application shall be incorporated into all new bridge structures.
- Any new signage would be located so that it minimizes view blockage of the Pacific Ocean to the greatest extent feasible, considering the necessary function of the sign.
- All new lighting shall minimize excess light and glare by careful placement of the poles, height and position of luminaires, and the use of shielded lenses where feasible.
- All areas where existing ramps and other paved surfaces are removed and where new landscaping is proposed shall be made suitable for planting.
- Existing trees and shrubs shall be preserved to the greatest extent possible.
- Existing healthy palm trees that would be affected by the project shall be transplanted to other areas within the project where feasible.
- Planting shall be included with all soundwalls to the greatest extent possible.
- Planting shall be included with all retaining walls to the greatest extent possible.
- New landscaping shall minimize view blockage of the Pacific Ocean.
- Plants with the potential of becoming skyline trees would be used as much as possible without blocking views of the Pacific Ocean.

- Existing Memorial Oaks would be preserved to the greatest extent feasible respective of the selected project alternative.
- All new oak trees planted as part of the Memorial Oak tree mitigation measure shall be propagated from the existing Memorial Oak trees.
- All new non-oak planting near the Memorial Oaks shall be species that are easily differentiated from the Memorial Oaks, in terms of their visual character (form, size, color, and or texture).
- Concrete median barrier and new soundwalls in the immediate vicinity of the Memorial Oaks shall include aesthetic treatment unique to the Memorial Oaks area.
- The landscaping plan shall include historically successful plant species throughout the corridor.
- All aesthetic planting shall use larger-container-size plant material where appropriate. Trees shall be planted, at minimum, from 15-gallon containers.
- All permanent storm water treatment measures would be designed to visually fit with the ornamental or natural landscaped roadsides to the greatest extent feasible considering their intended function. Swales, ditches and basins should appear as natural as possible. Built structures would be architecturally treated, colored or hidden from view with planting.

Greenhouse Gas Emissions

The following measures will also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

- Caltrans Standard Specification Provisions restrict idling time for lane closure during construction to 10 minutes in each direction; in addition, the contractor must comply with Santa Barbara County Air Pollution Control District's rules, ordinances, and regulations in regard to air quality restrictions.
- The project would incorporate the use of energy-efficient lighting, such as LED (light-emitting diode) traffic signals.
- Initially, mature landscaping will be removed where necessary to construct the project. However, planting will occur to offset this removal.
- Disturbed areas will be planted with a variety of native and drought-tolerant trees and shrubs in ratios sufficient to replace the air quality and cooling benefit

of trees removed by construction of the project. Any native trees removed as part of the project will be replaced at a 3:1 ratio resulting in continued increases to the biomass within the project limits. Additional trees will be planted as space allows to further increase those benefits. Street trees will be planted from large-sized containers to accelerate reestablishment of the greenhouse gas sink and to shade the pavement. Riparian planting will also be included to maintain shade along creek corridors.

- Slope, drainage channels, and other disturbed areas will be seeded with native and drought-tolerant shrubs, perennials and grasses.

To the extent that it is applicable or feasible, the following measures will be incorporated into the project:

- Compost and soil amendments derived from recycled wood products and green waste materials
- Fiber produced from recycled pulp such as newspaper, chipboard, cardboard
- Wood mulch made from green waste and/or clean manufactured wood or natural wood
- Native and drought-tolerant seed and plants species
- Irrigation controllers with “smart” irrigation technology for plants dependent on actual climate conditions
- Pesticide use and reduction goals restriction
- Fly ash in all concrete poured on the project
- Recycled water for irrigation within the Santa Barbara city limits (and elsewhere if available)

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Appendix G Potential Paleontological Sensitive Areas

The Potential Paleontological Sensitive Areas mapping was updated to be consistent with proposed project features. A description of the geologic formations was also added.

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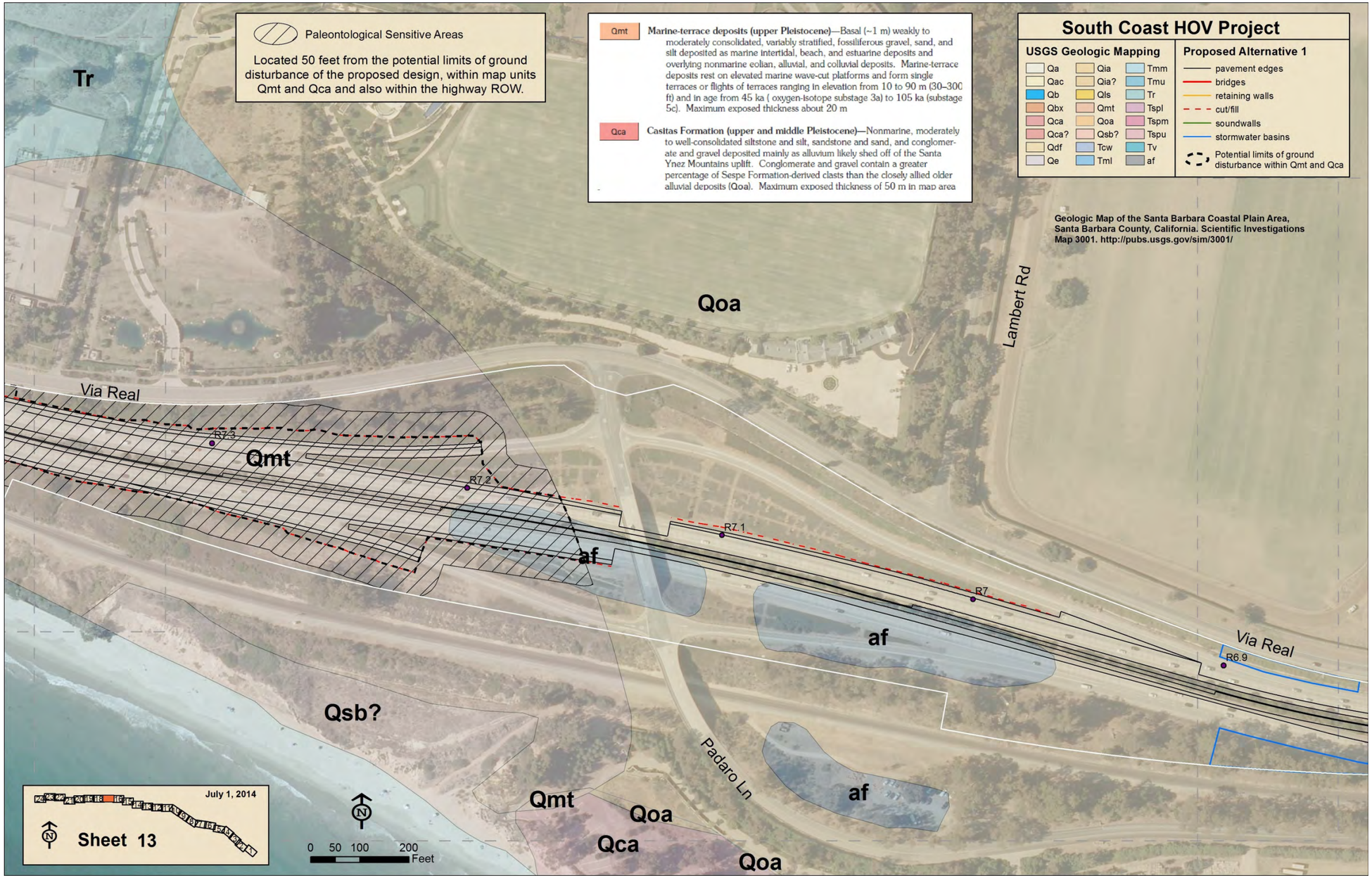
Paleontological Sensitive Areas
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Qmt
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South Coast HOV Project
USGS Geologic Mapping
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Tmm Tmu Tr Tspl Tspm Tspu Tv af
Proposed Alternative 1
pavement edges
bridges
retaining walls
cut/fill
soundwalls
stormwater basins
Potential limits of ground disturbance within Qmt and Qca
Geologic Map of the Santa Barbara Coastal Plain Area, Santa Barbara County, California. Scientific Investigations Map 3001. http://pubs.usgs.gov/sim/3001/
Tr
Qoa
Lambert Rd
Via Real
R7.3
Qmt
R7.2
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Via Real
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Padaro Ln
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Qmt
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July 1, 2014
Sheet 13
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Feet

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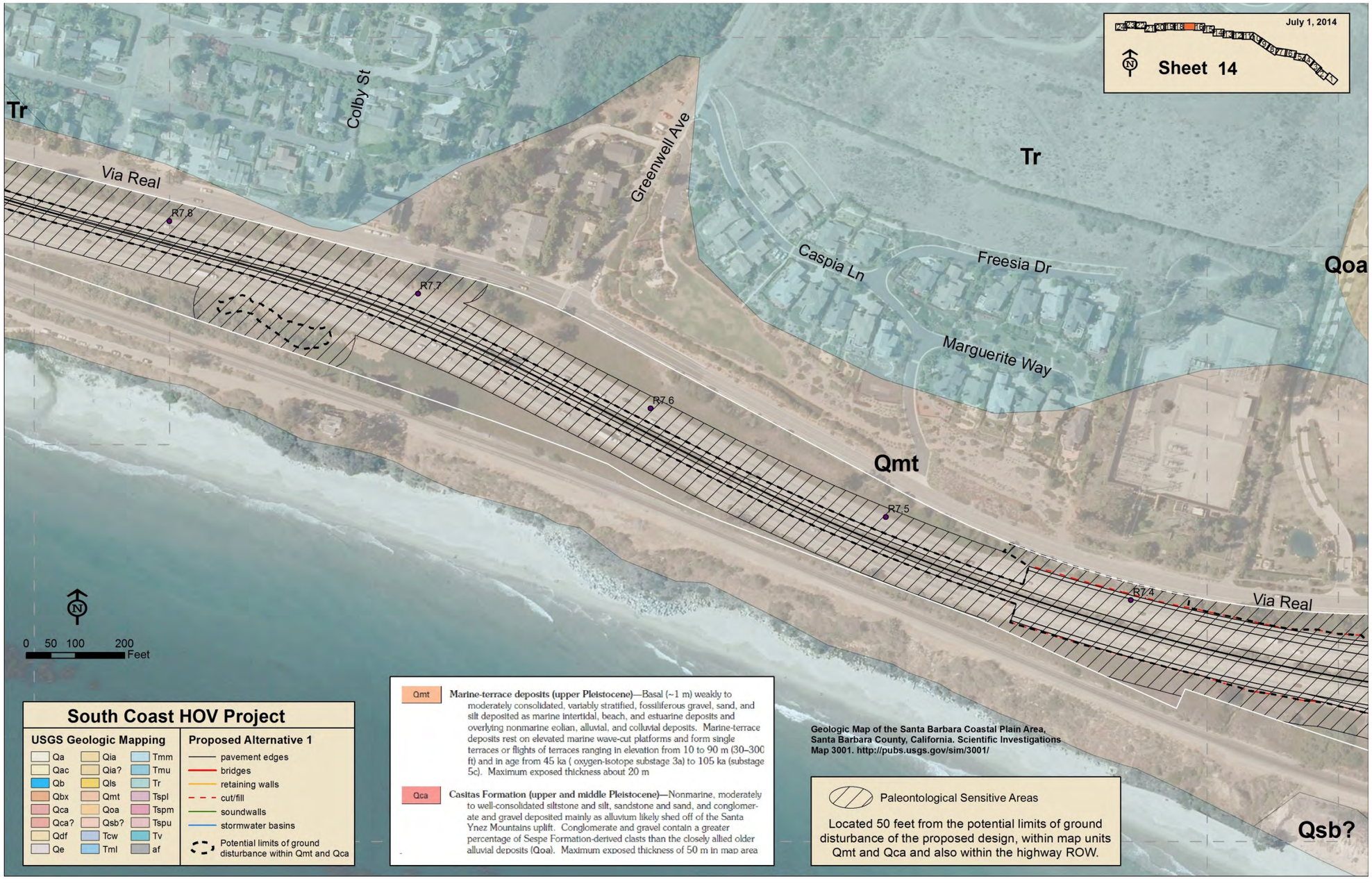
July 1, 2014
Sheet 14
Tr
Colby St
Via Real
R7.8
Greenwell Ave
Tr
Caspia Ln
Freesia Dr
Qoa
Marguerite Way
R7.7
R7.6
Qmt
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South Coast HOV Project
USGS Geologic Mapping
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Proposed Alternative 1
pavement edges
bridges
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cut/fill
soundwalls
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Potential limits of ground disturbance within Qmt and Qca
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Paleontological Sensitive Areas
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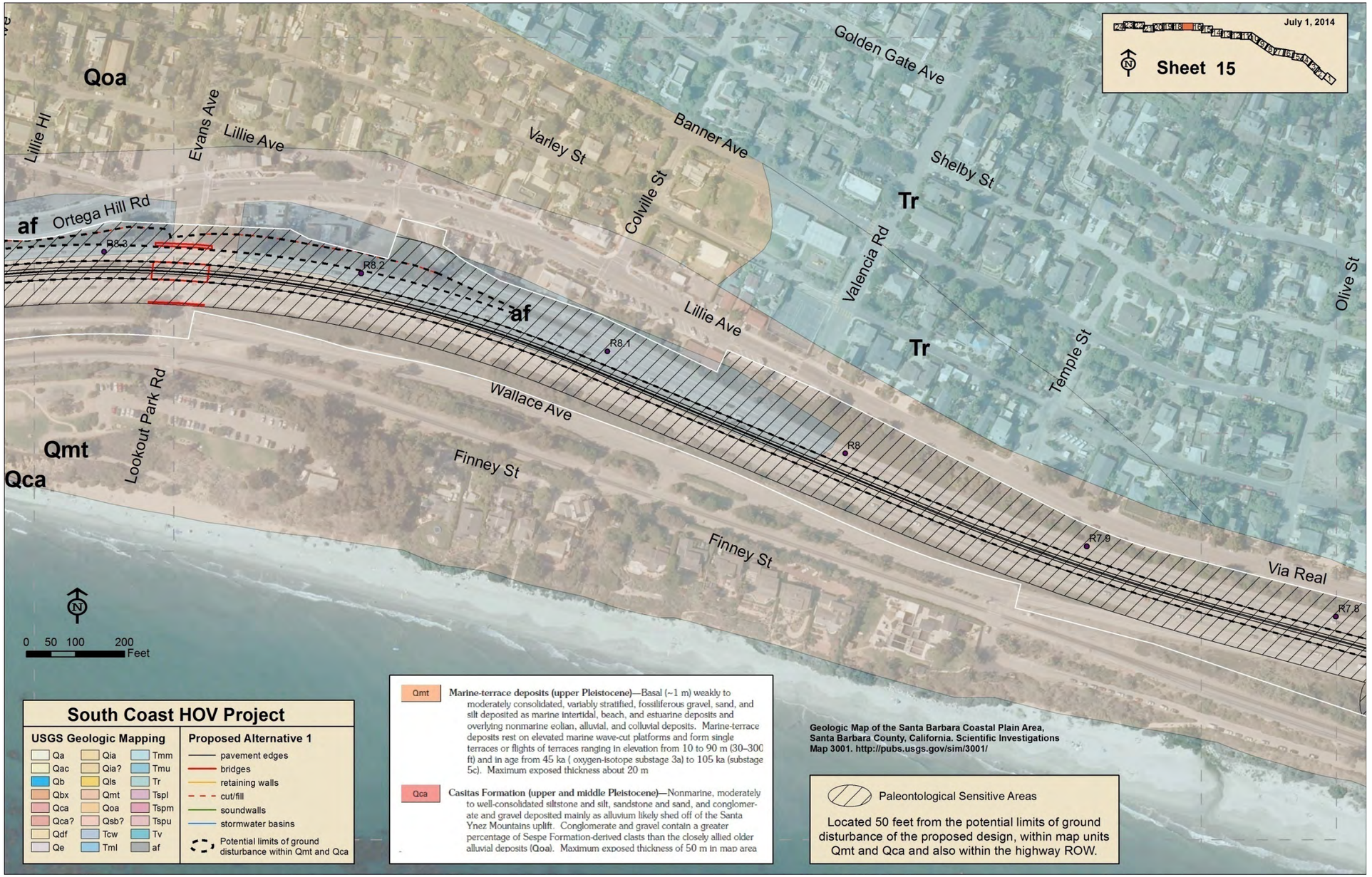
July 1, 2014
Sheet 15
Qoa
Qmt
Qca
af
Tr
Lillie Hl
Evans Ave
Lillie Ave
Varley St
Colville St
Banner Ave
Golden Gate Ave
Shelby St
Valencia Rd
Olive St
Temple St
Ortega Hill Rd
Lookout Park Rd
Wallace Ave
Finney St
Via Real
R8.3
R8.2
R8.1
R8
R7.9
R7.8
0 50 100 200 Feet
South Coast HOV Project
USGS Geologic Mapping
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Proposed Alternative 1
pavement edges
bridges
retaining walls
cut/fill
soundwalls
stormwater basins
Potential limits of ground disturbance within Qmt and Qca
Qmt Marine-terrace deposits (upper Pleistocene)—Basal (~1 m) weakly to moderately consolidated, variably stratified, fossiliferous gravel, sand, and silt deposited as marine intertidal, beach, and estuarine deposits and overlying nonmarine eolian, alluvial, and colluvial deposits. Marine-terrace deposits rest on elevated marine wave-cut platforms and form single terraces or flights of terraces ranging in elevation from 10 to 90 m (30–300 ft) and in age from 45 ka (oxygen-isotope substage 3a) to 105 ka (substage 5c). Maximum exposed thickness about 20 m
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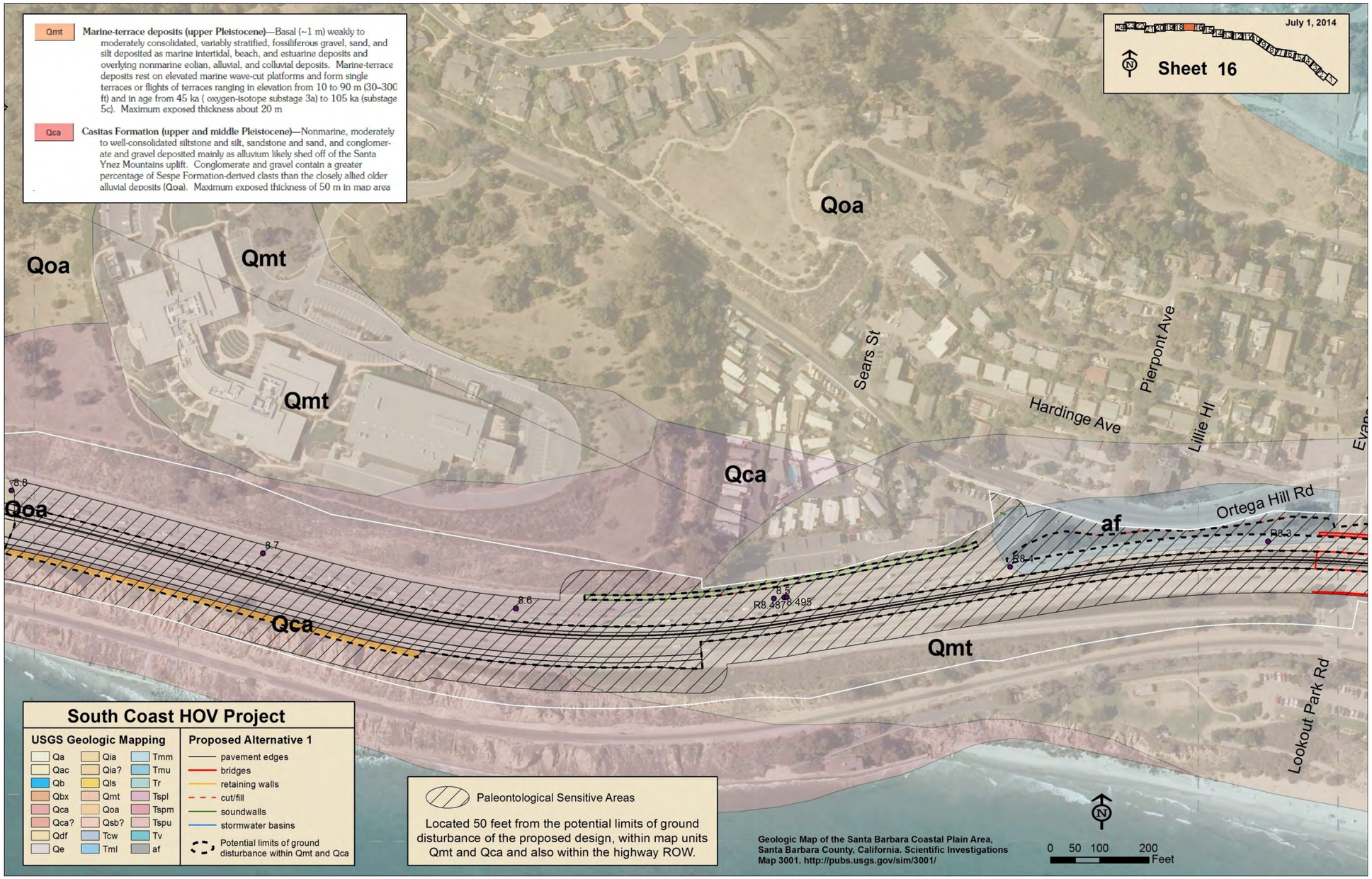
Qmt
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July 1, 2014
Sheet 16
Qoa
Qmt
Qca
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Sears St
Hardinge Ave
Pierpont Ave
Lillie Hl
Ortega Hill Rd
Lookout Park Rd
8.8
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South Coast HOV Project
USGS Geologic Mapping
Qa Qac Qb Qbx Qca Qca? Qdf Qe
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Tmm Tmu Tr Tspl Tspm Tspu Tv af
Proposed Alternative 1
pavement edges
bridges
retaining walls
cut/fill
soundwalls
stormwater basins
Potential limits of ground disturbance within Qmt and Qca
Paleontological Sensitive Areas
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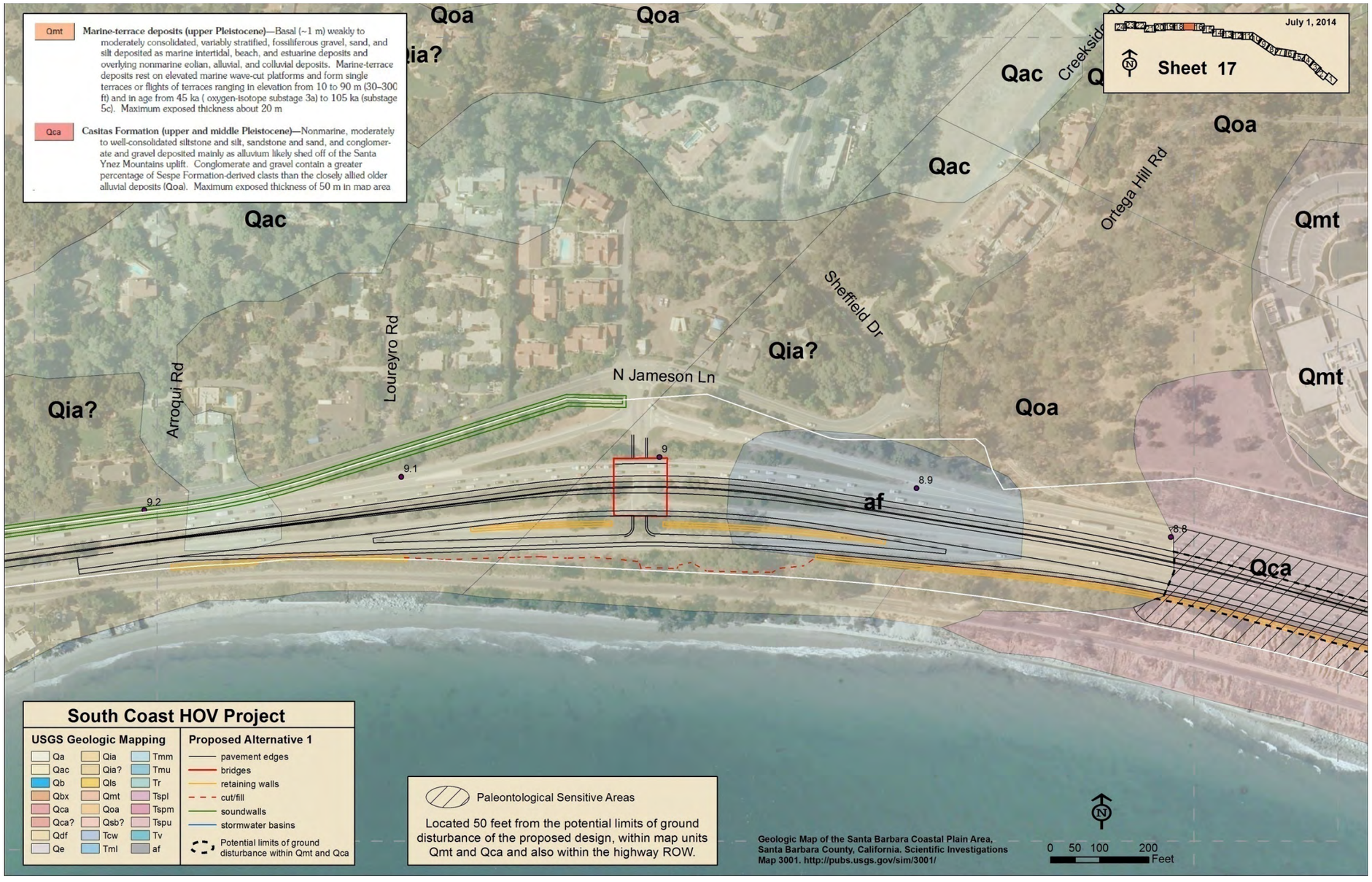
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July 1, 2014
Sheet 17
Qoa
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Qia?
Qmt
Qca
af
Ortega Hill Rd
Sheffield Dr
Loureyro Rd
Arroqui Rd
N Jameson Ln
9
9.1
9.2
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South Coast HOV Project
USGS Geologic Mapping
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Tmm Tmu Tr Tspl Tspm Tspu Tv af
Proposed Alternative 1
pavement edges
bridges
retaining walls
cut/fill
soundwalls
stormwater basins
Potential limits of ground disturbance within Qmt and Qca
Paleontological Sensitive Areas
Located 50 feet from the potential limits of ground disturbance of the proposed design, within map units Qmt and Qca and also within the highway ROW.
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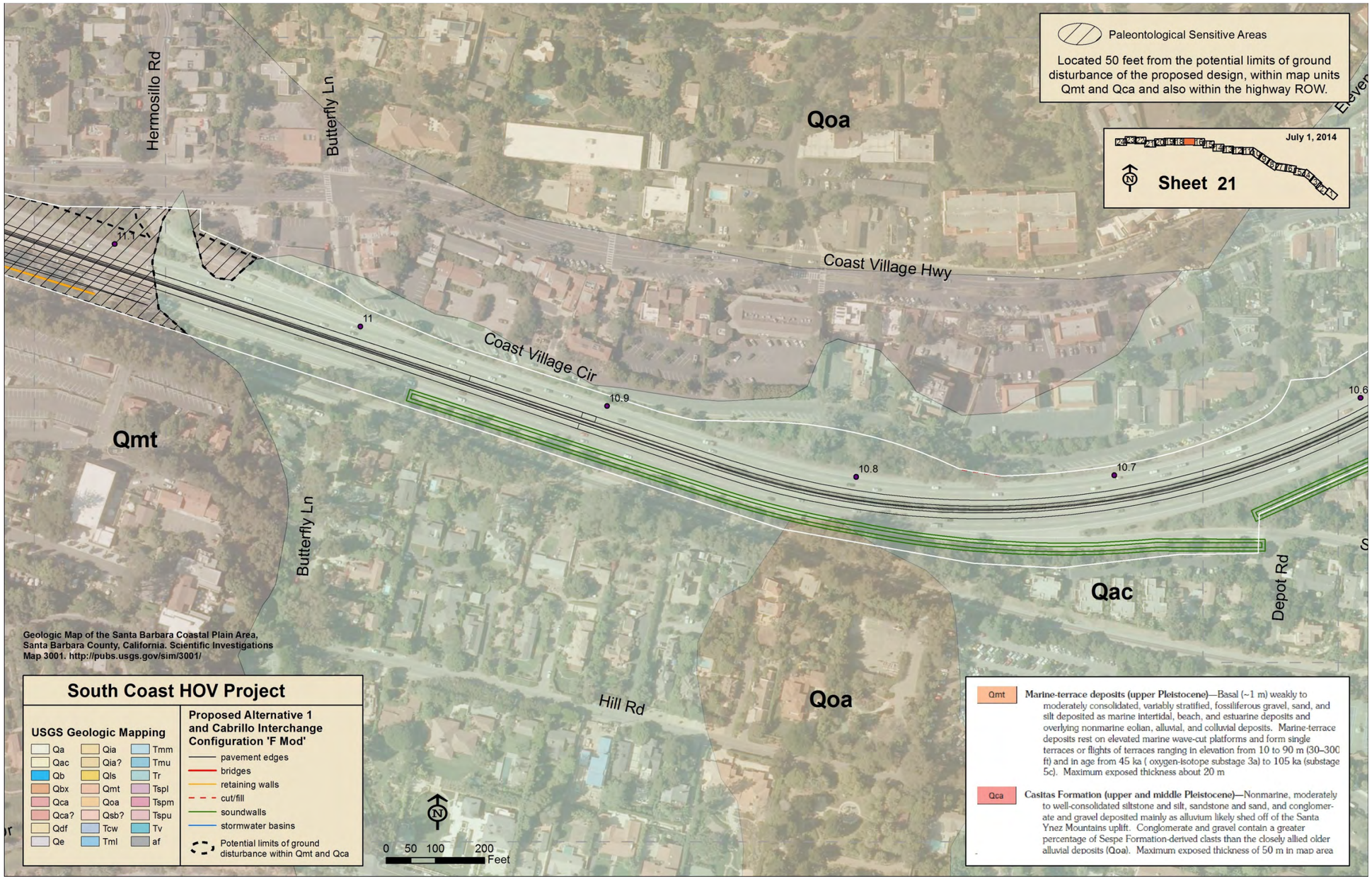
Paleontological Sensitive Areas
Located 50 feet from the potential limits of ground disturbance of the proposed design, within map units Qmt and Qca and also within the highway ROW.
July 1, 2014
Sheet 21
Hermosillo Rd
Butterfly Ln
Coast Village Hwy
Coast Village Cir
Qoa
Qmt
Qac
Hill Rd
Depot Rd
11.1
11
10.9
10.8
10.7
10.6
Geologic Map of the Santa Barbara Coastal Plain Area, Santa Barbara County, California. Scientific Investigations Map 3001. http://pubs.usgs.gov/sim/3001/
South Coast HOV Project
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Proposed Alternative 1 and Cabrillo Interchange Configuration 'F Mod'
pavement edges
bridges
retaining walls
cut/fill
soundwalls
stormwater basins
Potential limits of ground disturbance within Qmt and Qca
0 50 100 200 Feet
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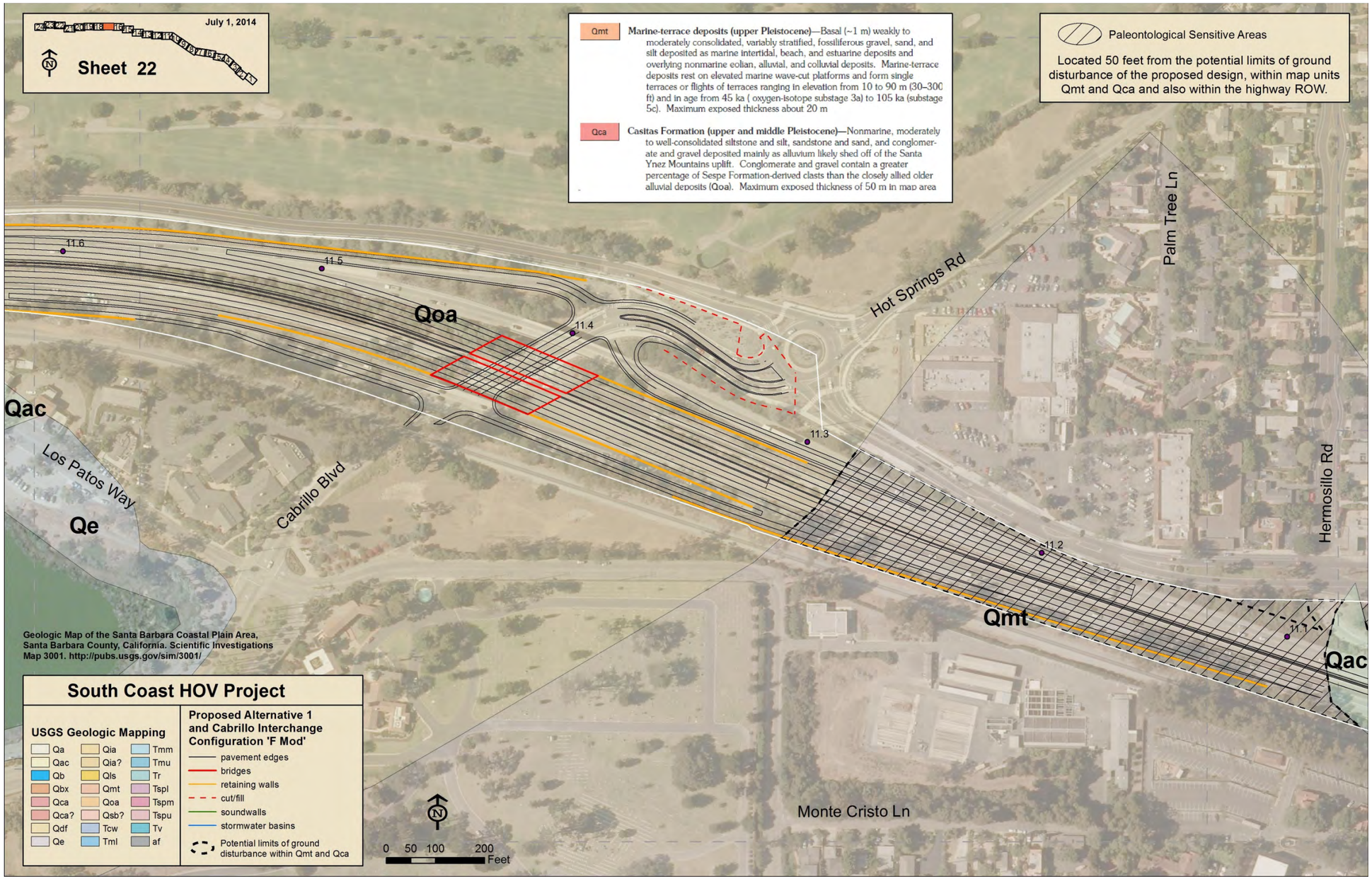
July 1, 2014
Sheet 22
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11.6
11.5
11.4
11.3
11.2
11.1
Qoa
Qac
Qe
Qmt
Qac
Hot Springs Rd
Palm Tree Ln
Hermosillo Rd
Los Patos Way
Cabrillo Blvd
Monte Cristo Ln
Geologic Map of the Santa Barbara Coastal Plain Area, Santa Barbara County, California. Scientific Investigations Map 3001. http://pubs.usgs.gov/sim/3001/
South Coast HOV Project
USGS Geologic Mapping
Qa Qac Qb Qbx Qca Qca? Qdf Qe Qia Qia? Qls Qmt Qoa Qsb? Tcw Tml Tmm Tmu Tr Tspl Tspm Tspu Tv af
Proposed Alternative 1 and Cabrillo Interchange Configuration 'F Mod'
pavement edges
bridges
retaining walls
cut/fill
soundwalls
stormwater basins
Potential limits of ground disturbance within Qmt and Qca
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Appendix H Biological Coordination

Two Biological Opinions and one Department of Army Corp's of Engineers Jurisdictional Determination are included in this appendix.

- A Biological Opinion for Tidewater Goby was issued by the U.S. Fish and Wildlife Service for the proposed project on August 6, 2012. The document is included in its entirety.

  Provided first is a letter issued by U.S. Fish and Wildlife Service on August 26, 2013 related to proposed revised critical habitat for endangered tidewater goby.

- A Biological Opinion for steelhead trout (Southern California Distinct Population Segment) was issued by the NOAA National Marine Fisheries Service for the proposed project on September 30, 2013. The document is included in its entirety.

- An approved Jurisdictional Determination by the Department of Army Corp's of Engineers for the South Coast 101 HOV Project was submitted to Caltrans on August 29, 2012. This determination was to confirm there are jurisdictional waters of the United States as well as non-jurisdictional aquatic resources on the project site.

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:
08EVEN00-2013-F-0355

August 26, 2013

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

Subject: Confirmation of the Biological and Conference Opinions for the South Coast 101 HOV Project, Santa Barbara County, California (File Number 08EVEN00-2013-F-0355) (8-8-12-F-13)

Dear Ms. Robertson:

This letter is in response to your request, dated July 22, 2013, for confirmation of the conference portion of the biological and conference opinion 8-8-12-F-13 as a biological opinion. The conference opinion addressed the effects of the proposed South Coast 101 High Occupancy Vehicle (HOV) project in Santa Barbara County, California on the proposed revised critical habitat for the endangered tidewater goby (*Eucyclogobius newberryi*). Confirmation is needed because revised critical habitat for the tidewater goby was designated on February 6, 2013.

We do not anticipate any effects of the proposed action on the revised critical habitat for tidewater goby beyond those analyzed in the biological and conference opinion. Consequently, the Service hereby confirms the conference opinion as a biological opinion.

If you have any questions, please contact Mark A. Elvin of my staff at (805) 644-1766, extension 258.

Sincerely,

Roger P. Root
Acting Field Supervisor

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
08EVEN00-2012-F-0174

August 6, 2012

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

Subject: Biological and Conference Opinion for the South Coast 101 High Occupancy Vehicle Project, Santa Barbara County, California (8-8-12-F-13)

Dear Ms. Robertson:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological and conference opinion based on our review of the proposed South Coast 101 High Occupancy Vehicle (HOV) project in Santa Barbara County, California. The California Department of Transportation (Caltrans) proposes to add a single HOV lane in both the northbound and southbound directions and reconstruct interchanges at Sheffield Drive and Cabrillo Boulevard along an approximate 11-mile section of State Route 101 between the city of Carpinteria and the city of Santa Barbara, in Santa Barbara County, California. At issue are the effects of the proposed actions on the federally endangered tidewater goby (*Eucyclogobius newberryi*). This document also transmits our conference opinion on proposed critical habitat for the tidewater goby. Your request for formal consultation was dated February 1, 2012, and your request for conference on the proposed revised critical habitat for the tidewater goby was on March 20, 2012 (Robertson 2012a). This biological and conference opinion is issued in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

Caltrans has assumed the Federal Highway Administration's (FHWA) authority and responsibility for compliance with the National Environmental Policy Act and other environmental laws. A memorandum of understanding between the FHWA and Caltrans allows Caltrans to serve as the Federal lead agency for formal consultation on the proposed project (U.S. Department of Transportation 2007).

This biological and conference opinion was prepared using information provided in your request for consultation, your biological assessment (Caltrans 2012), various communications between Caltrans and the Service, and information in our files. A complete record of this consultation can be made available at the Ventura Fish and Wildlife Office.

CONSULTATION HISTORY

The proposed project is within the historical distributions of the federally endangered Gambel's watercress (*Rorippa gambellii* [=*Nasturtium gambelii*]), marsh sandwort (*Arenaria paludicola*), and the federally threatened California red-legged frog (*Rana draytonii*), and suitable habitat occurs within the project area for these species. Caltrans conducted surveys for these species, but none were observed (Caltrans 2012). Caltrans made a "no effect" determination for Gambel's watercress, marsh sandwort, and California red-legged frog for this proposed project. To ensure that no effect to listed species occurs, Caltrans has proposed to conduct pre-construction surveys for sensitive species, including focused surveys for Gambel's watercress and marsh sandwort by botanists with expertise with them (Robertson 2012b) to confirm no listed species are present in the area to be impacted.

BIOLOGICAL AND CONFERENCE OPINIONS

DESCRIPTION OF THE PROPOSED ACTION

Caltrans proposes to widen State Route 101 to three lanes in each direction between 0.22 mile south of the Bailard Avenue overcrossing in the City of Carpinteria and Sycamore Creek in the City of Santa Barbara (Figure 1). A single HOV lane would be added in both the northbound and southbound directions. Interchanges would be reconstructed at Sheffield Drive and Cabrillo Boulevard and bridges would be replaced at Arroyo Parida [Arroyo Paredon], Toro Canyon, Romero (Picay), Oak, and San Ysidro Creeks and widened at Franklin and Santa Monica Creeks. Other various bridge structures and interchanges, not crossing drainages, would be replaced, modified, or widened. Work would be confined primarily to the existing Highway Right-of Way (ROW) as it travels through the urban environments in the cities of Santa Barbara, Montecito, Summerland and Carpinteria. Caltrans anticipates that the entire project would occur within a 269-acre area and that construction activities would begin between 2015 and 2017.

General Design Features
The proposed project would include the following actions:

- Add an additional lane in each direction on Route 101 to provide for a part time, continuous access HOV facility within the project limits.
- Replace bridge structures at: Arroyo Parida, Toro Canyon, Romero, Oak, and San Ysidro Creeks.
- Remove the channel lining at Arroyo Parida Bridge along Highway 101.
- 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.

- 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 (1,550 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 (Post Mark (PM) 1.6).

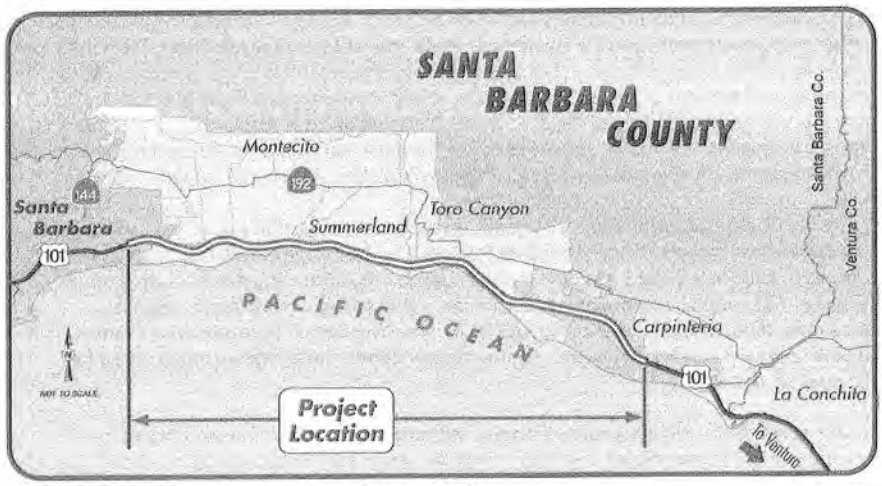

Figure 1. Project Location Map (Caltrans 2012)

Fencing would be installed throughout the project area to clearly define project limits and protect sensitive areas within the project to limit construction activities and protect habitats of concern, including riparian habitat. This fencing would be delineated on the project plans and established in the field prior to beginning any construction activities.

Proposed Project Schedule
The proposed project is expected to be implemented 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. Work in the Arroyo Parida Creek channel would occur between June 1 and October 31 to minimize potential impacts to migrating steelhead trout (*Oncorhynchus mykiss*) and tidewater goby. Tree removal throughout the project would occur between September 1 and February 15 to avoid impacts to nesting birds.

Proposed Work in Arroyo Parida Creek
Caltrans is proposing to replace the existing parallel Arroyo Parida Creek bridges with a single two-span structure that would accommodate three lanes of traffic in each direction and remove the channel lining at this bridge along Highway 101. The new bridge structure would be approximately 80 feet long and 173 feet wide, with a span approximately twice as long as the existing bridges to meet 25-year flood flow requirements. Underneath the bridge structure, the natural bottom creek channel would be widened by 40 feet. The wider bridge deck over the expanded channel would be supported by instream piers. Banks of the creek would continue to consist of concrete walls, and the streambed would consist of natural substrates. The creek bed would be graded to include a low flow channel per hydraulic design plans. Caltrans expects that the bridge replacement at Arroyo Parida Creek would result in approximately 0.156 acre of temporary impacts to Waters of the U.S. within the creek channel, 0.035 acre of temporary impacts to riparian vegetation, and 0.013 acre of channel that would be permanently shaded. The expanded channel would result in a gain of approximately 0.160 acre of natural creek bed.

Caltrans expects that the bridge replacement would be constructed in two stages and would take up to two seasons (June through October) to complete. The staging sequence is expected to proceed as follows: Stage 1 - middle section; Stage 2 - upstream and downstream sections. Highway 101 would be open during construction. Work within creek banks, including temporary dewatering, would be restricted to the low flow period from June 1 to October 31 to minimize effects to tidewater goby. Approximately 250 linear feet of the creek would be temporarily dewatered.

Bridge construction would consist of staging equipment and material in preparation for commencement of dewatering activities. Once the diversion has been installed, demolition of a portion of the structure would begin using an excavator with a hydraulic breaker. After the demolished portion of the existing structures is removed, construction of the pier and abutments would begin, which would include excavating the banks below the level of the streambed. Following this, construction of the bridge deck that includes falsework and pouring of concrete would begin. Upon completion of each stage, all construction debris would be removed from the channel. Disturbed areas would be stabilized using appropriate Best Management Practices

(BMPs) according to Caltrans' BMP Manual (Caltrans 2003) and the water diversion would be removed.

Avoidance and Minimization Measures

- Construction within Arroyo Parida Creek will be restricted to the low flow period between June 1st and October 31st to avoid the migration period for adult steelhead and to minimize impacts to tidewater goby.
- Only qualified personnel authorized under the Biological Opinion shall participate in activities associated with surveys, capture, handling, and relocation of tidewater goby. The names and credentials of personnel who desire to conduct these activities shall be supplied to the Service for their review and approval at least 30 days prior to the onset of these activities. The Service-approved biologist will monitor the area of direct impact (ADI) during all phases of construction that have the potential to affect tidewater goby and proposed critical habitat.
- Prior to construction activities, the project area will be surveyed for the presence of special-status species, including tidewater goby and steelhead because: 1) Caltrans does not anticipate construction to begin until between 2015 and 2017, and 2) tidewater goby and other species can occur in different areas over stretches of time like this. Additional surveys will be conducted up and downstream from the ADI in order to identify appropriate habitat for temporary fish relocation. Fish barriers will be installed temporarily and individuals present inside the ADI will be relocated within the creek by a Service-approved fisheries biologist, as authorized under a Biological Opinion. The names and credentials of personnel requested to conduct these activities shall be supplied to staff at the Ventura Office of the U.S. Fish and Wildlife Service for review and approval at least 30 day prior to the onset of these activities.
- To minimize potential disturbance during construction, the limits of work in creek areas will be delineated on project plans and marked in the field with ESA fencing. ESA fencing will be installed throughout areas of the project to delineate construction boundaries and protect sensitive habitats.
- No work will be performed in a wetted stream channel. A water diversion will be installed at the beginning of the construction window (June 1) or after and prior to any work in the creek. It will remain in place until October 31 or when construction in the creek is finished for the season. The water in Arroyo Parida Creek will be diverted using a corrugated pipe during construction activities. If water is to be pumped around work sites, pump intakes will be completely screened with wire mesh not larger than 0.08 inch to prevent tidewater gobies from entering the pump system.
- During the dewatering effort, if present, tidewater goby shall be removed prior to draining the site. After barriers are constructed, tidewater goby shall be captured, transported in buckets, and released in the most appropriate habitat immediately adjacent to the de-watered area. Tidewater goby shall be captured using dip nets and other appropriate tools and moved. Handling time for tidewater goby shall be minimized to the maximum extent practicable. Detailed records of tidewater goby handled will be kept

and reported to the Service. All debris and aquatic and emergent vegetation in the pumped area shall be carefully inspected. As the work site is dewatered, remaining pools shall be inspected for tidewater goby. If water is to be pumped around work sites, intakes shall be completely screened with wire mesh not larger than 0.08 inch to prevent tidewater goby from entering the pump system.

- All project personnel will receive environmental training that will include tidewater goby identification and natural history, protective measures, and reporting.
- Effects to downstream habitat will be avoided with the use of erosion and sedimentation Best Management Practices (BMPs) according to Caltrans' National Pollutant Discharge Elimination System (NPDES) permit (State Water Resources Control Board 1999) and Caltrans standards according to their Best Management Practices Manual (Caltrans 2003) to reduce downstream transport of construction generated particulates.
- Non-native vegetation will be removed from the ADI. Removal of existing stands of giant reed (*Arrundo donax*) on the southeast banks of Arroyo Parida Creek will be included in Caltrans landscape plans. Revegetation will be accomplished with the use of locally native species upon completion of bridge construction.
- Impacts to native riparian vegetation would be offset by replacement planting within the project limits. Replacement planting will be achieved using a 3:1 ratio for willows, coast live oaks, and western sycamores. Disturbed areas that are not replanted with riparian trees or shrubs would be stabilized and seeded with native grasses and forbs (Caltrans 2011).
- Temporary effects to water quality will be minimized by implementing the best management practices (BMPs) from Caltrans National Pollutant Discharge Elimination System statewide storm water permit (Caltrans 2003) and Caltrans anticipates that it will not use chemical herbicides (Robertson 2012c).
- Silt fence and fiber rolls will be used and to prevent excavated material and loose soil from reaching the stream. Erosion control measures will be applied where the soil surface is disturbed to control runoff and to assure that disturbed slopes do not erode.
- All disturbance to riparian vegetation and jurisdictional waters will be minimized with the use of ESA fencing. Riparian areas that are disturbed as a result of project construction shall be revegetated using native hydroseeding or live planting methods.
- Equipment storage will be located in upland areas. No equipment will be fueled or serviced within 50 feet of riparian or wetland areas.
- Replanting plans for creek locations will be reviewed by Santa Barbara County Flood Control to ensure that plantings would not impede flows within creek channels to avoid flooding. All riparian plantings would be monitored for 3 years to ensure that successful revegetation has occurred.
- Temporarily impacted portions of the creek are anticipated to recover to pre-project conditions with implementation of replanting and other measures included in this document. The new bridge structure would result in a wider creek channel at Arroyo

Parida Creek resulting in additional potential habitat for tidewater goby. Caltrans determined that this project may have a net beneficial effect at this location through improved quality of habitat through revegetation efforts and the expansion of the channel in the state ROW.

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

ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATION

The jeopardy analysis in these biological and conference opinions rely on four components: (1) the *Status of the Species*, which describes the range-wide condition of the tidewater goby the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which analyzes the condition of the tidewater goby in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the tidewater goby; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the tidewater goby; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the tidewater goby.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the current status of the tidewater goby, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the tidewater goby in the wild.

Adverse Modification Determination

These biological and conference opinions do not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied on the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in these biological and conference opinions rely on four components: (1) the *Status of Critical Habitat*, which describes the range-wide condition of proposed revised critical habitat for the tidewater goby in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the *Environmental Baseline*, which analyzes the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the PCEs and how that will influence the recovery role of the affected critical habitat units; and (4) *Cumulative Effects*, which

evaluates the effects of future non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed federal action on the proposed revised critical habitat for the tidewater goby are evaluated in the context of the range-wide condition of the proposed revised critical habitat, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCE to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the tidewater goby.

STATUS OF THE SPECIES

Tidewater Goby

The tidewater goby was listed as endangered on March 7, 1994 (59 FR 5494). On June 24, 1999, the Service proposed to remove the populations occurring north of Orange County, California, from the endangered species list (64 FR 33816). In November 2002, the Service withdrew this proposed delisting rule and determined it appropriate to retain the tidewater goby's listing as endangered throughout its range (67 FR 67803). We originally designated critical habitat for the tidewater goby on November 20, 2000 (65 FR 69693); however, in January 2008, we revised the designated critical habitat (71 FR 68914). We proposed a revised critical habitat designation for tidewater goby on October 19, 2011 (76 FR 64996). Critical habitat is designated and revised critical habitat is proposed in Santa Barbara County. Critical habitat is not designated within action area, but revised critical habitat is proposed within the project area in Arroyo Parida Creek. A recovery plan for the tidewater goby was completed on December 12, 2005 (Service 2005). A 5-Year Review for the tidewater goby was completed in September 2007 (Service 2007). Unless otherwise noted, information in the following species account is summarized from the following sources: Wang (1982), Irwin and Soltz (1984), Lafferty et al. (1999a, 1999b), Swift et al. (1989, 1993, 1997), Worcester (1992), Swenson (1995, 1999), and Swenson and McCray (1996).

The tidewater goby is endemic to California and typically inhabits coastal lagoons, estuaries, and marshes, preferring relatively low salinities of approximately 12 parts per thousand (ppt). Tidewater goby habitat is characterized by brackish estuaries, lagoons, and lower stream reaches where the water is fairly still but not stagnant. They tend to be found in the upstream portions of lagoons. Tidewater gobies can withstand a range of habitat conditions and have been documented in waters with salinity levels that range from 0 to 42 ppt, temperatures from 46 to 77 degrees Fahrenheit, and depths from approximately 10 inches to 6.5 feet.

The tidewater goby is primarily an annual species in central and southern California, although some variation in life history has been observed. If reproductive output during a single season fails, few (if any) tidewater gobies survive into the next year. Reproduction typically peaks from late April or May to July and can continue into November or December depending on the seasonal temperature and amount of rainfall. Males begin the breeding ritual by digging burrows (3 to 4 inches deep) in clean, coarse sand of open areas. Females then deposit eggs into the

burrows, averaging 400 eggs per spawning effort. Males remain in the burrows to guard the eggs. They frequently forego feeding, which may contribute to the mid-summer mortality observed in some populations. Within 9 to 10 days, larvae emerge and are approximately 0.20 to 0.27 inch in length. Tidewater gobies live in vegetated areas in the lagoon until they are 0.60 to 0.70 inch long. When they reach this life stage, they become substrate-oriented, spending the majority of time on the bottom rather than in the water column. Both males and females can breed more than once in a season, with a lifetime reproductive potential of 3 to 12 spawning events.

Tidewater gobies feed on small invertebrates, including mysids, amphipods, ostracods, snails, aquatic insect larvae, and particularly chironomid larvae. Tidewater gobies of less than 0.30 inch in length probably feed on unicellular phytoplankton or zooplankton, similar to many other early stage larval fishes.

Historically, the tidewater goby occurred in at least 135 California coastal lagoons and estuaries from Tillas Slough near the Oregon border south to Agua Hedionda Lagoon in northern San Diego County. The southern extent of its distribution has been reduced by approximately 8 miles. The species is currently known to occur in about 112 locations, although the number of sites fluctuates with climatic conditions. Currently, the most stable populations are in lagoons and estuaries of intermediate size (5 to 124 acres) that are relatively unaffected by human activities. Six regional clades based on morphological differences (Ahnelt et. al. 2004) that are supported by genetic work done by Dawson et al. (2001) have been used to define recovery units for the tidewater goby (Service 2005). The recovery plan describes 26 recovery sub-units for the tidewater goby (Service 2005).

Tidewater gobies enter the marine environment when sandbars are breached during storm events. The species' tolerance of high salinities (up to 60 ppt) for short periods of time enables it to withstand marine environment conditions where salinities are approximately 35 ppt, thereby allowing the species to re-establish or colonize lagoons and estuaries following flood events. However, genetic studies indicate that individual populations rarely have contact with other populations so natural recolonization may be rare. In Santa Barbara County during the fall of 1994, tidewater gobies were reported as common in the Santa Ynez River 4 miles upstream from the lagoon ; however, by January 1995, they were absent at the upstream sites. Tidewater gobies that are found upstream of lagoons in summer and fall tend to be juveniles. The highest densities of tidewater gobies are typically present in the fall. Vegetation is critical for over-wintering tidewater gobies because it provides refuge from high water flows.

Native predators are not known to be important regulators of tidewater goby population size in the lagoons of southern California. Rather, population declines are attributed to environmental conditions. During high flows, streams flood and breach lagoon barriers creating strong tidal conditions. As a result, tidewater goby populations plummet. Populations typically recover quickly in summer, with recorded mean densities of 54 to 323 fish per square foot. Tidewater goby densities are greatest among emergent and submerged vegetation (Moyle 2002).

The decline of the tidewater goby is attributed primarily to habitat loss or degradation resulting from urban, agricultural, and industrial development in and around coastal wetlands. Some extirpations are believed to be related to pollution, upstream water diversions, and the introduction of non-native predatory fish species, most notably, centrarchid sunfish (*Lepomis* spp.) and bass (*Micropterus* spp.). These threats continue to affect some of the remaining populations of tidewater gobies.

Proposed Revised Critical Habitat for the Tidewater Goby

The proposed revised critical habitat designation for the tidewater goby encompasses approximately 12,157 acres (76 FR 64996). In the proposed revised critical habitat rule, we proposed to designate critical habitat in 65 units in Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties, California. The currently designated revised critical habitat designation for the tidewater goby encompasses approximately 10,003 acres (71 FR 68914). In the current designated rule, critical habitat is designated in in Del Norte, Humboldt, Mendocino, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties, California. Portions of the proposed project occur within the boundaries of proposed revised critical habitat Unit SB-12, Arroyo Paredon.

The proposed revised designation is designed for the conservation of areas supporting the PCE that exists at coastal lagoons, estuaries, backwater marshes, and associated freshwater tributaries, and that are necessary to support the life history functions, of the tidewater goby.

All of the areas of proposed revised critical habitat for the tidewater goby are within the species' historical geographic range and contain the PCE to support at least one of the tidewater goby's essential life history functions. Based on our current knowledge of the life history, biology, and ecology of the tidewater goby and the requirements of the habitat to sustain the essential life history functions of this species, we have determined that the PCE for the tidewater goby consists of: (1) persistent, shallow (in the range of approximately 0.3 to 6.6 feet), still-to-slow-moving, lagoons, estuaries, and coastal streams ranging in salinity from 0.5 ppt to about 12 ppt, which provides adequate space for normal behavior and individual and population growth that contain: (a) Substrates (e.g., sand, silt, mud) suitable for the construction of burrows for reproduction; (b) Submerged and emergent aquatic vegetation, such as *Potamogeton pectinatus*, *Ruppia maritima*, *Typha latifolia*, and *Scirpus* spp., that provides protection from predators and high flow events; or (c) Presence of a sandbar(s) across the mouth of a lagoon or estuary during the late spring, summer, and fall that closes or partially closes the lagoon or estuary, thereby providing relatively stable water levels and salinity.

Recovery Plan for the Tidewater Goby

The 2005 final recovery plan for the tidewater goby states that the goal of recovery efforts is the reclassification of the species from endangered to threatened and, ultimately, delisting of the species. The recovery plan states that reclassification to threatened status may be considered when: 1) specific threats to each metapopulation, such as habitat destruction and alteration (e.g., coastal development, upstream diversion, channelization of rivers and streams, discharge of

agriculture and sewage effluents), introduced predators (e.g., centrarchid fishes), and competition with introduced species (e.g., yellowfin and chameleon gobies), have been addressed through the development and implementation of individual management plans that cumulatively cover the full range of the species; and 2) a metapopulation viability analysis based on scientifically credible monitoring over a 10-year period indicates that each Recovery Unit is viable. The target for downlisting is for individual Sub-Units within each Recovery Unit to have a 75 percent or better chance of persistence for a minimum of 100 years. Specifically, the target is for at least 5 Sub-Units in the North Coast Unit, 8 Sub-Units in the Greater Bay Unit, 3 Sub-Units in the Central Coast Unit, 3 Sub-Units in the Conception Unit, 1 Sub-Unit in the Los Angeles/Ventura Unit, and 2 Sub-Units in the South Coast Unit to individually have a 75 percent chance of persisting for 100 years.

The recovery plan states that delisting of the tidewater goby may be considered when: 1) downlisting criteria have been met; and 2) a metapopulation viability analysis projects that all recovery units are viable, as in the downlisting criterion except that the target for Sub-Units is a 95 percent probability of persistence for 100 years.

5-year Review for the Tidewater Goby

The 5-year review for the tidewater goby states that the recovery plan reflects up-to-date information; however, the 5-year review reconsiders the downlisting and delisting criteria in the recovery plan. The 5-year review states that other, currently available information on the species may also be used to determine the appropriate listing of the species under the Act. These include: the current number of occupied localities, current laws and regulations that act to protect the species, and our current understanding of threats and their impact on the tidewater goby. The 5-year review recommended that we reclassify the tidewater goby from endangered to threatened because we believed that the species was not an imminent danger of extinction. The main reason for this recommendation was that the number of localities known to be occupied had more than doubled since listing. The 5-year review also concluded that the tidewater goby may be more resilient in the face of severe drought events than believed at the time of listing. The 5-year review also stated that threats identified at the time of listing have been reduced or are not as serious as thought. Although numerous threats to the tidewater goby have been identified (e.g., non-native predation and competition, pollution, cattle grazing), information on the degree of impact these threats may have on tidewater gobies is generally lacking. According to the 5-year review, the increase in occupied localities indicates that these threats appear to not be having a major impact on the tidewater goby.

On May 18, 2010, we received a petition dated May 13, 2010, from The Pacific Legal Foundation, requesting that the tidewater goby be reclassified as threatened under the Act. Included in the petition was reference to the 5-year review of the tidewater goby's status published by the Service in 2007. We published a 90-day finding on January 19, 2011 (76 FR 3069), that stated our conclusion that the petition presented substantial scientific or commercial information indicating that the petitioned action (reclassification of the tidewater goby) may be warranted. We will announce a 12-month finding on the petition to reclassify the tidewater goby as threatened under the Act in 2012. The species currently remains listed an endangered.

ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 *Code of Federal Regulations* 402.02). For the purposes of these biological and conference opinions, we consider the action area to include the 269 acres that Caltrans anticipates will be used for construction and staging sites along the 11-mile stretch of Highway 101. Furthermore, we are including in the action area all construction and staging sites within Arroyo Parida Creek for a distance of distance of 500 feet upstream and downstream of the work area. Arroyo Parida, Toro Canyon, Romero, Oak, and San Ysidro Creeks are all within the action area and support soft bottom, hard substrate, and water column habitats. Caltrans conducted surveys for sensitive species and habitat assessments for tidewater goby, steelhead trout, California red-legged frog, southwestern pond turtle (*Emys marmorata*), two-striped garter snake (*Thamnophis hammondii)*, Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*), light-footed clapper rail (*Rallus longirostris levipes*), southwestern willow flycatcher (*Empidonax traiillii extimus*), and least Bell's vireo (*Vireo bellii pusillus*) throughout the project area (Caltrans 2012). Because no tidewater goby were found outside of Arroyo Parida Creek and Caltrans' avoidance and minimization measures for tidewater goby only apply to Arroyo Parida Creek. As described below, tidewater gobies have only been found in, and revised critical habitat has only been proposed for, Arroyo Parida Creek within the action area. Our biological and conference opinion only analyzes effects to tidewater goby and its proposed revised critical habitat within Arroyo Parida Creek.

Tidewater Goby

Arroyo Parida is a 5.4 mile-long coastal stream that flows from the steep southern face of the Santa Ynez Mountains to the Pacific Ocean. Located just northwest of Carpinteria, the creek drains an approximate 3,080-acre watershed. The upper watershed is mostly in national forest land with some rural residential areas occurring in the foothills. In its upper reaches, a debris basin is located approximately 1,000 feet upstream of the Oil Canyon Creek and Arroyo Parida Creek confluence, and it acts as a migration barrier to steelhead (Stoecker et al 2002). At Highway 192 (Foothill Road), approximately 1 mile upstream from the ocean, the concrete-lining below the highway bridge is an additional impediment to fish passage. Upstream of Highway 192, the creek possesses some riparian overstory canopy. Downstream of Highway 192, agricultural operations have compromised the riparian buffer and in some cases directly deposited sediment into the active channel. Near its outlet, Arroyo Parida Creek is channelized and constrained by development. Here, the creek flows under Via Real County Road, then under the southbound and northbound Highway 101 bridges, under a Union Pacific Railroad trestle bridge, and finally under Padaro Lane before it follows a rip-rap lined channel to the Pacific Ocean.

Habitat for tidewater gobies in Arroyo Parida Creek appears to be adequate to support foraging and breeding. The population size and distribution of tidewater gobies in the creek are unknown, including whether the population is persistent over time. Adults and juveniles of this species could use benthic open water habitat as well as emergent vegetation habitat. Distribution of

tidewater gobies in the creek is unlikely to be uniform, with differences between the open water and dense emergent vegetation. In open water, areas with anoxic bottom waters would be unsuitable for tidewater gobies, although some could use more oxygenated waters near the surface.

Proposed Revised Critical Habitat for the Tidewater Goby
In our proposed revised designation of critical habitat for the tidewater goby, we refer to Arroyo Parida Creek as Arroyo Paredon Creek and it is in Unit SB-12, Arroyo Paredon. Approximately 0.156 acre of the proposed project occurs within the proposed revised critical habitat Unit SB-12, Arroyo Paredon for tidewater goby.

Recovery Plan for the Tidewater Goby
The final recovery plan for the tidewater goby subdivided the geographic distribution of this species into six recovery units, encompassing a total of 26 sub-units defined to genetic differentiation and geomorphology. Arroyo Parida Creek is included the Sub-Unit CO3 of the Conception Recovery Unit. The CO3 Sub-Unit extends from Point Arguello to the southeastern terminus of the steep Seacliff region. This Sub-Unit is a fairly long stretch of coast and contains a large number (28) of small habitats, which are located in Santa Barbara County. Primary tasks for this Sub-Unit as recommended in the recovery plan include: 1) population monitoring; 2) substantiate Sub-Unit with genetic studies; and 3) consider recolonization if there is a 25 percent reduction in the number of inhabited locations. The available tidewater goby habitat in Arroyo Parida Creek encompasses approximately 0.2 to 1.0 acre. The final recovery plan does not specify the recovery function of Arroyo Parida Creek in Santa Barbara County.

EFFECTS OF THE ACTION

Tidewater Goby
Because tidewater goby have only been found in Arroyo Parida Creek, and it is the only portion of the action area within the proposed critical habitat designation, we are only analyzing effects to the species within Arroyo Parida Creek. Tidewater gobies have not been found in any of the other creeks within the action area, so we are not analyzing effects to the species in the creeks in those portions of the action area; however, we do not expect these effects to tidewater goby in the other creeks in the action area because they do not occur in them. Construction activities that would directly affect tidewater gobies and tidewater goby habitat that are present within the project site consist of sedimentation; de-watering or stream diversions; individuals may be injured or killed during the construction of the proposed project and during follow-up monitoring and maintenance activities; stranding resulting in desiccation, suffocation, or opportunistic predation; and the capture and the relocation of tidewater gobies from the work areas within the channel. Activities at and upstream of the Highway 101 Arroyo Parida Creek Bridge could directly affect tidewater gobies if any are present in those locations and could indirectly affect this species downstream through de-watering or altered water flows in the creek and potential releases of sediment or pollutants into the stream that affects water flows into tidewater goby habitat.

Tidewater gobies may be breeding during the proposed project, and any eggs located within the dewatering area would not be detectable. Breeding substrate composition may be altered by vegetation removal activities, and sediment deposition. Tidewater goby eggs may be smothered by increased sediment deposition. These eggs may be injured or killed during the proposed condition during vegetation removal activities. Hazardous material, such as fuels, oils, lubricants, or herbicides could enter the creek and pollute the water reducing the health and survival of tidewater gobies and even result in death. Although tidewater gobies may breed any time of the year, this impact would be minimized by the Caltrans' proposal to conduct the project in the late summer to fall when breeding activities are not at their peak. Caltrans proposes to implement BMPs in the event that an accidental spill or inadvertent discharge of hazardous material occurs.

Sedimentation that would occur during construction activities may result in tidewater goby injury, death, and lowered breeding success. Sediment may affect tidewater gobies by impairing the efficiency of their gill filaments and exposing them to higher salinities as they flee downstream. Direct effects of sedimentation include mortality, reduced physiological function, and burrow smothering. Indirect effects of sedimentation include potential alteration to the food web which could create cascading effects to higher trophic levels. A reduction in phytoplankton can be attributed to increased turbidity, which can therefore reduce zooplankton, in turn reducing benthic macroinvertebrates, and thus reducing prey available to tidewater gobies (Henley et al. 2000). These effects would be minimized because Caltrans' will implement BMPs and other minimization measures for the project according to their NPDES (Caltrans 1999) and BMP Manual (Caltrans 2003), which includes measures to minimize erosion and sedimentation, such as using sand bags, straw bales, straw wattles, or other erosion control materials during restoration to dissipate the energy of flowing water, reduce soil erosion, and prevent sediment or other materials from entering the creeks.

During construction of the proposed project, dewatering of Arroyo Parida Creek may result in the death of any tidewater gobies in the dewatered area due to stranding resulting in desiccation, suffocation, entrainment in pumps, or opportunistic predation. To minimize these effects, Caltrans has proposed to capture and relocate tidewater gobies from areas that would be dewatered (Robertson 2012c). Tidewater gobies may be injured or killed during relocation activities, from mishandling, physiological stress, or from capture and relocation equipment. To minimize these potential effects, Caltrans proposes to use personnel who are approved by the Service and have experience relocating tidewater gobies, and to follow guidelines in the Service's tidewater goby survey protocol (Service 2005). However, the potential exists that some tidewater gobies may not be located and will desiccate, or may still be killed or injured during the capture and relocation procedures despite careful procedures. Caltrans would also screen the pump intakes with wire with no greater than 0.125-inch mesh diameter should reduce the potential that tidewater gobies would be caught in the inflow (Robertson 2012c).

Construction equipment and materials that have the potential to contribute pollutants to storm water discharges include vehicle fluids (e.g., oil, grease, petroleum, coolants, etc.), raw landscaping materials and wastes (e.g., plant materials, etc.), BMP materials (e.g., sandbags, coir

fiber mats, etc.,), treated lumber, and general litter. These materials may injure or kill tidewater gobies. The release of these materials into tidewater goby habitats would be minimized by the implementation of the BMPs and minimization measures proposed by Caltrans for the site, which includes measures to minimize or avoid the release of contaminants into tidewater goby habitat and to conduct refueling at least 50 feet from the top of the bank.

Noise and vibration from work activities would likely disturb tidewater gobies to some degree; however, these effects are temporary, lasting only for the duration of the construction activities. If tidewater gobies are driven from the vicinity of the work activities, we expect that they would return upon the completion of construction.

The removal of vegetation along the channel and banks of Arroyo Parida Creek would result in a temporary loss of habitat for tidewater goby. Caltrans has proposed that it the removal of vegetation within the channel would occur outside the peak tidewater goby breeding season in the late summer and early fall when population numbers are typically lower. The project would not create barriers to tidewater goby movement up and down the creek following construction. Caltrans has proposed that it would begin revegetation efforts at the earliest appropriate planting window following the completion of the bridge structure, but this activity may have to occur during a less than optimal time for tidewater goby depending on when construction is complete in relation to rains that may occur and flowing water in the creek with whether tidewater gobies are breeding in the creek at that time. Therefore, we expect the timing of this activity will minimize the effects to tidewater goby.

Approximately 11 willows would also be removed during the work in Arroyo Parida Creek as would the area of native plant restoration along the banks. This would represent a temporary loss of approximately 0.035 acre of riparian habitat. During construction within Arroyo Parida Creek, temporary impacts would occur to Waters of the U.S within the creek channels earth-moving equipment expands and contours the banks and the channel. If flowing water is present during construction, water diversions or dams would be used temporarily to maintain suitable dry working conditions in the work area. Approximately 0.013 acre of channel is expected to be lost through permanent shading. The completed project would result in a net gain of approximately 0.160 acre of natural creek bed in Arroyo Parida Creek.

Wetland restoration along the creek and banks would cause a temporary disturbance to habitat that could be used by the tidewater goby. Planting in shallow water along the shoreline at the restoration sites would also temporarily disturb potential habitat for the tidewater goby. Any individuals in those areas would likely move away from the disturbance during the planting process but subsequently could use the areas again.

Some potential exists for tidewater gobies excluded from a work area to be moved into habitat that does not contain those elements necessary to sustain the species (e.g., adequate food and suitable substrate type for breeding). For example, if exclusion from a work area results in overcrowding, tidewater gobies may compete to a greater degree for food, breeding substrate, and space. The effects of such types of the lack of certain resources are unknown but because

the tidewater goby has an annual life history, could lead to the extirpation of a population. Consequently, the potential needs to be carefully considered during the evaluation of any action covered by these biological and conference opinions. Upon completion of work activities, tidewater gobies will likely regain use of the disturbed habitat after restoration actions or natural processes restore appropriate water depths and substrate.

In summary, the proposed action could adversely affect all tidewater goby adults, juveniles, and/or eggs that may occur in Arroyo Parida Creek within the action area, but because the project effects would be temporary, the action area is limited, and the fact that Caltrans has proposed to implement the avoidance and minimization measures as described above, we anticipate that few tidewater goby adults, juveniles, and/or eggs are likely to be killed or injured during construction, maintenance, and monitoring activities. Because tidewater goby are not know from other creeks within the action area, Caltrans will survey these areas before work commences and will reinitiate if they are located; therefore adverse effects are not anticipated in these other creeks within the action area.

Proposed Revised Critical Habitat for the Tidewater Goby

Approximately 0.156 acre of the proposed project occurs within the proposed revised critical habitat Unit SB-12, Arroyo Paredon for tidewater goby and is proposed to be temporarily impacted by bridge construction. Permanent effects of the proposed project include: 1) permanent loss of 0.013 acre of channel that will be shaded under the increased size of the bridge; and 2) future beneficial effects that would result from replacement of the highway bridge with a longer structure that will accommodate an expanded creek channel within the state right of way (ROW). The channel will be widened under the new bridge structure resulting in 0.160 acre of additional natural creek bed, expanding potential habitat for tidewater goby at this location; however, the widening of the creek channel will occur a future time and not with this the completion of this proposed project.

Temporary impacts that may affect tidewater gobies include grubbing and grading, placement of temporary gravel fill, and physical degradation associated with equipment and personnel movement within the project impact area. At Arroyo Parida Creek, approximately 0.156 acre of proposed critical habitat for tidewater goby would be temporarily affected by this project. The majority of project-related impacts are considered short-term given the dynamic nature of this system and include the removal of vegetation along creek banks as well as the disturbance of the unvegetated channels.

Portions of critical habitat subject to temporary effects are expected to recover to pre-project conditions with implementation of the replanting and other measures included in the project description. Potential impacts to water quality will be minimized through the dewatering of the creek during construction activities, the use of erosion BMPs, and the anticipation that no chemical herbicides will be used.

Vegetation removal from the creek banks downstream of the highway bridges will reduce the amount of filtered shading on the creek, which is beneficial to tidewater goby and other native

fish. The filtered shading under natural vegetation differs from the complete shading under large, solid structures (such as bridges) in that some plants and animals can survive in partial shading, whereas complete shading prevents the growth of plants and decreases the likelihood that animals can survive there. This will be minimized by the revegetation and restoration of the area with native plants, including replanting of riparian trees at a 3:1 ratio. Temporarily impacted portions of the creek are anticipated to recover to pre-project conditions with implementation of the replanting and other measures included in this document. Because post-construction replanting of riparian areas is anticipated, it is unlikely that the proposed project will have any long-term or substantial effects on tidewater goby habitat within the project area.

Permanent, beneficial effects of the project will result from a gain of approximately 0.160 acre of unlined creek bed with the wider channel. The expanded creek channel will result in decreased velocities at peak flows, increased filtration and groundwater recharge, and will provide additional potential habitat for tidewater gobies at this location.

The indirect effects identified for this project are associated with the improvement of habitat through non-native plant removal and revegetation/mitigation efforts and downstream effects to water quality and tidewater goby habitat.

Summary of the Effects on the Tidewater Goby
The proposed project, as modified by proposed avoidance and minimization measures, should not reduce the reproduction, numbers, or distribution of the tidewater goby. We expect that although the proposed project would have some effects on a limited number of tidewater goby individuals, we do not believe the impacts would be substantial. Because the project effects would be temporary, the action area is limited, and the fact that Caltrans has proposed to implement the avoidance and minimization measures as described above, we anticipate that few tidewater goby adults, juveniles, and/or eggs are likely to be killed or injured during construction, revegetation, and maintenance and monitoring activities.

Because only a small portion of the proposed critical habitat would be affected by the project, we do not expect that the conservation function of proposed critical habitat unit SB–12, Arroyo Paredon would be appreciably diminished. The unit should still meet the goal of the critical habitat designation, which is the protection and management of the metapopulation dynamics of the tidewater goby for the conservation of the species, because the effects are temporary. The measures proposed by Caltrans should help avoid adverse changes to the PCE. We do not anticipate any permanent or long-term adverse effects to proposed revised critical habitat for the tidewater goby as a result of the proposed action.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are currently unaware of other non-Federal actions that are

reasonably certain to occur in the action area that may adversely affect the tidewater goby or its proposed revised critical habitat.

CONCLUSION

After reviewing the current status of the species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the proposed project is not likely to jeopardize the continued existence of tidewater goby nor adversely modify proposed revised critical habitat.

We have reached this conclusion for the following reasons:

1. Caltrans has proposed measures to minimize the potential adverse effects of project activities on the tidewater goby and its proposed revised critical habitat;

2. The area of the project in which tidewater gobies occur is generally small in area and the effects are of short duration;

3. Few individual tidewater gobies and a small area of its proposed revised critical habitat are likely to be disturbed during project activities; and

4. The tidewater goby population in Arroyo Parida Creek, within the project area, represents a small portion of the species distribution and a small portion of the species' proposed revised critical habitat, so anticipated effects are not likely to appreciably reduce the overall population status of the species or result in a major disruption of the critical habitat unit.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibits the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary. Caltrans must include them as binding conditions of its authorization for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the authorization, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR 402.14(i)(3)].

Incidental take of the tidewater goby will be difficult to detect because of its small body size and finding a dead or injured specimen is unlikely. Finding carcasses and assigning a cause of death are problematic, especially in the presence of numerous scavengers that are likely to find dead animals soon after they die. Tidewater gobies may be taken only within the area identified as occupied within the boundaries of the action area. This biological opinion does not anticipate adverse effects to or take of tidewater goby anywhere within the action area outside of Arroyo Parida Creek because Caltrans conducted surveys for sensitive species and habitat assessments throughout the project area, tidewater goby does not occur in any of the drainages in the project area outside of Arroyo Parida Creek, and Caltrans' proposed avoidance and minimization measures for tidewater goby only apply to Arroyo Parida Creek (Caltrans 2012).

We anticipate that few tidewater gobies will be taken through injury or mortality during restoration activities in the action area. Given the avoidance and minimization measures proposed by Caltrans, we anticipate that take of the tidewater goby will be limited to: capture for relocation purposes; harm or harassment due to work activities including noise, vibration, and temporary disturbance of habitat; injury or death of individuals by vegetation removal equipment if undetected in the project area. All tidewater gobies relocated from the project area are considered taken as a result of their capture. A subset of these captured individuals may be killed or injured as a result of their handling and relocation to other locations, or if they attempt to return to the project activity sites after they have been relocated.

While we are unable to reasonably anticipate the actual number of tidewater goby that would be taken by the proposed project within Arroyo Parida Creek, we must provide a number at which consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of these biological and conference opinions indicate that adverse effects to tidewater goby would likely be low given the nature of the proposed activities, and we, therefore, anticipate that take of tidewater gobies would also be low. We also recognize that for every tidewater goby found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take limit we are anticipating that the actual take would be higher and we set the number at a low limit.

Similarly, for estimating the number that would be taken by capture, we cannot predict how many may be encountered because the population numbers fluctuate between and within years. While we believe the benefits of relocation (i.e., minimizing mortality) outweigh the risk of capture, we must provide a limit at which consultation would be reinitiated. The number

captured should be much higher than those tidewater gobies will be killed or injured, so the take we anticipate for capture is magnitudes higher than what we expect for injury or mortality.

Therefore, if 10 (ten) tidewater gobies are found dead or injured, or, if 100 (one hundred) tidewater gobies are captured and relocated, Caltrans must contact our office immediately to reinitiate formal consultation. Under either take scenario, project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

This biological opinion provides an exemption from the prohibition against the taking of listed species, contained in section 9 of the Act, only for the activities included in the Description of the Proposed Action section of this biological opinion. We have determined that tidewater gobies are likely to be taken only within the defined boundaries of the work area where it affects Arroyo Parida Creek because tidewater gobies were not found during surveys in other similar habitat. While the action area is defined as the entire 269-acre area along a 11-mile stretch of Highway 101 between Carpinteria and Santa Barbara, California, as well as a distance of 500 feet upstream from the proposed project boundary, we only anticipate that take will occur in Arroyo Parida Creek. If tidewater gobies are found in other suitable habitat within the action area during project activities and could be adversely affected, that would constitute new information that would warrant reinitiation of formal consultation.

REASONABLE AND PRUDENT MEASURES

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of tidewater gobies:

1. Caltrans must monitor activities to ensure that the level of incidental take of tidewater goby that occurs during project implementation is commensurate with the analysis contained in this biological opinion.

2. Caltrans must implement specific activity restrictions to avoid or minimize the effects of project activities on the tidewater goby.

The Service's evaluation of the effects of the proposed action includes consideration of the measures to minimize the adverse effects of the proposed action on the tidewater goby that were developed by Caltrans and repeated in the Description of the Proposed Action portion of this biological opinion. Any subsequent changes in these measures proposed by Caltrans may constitute a modification of the proposed action and may warrant reinitiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to supplement the protective measures that were proposed by Caltrans as part of the proposed action.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, Caltrans must comply with the following terms and conditions, which implement the reasonable and prudent measures. These terms and conditions are non-discretionary.

1. The following terms and conditions implement reasonable and prudent measure 1:

   1.1 The Service-approved biologist will conduct a training session for all project personnel prior to any project activities. At a minimum, the training will include a description of the tidewater goby and its habitat; the general provisions of the Act; the necessity for adhering to the provisions of the Act; the penalties associated with violating the provisions of the Act; the specific measures that are being implemented to conserve the tidewater goby while this project is being conducted; and the boundaries within which the project may be accomplished. The program will also cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on these species during project implementation. The project foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Multiple education programs will be conducted as needed to inform new personnel brought on the job.

   1.2 Caltrans must develop and implement a monitoring plan to determine the level of incidental take of tidewater goby associated with the project activities in the action area. The monitoring plan must include a standardized mechanism for Caltrans employees, contractors, permittees, and volunteers to report any observations of dead or injured listed animals to the appropriate Caltrans and Service offices. Caltrans must collect information obtained through the monitoring to include in the annual report to the Service that is required by this incidental take statement and described in the "Reporting Requirements" section below.

   1.3 A Service approved biologist must conduct surveys for tidewater goby in other creeks within the action area immediately prior to project implementation.

2. The following terms and conditions implement reasonable and prudent measures 2:

   2.1 The capture, handling, and monitoring of the tidewater goby must be conducted only by Service-approved biologists. Caltrans must provide their qualifications of individuals that would be conducting these activities to the Service at least 15 days prior to project activities within the vicinity of the species' habitat. No project activities will begin in areas that could support tidewater goby until the Caltrans has received approval from the Service that the biologist(s) are qualified to conduct the work.

2.2 Prior to the onset of any project-related activities, the Service-approved biologists must identify appropriate areas to receive captured tidewater goby from the project areas. These areas must be in proximity to the capture site, contain suitable habitat, and not be affected by project activities to the best of the Service-approved biologists' knowledge.

2.3 If tidewater gobies are found and these individuals are likely to be killed or injured by work activities, the Service-approved biologists must be allowed sufficient time to move them from the site before work activities resume. The Service-approved biologist must relocate tidewater gobies the shortest distance possible to one of the pre-determined areas discussed in term and condition 2.2.

2.4 The limits of the project activities must be clearly marked to prevent construction equipment from entering areas beyond the footprint needed to complete the project. Colored flagging would be appropriate to delineate the project boundaries.

2.5 Vehicles and all project activities must remain within the defined activity area and use only designated access points and staging areas.

2.6 The work area must be kept clean to avoid attracting predators. All food and trash must be disposed of in closed containers and removed from the project site.

2.7 Caltrans must implement BMPs to avoid impacts to water quality in Arroyo Parida Creek and any other creek occupied by tidewater gobies, which include fueling and maintaining heavy equipment outside of the creek areas; checking equipment for leaks and spills; using sand bags, straw bales, straw wattles, or other erosion control materials during restoration to dissipate the energy of flowing water, reduce soil erosion, and prevent sediment or other materials from entering the creeks; and avoiding the use of herbicides.

2.8 All power equipment and vehicles will be kept in good working order and inspected each day for leaks prior to use. Leaks will be repaired immediately or problem vehicles or equipment will be removed from the project site. Equipment will be staged in containment or other suitable barriers overnight to prevent accidental leakage of fluids.

2.9 Appropriate spill containment and clean-up materials will be available on site at all times. Any spills will be cleaned up immediately and will not be buried or washed with water.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), Caltrans must submit an annual report of project activities to the Service's Ventura Fish and Wildlife Office (2493 Portola Road, Suite B; Ventura, California 93003). The report must include: (1) a table documenting the number of tidewater goby observed, killed, injured, or handled during the subject project implementation; (2) a summary of how the terms and conditions of these biological and conference opinions and the protective measures proposed by Caltrans worked; and (3) any suggestions of how these measures could be revised to improve conservation of this species while facilitating compliance with the Act. This information will assist the Service in evaluating future actions for the conservation of the listed species involved. Reports must be submitted to the Service's Ventura Fish and Wildlife Office 2 months following the completion of the subject project.

DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), upon locating a dead or injured tidewater goby, initial notification within three working days of its finding must be made by telephone and in writing to the Ventura Fish and Wildlife Office (805-644-1766). The report must include the date, time, location of the carcass, a photograph, cause of death or injury, if known, and any other pertinent information.

Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. Should there be any injured tidewater goby, the Service should be contacted regarding the final disposition of the animals. The remains of any tidewater goby must be placed with the Ventura Fish and Wildlife Office, contact: Chris Dellith of our staff at (805) 644-1766, extension 227. In the case of take or suspected take of listed species not exempted in this biological opinion, the Ventura Fish and Wildlife Office must be notified within 24 hours.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Arroyo Parida Creek and all other creeks within the subject project should be monitored to determine the status of tidewater gobies. We recommend that a report be conducted annually which would summarize any findings of monitoring activities.

2. Caltrans should work with local agencies and governments towards the implementation of recovery actions identified in the tidewater goby recovery plan (Service 2005).

3. We recommend that any non-native predators of the tidewater goby be permanently removed from the wild if they can be captured while monitoring project activities. Anyone conducting such removals should be in compliance with the California Fish and Game Code.

4. Caltrans should conduct studies to increase our understanding of the population dynamics of the tidewater gobies in project area. Such studies could include developing metapopulation viability analysis and opportunities for reestablishing connectivity with nearby tidewater goby populations. This type of research and the data obtained could greatly assist Caltrans in future consultations within tidewater goby habitat.

REINITIATION NOTICE

This concludes formal consultation on the proposed South Coast 101 High Occupancy Vehicle (HOV) Project as described. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in these biological and conference opinions; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in these biological and conference opinions; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) will have lapsed and any further take would be a violation of section 4(d) or section 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions regarding this consultation, please contact Mark A. Elvin of our staff at (805) 644-1766, extension 258.

Sincerely,

Diane K. Noda
Field Supervisor

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

SEP 3 0 2013

In response refer to:
2013/9495

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

Dear Mr. Bonner:

Enclosed is NOAA's National Marine Fisheries Service's (NMFS) Biological Opinion for the California Department of Transportation's (Caltrans) implementation of the proposed South Coast Highway 101 High Occupancy Vehicle Lanes Project (proposed action) located in Santa Barbara County, California (Caltrans Project # 05-07000-SB-101-1.4/12.3). Caltrans is proposing to widen Highway 101 between the City of Carpenteria and the City of Santa Barbara and replace bridges at Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek. The Biological Opinion addresses effects of this action on endangered steelhead and designated critical habitat for this species in accordance with Section 7 of the U.S. Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

The Biological Opinion concludes that Caltrans' proposed action is not likely to jeopardize the continued existence of the endangered Southern California Distinct Population Segment of steelhead or destroy or adversely modify designated critical habitat for this species. NMFS concludes that the proposed action may result in the incidental take of steelhead, therefore, an Incidental Take Statement is included in the Biological Opinion. The Incidental Take Statement includes Reasonable and Prudent Measures that are necessary and appropriate to minimize the incidental take of steelhead. Jay Ogawa is the principal contact for this consultation. Please contact him at (562) 980-4061 or via email at jay.ogawa@noaa.gov if you have any questions concerning the Biological Opinion or if you would like additional information.

Sincerely,

FOR

William W. Stelle, Jr.
Acting Regional Administrator

Enclosure

cc: Mary Larson, CDFG
Chris Dellith, USFWS
Administrative File: 151422SWR2009PR00252

BIOLOGICAL OPINION

AGENCY: California Department of Transportation

ACTION: Construction of the South Coast High Occupancy Vehicle Lanes Project in Santa Barbara County, California

CONSULTATION CONDUCTED BY: National Marine Fisheries Service, Southwest Region

TRACKING NUMBER: 2013/9495

DATE ISSUED: September 30, 2013

I. CONSULTATION HISTORY

On March 15, 2012, NOAA's National Marine Fisheries Service (NMFS) received from the California Department of Transportation's (Caltrans) office in San Luis Obispo, California, a written request for formal consultation under Section 7 of the U.S. Endangered Species Act (ESA). The request concerns Caltrans' South Coast Highway 101 High Occupancy Vehicle (HOV) Lanes Project (proposed action), in Santa Barbara County (Project # 05-07000-SB-101-1.4/12.3). Under the proposed action, Caltrans' will widen US-101 to three lanes in the northbound and southbound directions and replace bridges at Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek. Caltrans is taking responsibility as the lead Federal Agency for ESA compliance in accordance with the *Memorandum of Understanding between the Federal Highway Administration and Caltrans Concerning the State of California's Participation in the Surface Transportation Project Delivery Program Pursuant to 23 USC 327*, which became effective October 1, 2012. Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek are within the endangered Southern California Distinct Population Segment (DPS) of steelhead (*Oncorhynchus mykiss*), and are designated critical habitat for this species. From 2009 to 2013 NMFS provided Caltrans with technical advice in letters and emails, and during site visits and teleconferences, for avoiding conflict between endangered steelhead and the proposed action. In this regard, NMFS offered recommendations that would maintain or improve the existing habitat and passage conditions for steelhead within the action areas to the maximum extent possible in light of the proposed action and given hydraulic constraints. NMFS requested more information on April 5, 2012 and April 13, 2013 to better understand the effects of the proposed action on endangered steelhead and designated critical habitat for the species. Following NMFS' receipt of the requested supplemental information on May 22, 2013, formal consultation was initiated on the same day.

This biological opinion is based on the best scientific and commercial data available, including information included in Caltrans' consultation request and biological assessment, a fish passage analysis, observations of the creek and instream habitat noted by NMFS biologists during on-site meetings with Caltrans, expected effects of the proposed action on steelhead and critical habitat, and the ecological literature. A complete administrative record for this consultation is maintained on file at NMFS' Southwest Regional Office (501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802).

II. DESCRIPTION OF PROPOSED ACTION

A. Proposed Action

The purpose of the proposed action is to widen US-101 between post mile (PM) 1.4 and PM 12.3 in Santa Barbara County. An HOV lane will be added in both the south and northbound directions to reduce congestion and delay, provide capacity for future travel demand, and encourage modal shift to transit and carpooling. To accommodate the addition of an HOV lane, bridge replacements will occur at Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek. Construction of the proposed action is expected to begin in 2016 or 2017. All instream work will occur over 2 to 3 consecutive construction seasons between June 1 and October 31. Construction equipment to be used during the proposed action include; excavators, concrete-breaker, cement-mixing trucks, cement-pumps, pick-up trucks, and a pile-driving hammer.

B. Proposed Construction Activities

The following description summarizes the proposed activities to prepare each action area for construction in the dry. Information specific to each proposed bridge removal is presented subsequently.

Proposed activities to prepare the action area for construction.—With regard to preparing the action area within each creek for construction, construction sites will be isolated from surface flow and any steelhead within the affected area will be relocated, if water is present. A coffer dam will be constructed across the channel immediately upstream of the existing US-101 bridge and remain in place for the duration of each construction season. Surface flow will travel through the work area via corrugated high density polyethylene pipe and return to the creek downstream. After the immediate work area is dewatered and all steelhead have been removed and relocated, and the water diversion is functioning as designed, steelhead will be able to migrate volitionally downstream within the pipe.

Prior to the actual diversion of surface water, surveys will be conducted up and downstream of the work area within each creek to identify suitable habitat for steelhead relocation efforts. The entire work area will be surveyed for steelhead, which will be captured with seines and dipnets. Once relocations are complete, streamflow will be diverted slowly and in stages to ensure the creek does not dewater suddenly. As flows are diverted, continual surveys of the dewatered area will be undertaken by biologists, and all steelhead in the dewatered area will be captured and relocated from residual wetted areas. Surveys of the work area will continue for several hours to ensure that all steelhead are removed from the dewatered area and relocated to suitable habitat

upstream or downstream within each creek. Additional measures will be undertaken to minimize take of steelhead and adverse effects to critical habitat during the dewatering process and subsequent construction activities. If groundwater is encountered after the diversion of surface flows, water will be pumped to a settling basin to remove any suspended sediments prior to discharge back into the creek. Pump intakes will be screened with wire mesh no larger than 2-millimeters to prevent steelhead fry from entering the pump system. All pumps will be monitored by a fish biologist to ensure that no fish are impinged on the intake during the dewatering process. Upon completion of the proposed action and construction activities each season, barriers to surface flow shall be removed and the streambed will be restored to pre-construction conditions if altered during construction activities. Detailed grading plans will be used to retain the existing heterogeneity of substrate and topography (*i.e.*, thalweg profile).

Proposed construction activities and creek-specific bridge replacements. —After the work area is dewatered, Caltrans will begin demolishing target bridges in sections using an excavator stationed on the roadway. Concrete debris will be removed from the creek channel as necessary. Best management practices (BMPs) will be maintained throughout the demolition and construction periods to minimize erosion and sedimentation of the disturbed sections of the work area. These BMPs include, jute-netting, straw-fiber rolls, silt-fencing, and hay bales. After the demolished section has been removed, bridge piles will be driven with an impact hammer for bridge abutment and pier foundations. A concrete-mixing truck staged on the roadway will pour concrete into forms to create the support structures and bridge deck. All vehicle and equipment maintenance, material storage, concrete washouts and sanitary facilities will be located outside of creek limits at least 50-feet from downstream drainage facilities and watercourses. Stream specific details of the bridge replacements are provided as follows.

At Arroyo Paredon Creek, the two existing northbound and southbound US-101 bridges that pass over the creek will be replaced with one bridge (124-feet wide x 80-feet long). The bridge replacement is expected to occur over two construction seasons (June 1 to October 31) beginning in 2016 or 2017. Caltrans proposes to dewater an approximately 250-foot long section of Arroyo Paredon Creek each construction season. The new bridge will have two 25-foot wide spans (bays) separated by a concrete pier and have the ability to convey a 25-year flood event. The bridge is proposed to be 3-feet longer than the existing structure and will result in the gain of approximately 0.012 acres of natural creek bed. The location of the new abutments and pier will match the alignment of the existing channel.

At Romero Creek, the two existing US-101 bridges over the creek will be replaced with one single-span structure (101-feet wide x 92-feet long) that will be constructed over three seasons (June 1 to October 31) beginning in 2016 or 2017. Caltrans proposes to dewater an approximately 175-foot long section of creek each season. The new bridge will be 20-feet longer and have the ability to convey a 100-year flood event. The wider channel will result in approximately 0.13 acres of natural creek bed. The location of the new abutments will match the alignment of the existing channel.

At San Ysidro Creek, the two existing US-101 bridges over San Ysidro Creek will be replaced with one bridge (113-feet wide x 80-feet long) that will span the width of the channel. The proposed bridge will be constructed over three seasons (June 1 to October 31). Caltrans

proposes to dewater an approximately 185-foot long section of creek each season. The wider structure will align with the existing channel and result in a gain of approximately 0.11 acre of unlined streambed and be able to convey a 100-year flood event.

Proposed post-construction activities.—Following construction of the bridge structures, Caltrans proposes to implement a landscape architecture planting plan that includes trees and native grasses. Planting of arroyo willows and coastal live oaks will occur at a 3:1 ratio and Monterey pines and eucalyptus will be replaced in-kind. Native grasses and forbs will be planted in disturbed areas or areas that are vegetated by invasive plants. All riparian plantings will be monitored for three years to ensure successful revegetation.

C. Action Area

The action area refers to all areas to be affected directly or indirectly by the proposed action and not merely the immediate area involved in the action (50 CFR § 402.02). The action area includes the linear extent (upstream to downstream) of bridge crossings over three creeks along US-101 between PM 1.4 and PM 12.3 in Santa Barbara County. These areas are located at the following US-101 crossings: Arroyo Paredon Creek (PM 5.63), Romero Creek (PM 9.34), and San Ysidro Creek (PM 9.56). The action area extends approximately 65-feet upstream from the crossing at Arroyo Paredon Creek and approximately 40-feet upstream from the crossing at Romero Creek and San Ysidro Creek to account for the upper limit of the water diversion and 350-feet downstream from the end of the diversion, where effects such as elevated turbidity are anticipated to cease. The approximate length of Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek within the action area is 600-feet, 525-feet, and 535-feet. The action area extends laterally to encompass the riparian corridor to the top of the banks of all three creeks.

D. Interrelated and Interdependent Activities

Interrelated actions are those actions that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the proposed action (50 CFR § 402.02). There is no known action interrelated or interdependent with the proposed action.

III. STATUS OF THE SPECIES AND CRITICAL HABITAT

This biological opinion considers the potential effects of the proposed action on the Southern California steelhead DPS and their designated critical habitat. For this reason, the status of the Southern California steelhead DPS, their life history and habitat requirements, value of critical habitat, and recent factors affecting populations are described as follows.

A. Status of Southern California Steelhead

The endangered Southern California DPS of steelhead extends from the Santa Maria River in Santa Barbara County to the California-Mexico border. NMFS characterized the abundance of steelhead in the DPS when the species was originally listed (August 18, 1997, 62 FR 43937) and cited this information as the basis for the recent re-listing of the Southern California DPS of

steelhead as endangered (May 3, 2006, 71 FR 834). Estimates of historical (pre-1960s) and more recent (1997) abundance show a precipitous drop in numbers of spawning adults for major rivers in the southern California DPS. An updated status report states that the chief causes for the numerical decline of steelhead in southern California include urbanization, water withdrawals, channelization of creeks, human-made barriers to migration, and the introduction of exotic fishes and riparian plants (Good *et al.* 2005), and the most recent status review indicates these threats are essentially unchanged (Williams *et al.* 2011). Historical data on steelhead numbers for this region are sparse. The historic and recent steelhead abundance estimates, and percent decline are summarized in Table 1. The run size estimates illustrate the severity of the numerical decline for the major rivers in the Southern California DPS of steelhead (Good *et al.* 2005, Williams *et al.* 2011).

Table 1. Historical and recent abundance estimates of adult steelhead in the Southern California DPS. Data are from Good *et al.* 2005.

	Pre-1950	Pre-1960	1990s	2000s	Percent Decline
Santa Ynez River	20,000-30,000		< 100		99
Ventura River		4,000-5,000	< 100	< 100	96
Santa Clara River		7,000-9,000	< 100	< 10	99
Malibu Creek		1,000	< 100		90

Recent stream surveys to document the species' current pattern of occurrence have concluded that of the 46 watersheds in the DPS which steelhead occupied historically, *O. mykiss* currently occupy only about 40% to 50% of these watersheds (Boughton *et al.* 2005). Fish surveys by NOAA Southwest Fisheries Science Center (SWFSC), direct observations by NMFS biologists, and anecdotal information from local biologists working on major rivers and creeks throughout the DPS suggest that although steelhead populations continue to persist in some coastal watersheds, the population numbers are exceedingly small (Good *et al.* 2005, Williams *et al.* 2011). On a positive note, there have been observations of steelhead recolonizing vacant watersheds during years with abundant rainfall, notably San Mateo Creek and Topanga Creek (Good *et al.* 2005). NMFS reviews the status and viability of the Southern California DPS of steelhead on the basis of available information (including new information) about the species abundance, population growth rate, spatial structure, and diversity (McElhany *et al.* 2000) every five years as required by the ESA. In the last two status reviews, NMFS concluded that the risk of extinction for the Southern California DPS of steelhead was unchanged (Good *et al.* 2005, Williams *et al.* 2011).

B. Life History and Habitat Requirements

The major freshwater life history stages of steelhead involve freshwater rearing and emigration of juveniles, upstream migration of adults, spawning, and incubation of embryos (Shapovalov and Taft 1954, Barnhart 1991, Meehan and Bjornn 1991, Moyle 2002). Steelhead juveniles rear in freshwater for one to three years before migrating to the ocean, usually in the spring, where they may remain for up to four years. The timing of outmigration appears to be influenced by

photoperiod, streamflow, and temperature (Shapovalov and Taft 1954). In some drainages, juvenile steelhead may rear in lagoon or estuary habitats for several weeks prior to ocean entry.

Steelhead grow and reach maturity at age two to four while in the ocean. In southern California, adults generally migrate to natal streams for spawning December through March (Fukushima and Lesh 1998), but some adults may not enter coastal streams until late spring, depending on flow conditions. Adults may migrate several to hundreds of miles in some watersheds to reach their spawning grounds. Although spawning may occur during January through April, the specific timing of spawning may vary a month or more among streams within a region. Steelhead do not necessarily die after spawning and may return to the ocean, sometimes repeating their spawning migration one or more years. Female steelhead dig a nest in the streambed and then deposit their eggs. After fertilization by the male, the female covers the nest with a layer of gravel, and the embryos incubate within the gravel pocket. Hatching time varies from about three weeks to two months depending on water temperature. The young fish emerge from the nest about two to six weeks after hatching.

Habitat requirements of steelhead in streams generally depend on the life history stage. Habitat for southern California steelhead consists of water, substrate, and adjacent riparian zone of estuarine and riverine reaches of coastal river basins, and major rivers. Generally, streamflow volume, water temperature, and water chemistry must be appropriate for adult upstream migration and juvenile downstream migration. Low streamflow, high water temperature, physical barriers, low dissolved oxygen, and high turbidity may delay or halt upstream migration of adults and timing of spawning, and downstream migration of juveniles and subsequent entry into estuary, lagoon, or ocean. These factors affect steelhead to varying degrees in southern California watersheds, depending on the level of anthropogenic disturbance and stream conditions within the watershed. Suitable water depth and velocity, and substrate composition are the primary requirements for spawning, but water temperature and turbidity are also important. Dissolved oxygen concentration, pH, and water temperature are factors affecting survival of incubating embryos. Fine sediments, sand and smaller particles, may fill interstitial spaces between substrate particles, thereby reducing water flow and dissolved oxygen levels within a nest. Juvenile steelhead require living space (various combinations of water depth and velocity), shelter from predators and harsh environmental conditions, adequate food resources, and suitable water quality and quantity, for ontogeny and survival during summer and winter. Young-of-the-year and yearling steelhead generally use shallow water habitats such as riffles and runs during much of the year where these habitats exist (Roper *et al.* 1994). However, young-of-the-year and older juveniles may seek cover and cool water in pools during periods of elevated water temperature and low flows (Nielsen *et al.* 1994, Matthews and Berg 1997).

C. Regional Climatic Variation and Trends

The interaction of changing climate conditions with other stressors such as habitat fragmentation is likely to result in additional threats to natural resources (McCarty 2001), including the viability of steelhead populations. In the southwest region (southern Rocky Mountains to the Pacific Coast), the average temperature has already increased roughly 1.5 °F compared to a 1960-1979 baseline period. By the end of the century, average annual temperature is projected to rise approximately 4 to 10 °F above the historical baseline, averaging over the entire region

(Karl *et al.* 2009). The southern California region is experiencing an increasing trend in droughts, as measured by the Palmer Drought Severity Index from 1958 to 2007 (Karl *et al.* 2009). With regard to the character of precipitation, the southwest region, including California, showed a 16% increase in the number of days with very heavy precipitation from 1958 to 2007. Generally for most areas of the country, the fraction of precipitation falling as rain versus snow has increased during the last 50 years (Karl *et al.* 2009). Indicators of climate variability in the western United States exhibit trends toward an earlier spring since the mid-1970s (Cayan *et al.* 2001).

With regard to expected climate trends and projections on an ecoregional scale within southern California (PRBO Conservation Science 2011), regional climate models[1] project mean annual temperature increases of 1.7 to 2.2 °C (3.1 to 4.0 °F) by 2070. Although there is relatively little consensus about projected effects of climate change on precipitation patterns, Snyder and Sloan (2005) projected mean annual precipitation in southwestern California to decrease by 2.0 cm (4.0%) by the end of the 21st century. Wildfires periodicity may increase in the future owing to changes in climate; Westerling and Bryant (2008) evaluated wildfire risk in this region and found that the probability of occurrence of large (>200-hectare) fires in southern California ranged from a decrease of 29% to an increase of 28%.

D. Status of Critical Habitat

Critical habitat for the Southern California DPS of steelhead was designated on September 2, 2005, and consists of the stream channels listed in 70 FR 52488. Critical habitat has a lateral extent defined as the width of the channel delineated by the ordinary high-water line as defined by the Corps in 33 CFR 329.11, or by its bankfull elevation, which is the discharge level on the streambank that has a recurrence interval of approximately 2 years (September 2, 2005, 70 FR 52522). To better define critical habitat for steelhead, NMFS' Critical Habitat Analytical Review Teams (CHARTs) developed a list of Primary Constituent Elements (PCEs) specific to steelhead and their habitat. PCEs are components of stream habitat that have been determined to be essential for the conservation of the Southern California DPS of steelhead, and are specific habitat components that support one or more steelhead life stages and in turn contain physical or biological features essential to steelhead survival, growth, and reproduction, and conservation. These include:

1. **Freshwater spawning sites** with sufficient water quantity and quality and adequate substrate (i.e., spawning gravels of appropriate sizes) to support spawning, incubation and larval development.

2. **Freshwater rearing sites** with sufficient water quantity and floodplain connectivity to form and maintain physical habitat conditions and allow salmonid development and mobility; sufficient water quality and forage to support juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams, beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

[1] See page 43 of PRBO Conservation Science (2011) for a summary of all models referenced, emission scenarios and outputs.

3. **Freshwater migration corridors** free of obstruction with adequate water quality and quantity conditions and natural cover to support juvenile and adult mobility and survival.

4. **Estuarine areas** free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and salt-water; natural cover; and juvenile and adult forage supporting growth and maturation.

5. **Marine areas** free of obstruction with sufficient water quality and quantity conditions and forage to support salmonid growth and maturation; and natural cover.

Streams designated as critical habitat in the endangered Southern California DPS of steelhead contain the above PCE attributes in differing amounts and to varying degrees, depending on the particular stream and the characteristics of the watershed. Perennial streams with conditions suitable for steelhead are less abundant in the southern portion of the DPS compared to the northern portion. Some of this is due to the amount of coastal development in the southern region. During the summer many creeks at the southern extent of the species' range become intermittent in sections or dry completely, and stream temperatures may become a factor in terms of suitability for rearing steelhead. In some cases this occurrence is natural and in other cases it is due to anthropogenic factors. Overall, steelhead oversummering habitat is thought to be the most geographically limited of all the habitats that are necessary for essential life history function (Boughton *et al.* 2006).

As part of the process to gather and analyze information to finalize the designation of critical habitat, several CHARTs compiled all available information regarding the distribution and habitat use of steelhead within the endangered Southern California DPS of steelhead, as well as habitat condition. The CHARTs performed conservation assessments for all occupied watersheds, including riverine reaches and estuarine areas within each DPS. Essential features of critical habitat for steelhead spawning, rearing, and migration were found to be contained in 741 miles (1,186 km) of occupied stream habitat within the 32 HSAs of the Southern California Steelhead DPS. Streams with high conservation value were found to have most or all of the PCEs of critical habitat and extensive areas that were suitable for steelhead spawning, rearing, and migration, despite negative effects of anthropogenic factors. Streams with medium or low conservation value were less suitable for steelhead in terms of spawning rearing and migration, and had fewer of the PCEs necessary for steelhead survival growth and reproduction, generally due to anthropogenic factors. While many streams in the DPS have been found to have high conservation value for survival and recovery of the species, the spawning, rearing, and migratory habitat within the DPS are heavily impacted by dams, diversions, and human development. As a result, much of the available habitat has become severely degraded, and habitat degradation has been a main contributing factor to the current endangered status of the DPS (Good *et al.* 2005). The most recent status review found that these threats have remained essentially unchanged (NMFS 2011).

E. Population Viability

One prerequisite for predicting the effects of an action on a species (including establishing a point of reference for the effects analysis) involves an understanding of whether the broad

population is likely to experience a reduction in the likelihood of being viable, i.e., the hypothetical state(s) in which extinction risk of the broad population is negligible and full evolutionary potential is retained (Boughton *et al.* 2006). By definition, a viable salmonid population (VSP) is an independent population of any Pacific salmonid (genus *Oncorhynchus*) that has a negligible risk of extinction due to threats from demographic variation (random or directional), local environmental variation, and genetic diversity changes (random or directional) over a 100-year time frame. Other processes contributing to extinction risk (catastrophes and large-scale environmental variation) are also important considerations, but by their nature they need to be assessed at the larger temporal and spatial scales represented by DPSs or other entire collections of populations. An independent population is any collection of one or more local breeding units whose population dynamics or extinction risk over a 100-year time period is not substantially altered by exchanges of individuals with other populations. Generally, an independent population is contained within a distinct stream or possibly an entire watershed, and represents a subunit of the entire DPS.

Four principal parameters are used to evaluate the long term viability and conversely the extinction risk for the endangered Southern California DPS of steelhead. They are: (1) abundance; (2) population growth rate; (3) population spatial structure; and (4) population diversity. These specific parameters are important to consider because they are predictors of extinction risk and reflect general biological and ecological processes that are critical to the growth and survival of steelhead populations, and they are measurable (McElhany *et al.* 2000). To assess viability, guidelines or decision criteria are defined for each of the four parameters to further the viability evaluation (McElhany *et al.* 2000). Population viability for steelhead is based on four key concepts that provide the basis for judging the persistence of a population in the wild. The bases for these concepts can be found in the many publications regarding population ecology, conservation biology, and extinction risk (e.g., Pimm *et al.* 1988, Berger 1990, Primack 2004, see also McElhany *et al.* 2000 and Boughton *et al.* 2006). The four concepts are outlined below.

1. Abundance

Information about a population's size or abundance provides an indication of the sort of extinction risk a population faces. Small populations face a host of risks intrinsic to their low abundance; conversely, large populations exhibit a greater degree of resilience. Small populations tend to be at greater risk of extinction than large populations primarily because several processes that affect population dynamics operate differently in small populations than they do in large populations. Generally, the greater the size of a steelhead population, the greater the chance of it being viable in the long term. Within the endangered Southern California DPS of steelhead, abundance has been severely reduced from historic levels (Good *et al.* 2005) and this has negative implications for long term viability for this DPS.

2. Population Growth Rate

Population growth rate and factors that affect population growth rate provide information on how well a population is "performing" in the habitats it occupies during the life cycle. These parameters, and related trends in abundance, reflect conditions that drive a population's

dynamics and thus determine its abundance. Changes in environmental conditions, including ecological interactions, can influence a population's intrinsic productivity or the environment's capacity to support a population, or both. In regard to steelhead, the greater the productivity of a steelhead population the greater its ability to recover from environmental disturbance and the greater its viability. Because of the very low abundance of steelhead in southern California, the population growth rate has also been reduced, making the DPS less resilient to disturbance, and this has further reduced the long term viability of the DPS.

3. Spatial Structure

A population's spatial structure is made up of both the geographic distribution of individuals in the population and the processes that generate that distribution. A population's spatial structure depends fundamentally on habitat quality, spatial configuration, and dynamics as well as the dispersal characteristics of individuals in the population. Understanding the spatial structure of a population is important because the population structure can affect evolutionary processes and, therefore, alter the ability of a population to adapt to spatial or temporal changes in the species' environment over the long term (McElhany *et al.* 2000). Generally, steelhead populations that are thinly distributed over space are susceptible to experiencing poor population growth rate and loss of genetic diversity which result in lowered viability. Within the endangered Southern California DPS of steelhead, anthropogenic activities such as the introduction of migration barriers have substantially reduced the number of watersheds (or portions of watersheds) that are currently accessible to steelhead. This has significantly reduced the spatial structure of the DPS (Boughton *et al.* 2005).

4. Diversity

Steelhead populations possess a suite of life history traits that exhibit considerable diversity within and among populations, and this variation has important effects on population and DPS viability. Some of these varying traits are anadromy, timing of spawning, emigration, and immigration, fecundity, age-at-maturity, behavior, physiological and genetic characteristics, to mention a few. In terms of steelhead population viability, the more diverse the assortment of life history traits (or the more these traits are not restricted), the more likely the steelhead population is to survive a spatially and temporally fluctuating environment over the long term. Because anthropogenic activities have severely reduced and eliminated the expression of some life history traits of steelhead in southern California, the long term viability of the DPS has declined as well.

In summary, the endangered Southern California DPS of steelhead has been severely impacted by anthropogenic factors, and this has negatively affected the abundance, productivity, spatial structure, and diversity of the entire DPS. The endangered Southern California DPS of steelhead is currently not viable and is at a high risk of extinction. This finding is consistent with conclusions of past and recent technical reviews (Busby *et al.* 1996, Good *et al.* 2005, Williams *et al.* 2011), and the formal listing determination for the species (NMFS 1997, 2006).

IV. ENVIRONMENTAL BASELINE

Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek are coastal streams that originate in the Santa Ynez Mountains and flow through rural residential, agricultural, and urbanized areas of southern Santa Barbara County. Stream lengths are relatively short and the watersheds are comparatively similar in slope and size with steep upper watersheds and lower watersheds that flow through a narrow coastal terrace. US-101 traverses the mainstem of each creek in close proximity to their mouths (approximately 1/8 mile downstream). In the vicinity of the action area, the creeks flow through unlined concrete walled channels that are nearly devoid of riparian vegetation before entering the Pacific Ocean. The mostly ephemeral streams convey natural flow and agricultural and hard-surface runoff. Seasonal lagoons form at Arroyo Paredon Creek and Romero Creek. The three creeks have been designated as Core 3 watersheds in the NMFS Recovery Plan for Southern California Steelhead (NMFS 2012), which indicates their importance for recovery of the endangered Southern California DPS of steelhead.

A. Status of Critical Habitat in the Action Area

Aquatic habitat within the action area of Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek consists of shallow pools, runs and riffles. The average channel widths in the action area are between 21- and 28-feet and the stream banks consist of vertical concrete walls. The stream bed is composed of cobble and some small boulders overlaid by fine sediment. During the dry season, surface flow within the lower watersheds of each stream can be limited and in the action area is typically reduced to disconnected pools by mid-summer, many of which dry by the end of summer or early fall. Water quality is impaired by elevated levels of fecal coliform, nitrate, and other pollutants known to enter the waterway (Caltrans 2010). Santa Barbara County Flood Control (SBCFC) manages the lower watersheds as the creeks flow through urbanized areas in the vicinity of the action area. As a result, instream cover such as woody debris, large boulders, and other stream features that create habitat complexity for juvenile steelhead are removed annually from the channel. The north and south banks of the action area are mainly devoid of riparian vegetation due to a combination of channel modification and regular clearing and brushing during flood control maintenance. Species in the riparian canopy include arroyo willow (*Salix lasioepis*), western sycamore (*Platanus raceosa*), coast live oak (*Quercus agrifolia*), blue gum eucalyptus (*Eucalyptus globulus*), Monterey Pine (*Pinus radiate*) and alder (*Alnus rubra*). Overall, the PCEs of critical habitat for juvenile steelhead rearing (i.e., natural cover, shelter, pools, water quality/quantity, and riparian) within the action area are limited and degraded. Rearing and foraging habitat is limited by the simplified channel and poor water quality conditions. Habitat complexity that provides natural cover (e.g., large woody debris, large substrate, riparian and aquatic vegetation) is lacking. The PCEs for spawning habitat in the action area are degraded based on the degraded substrate conditions within the action area. Finally, the PCEs for migration are considered good through the action area, as there is no obvious barrier to adult or juvenile steelhead migration.

B. Status of Steelhead in the Action Area

Although no estimate of total steelhead abundance in Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek is available, there have been numerous sightings of *O. mykiss* within each creek. The historical presence of steelhead in each watershed has been documented (Stoeker 2002), and the recent presence of adult and juvenile *O. mykiss* in the vicinity of the action area have also been documented (Oberhoff and Cesena 2002, Stoeker 2002). In August 2009, one, 11-inch *O.mykiss* was observed in Romero Creek Lagoon approximately 800-feet downstream of the US-101 crossing (pers. comm. B. Trautwein). In the spring of 1999 and 2001, juvenile *O. mykiss* were observed in Arroyo Paredon Creek approximately 1/2-mile upstream of the US-101 bridge by SBCFD biologists (Oberhoff and Cesena 2002). Caltrans and NMFS biologists have observed several juvenile *O. mykiss* upstream and downstream of the action area on Romero Creek (Caltrans 2013, M. McGoogan, NMFS 2013, pers. obs.). In the spring of 2001, steelhead surveys within San Ysidro Creek were performed by Stoeker Ecological as part of the South Coast Steelhead Assessment and Recovery Project. The creek was surveyed within a 3.5-mile reach between the upstream end of the lagoon and the Montecito Water District pipeline. Relative abundance of juvenile *O. mykiss* within the reach was estimated at 318 individuals (90 fish/mile or 0.02 fish/foot) (Stoeker 2002). Based on similar watershed characteristics, habitat conditions and anecdotal observations of *O.mykiss* within the vicinity of the action area, the abundance of steelhead observed in San Ysidro Creek is an informative index of the potential abundance of steelhead within the lower reaches of Romero Creek and Arroyo Paredon Creek. Because construction of the proposed action will occur during the summer rearing season, NMFS expects juvenile steelhead to be present in the action area, although fewer are expected than have been found in spring. Adult steelhead are not expected to be present within the action area during the time of construction activities (June 1 to October 31).

C. Factors Affecting Species Environment in the Action Area and Vicinity

The Final Southern California Recovery Plan (NMFS 2012) identifies several sources of habitat impairments in the Conception Coast Biogeographic Population Group region that are relevant to the watersheds discussed in this biological opinion: roads, urban development, flood control maintenance, surface water diversions, and agricultural development. The stream environment within the action area is impacted by the SBCFC project, which constricts the stream to a narrow, concrete walled channel and by the US-101bridge that traverses the creek and is a source of road surface runoff. Upstream of the action area agricultural activities may contribute to degraded water-quality conditions in the action area. Barriers to steelhead migration are located upstream of the action area.

1. Channelization and Flood Control Maintenance

Current flood control practices in the lower watershed of each creek, including the section of stream within each of the three action areas, have confined the stream channel and limited opportunities for riparian communities to become established. Modification of the stream channel in the lower watershed has affected the amount of available steelhead habitat and the processes that develop and maintain preferred habitat by eliminating floodplain connectivity, limiting instream habitat complexity, and reducing riparian vegetation. Flood control practices

in the vicinity of the action area have disrupted stream sinuosity and inhibited the creeks ability to braid. Impacts to aquatic habitat primarily result from annual flood control maintenance which minimizes recruitment of large woody debris, aquatic vegetation, and establishment of a riparian canopy. These impacts result in negative effects to juvenile steelhead growth and survival by reducing new habitat types, limiting recruitment of organic material, and reducing lower food chain production.

2. Highway Encroachment

US-101 traverses the action area within each creek, and the location of the road likely results in runoff from the road surface entering the creeks during rainstorms, which may reduce the water quality within the action areas to an unknown degree. The effects on water quality from road surface runoff are most likely to occur during and shortly after rainfall events. Runoff from road surfaces can contain dirt, oil, automotive fluids, and petrochemicals that are harmful to aquatic life, including steelhead (Spence *et al.* 1996). Additionally, the highway has contributed to the confinement of the stream channel and diminished riparian vegetation.

3. Agricultural Development

Agricultural fields exist in the lower watershed of each creek and demands on upstream water resources may occur from these fields. It is unknown to what extent water demands may affect the quantity and extent of surface water and essential features of steelhead habitat within each of the action areas. Substantive withdrawal of surface water, especially during the dry season, has the potential to decrease the quality and availability of habitat for juvenile steelhead. Additionally, decreased flows could result in increased water temperatures and lower dissolved oxygen, both of which can cause stress and suffocation of juvenile steelhead (Spence *et al.* 1996). Upstream agricultural activities have the potential to degrade water quality in the action areas through sedimentation and agricultural runoff (Spence *et al.* 1996). Erosion and sedimentation are harmful to salmonids can bury less mobile organisms that serve as food to juvenile steelhead (Cordone and Kelley 1961). Agricultural runoff can transfer nutrients and pesticides to the creek, which can in turn lower dissolved oxygen levels by increasing algae growth in streams and decreasing forage for steelhead (Spence *et al.* 1996). These impacts, if occurring, have the potential to adversely impair steelhead survival within the lower watershed of each creek.

V. EFFECTS OF THE PROPOSED ACTION

This section describes potential effects of the proposed action on endangered steelhead and designated critical habitat for this species. To identify the potential effects, NMFS reviewed the proposed action and ecological literature concerning the effect of habitat changes on steelhead and aquatic habitat, and carefully considered the type, amount, and extent of habitat changes that are expected to result from the proposed action. A general knowledge of physical and biological processes, population dynamics, life history, and habitat requirements of steelhead supplemented the literature review, particularly where there was little or no information concerning effects of an impact on steelhead or the aquatic environment. With regard to critical habitat, this biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR §402.02, which was invalidated by *Gifford Pinchot Task Force v.*

USFWS, 378 F.3d 1059 (9th Cir. 2004), amended by 387 F.3d 968 (9th Cir. 2004). Instead, this effects assessment relies upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat. Therefore, in considering effects on critical habitat, NMFS assessed whether implementation of the proposed action would allow critical habitat to remain functional, or allow for primary constituent elements to become functionally established, serving the intended conservation role for the species.

Construction activities are expected to affect steelhead through dewatering, capture and relocation, temporary increased turbidity, and pile installation. Effects to critical habitat in the action areas include the temporary loss and disturbance of instream and riparian habitat during construction activities. The potential effects of these activities are described in more detail below.

A. Effects on Endangered Steelhead

Dewatering. Within the action area of each creek streamflow diversion and dewatering of the immediate work area is expected to temporarily disrupt steelhead behavior patterns (*i.e.*, rearing, migrating), and cause temporary loss of aquatic habitat as well as loss of invertebrate forage. Approximately 250-, 175-, and 185-linear feet on Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek will be dewatered, respectively. The work area in each creek will be dewatered for up to 5 months during the dry season (June 1 through October 31) to allow construction work to proceed in dry conditions. Water diversions in Romero Creek and San Ysidro Creek may be installed up to three times (once per year when instream construction activities are expected) and the water diversion in Arroyo Paredon Creek may be installed up to two times (once per year when instream construction activities are expected).

Dewatering will temporarily preclude the action area from serving as a freshwater rearing site and a freshwater migration corridor for endangered steelhead. The ability of juvenile steelhead to migrate upstream through the action area will be hindered for several months while the surface-water diversion is in place. Juveniles downstream of the diversion are expected to remain in runs and riffles or access the seasonal lagoons until the work is complete. Downstream migration of juvenile steelhead from reaches upstream of the action area on each creek is not expected to be significantly affected by the diversion since downstream migrants would be able to migrate from upstream to downstream of the action area through the diversion pipe. Adult steelhead are not expected in the creeks and, therefore, are not likely to be affected by construction activities.

Aquatic macroinvertebrate forage will be temporarily reduced or eliminated within the action area of each creek as a result of isolating the work space from flowing water. Aquatic insects provide a source of food for instream fish populations, and may represent a substantial portion of food items consumed by juvenile steelhead. Effects to aquatic macroinvertebrates resulting from streamflow diversions and dewatering will be temporary because construction activities will be temporary, and rapid recolonization (about one to two months) of the restored channel area by macroinvertebrates is expected following rewatering (Cushman 1985, Thomas 1985, Harvey 1986). In addition, the effect of macroinvertebrate loss on juvenile steelhead is expected to be negligible because food from upstream sources would be available downstream of the dewatered

areas via drift. Based on the foregoing, the temporary loss of aquatic macroinvertebrates as a result of dewatering activities is not expected to adversely affect steelhead.

Ultimately, the loss of aquatic habitat associated with dewatering, and the impedance of juvenile upstream migration through the action area will be temporary and is not expected to result in lethal effects, as relocated steelhead will be able to use all aquatic habitat up or downstream of the dewatered portion of the creek, which is of similar quality as the dewatered area (J.Ogawa, NMFS, 2012, pers. obs.). Connectivity between the upstream and downstream stream reaches will be restored after the water diversion is removed and creek flows are returned to the dewatered area. Overall, effects to steelhead from water diversion are expected to be non-lethal and temporary.

Fish relocation.—During the dewatering process in each creek, the water diversion could harm rearing juvenile steelhead by concentrating or stranding them in residual wetted areas before they are relocated and rearing juvenile steelhead could be killed if they become stranded and are not moved out of the diversion area. In addition, steelhead are expected to move to adjacent areas of aquatic habitat during water diversion (Clothier 1953, Clothier 1954, Kraft 1972, Campbell and Scott 1984).

However, to reduce the likelihood of harm and mortality to juvenile steelhead within the area to be dewatered in each creek, biologists will survey the stream within the action area prior to and during the water diversion, and will capture and relocate steelhead to the nearest suitable habitat within each creek. Relocation sites upstream or downstream of the action area will be identified prior to dewatering of each creek. Biologists will survey beneath small boulders and areas where juvenile steelhead can hide to the maximum extent practicable in order to relocate steelhead out of the action area. In the event that some steelhead are missed by the biologists and stranded in the diversion area, some mortality may be expected.

Sites selected for relocating juvenile steelhead should have ample habitat, but relocated fish may compete with other fish for available resources such as food and habitat (Keeley 2003). Stress from crowding, including increased competition for food among juvenile steelhead in the relocation areas is expected to be temporary, because when the proposed action is finished steelhead will be able to redistribute to the action area. Once the proposed action is complete and the water diversion is removed, living space for juvenile steelhead will return to the dewatered action area on each creek. Fish relocation efforts are expected to significantly minimize impacts to juvenile steelhead by removing them from areas where they would have probably experienced high rates of injury and mortality.

Based on steelhead survey results provided by Stoecker Environmental (2002), as described in the environmental baseline, NMFS expects no more than 10 juvenile steelhead at each US-101 bridge will need to be relocated each year (or no more than a total of 30 juvenile steelhead at San Ysidro Creek and Romero Creek; no more than 20 juvenile steelhead at Arroyo Paredon Creek). Based on NMFS' experience and knowledge gained on similar projects in Santa Barbara County during the last several years, it is expected that 5 juvenile steelhead from each crossing may be injured or killed each year as a result of the proposed action (15 mortalities at Romero Creek and San Ysidro Creek; 10 mortalities at Arroyo Paredon Creek over the life of the proposed action).

Based on NMFS' general familiarity of steelhead abundance in southern California in general, and Santa Barbara County streams in particular, the anticipated number of juvenile steelhead that may be injured or killed as a result of the proposed action is likely to represent a small fraction of the overall watershed-specific populations and the entire Southern California DPS of endangered steelhead. Therefore, the effects of the relocation on steelhead are not expected to give rise to population-level effects.

Sedimentation and turbidity.—Although the action area will be dewatered during the time of construction, heavy equipment and people working within the stream channel will likely cause some increases in turbidity and release of fine sediments. Short-term increases in turbidity are anticipated to occur during water diversion and dewatering activities, during the first flush of the stream channel when it is re-watered, and during the first rainstorms which may mobilize disturbed sediments within the action area. This could affect water quality up to 350-feet downstream from the end of the diversion, and is a concern to NMFS because water quality is an important feature of steelhead critical habitat (Bjornn and Reiser 1991) and can affect steelhead by a variety of mechanisms. High concentrations of suspended sediment can disrupt normal feeding behavior, reduce feeding efficiency, and decrease food availability (Cordone and Kelly 1961, Bjornn *et al.* 1977, Berg and Northcote 1985). Chronic elevated sedimentation and turbidity can also reduce salmonid growth rates (Crouse *et al.* 1981), increase salmonid plasma cortisol levels (Servizi and Martens 1992), cause salmonid mortality (Cordone and Kelly 1961, Sigler *et al.* 1984), and reduce the survival and emergence of salmonid eggs and fry (Chapman 1988). Even small pulses of turbid water can cause salmonids to be displaced from established territories to less suitable habitat and/or increase competition and predation, thereby reducing survival (Waters 1995).

However, NMFS does not expect chronic or acute effects owing to sedimentation or turbidity on steelhead in Arroyo Paredon Creek, Romero Creek, or San Ysidro Creek because increases in sedimentation and turbidity levels resulting from construction activities are expected to be minimal and temporary (*i.e.*, a few hours during dewatering, and a few hours after rewatering to about one day during the first storm). This is because the area where the construction will take place is relatively small and work within the streambed is limited. Also, much of the research mentioned above was carried out in a laboratory setting with turbidity levels significantly higher than those expected to result from construction activities. BMPs and sediment control devices deployed during construction (e.g., jute-netting, straw-fiber rolls, silt-fencing, hay bales, and settling basins) are expected to minimize the effects of sedimentation and turbidity on water quality. The success of these measures has been documented during other similar projects (M. Larson, CDFG, 2008, personal communication). Furthermore, increases in sedimentation and turbidity during the first wet-season rains are not expected to be significantly higher than background levels because streams within the Southern California steelhead DPS naturally have very high sediment concentrations during storm events (USACE 2004). NMFS expects that the disturbance within the stream channel will not result in increased sedimentation within the three creeks in the long term. For these reasons, NMFS does not expect acute turbidity related effects on steelhead.

Pile installation.—Available information indicates that fish may be injured or killed when exposed to elevated levels of underwater sound pressure generated from driving steel piles with

impact hammers (Hastings and Popper 2005). Injuries to fish include hemorrhaging and the rupture of internal organs, including the swimbladder and kidney. Death can be instantaneous, occur within minutes after exposure, or occur several days later. Other sustained injuries may not lead to death but could result in reduced fitness, ability to forage, increase predation risk, impact sensory functions, and disrupt migration and behavior patterns. Therefore, the potential impact of pile driving on steelhead at Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek is of concern.

The Fisheries Hydroacoustic Working Group (FHWG[2]), uses a duel metric threshold criterion to correlate physical injury to fish exposed to underwater producing pile driving with impact hammers. Specifically, this includes single strike peak sound pressure level (SPL) of 206 decibels (dB) and a cumulative sound exposure level (SEL) of 187 dB for fish two grams or greater, or 183 dB for fish less than 2 grams. If either threshold is exceeded, then physical injury is assumed to occur. The work area within each creek will be dewatered each construction season and therefore none of the piles will be installed in or near surface waters. The sound energy originating from the ground as a result of pile driving activities will be dominated by low frequencies that do not propagate efficiently through water, particularly shallow water (less than 3 feet deep) existing beyond the dewatered work area. At a distance of 30-feet from the driven pile, peak SPL is expected to be between 172 dB and 181 dB and the SEL to be between 147 dB and 158 dB. These levels are below those that cause injury to juvenile steelhead. To further minimize the effects of pile driving on steelhead, pile driving is to occur during the dry season (June 1 and October 31) and sound attenuation devices (e.g., cushion blocks) will be implemented (a 10 dB reduction in sound is assumed from the proposed attenuation). Therefore, no adverse effects to steelhead are expected as a result of pile driving associated with the proposed action.

B. Effects on Critical Habitat

Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek are designated critical habitat. The proposed action will temporarily impact approximately 0.35 acres of critical habitat (0.16 acres at Arroyo Predon Creek; 0.08 acres at Romero Creek; 0.11 acres at San Ysidro Creek). PCE's of critical habitat for steelhead in the action area include sites for migration and some marginal rearing opportunities. The potential effects of the proposed action on designated habitat for the species include the temporary loss of aquatic habitat during dewatering, disturbance of the streambed and banks, and removal of riparian vegetation. The temporary loss of channel and associated streambanks (within the dewatered area) for a 5-month period for up to 3 construction seasons is not expected to permanently adversely affect essential physical or biological features associated with steelhead critical habitat. These features will return to their current condition or be improved upon completion of the proposed action. Therefore, the value of critical habitat for steelhead will not be appreciably reduced in the action area beyond the temporary effects noted here.

[2] Member agencies of the FHWG include Caltrans, Federal Highways Administration, NMFS (Northwest and Southwest Regions), United States Fish and Wildlife Service, Oregon and Washington Departments of Transportation.

Manipulation and disturbance of the streambed can result in changes to channel morphology and hydraulic conditions that may create barriers or impediments to steelhead migration. Bridge construction and removal will result in minor changes to habitat space, as the replacement bridges will be constructed mostly within the existing bridge footprint and alignment. After construction is complete, the channels will be wider and have added roughness. The existing rearing conditions are expected to remain the same because the proposed grading of the stream bed will retain the existing substrate size, slope and thalweg. However, the final design and grading plans have not been submitted and there are some uncertainties as to how the final project conditions at each site will function, hence there exists a need to review the final design and grading plans. Hydraulic computations and a one-dimensional (1-D) HECRAS model were used to analyze potential post-project hydraulic conditions through each individual project reach. The results of the model showed that the proposed action will likely improve fish passage at each creek by decreasing velocities at peak flows. However, there are limits to a 1-D model and the bathymetry data used to develop each model may not reflect the streambed characteristics upon completion of the proposed action. Therefore, monitoring of each site following implementation of the proposed action is warranted and would assess whether a fish passage problem exists or if the proposed action is functioning as designed. In this regard, this effects assessment assumes the following: (1) Caltrans will continue to coordinate with NMFS on details regarding the final design and grading plans, including submission of the subject plans to NMFS for review and comment, and (2) Caltrans will revise the design or grading plan according to NMFS guidance when such revisions are necessary to ensure the proposed habitat and fish passage conditions are attained. Based on these assumptions, the proposed action is not expected to appreciably reduce the functional value of the action areas as sites of freshwater migration or rearing.

Riparian vegetation provides numerous functional values that may benefit migrating, rearing, or spawning steelhead. Riparian vegetation enhances stream habitat by providing shade, cover, and shelter for stream fish in the form of overhanging branches, rootwads, undercut banks, and scour pools (Wesche *et al*. 1987, Platts 1991, Wang *et al*. 1997, Bilby and Bisson 1998, Naiman *et al*. 2000). Riparian zones enhance water quality by reducing the input of fine sediments and pollutants into streams (Karr and Schlosser 1978, Lowrance *et al*. 1985). Riparian vegetation also provides a source of drift forage for juvenile steelhead (Wesche *et al*. 1987). The proposed action is expected to result in the temporary degradation of these elements of critical habitat within discrete areas of Arroyo Paredon Creek and San Ysidro Creek due to a loss of some shade and cover where riparian vegetation is currently present along the north and south banks of the active channels. Caltrans anticipates construction of the proposed action will impact 11-arroyo willows at Arroyo Paredon Creek and 3-coast live oaks, 2-Monterey pine trees, and 1-Blue Gum eucalyptus at San Ysidro Creek. Indirect effects associated with the removal of riparian vegetation can result in increased water temperatures (Mitchell 1999, Opperman and Merenlender 2004) and decreased water quality (Lowrance *et al*. 1985, Welsch 1991) attributable to a loss of shade and cover over the active channel. However, the loss of trees and vegetation as a result of the proposed action are expected to be temporary, because native riparian vegetation will be replanted throughout the disturbed areas to minimize impacts from construction. Until the action area is recovered, riparian vegetation located upstream and downstream of the affected reach is expected to help maintain stream temperatures and provide cover for steelhead during the interim conditions. Based on NMFS' experience observing the response of riparian vegetation to human-made disturbances (M. McGoogan, NMFS 2013,

personal communication), the riparian zone is expected to recover from the proposed action 1- to 2-years following the completion of construction. Overall, the amount and characteristics of the existing riparian vegetation that will be affected by the proposed action is not expected to diminish the overall functional value of the migratory corridor and freshwater rearing sites within the action area.

F. Summary of Effects

The effects of the proposed action on steelhead and critical habitat are: (1) the temporary loss and alteration of aquatic habitat for the approximate 5-month period of project construction for up to 3 construction seasons (June 1 to October 31); (2) the temporary harassment, capture and collection of steelhead during water diversion and fish relocation and temporary obstruction of upstream migration through the action area; (3) the temporary harassment of steelhead during pile installation; (4) the re-grading of the stream bed; and, (5) alteration and temporary (1 to 2 year) reduction in riparian habitat. NMFS expects the effects to steelhead from disrupting migration and the loss and alteration of aquatic habitat during water diversion will be temporary and discountable because (1) migration through the action area by steelhead will be unimpaired after the water diversion is removed and the proposed action is complete; (2) continued use of aquatic habitat by steelhead in areas adjacent to the dewatered area of the creek will not be affected during the proposed action; and (3) steelhead will be able to use the aquatic habitat throughout the action area after the proposed action is complete. NMFS anticipates that pile driving effects within 30-feet from the source will be below the levels known to cause harm or mortality to fish, and, therefore, are not expected to adversely affect steelhead. With regard to critical habitat, the impacts to the riparian zone are expected to be temporary and confined to discrete areas, and the revegetation plan is expected to create a functioning riparian zone that provides cover and shelter for steelhead within the action area of Arroyo Paredon Creek and San Ysidro Creek. The impacts from disturbing the streambed are not expected to adversely affect the quality or quantity of aquatic habitat, or habitat-forming geomorphic processes downstream of the action area; rather the proposed action is expected to ultimately improve steelhead passage conditions. Maintained access to spawning and rearing habitat upstream of the action area on Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek as well as the enhancement of passage conditions within the action areas are expected to favor the viability of the endangered Southern California DPS of steelhead and not reduce the conservation value of critical habitat for the species.

VI. CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, local or private actions that are reasonably certain to occur in the action area considered in this Biological Opinion. NMFS is generally familiar with activities occurring in the action area, and at this time is unaware of such actions that would be reasonably certain to occur. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Endangered Species Act. Consequently, NMFS believes no cumulative effect, beyond the continuing effects of present land uses, is likely.

VII. CONCLUSION

After reviewing the best scientific and commercial information available, the status of the endangered Southern California DPS of steelhead, the environmental baseline for the action area, expected effects of the proposed action, and cumulative effects, NMFS concludes the proposed action is not likely to jeopardize the continued existence of the Federally endangered Southern California DPS of steelhead, or destroy or adversely modify critical habitat for this species.

VIII. INCIDENTAL TAKE STATEMENT

Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Harm is further defined by NMFS to include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. Incidental take is defined as take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and must be undertaken by Caltrans for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to assume and implement the terms and conditions or (2) fails to adhere to the terms and conditions of this incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to NMFS as specified in the incidental take statement (50 CFR §402.14(i)(3)).

A. Amount or Extent of Take

NMFS anticipates the proposed action that will occur in Arroyo Paredon Creek, Romero Creek, and San Ysidro Creek, Santa Barbara County, California, may result in the incidental take of steelhead at each location. Incidental take would be in the form of harassment or harm due to the water diversions, and steelhead capture or collection due to relocation procedures, if such procedures become necessary. Based on field surveys of the action area, and the depth, size, and amount of cover in the aquatic habitat immediately within the action area, NMFS anticipates the following amount of incidental take: All steelhead in the action area, anticipated to be no more than 10 juveniles that are captured or harassed during each of three construction seasons (no more than 30 individuals at Romero Creek and San Ysidro Creek over 3 construction seasons; no more than 20 individuals at Arroyo Paredon Creek over 2 construction seasons). No more than 5 juvenile steelhead are expected to be injured or killed at any single action area (total of 15 individuals) as a result of dewatering the action areas and relocating this species. No other incidental take of steelhead is anticipated as a result of the proposed action. The accompanying

Biological Opinion does not anticipate any form of take that is not incidental to the proposed action.

B. Effect of Take

In the Biological Opinion, NMFS concludes that the anticipated level of take associated with the proposed action is not likely to result in jeopardy to the endangered Southern California DPS of steelhead or destroy or adversely modify designated critical habitat for this species.

C. Reasonable and Prudent Measures

NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize and monitor incidental take of steelhead:

1. Minimize harm and mortality to steelhead from fish relocation and pile driving activities.
2. Minimize the impacts to steelhead and critical habitat from construction activities.
3. Minimize the amount and extent of sediment-related effects on the quality and quantity of instream habitat within the action area.
4. Minimize the amount and extent of temporary and permanent changes in the quality and quantity of instream and riparian habitat within the action area.

D. Terms and Conditions

In order to be exempt from any prohibitions of section 9 of the ESA, Caltrans must ensure that it complies with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary:

1. The following terms and conditions implement reasonable and prudent measure No. 1.

   A. Caltrans shall retain a biologist with expertise in the areas of resident or anadromous salmonid biology and ecology; fish/habitat relationships; biological monitoring; and, handling, collecting, and relocating salmonid species.

   B. Caltrans' biological monitor shall oversee the construction site during implementation and removal of the water diversion for removing any steelhead. The biologist shall capture steelhead in the isolated wetted work areas and then relocate steelhead to suitable habitat upstream or downstream. One or more of the following methods shall be used to capture steelhead: seine, dip net, throw net, minnow trap, or by hand. Electrofishing is prohibited.

   C. Caltrans' biological monitor shall provide a written fish relocation report to NMFS within 30 calendar days following completion of the proposed action. The report shall include:

1) the number and size of any and all steelhead relocated during the proposed action or fish relocation; 2) the date and time of the collection and relocation site; 3) a description of any problem encountered during the proposed action or when implementing terms and conditions; and, 4) any effect of the proposed action on steelhead that was not previously considered. The report should be sent to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213.

D. Caltrans' biologist shall contact NMFS (Jay Ogawa, 562-980-4061) immediately if one or more steelhead are found dead or injured. The purpose of the contact shall be to review the activities resulting in take and to determine if additional protective measures are required. All steelhead mortalities shall be retained, placed in an appropriate-sized sealable plastic bag, labeled with the date and location of collection, fork length measured, weight, and be frozen as soon as possible. Frozen samples shall be retained by the biologist until specific instructions are provided by NMFS. Subsequent notification must also be made in writing to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213 within five days of noting dead or injured steelhead. The written notification shall include: 1) the date, time, and location of the carcass or injured specimen; 2) a color photograph; 3) cause of injury or death; and, 4) name and affiliation of the person who found the specimen.

E. Caltrans' biological monitor shall monitor sound levels during pile driving activities to ensure that levels at the streams edge and underwater are not higher than the anticipated peak SPL and cumulative SEL described in the biological assessment. Pile driving shall be monitored at a minimum of 3 locations, approximately 30-feet away from the pile being driven and immediately upstream and downstream of the dewatered work area. If sound levels at the streams edge or underwater are higher than those proposed, the biologist shall be empowered to halt work and will contact NMFS (Jay Ogawa, 562-980-4061) immediately and prior to continuing pile driving activities.

2. The following terms and conditions implement reasonable and prudent measure No. 2.

A. Caltrans shall provide the final design and grading plans of the proposed action to NMFS within 14 calendar days prior to the beginning of construction so NMFS may review and provide comments to increase the likelihood that the proposed fish passage and habitat conditions at each site will be incorporated into the completed project. Caltrans shall revise and resubmit the plans to NMFS within 30 calendar days of receiving NMFS comments. Caltrans must receive final NMFS agreement with the design and grading plans prior to implementation of the proposed action. Plans shall be sent to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213.

B. Caltrans' biological monitor shall monitor all construction activities, instream habitat, and performance of sediment control devices for the purpose of identifying and reconciling any condition that could adversely affect steelhead or their habitat. The biologist shall be empowered to halt work activity and to recommend measures for avoiding adverse effects to steelhead and their habitat. The biological monitor shall contact NMFS (Jay Ogawa, 562-980-4061) immediately for further guidance if any

unanticipated problem, which could have an adverse effect on steelhead or critical habitat, occurs. Caltrans' biological monitor shall provide photographs of the graded section of stream bed within the action area and vicinity within 30 calendar days following completion of the proposed action, to ensure proposed methods of construction were implemented.

A. Any heavy equipment used in or near the creek channel shall be removed from the channel at the end of each workday. When feasible work shall be performed from the roadway. All heavy equipment shall be checked for leaks of oil, gas, hydraulic fluid and any other pollutant which could impact water quality and instream habitat each workday prior to being deployed into the creek. Such leaks shall be controlled for the purpose of avoiding water-quality impacts to surface water.

B. All materials and debris related to bridge demolition and construction shall be removed from the creek channel bed and riparian zone as soon as possible and prior to November 1.

3. The following terms and conditions implements reasonable and prudent measure No. 3.

A. Erosion control or sediment detention devices (*e.g.*, settling basin) shall be installed prior to the time of construction activities and incorporated into Caltrans' maintenance activities. These devices shall be in place during construction activities for the purpose of minimizing sediment and sediment slurry input into flowing water. Sediment collected in the devices shall be disposed of off-site and will not be allowed to reenter the creek channel.

4. The following terms and conditions implements reasonable and prudent measure No. 4.

A. Caltrans shall obtain a topographical survey of the stream channel at each site within 30 calendar days following implementation of the proposed action and submit the results as soon as they become available. The survey results shall be sent to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213. The survey shall start slightly upstream of the water diversion at each crossing and end slightly downstream of the water diversion. The survey shall possess sufficient detail to provide channel profile and cross-sections for the purpose of ensuring the proposed action does not result in reduced fish-passage conditions or degradation of existing aquatic habitat.

B. Caltrans or their authorized biologist shall provide a revegetation report that is to include a description of the locations seeded or planted, the area revegetated, proposed methods to monitor and maintain the revegetated area, and criteria used to determine the success of the plantings. The revegetation report shall be sent to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213, within 30 working days following completion of the proposed action.

X. REINITIATION OF CONSULTATION

This concludes formal consultation on the actions outlined in the project proposal. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in this opinion, (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, formal consultation shall be reinitiated immediately.

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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

Appendix I Evaluation of Montecito Association's Proposal

As discussed in Chapter 4 of this document, Caltrans has provided numerous opportunities for community involvement and input since the beginning of the project development process for the South Coast 101 HOV Lanes project. In spring 2009, staff from Caltrans and the Santa Barbara County Association of Governments (SBCAG) began outreach efforts to communities such as Montecito, Summerland, Toro Canyon, Carpinteria, and Santa Barbara that would potentially be affected by the project. Various public scoping meetings were held in 2009. Once the community became aware of the upcoming project, the Montecito Association 101 subcommittee was formed. As part of the public outreach, Caltrans staff scheduled and held at least 10 meetings with the Montecito Association subcommittee between 2010 and 2012 (refer to Chapter 4 for a list of those meetings).

The draft environmental document was released in March 2012, and the comment period closed July 9, 2012. Although a comment letter was received from the Montecito Association within the allotted timeframe, the Montecito Association also submitted a proposal of two concepts for the Cabrillo Boulevard/Hot Springs Road Interchange in November 2012 and March 2013. To address the proposed concepts, Caltrans staff gave a Plan Evaluation and Findings PowerPoint presentation to the Santa Barbara County Association of Governments board on May 16, 2013.

Although the two concepts were submitted after the public comment period, Caltrans and Santa Barbara County Association of Governments staff felt it was in the best interest of the project and the community to review and discuss the Montecito Association concepts as part of this final environmental document. Note that these two concepts were also on the Common Sense 101/Community Coalition website.

This overview compares and explains certain elements of the Cabrillo Interchange configurations that were previously considered and dismissed by the team. One issue creating differing opinions was the existing left-hand on- and off-ramps at Cabrillo Boulevard and Sheffield Drive. Caltrans leadership considered whether to allow these ramps to remain but, based on stated policies and the present configurations of the ramps, determined that these left-hand ramps cannot remain. The Montecito Association on the other hand believes the left-hand ramps function fine as they are.

This appendix discussion explains how issues relative to the two interchanges were evaluated and why certain features were not carried forward.

The following are three components of the Montecito Association's Alternative Plan:

- Cabrillo Interchange Concept
  - Concept 1 (October 2012)
  - Concept 2 (May 2013)
- Sheffield Interchange Concept
- Elimination of HOV lanes in Montecito

The evaluation process for considering the Montecito's Alternative Plan consisted of:

- Developed concepts into working designs
- Designed horizontal and vertical alignments
- Applied engineering standards and principles

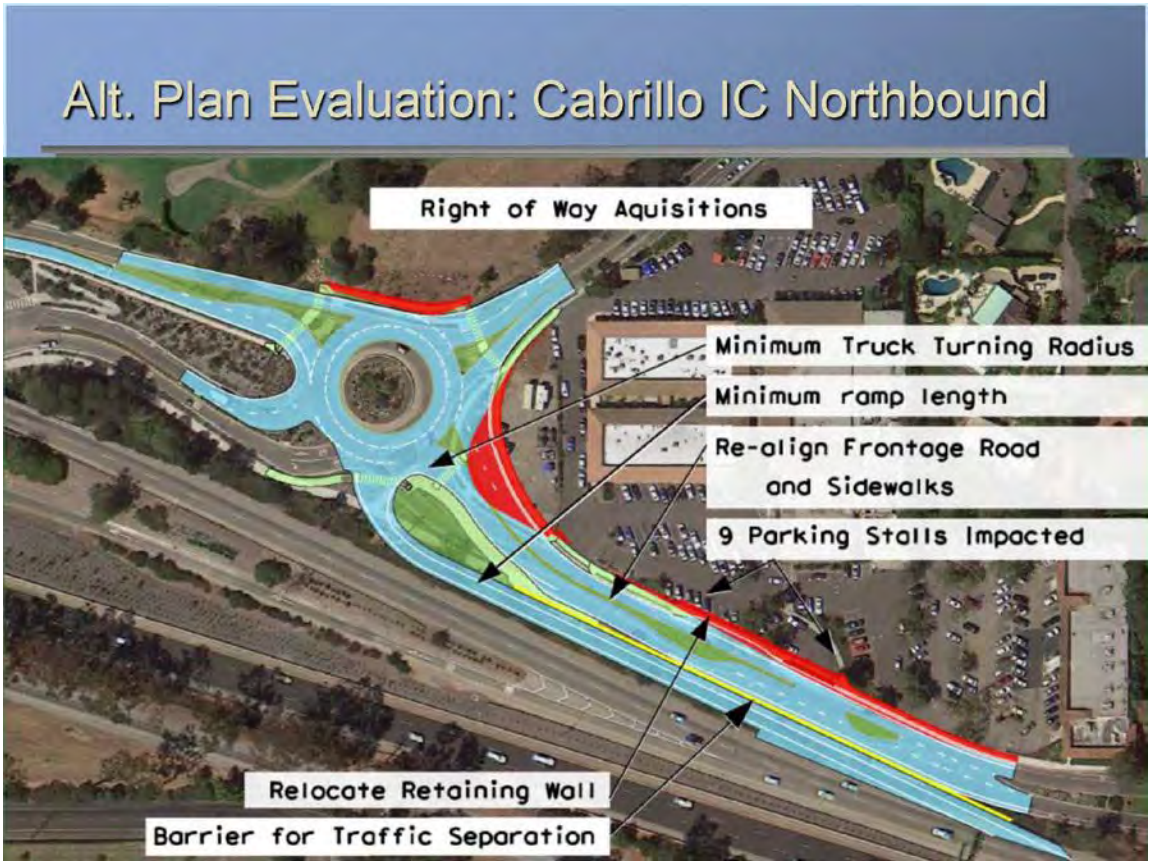
The stated goals of the Montecito Association's Alternative Plan are to:

- Solve the congestion problem—add a third lane
- Minimize time required for construction
- Minimize disruption impacts on local roads and regional businesses
- Spend the money wisely

Figure 1 shows the existing interchange

Figure 2 shows Concept 1

Figure 3 shows a graphic assessment of Concept 1



Concept 1 involves the roundabout, which required an additional iterative design and operational analysis. The conclusions of this analysis were as follows:

- The roundabout configuration shown above would result in unacceptable operations as the new off-ramp would queue or cause a backup of vehicles onto the mainline.
- This concept would require a larger roundabout configuration that provides increased spacing between entry points (refer to figure on next page).
- A larger roundabout that provides for adequate operations would result in extensive right-of-way impacts to the golf course and/or shopping center.

Figure 4 shows a close-up of the size of the roundabout and associated features

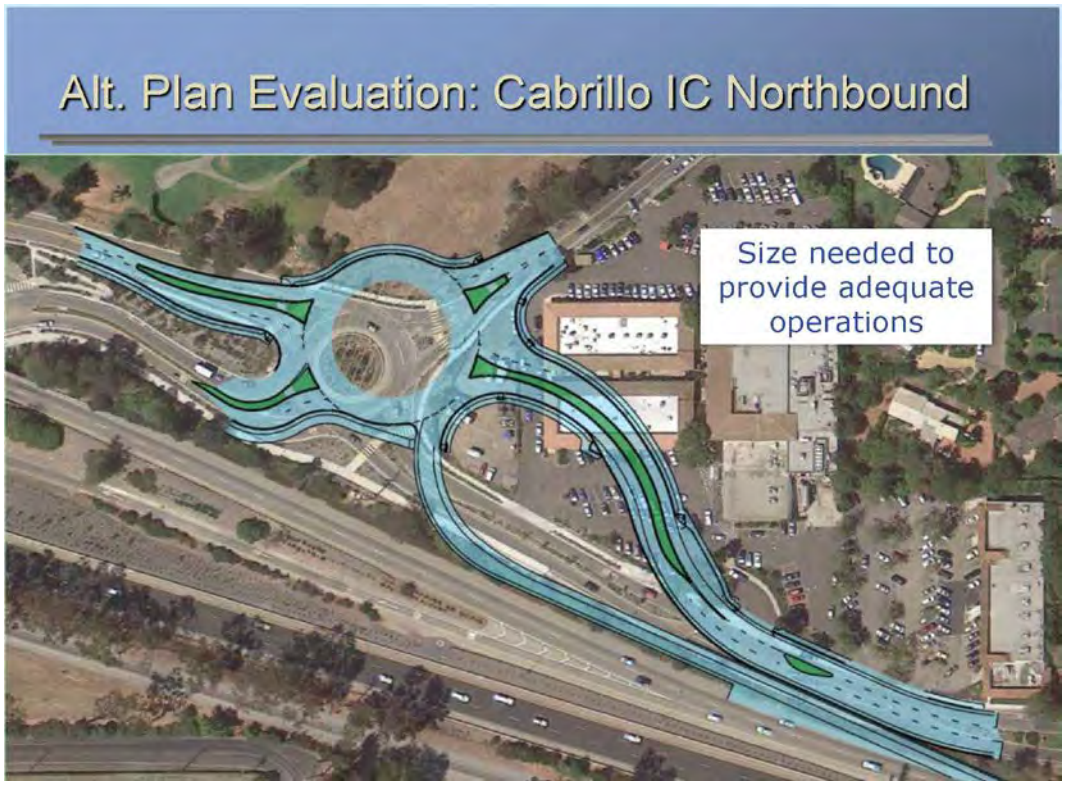


Figure 5 shows the existing Los Patos off-ramp conditions

Figure 6 shows the railroad bridge height constraints

Figure 7 shows accidents caused by the low clearance of Los Patos Railroad Overcrossing

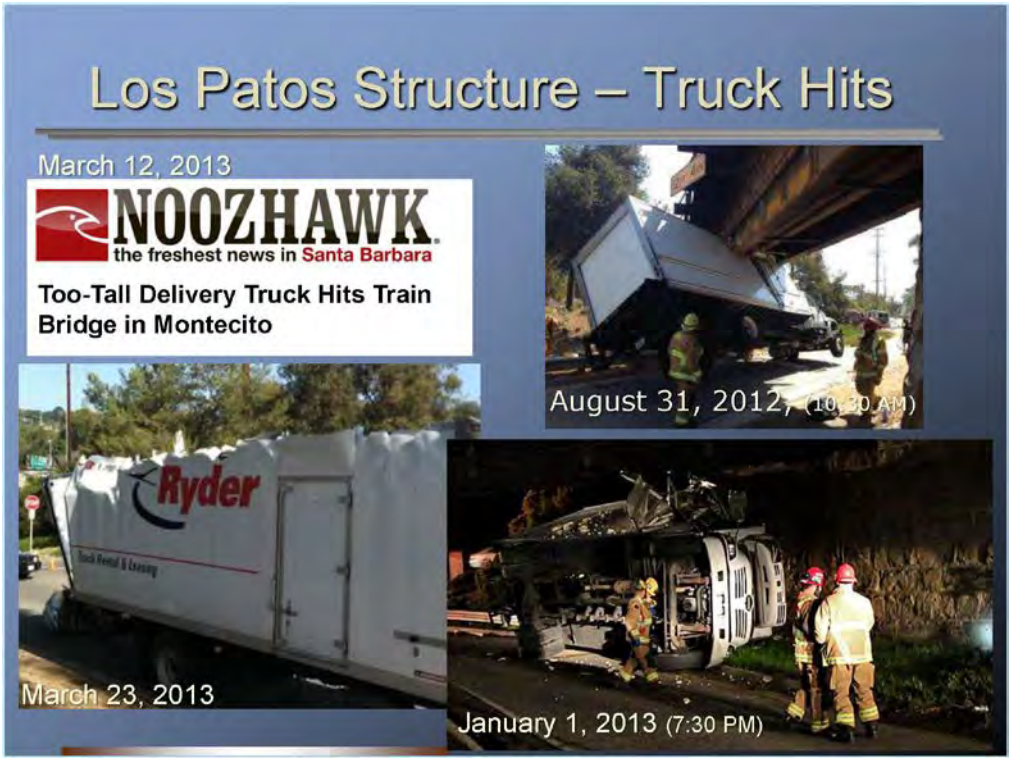
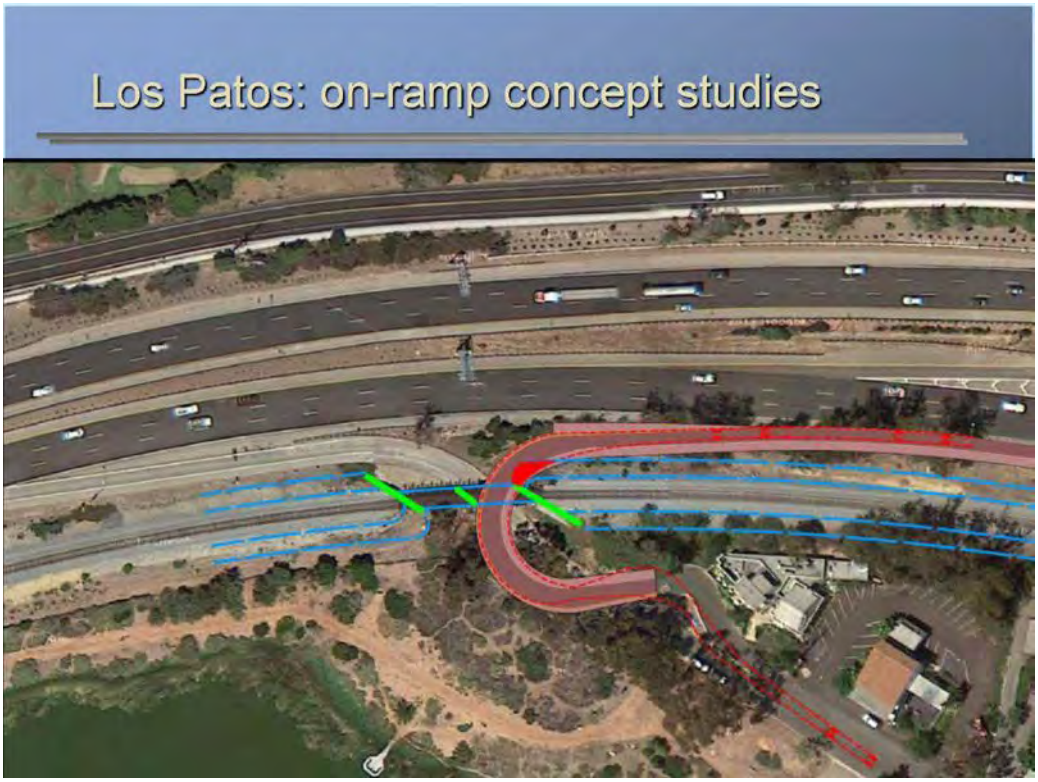
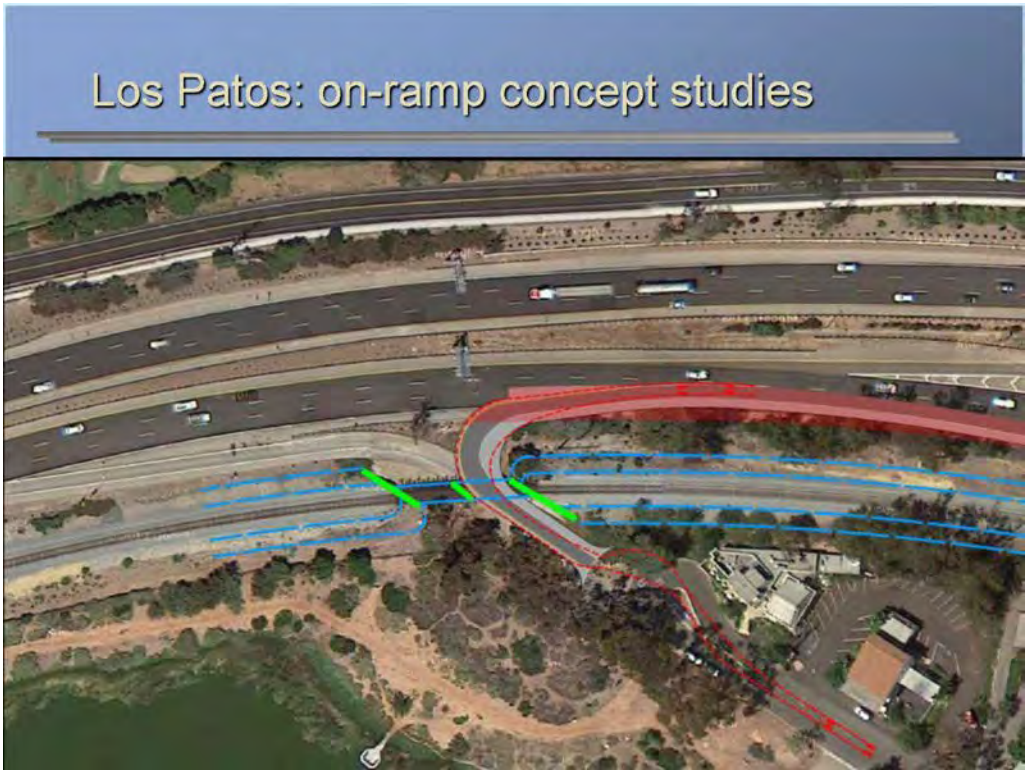
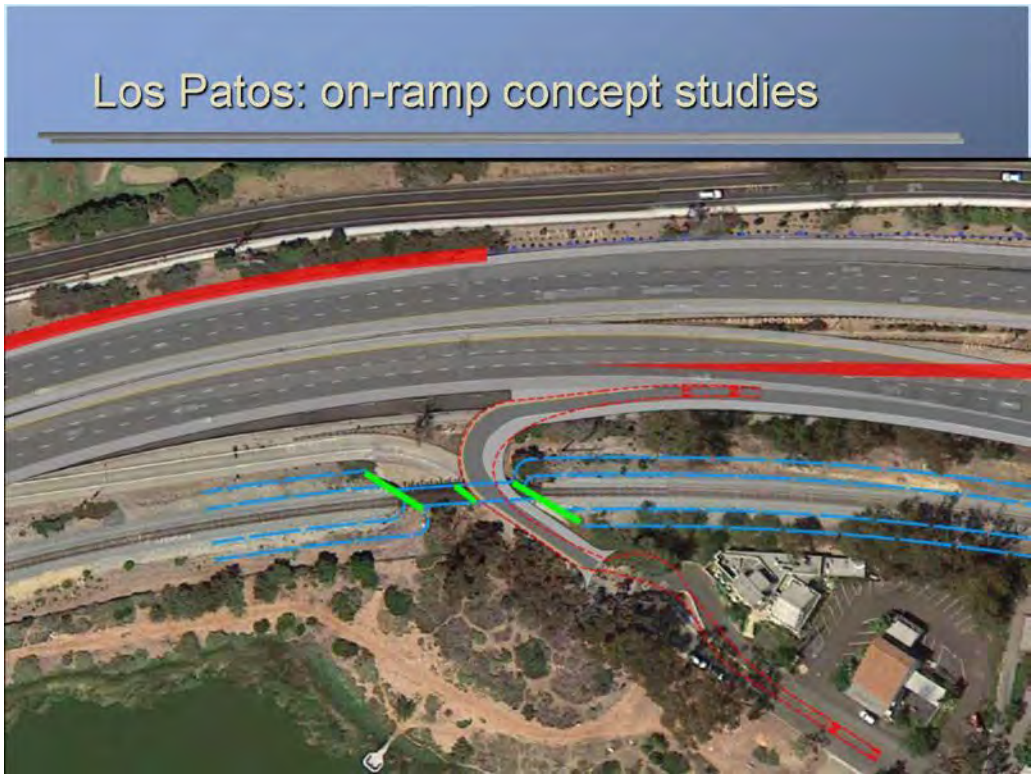


Figure 8 shows a Los Patos bridge concept

Figures 9, 10, and 11 show three concepts for the Los Patos on-ramp

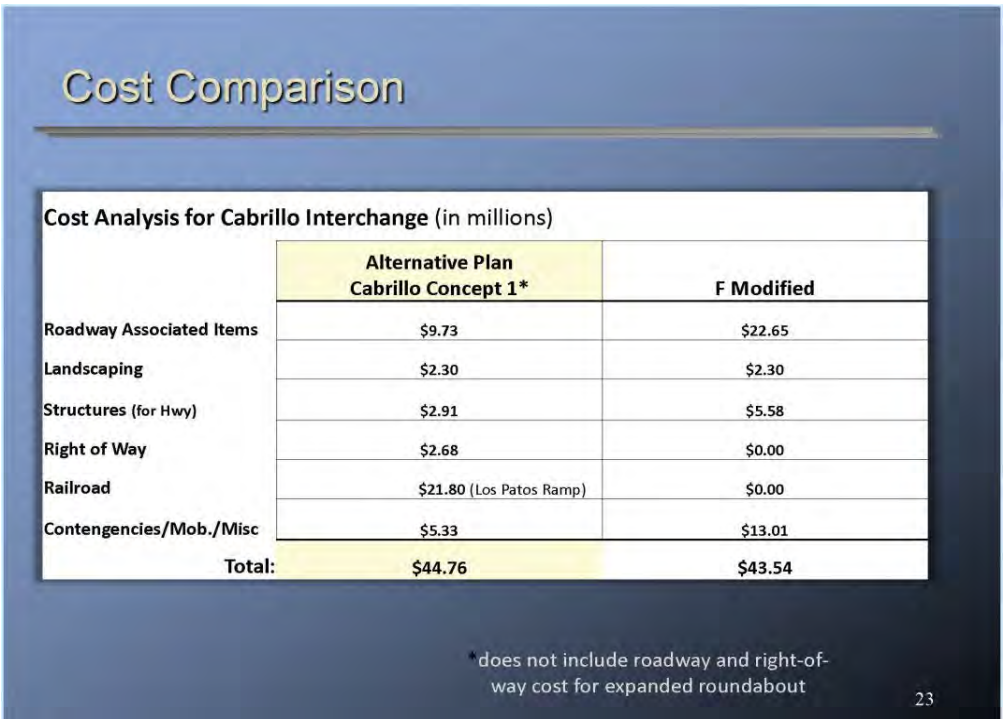






Three ramp alignment options were evaluated. It was determined through this evaluation that a shift in the mainline lanes would be required to fit a ramp between the existing railroad structure abutments. This inland shift of the mainline lanes would move into the locations where the southbound left-side ramp currently exists.

Figure 12 shows a cost comparison - Montecito Association's Concept 1 versus F Modified



Cost Comparison

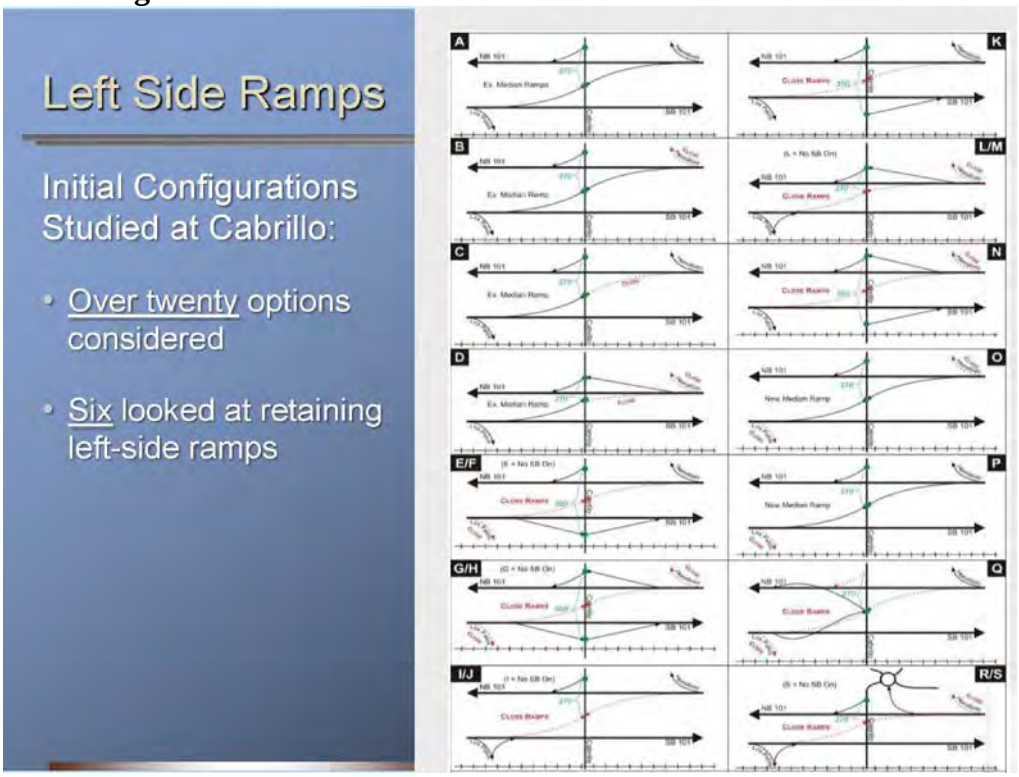
Cost Analysis for Cabrillo Interchange (in millions)

	Alternative Plan Cabrillo Concept 1*	F Modified
Roadway Associated Items	$9.73	$22.65
Landscaping	$2.30	$2.30
Structures (for Hwy)	$2.91	$5.58
Right of Way	$2.68	$0.00
Railroad	$21.80 (Los Patos Ramp)	$0.00
Contengencies/Mob./Misc	$5.33	$13.01
Total:	**$44.76**	**$43.54**

*does not include roadway and right-of-way cost for expanded roundabout

23

Figure 13 shows the configurations considered for Cabrillo Boulevard Interchange



Left-Side Ramps

In addition to the following, please refer to the fact sheet that is contained in Appendix L.

AASHTO's A Policy on Geometric Design of Highways and Streets, 2011: Extreme care should be exercised to avoid left-hand entrances and exits in the design of interchanges (p. 10-103)

California Department of Transportation, Highway Design Manual 2012: All freeway entrances and exits shall connect to the right of through traffic. (504.2)

As noted in the collision discussion in Section 2.1.5 of the final environmental document, the current left-side ramps at Cabrillo have a higher-than-average accident rate:

- Northbound Cabrillo left-side off-ramp: 35% higher than average (total collisions)
- Southbound Cabrillo left side off-ramp: 50% higher than average – over twice the average (injury accidents)

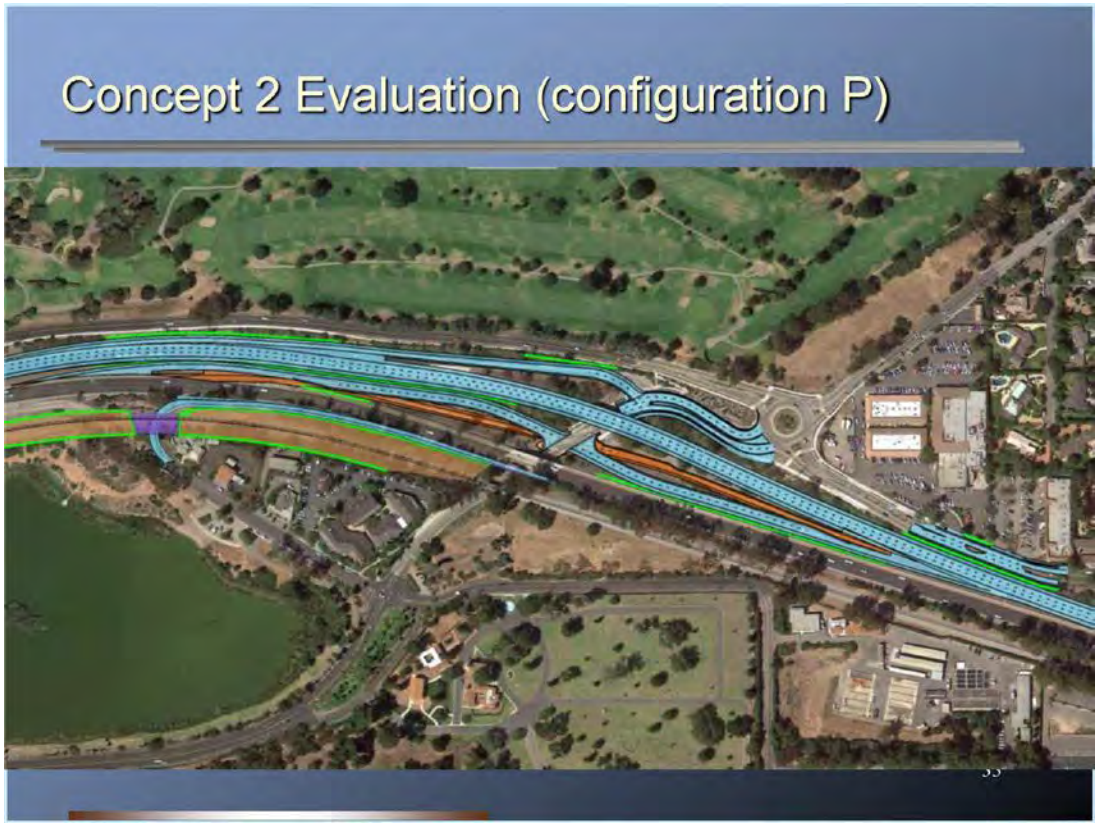
Caltrans' Findings for Cabrillo Interchange Concept 1

- Acquisition of private and commercial property would be required to reconstruct the roundabout.
- Union Pacific Railroad will not permit modifications at Los Patos as proposed by Montecito Association.
- Concept 1 would not result in cost savings.
- Left-side ramps cannot be retained due to safety and operational reasons (refer to Fact Sheet for left-side ramps in Appendix J)

Cabrillo Interchange Concept 2

Figure 14 shows the Montecito Association's proposal for Concept 2

This proposal is effectively the same as configuration P previously considered by the Project Development Team shown in Figure 15



Caltrans' Findings for Cabrillo Interchange Concept 2

- Concept 2 requires reconstruction of existing ramps.
- Concept 2 requires partial reconstruction of Coast Village Road.
- The order of magnitude costs: $27 million.
- Adding a future southbound on-ramp would require railroad reconstruction and an on-ramp at Los Patos (+$21 million = $48 million).
- Left-side ramp user expectation, weave, and diverge issues remain.
- Total estimated construction duration would be approximately 28 months.

Cabrillo Interchange Construction Staging

Caltrans worked quickly to provide details for staging the construction of the F Modified configuration to address the following concerns raised by the community:

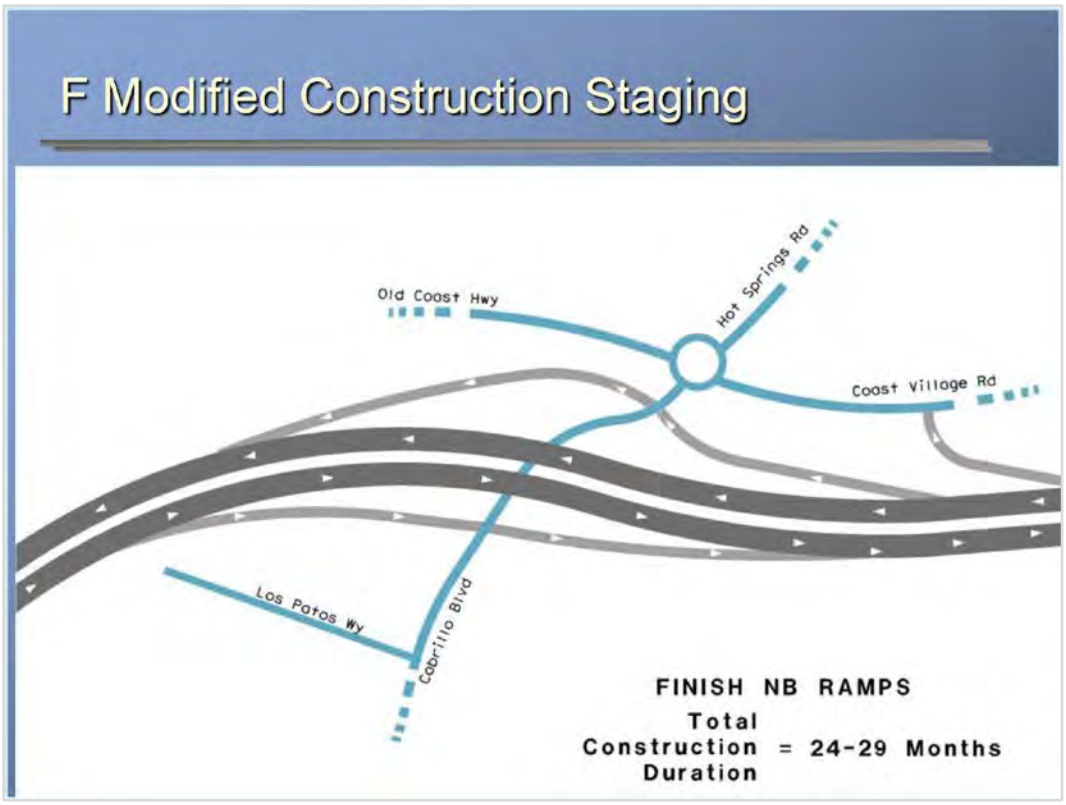
- Need for the freeway lanes and Cabrillo Boulevard to be open for traffic and emergency response.
- Need to limit extended ramp closures to avoid traffic diversions.

- Need to expedite construction duration and avoid lengthy construction impacts.

The details for the construction staging plans for F Modified are as follows:

- Two lanes would remain open on U.S. 101 in each direction except for intermittent nighttime lane closures.
- Cabrillo Boulevard would remain open except for intermittent nighttime lane closures.
- Access to and from Cabrillo Boulevard would be maintained.
- No traffic would be diverted to Los Patos Way.
- Hermosillo off-ramp would be the only northbound off-ramp for one month or less.
- The total construction duration would be 24-29 months.

Figure 16 shows the staging for constructing F Modified



Sheffield Interchange

Figure 17 shows the Montecito Association's Alternative Plan for Sheffield Interchange

Figure 18 shows the cross-section of the interchange, which is located in a constrained location

Figure 19 shows the layout required to retain the median planter

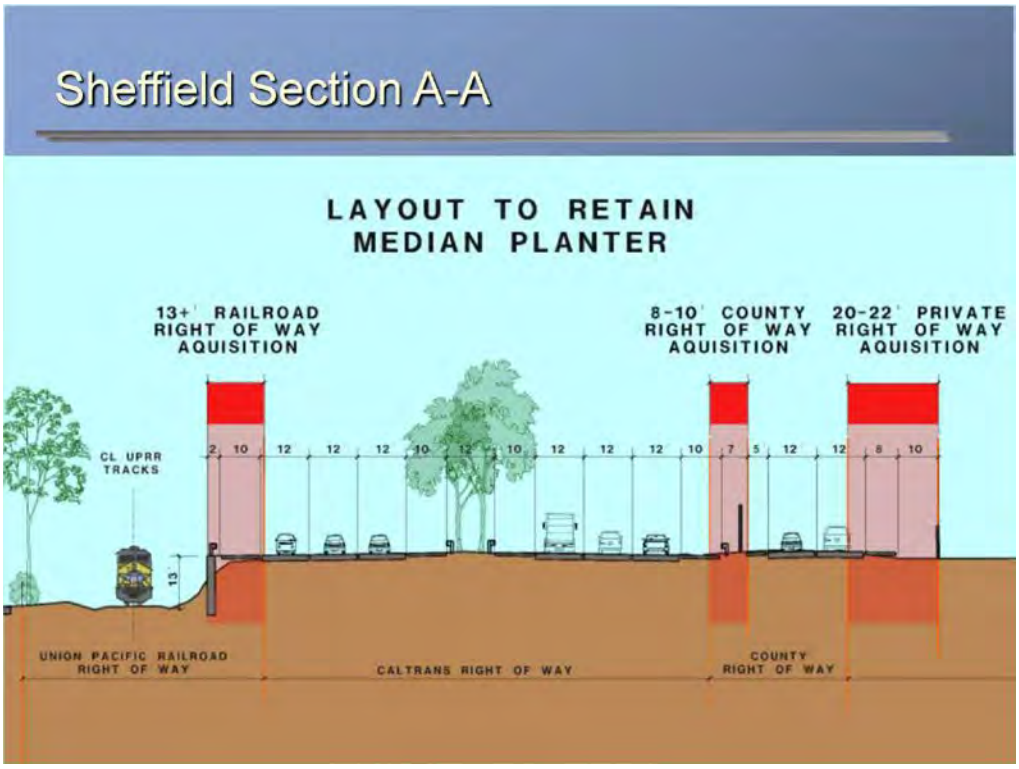


Figure 20 shows a cross-section of the Montecito Association's proposal for Sheffield; the design requires acquisition of 6 feet of railroad right-of-way

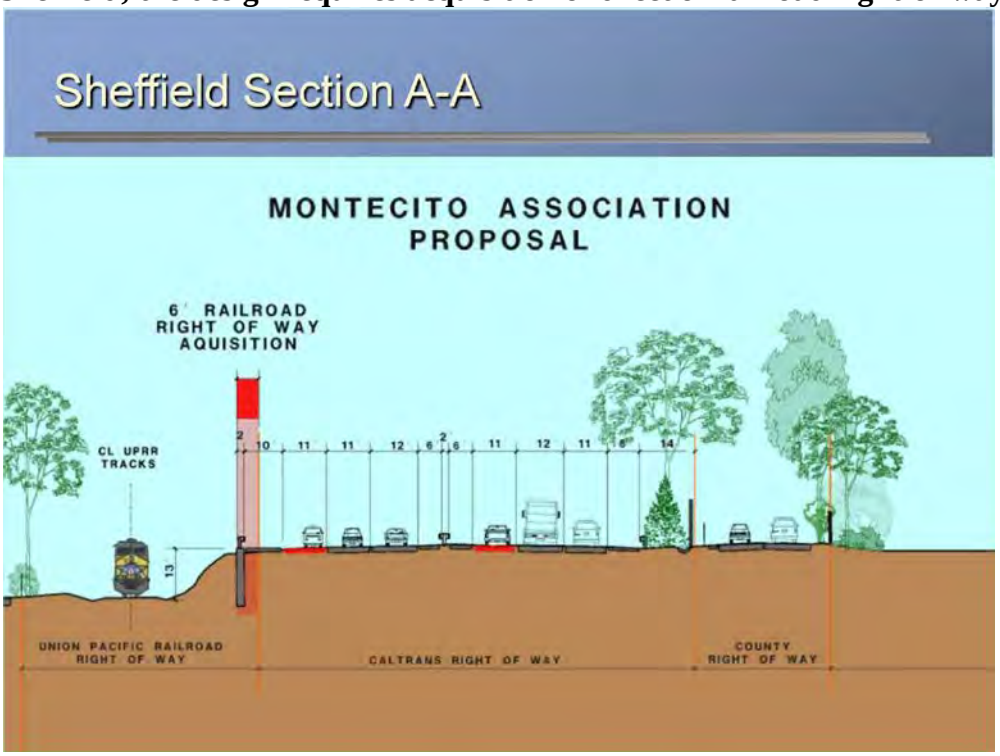
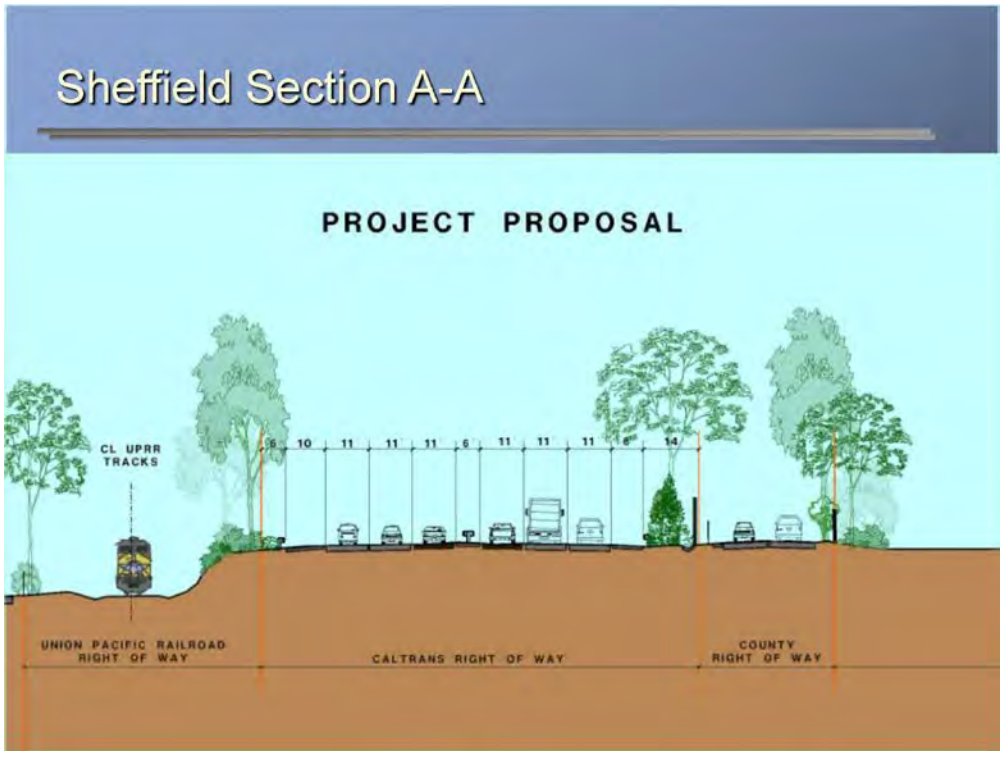


Figure 21 show the Caltrans proposal for Sheffield



Additional Considerations for Sheffield

Southbound Ramp Conditions:

- The existing southbound on-ramp enters from below the freeway on uphill grade into the fast lane.
- Spacing to Evans off-ramp - there is limited area for weaving between successive ramps.
- Left-side ramps - Added lane would exacerbate operational and safety issues.

Caltrans Findings for the Montecito Association Concept for the Sheffield Interchange

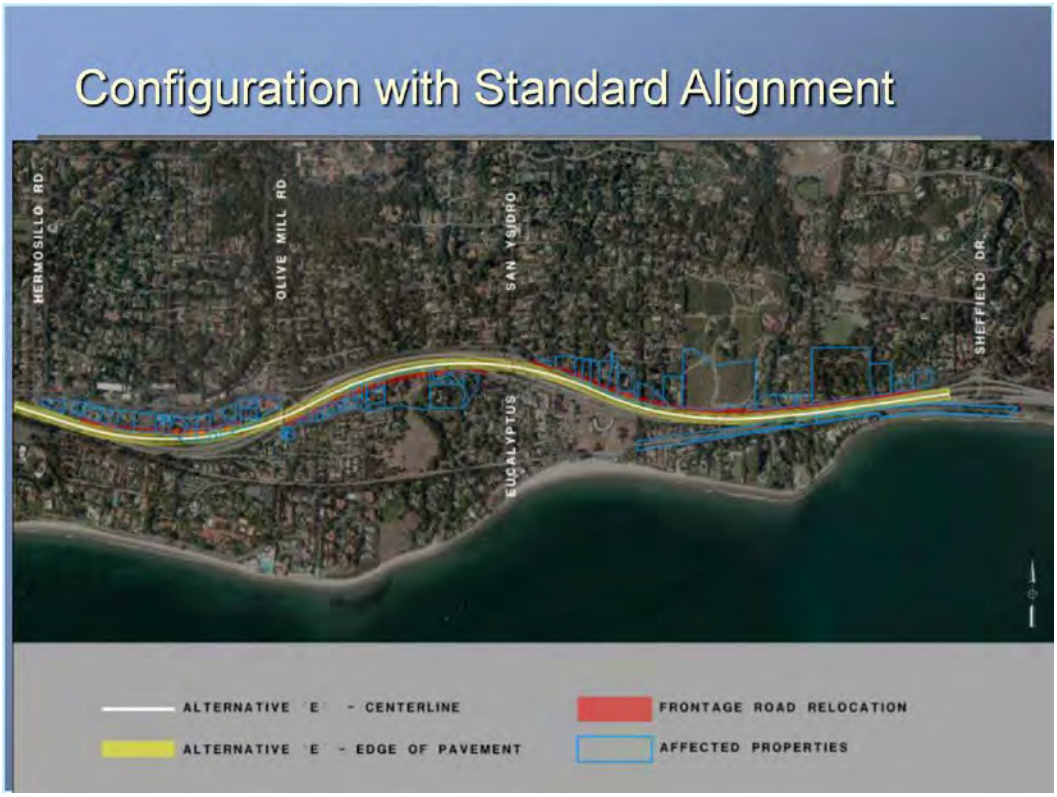
- Acquisition of property from Union Pacific Railroad is required.
- Median landscaping cannot be maintained without acquisition of private residential properties along North Jameson.
- Left-side ramps cannot be retained due to safety and operational reasons.

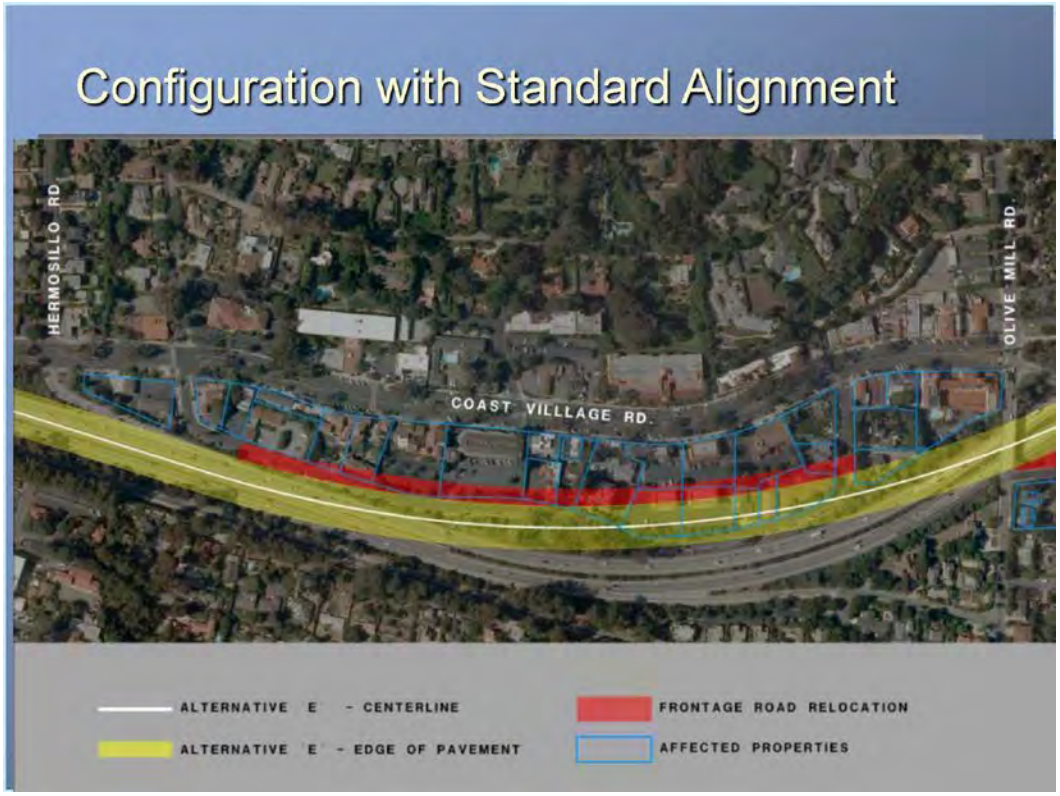
Figure 22 shows the Sheffield Interchange refinements made by Caltrans

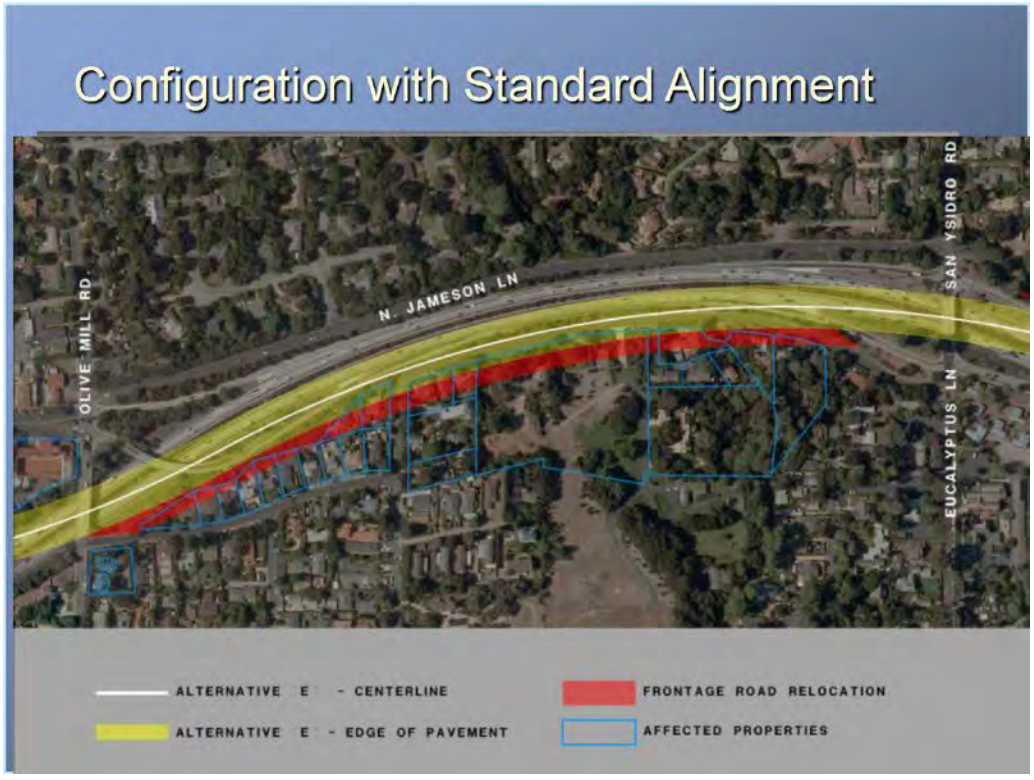
Montecito Area Design Considerations
Standard Alignment Summary (Alternative E)

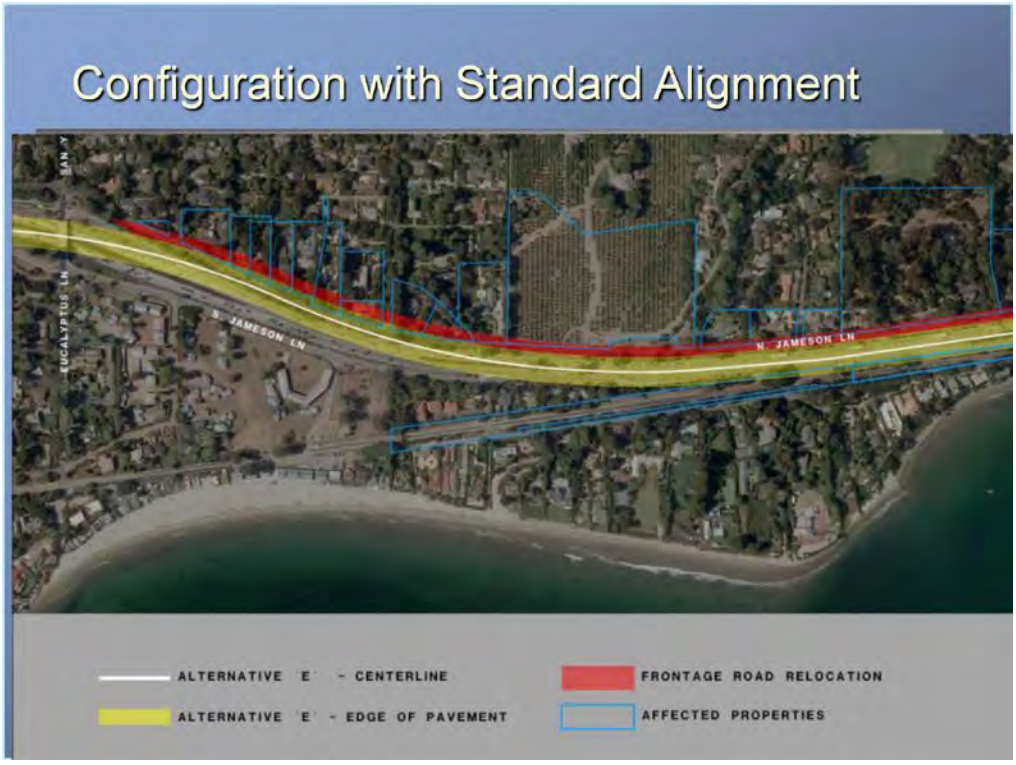
- This configuration was evaluated early in the environmental phase by the Project Development Team
- The alternative would have:
  - Provided standard alignment.
  - Accommodated median planting.
  - Retained some nonstandard features.

Figures 23-26 show the Standard Alignment Configuration (Alternative E)




Configuration with Standard Alignment
HERMOSILLO RD
OLIVE MILL RD
COAST VILLLAGE RD
ALTERNATIVE E - CENTERLINE
ALTERNATIVE E - EDGE OF PAVEMENT
FRONTAGE ROAD RELOCATION
AFFECTED PROPERTIES


Configuration with Standard Alignment
OLIVE MILL RD
N. JAMESON LN
SAN YSIDRO RD
EUCALYPTUS LN
ALTERNATIVE E - CENTERLINE
ALTERNATIVE E - EDGE OF PAVEMENT
FRONTAGE ROAD RELOCATION
AFFECTED PROPERTIES



Summary of Caltrans' Evaluation of the Standard Alignment

Alternative E would have resulted in:

- Realignment of U.S. 101 and many frontage roads.
- Acquisition of over 50 private properties (some partial).
- Direct effects to historic properties.
- Conflicts with sensitive species and cultural resources.
- Significant loss of mature landscaping.
- Costs beyond the available funding (over $700 million).

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Appendix J Left-side Ramps Fact Sheet

South Coast 101 HOV Lanes Project

Fact Sheet: Highway Design Issues for Left-Side Ramps

Background – The 10.9 mile South Coast 101 HOV Lanes project proposes to add a High-Occupancy Vehicle (HOV) lane in each direction between Bailard Avenue in Carpinteria and Sycamore Creek in Santa Barbara. Two existing interchanges within the project limits currently have a mix of right-side and left-side ramps: Hot Springs/Cabrillo has left-side exit ramps in both directions, and Sheffield has left-side exit and entrance ramps in the southbound direction. Both were built in the 1950s.

Purpose of this Fact Sheet – This fact sheet will help build an understanding of left-side ramp issues and their implications for interchange configuration options for the South Coast HOV Lanes project. Due to their inherent operational and safety problems, left-side ramps are contrary to modern engineering principles for highway safety. There is no justification to overcome the negative consequences of retaining the left-side ramps with this project, due to factors which are explained in this fact sheet.

Operational Problems with Left-Side Ramps – The operational problems with left-side ramps are well known by transportation professionals nationwide. Left side ramps are increasingly rare on freeways because they do not meet driver expectations. This can be very disruptive for traffic flow, as drivers are forced to merge across all of the lanes to reach their desired exit, often swerving into the exit from a non-adjacent lane (Figure 1). This situation worsens as traffic increases and lanes are added to the freeway.

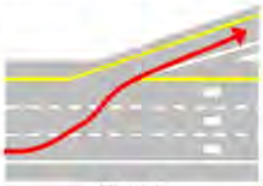


Figure 1

Another result of the left-side ramps not meeting driver expectations is that motorists can mistakenly exit the freeway by following the left yellow edge line. Often these drivers, having realized their mistake, attempt to re-enter the freeway lanes by driving across the gore area beyond the exit (Figure 2).

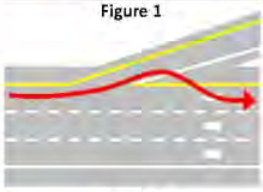


Figure 2

From 2007 to 2009, six collisions resulted from such events at the southbound Hot Springs/Cabrillo exit ramp.

Traffic flow is also disrupted when the low-speed ramps connect to the fastest lane of the freeway. Left-side exit ramps require slow-moving vehicles and trucks to transition across the through lanes and then merge with high-speed left lane traffic before exiting. Similarly, left-side entrance ramps require entering traffic to merge into the fastest lane of the freeway, disrupting the flow in that lane significantly (Figure 3). Both cases are aggravated when the left-side ramps connect to a street below the freeway level, since the descending exit ramp and ascending entrance ramp make it even more difficult for vehicles to adjust their speed. Both interchanges have this condition.

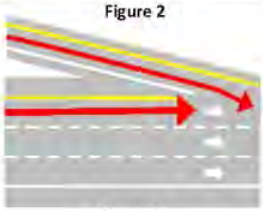
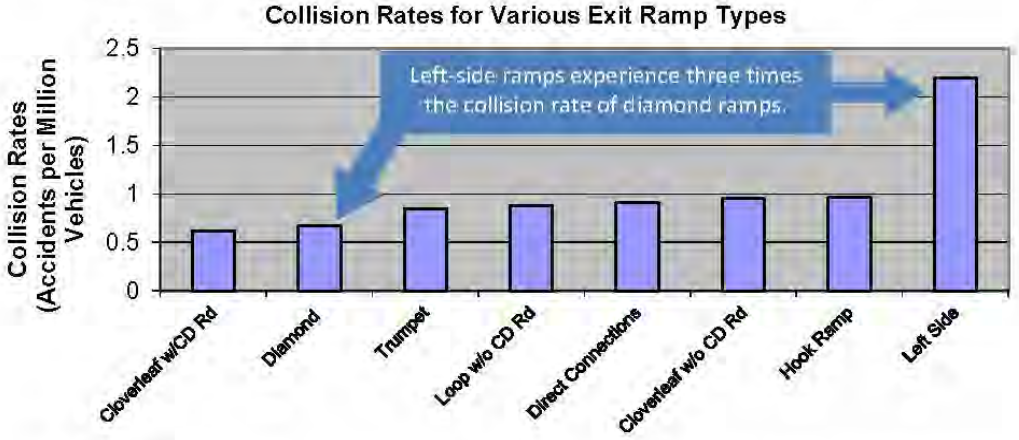


Figure 3

Left-side ramps are incompatible with High-Occupancy Vehicle lanes, because non-HOV traffic is not legally allowed to cross through an HOV lane to access the ramps.

Safety Record of Left-Side Ramps – Over decades of history with left side ramps, collision patterns have shown that they do not perform well from a safety standpoint. Compared with other types of ramps, left-side ramps have more than double the accident rates of ramps located to the right of traffic.



Local Safety Record – Similar to state and national trends, the collision rate for the northbound Cabrillo left side exit ramp is 35% higher than the statewide average for total collisions. The collision rate for the southbound Cabrillo left side exit ramp is 50% higher than average for total collisions, and over twice the average for injury accidents.

State Standards and National Policy – Due to the modern understanding of the operational problems of left-side ramps, and to ensure smooth, safe traffic flow on the freeway at interchanges, both the State of California standards and National policy strongly indicate that left side ramps are not to be used.

State Standard	National Policy
CA Department of Transportation, *Highway Design Manual*, 2012	AASHTO's *A Policy on Geometric Design of Highways and Streets*, 2011
All freeway entrances and exits shall connect to the right of through traffic. (504.2)	**Extreme care should be exercised to avoid left-hand entrances and exits in the design of interchanges.** (p.10-103)

South Coast 101 HOV Configurations Without Left-Side Ramps – The project Draft Environmental Impact Report contained five viable Hot Springs/Cabrillo interchange configurations that do not retain the left-side ramps, and rejected eight configurations that did retain left-side ramps, due to the nonstandard ramp arrangement and other factors. Similarly, the Sheffield interchange lends itself to a standard diamond ramp configuration to eliminate the nonstandard left-side southbound ramps.

Conclusion – As the owner and operator of U.S. 101, Caltrans has the responsibility to provide safe mobility for the public, in part by following established design standards. A project-specific decision process is required for nonstandard project features, based on engineering knowledge and consideration of safety, operations, and construction costs. With the well known operational and safety problems associated with left-side ramps, and with the variety of feasible options available with standard ramps to the right of traffic, there is no justification to build a configuration with this project that perpetuates the left-side ramps into the future.

Appendix K Director's Letter to SBCAG Board and Response

Following the May 16, 2013 meeting of the Santa Barbara County Association of Governments (SBCAG) Board, additional investigation and analysis occurred on the part of the Montecito Association, Caltrans, and SBCAG. This process culminated with the submittal of a letter by Caltrans Director Malcolm Dougherty to SBCAG. A letter was also sent by the District 5 Director to representatives of the Montecito Association. The two letters from Caltrans along with an attached letter from CHP are included. The two letters put to rest several issues relative to dropping any configurations that include left-side ramps. Additionally, a response from SBCAG following its board meeting held January 16, 2014 was sent to Malcolm Dougherty, Director of Caltrans.

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr.
Governor

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December 18, 2013

Mr. Dave Kent, President
Montecito Association
P.O. Box 5278
Santa Barbara, CA 93150

Mr. Jack Overall
101 Community Coalition
c/o Montecito Association
P.O. Box 5278
Santa Barbara, CA 93150

Dear Mr. Kent and Mr. Overall:

The purpose of this letter is to follow up on prior conversations and share the California Department of Transportations's (Caltrans) conclusions on the viability of interchange proposals that retain left-side ramps as part of the South Coast 101 HOV Lanes Project (Project). Our conclusions have come after careful and full consideration of technical information prepared by Caltrans, the Montecito Association, the 101 Community Coalition and others. This letter also communicates Caltrans findings related to documents recently submitted to Caltrans by the 101 Community Coalition (Coalition) in relation to the project and prepared by Mountain Pacific, Inc. These documents include the *Review of Accidents at U.S. 101 Cabrillo/Hot Springs Left-Side Ramps* (September 23, 2013, and related handouts from the November 15, 2013 meeting) and the three *101 Community Coalition Alternative Plan* reports submitted to the Santa Barbara Council of Governments (SBCAG) at the May 16, 2013 Board meeting (*Executive Summary, Sheffield Drive Fact Sheet, and Cabrillo Blvd. Fact Sheet).*

Caltrans has carefully considered a range of options for adding a new lane in each direction between the cities of Carpinteria and Santa Barbara as part of this Project. This includes ample consideration of concepts that would retain the existing left-side ramps by reconstruction of them at the Cabrillo and Sheffield interchanges. The Project team has studied many similar concepts, including six developed by Caltrans and four developed by the Montecito Association (MA) and the Coalition.

Ultimately, Caltrans has concluded that configurations that reconstruct yet retain left-side ramps would not result in acceptable long-term safety and operational conditions and are not viable or approvable as part of this Project.

Rationale for this conclusion includes:

- SAFETY
  Left-side ramps are inconsistent with modern freeway engineering principles and practices; they contribute to higher than normal unexpected maneuvers, create driver confusion, and compromise safety and operations. In the context of a project that is adding a third lane in each direction, retaining left-side ramps would result in a less-safe condition than replacing left-side ramps with right-side ramps.
- STANDARDS
  Left-side ramps are non-standard, functionally obsolete, and are being systematically removed on freeways nationwide. Left-side ramps are not supported or recommended by national and state highway design standards and guidelines.
- EQUIVALENT IMPACTS
  Due to the amount of work required to reconstruct the existing left-side ramps to correct reduced stopping sight distance and to accommodate the added lanes, there would be no substantive savings in costs, environmental impacts, or construction related impacts associated with these proposals, including the latest Coalition proposal. This is due to interchange specific design constraints (including the location of the Union Pacific Rail Road tracks and adjacent frontage roads), changes required to add a new lane in each direction, the need to address other non-standard features, and the cost for acquiring privately owned property, among other factors. At the Cabrillo interchange, configurations that retain left-side ramps could not physically accommodate a new southbound on-ramp connected directly from Cabrillo Boulevard.

Caltrans has carefully considered the *Review of Accidents at U.S. 101 Cabrillo/Hot Springs Left-Side Ramps* (September 23, 2013), as well as related handouts supplied by the Coalition at the November 15, 2013 meeting. In review of the Coalition accident analyses, Caltrans consulted with our internal accident investigation specialists, and also requested that the California Highway Patrol (CHP) review the analysis. This review was coordinated through CHP Coastal Division Chief, Reginald Chappelle.

After considerable review, it was determined by both Caltrans and CHP that we were not in agreement with the accident analysis methodology and related conclusions presented by your group. As responsible agencies, Caltrans and CHP are not able to discount documented accidents that occurred in proximity to a left-side ramp in the way that the Coalition's engineering consultant had done. For instance, an accident which involved an "*unsafe lane change*" or "*lack of appropriate signal*" cannot be discounted as not related to the left-side ramp condition using the logic that "it could have occurred" at another location.

These and other contributing factors are not mutually exclusive of the left-side ramp conditions nor do they invalidate the accident's relationship with the left-side ramp. The Coalition's analysis does not diminish Caltrans' obligation to recognize all accidents that have occurred in proximity to the left-side ramps in this corridor. Nor would Caltrans or CHP be able to discount future accidents and State and public related risk exposure implications if the left-side ramps were retained without sufficient and compelling justification.

The added lanes that this Project proposes to construct will result in a physically and functionally different freeway than what currently exists. Accident history at the existing interchanges is only one of many other factors that must be considered in the design of a lane addition project. These improvements must provide for long-term safety and operations today and for decades to come, while balancing environmental impacts and Project related costs. When considering expected traffic volumes, Caltrans as the owner and operator of U.S. 101, also has the burden of making design decisions that balance a wide array of stakeholder interests and protect the State and taxpayers from exposure to public risk.

Modern freeway design standards, like building codes, have been developed after decades of experience and are selected to protect public safety. Caltrans approves design exceptions when sufficient and compelling justification exists for doing so, using well established engineering methodologies. Deviations without adequate or appropriate justification would expose the traveling public to less-safe conditions and the State to high levels of public risk.

Caltrans has assessed design exception criteria associated with left-side ramp configurations as part of this Project on multiple occasions. Caltrans has also reviewed the three *101 Community Coalition Alternative Plan* (CCAP) reports submitted to the SBCAG Board at the May 16, 2013 Board meeting (titled *Executive Summary, Sheffield Drive Fact Sheet,* and *Cabrillo Blvd Fact Sheet*). These documents correctly identify

that each of the left-side ramps contain existing non-standard features such as inadequate acceleration/deceleration length, inadequate weave area, limited stopping sight distance, and that reconstruction of the ramps would be required to correct these deficiencies.

The information presented within the CCAP documents does not have compelling information which would cause us to change our previous conclusions. After thoroughly reviewing these documents, our findings remain consistent with the information we presented at the May 16, 2013, SBCAG board meeting. Sufficient justification does not exist in the context of this Project to approve exceptions to the mandatory standard that requires all ramps to connect to the right of through traffic.

Caltrans recognizes that the MA and Coalition members have dedicated considerable time and energy in the interest of providing the best Project possible. These efforts have resulted in positive Project refinements and we hope to work together in the design phase of the Project to select aesthetic refinements that best fit within the context of the Montecito Community.

Sincerely,

TIMOTHY M. GUBBINS
District Director

c: Roger Aceves, Chairman, Santa Barbara County Association of Governments
Steve Lavagnino, Vice Chairman, Santa Barbara County Association of Governments
Reginald Chappelle, Chief, CHP Coastal Division

State of California— Transportation Agency EDMUND G. BROWN Jr., Governor

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(800) 735-2922 (Voice)

December 11, 2013

File No.: 701.11709.11503.101 HOV Project.doc

Timothy M. Gubbins, District Director
Department of Transportation, District 5
50 Higuera Street
San Luis Obispo, CA 93401-5415

Dear District Director Gubbins:

I have reviewed the collision assessment prepared by the 101 Community Coalition which was recently provided to our office by Caltrans District 5, and find nothing in the report to support the retention of the left-side ramps as a component of the project which will add a new lane to U.S. 101 in the Santa Barbara corridor. While the California Highway Patrol defers issues relative to roadway engineering and design to the subject matter experts at Caltrans, both agencies share the common vision of facilitating the safe and efficient movement of traffic on the roadways within our jurisdictional responsibility. Our specific role remains to provide the highest quality of safety and service to the motoring public throughout California.

Thank you for allowing us to review the collision analysis provided by the 101 Community Coalition regarding the South Coast 101 HOV Widening Project, and for your unwavering commitment to traffic safety in the design, construction and maintenance of our roadways.

Sincerely,

for

R. J. CHAPPELLE, Chief
Coastal Division

cc: Assistant Commissioner, Field

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STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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December 19, 2013

The Honorable Roger Aceves
Chairman, Santa Barbara County Association of Governments
260 North San Antonio Road, Suite B
Santa Barbara, CA 93110

Dear Chairman Aceves:

Thank you for the opportunity to present findings from our evaluation of the Montecito Association's Alternative Plan at the May 16, 2013, Santa Barbara County Association of Governments (SBCAG) Board meeting. The California Department of Transportation (Caltrans) has had time to fully consider the Board's requests from that meeting and I have also received a letter from County Supervisor Salud Carbajal, dated September 4, 2013, requesting that I reply to the SBCAG Board. There is an urgent need for congestion relief in this corridor and I appreciate the partnership we have with SBCAG to move this vital project forward. We are now at a critical juncture in the project delivery process when we must have a shared understanding of the next steps to achieve project approval in order to improve mobility along the corridor.

Since the May SBCAG Board meeting, Caltrans has continued to meet with the Montecito Association (MA) and 101 Community Coalition (Coalition) representatives to fully understand their proposal and related accident analysis. After ample consideration of these materials, Caltrans has concluded that configurations that reconstruct yet retain existing left-side ramps would not result in acceptable long-term safety and operational conditions and are not viable or approvable as part of this project. Safety of the motoring public is of the utmost importance to both Caltrans and the California Highway Patrol (CHP) as we evaluate the best transportation improvement strategy.

SBCAG is the primary project sponsor while Caltrans is the lead agency for project approval and compliance with state and federal environmental laws. With respect to these roles, this letter sets forth Caltrans' response to the request the board made for consideration of three points at the May Board meeting.

1. The Board asked that Caltrans re-circulate the Draft Environmental Document (DED) for the project taking into consideration the MA alternative, if necessary.

Caltrans does not feel that it is necessary to re-circulate the DED in order to completely evaluate the MA proposal. Caltrans has fully considered the proposals presented by the MA. Caltrans believes that the DED for the project (as currently scoped) meets the requirements of the California Environmental Quality Act (CEQA) and the National Environmental Protection Act (NEPA) and that the environmental document can be approved without re-circulation. Our proposal is to proceed with preparation and release of the Final Environmental Document (FED). Under this approach, a preferred alternative would be identified from among those presented in the DED. Some project modifications will be included in response to DED comments received during the public document period as discussed during the May Board meeting. Findings from our evaluation of the 101 Community Coalition Alternative Plan will also be documented in the FED as requested by the SBCAG Board. The project would retain the original alternatives from the DED, including the HOV limits, but there are opportunities to address this item and additional local features on a concurrent path during the coastal permitting process that will occur after certification of the FED as indicated later in this letter. An FED can be certified in approximately seven months, and no additional funding would be required from SBCAG to complete the environmental phase work for the project.

2. The Board asked that Caltrans include the Coalition alternative in the environmental document.

As noted above, Caltrans' analysis of the Coalition alternative plan will be included in the FED. Project alternatives that retain left side ramps are not considered viable and will be identified as fully "considered but rejected" in the FED.

Left side ramps are not consistent with modern engineering standards, do not meet driver expectation, and cannot be retained due to safety and operational reasons. These findings were well documented in our presentation, as well as my testimony at your May 16, 2013 SBCAG Board meeting.

Caltrans' determination that retaining the left-side ramps are infeasible was reached after a thorough analysis which has taken into account many factors including:

- Current state and federal highway design standards
- Driver expectations
- Cost
- Historical accident rates and collision reports at the specific interchanges
- Future safety issues with the 6-lane configuration
- Congestion relief benefits and traffic operational issues.

Further consideration of the Coalition's documentation and review of corridor specific accident data resulted in the same conclusions. We carefully evaluated their recent accident data analysis in consultation with our internal accident investigation specialists, and also requested that the CHP review the analysis. This review was coordinated through the CHP Coastal Division Chief, Reginald Chappelle, who concurred with Caltrans' assessment. More specific information associated with these conclusions was included in a December 11, 2013 joint letter to the MA and Coalition, which is attached.

Caltrans' determination regarding the infeasibility of the left-side ramps in the project was reached in consultation with Transportation Secretary Brian Kelly. If SBCAG wants to move forward with the project, it should be understood that the left-side ramps are not a viable option.

3. The Board asked that Caltrans modify the start/stop location of the HOV lane south of Sheffield Road.

Shortening the limits of the HOV lane would be inconsistent with the project purpose and the need and project description identified in the SBCAG's adopted 2040 Regional Transportation Plan (RTP). In addition, changing the limits of the HOV lane could significantly reduce the effectiveness of the project long-term in reducing congestion, achieving mode shift, and reducing greenhouse emissions. A careful analysis must be completed before a decision is made to change the limits of the HOV lane. If SBCAG and Caltrans agree, following such an analysis, that changing the HOV limits is appropriate, SBCAG would need to amend its RTP and the environmental document would need to be re-visited to identify the effects of a significant change in the project scope.

Caltrans believes that HOV lanes provide the greatest long-term congestion relief and are consistent with regional and state goals to reduce greenhouse gas (GHG) emissions.

SBCAG's recently adopted RTP, as well as the previous 2030 RTP, clearly plan for HOV lanes to be added between the cities of Carpinteria and Santa Barbara. Plan consistency is especially critical in this corridor based on the 101 in Motion consensus recommendations, the Measure A voter expectations, and the current RTP language calling for HOV lanes within the project limits. These limits will also provide the greatest measure of effectiveness for an HOV lane in this corridor, including the potential for mode shift.

State law and the Governor's transportation policy all strongly support efforts to combat climate change by reducing GHG emissions. The 101 HOV project is the single most effective strategy for reducing GHG emissions from transportation sources in SBCAG's recently adopted RTP. Reducing the length of the proposed HOV lane by 25% (approximately 6 miles; 3 in each direction) in the most congested part of the corridor will significantly reduce its effectiveness long-term and result in increased miles traveled and greater GHG emissions. This change to the project would be in direct conflict with SB 375 goals and SBCAG's sustainable community strategy.

If the RTP is subsequently modified to change the HOV limits within the corridor, the SBCAG Board could ask Caltrans to evaluate the changes during the design and permitting phase of the project and modify the project as needed. An appropriate level of FED re-evaluation would be performed at that time.

In light of the foregoing, Caltrans proposes to retain the project scope in the FED consistent with SBCAG's RTP and the purpose and need identified in the DED. The features of the project would include those that are essential to adding a new lane in each direction on US 101 within the project limits.

There are a number of other local improvements with merit of their own that are not precluded by the HOV lane project or essential to the stated purpose and need for the HOV lane project. These improvements include, but are not limited to, replacing the railroad crossing over Cabrillo Boulevard, improving the intersections at Olive Mill and Coast Village Road, and reconstructing the San Ysidro Road interchange. These improvements should be undertaken as separate projects, each with an independent purpose and need, a local specific project development team, and an appropriate range of alternatives. Developed separately, coordination between the HOV land project team and teams working on local projects would occur in the permitting phase of the HOV project, as needed. Possibilities for constructing local features with HOV improvements and related shared funding opportunities could be explored at that time as well.
This approach to dealing with local improvements is the fastest and most cost effective approach to delivering the project and congestion relief to motorists along this important corridor.

If the SBCAG Board were to add local improvements such as those mentioned above, it would require revisions, and re-circulating the DED resulting in significant delay to the HOV project. Each individual additional improvement would require the development of a location specific purpose and need, a full range of project alternatives, environmental

studies to assess impacts, and selection of a preferred alternative. This process would add complexity, time, and funding requirements to the existing HOV project's environmental process. It will likely require an additional 4-5 years to develop community consensus, conduct necessary environmental and design assessments, prepare the DED, circulate it for public review and finalize the document. The environmental phase cost for this additional work is estimated to be $7 to $9 million. Escalated capital cost associated with a 4-5 year delay would be considerably more.

On the basis of these considerations, it is Caltrans' intent to proceed with finalizing the environmental document to achieve project approval and provide timely congestion relief in this corridor. Caltrans is also committed to coordinating extensively with local permitting agencies and related design review teams to integrate locally focused landscaping and aesthetic refinements and stage construction plans with local input into the project, as well as working with SBCAG on additional desired local improvements concurrently.

Caltrans awaits your concurrence with this approach. Please communicate directly with District 5 Director, Tim Gubbins. You can reach Tim at 805-548-3127, or by email at tim.gubbins@dot.ca.gov.

Sincerely,

MALCOLM DOUGHERTY
Director

cc: Steve Lavagnino, Vice Chairman, Santa Barbara County Association of Governments

SBCAG
santa barbara county association of governments

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January 27, 2014

Mr. Malcolm Dougherty, Director
California Department of Transportation
P.O. Box 942873, MS-49
Sacramento, CA 94273-0001

Dear Mr. Dougherty:

At its January 16, 2014, meeting, the SBCAG board voted to move forward with the 101 HOV project using the approach proposed in your December 19 letter to the Chair. Our concurrence with Caltrans' approach for moving the 101 project forward is based on the following understanding of the proposal:

- The scope of the project as identified in the draft EIR will be retained;
- Caltrans has made the determination that project alternatives that retain left-side ramps are not viable and that in the final EIR Caltrans will identify these alternatives as "considered but rejected";
- The original limits of the HOV lanes will be retained consistent with the project description in the draft EIR and SBCAG's adopted 2040 Regional Transportation Plan;
- Local improvements not included in the project description will be undertaken as separate projects from the 101 HOV project; and
- Caltrans will not recirculate the draft EIR and will proceed with preparing and releasing the final EIR as soon as possible.

SBCAG intends to work with the affected jurisdictions on local improvements at the Cabrillo UPRR bridge, Coast Village Road/Olive Mill intersection and 101/San Ysidro Road interchange concurrently and on a parallel path with the 101 HOV project.

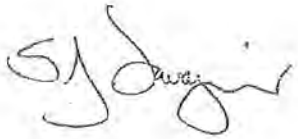
SBCAG requests that Caltrans cooperate in hiring an independent firm to assist in the development of the final design for the 101 project. We believe that this assistance will facilitate better communication and understanding for all stakeholders and result in a project that achieves shared project goals for congestion relief, improved safety while minimizing costs, delays and community disruption.

Relieving daily congestion on the 101 corridor is an urgent need and completing the 101 HOV project is the highest priority transportation improvement project in our region. The project will provide increased capacity on a highway of importance to the state and the nation. SBCAG is

making a significant investment of $140 million in Measure A local sales tax revenues to help complete the 101 HOV project.

I want to thank you and Secretary Kelly for the investment of time and effort to address the concerns and requests of the SBCAG board. We look forward to strengthening our partnership with Caltrans to deliver this critical project.

Sincerely,



Steve Lavagnino
Chair, SBCAG

cc: Tim Gubbins
Senator Hannah Beth Jackson
Assemblymember Das Williams
Secretary Brian Kelly
SBCAG Board Members

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Appendix L Project Mapping

Bound Separately

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Appendix M Response to Comments

Bound Separately