Highway 101 Greenbrae/Twin Cities Corridor Improvement Project

MARIN COUNTY, CALIFORNIA
DISTRICT 4 – MRN – 101 – PM 7.2/8.9
EA 1A6600

Appendices

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 Caltrans under its assumption of responsibility pursuant to 23 USC 327.

December 2012

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Appendix A

CEQA Checklist

Appendix A

California Environmental Quality Act (CEQA) Evaluation

A.1 Determining Significance under CEQA

The project is sponsored by the TAM, and funded by the Regional Measure 2 Program administered by the Metropolitan Transportation Commission (MTC).[1] Because the project proposes the use of federal funds, the project is subject to federal, as well as state environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency for preparing the environmental document in compliance with CEQA and NEPA. FHWA's responsibility for environmental review, consultation, and any other action required in accordance with NEPA and other applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (USC) 327.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or some lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require the Department to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

[1] On March 2, 2004, voters passed Regional Measure 2, raising the toll on the seven State-owned toll bridges in the San Francisco Bay Area by $1.00. This extra dollar is to fund various transportation projects within the region that have been determined to reduce congestion or to make improvements to travel in the toll bridge corridors.

A.1.1 Discussion of Significance of Impacts

The CEQA Environmental Significance Checklist identifies the physical, environmental effects that might be affected by implementation of the proposed Build Alternative. The findings for the CEQA checklist were determined in consultation with the technical studies prepared for this project, as listed in **Appendix F**. The CEQA impact levels include: potentially significant impact, less-than-significant impact with mitigation, less-than significant-impact, and no impact. In many cases, background studies performed in connection with the Build Alternative indicate no significant impact.

A.1.2 Issues with No Impact

As part of the scoping and environmental analysis conducted for the Build Alternative, the following environmental issues were considered but no adverse impacts were identified: coastal zone, wild and scenic rivers, community character and cohesion, farmlands and timberlands, and emergency services. Refer to **Section 2.1** for a more detailed description of these resource areas determined to be unaffected by the Build Alternative.

A.1.3 Less-than-Significant Effects of the Build Alternative

The CEQA Checklist identifies the following items as "Less then Significant". These items include resource areas where the Build Alternative would have a less-than-significant effect with the implementation of the avoidance and minimization measures identified in the relevant sections of **Chapter 2.0, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures.**

Aesthetics

The Build Alternative would not have a substantial adverse effect on a scenic vista, damage scenic resources, or create a new permanent source of substantial light or glare. However, adverse effects to the visual quality of the site may occur as a result of tree removal. Mitigation has been incorporated to reduce the impact to a less than significant level as discussed in **Subsection A.1.4, Significant Environmental Effects of the Build Alternative** below. See **Subsection 2.2.6, Visual/Aesthetic,** for further details.

Air Quality

The Build Alternative will not cause a significant change to air quality in the project area, conflict with the implementation of an applicable air quality plan, violate any air quality standards, or contribute to any air quality violation. In addition, the Build Alternative will not result in a net increase of any criteria pollutants, expose sensitive receptors to substantial pollutant concentrations, or create objectionable odors. See **Subsection 2.3.6, Air Quality,** for further details.

Biological Resources

The Build Alternative will result in substantial adversely affects to special-status animal species, sensitive natural communities, and protected wetlands and waters of the U.S.. As a result, mitigation has been incorporated to reduce the impact to a less than significant level, as discussed in **Subsection A.1.4, Significant Environmental Effects of the Build Alternative** below.

While some trees will be removed for construction purposes, these trees are largely located along the highway corridor and not likely prime habitat for migratory birds, and impacts are expected to be minimal through the implementation of avoidance measures identified in **Section 2.4.4.4**, as

well as through compliance with the local tree ordinances that stipulate which trees need to be replaced outside of Caltrans right-of-way (see **Section 2.2.6, Visual/Aesthetics, Mitigation Measure VIS-1**). The Build Alternative will not substantially impact movement of migratory fish, wildlife species, or their wildlife corridors. In addition, the Build Alternative would not conflict with the provisions of a habitat conservation plan. See **Subsection 2.4, Biology,** for further details.

Cultural Resources

There are no archaeological or historical resources within the Build Alternative's that are of potential effect (APE). The Build Alternative will not result in a significant impact to known cultural resources or cause a substantial adverse change in the significance of a historical or archaeological resource. Though the likelihood of encountering significant archeological material during construction is considered low, provisions to address these circumstances are included in **Subsection 2.2.7, Cultural Resources**. These provisions include minimization measures to be taken in the event that human remains are discovered during construction.

The paleontological study area is underlain with geological formations characterized as having low paleontological sensitivity. Construction activities associated with the Build Alternative are not expected to impact any paleontological resources. See **Subsection 2.3.4, Paleontology,** for further details.

Geology and Soils

The Build Alternative will not result in a significant impact to the geology of the site. All structures constructed as part of the Build Alternative will comply with the Caltrans' seismic design standards. People and structures will not be exposed to substantial adverse effects involving fault rupture or other seismic-related issues. The proposed improvements will not result in the substantial soil erosion or the loss of topsoil and is not located on unstable soil, an unstable geologic unit, or expansive soil. See **Subsection 2.3.3, Geology/Soils/Seismic/Topography,** for further details.

Hazardous and Hazardous Materials

The Build Alternative will not create any significant hazards to the public or environment. Measures will be taken to avoid exposure to hazardous materials and aerially deposited lead known to exist in the within the proposed construction areas. No hazardous materials will be emitted as a result of the project, and no people or structures would be exposed to a significant risk of loss. Additionally, the proposed improvements will not impair implementation or interfere with any emergency plans. See **Subsection 2.3.5, Hazardous Waste/Materials,** for further details.

Hydrology and Water Quality

The majority of the proposed Build Alternative improvements will be located within a Zone AE type Special Flood Hazard Area. However, because the main profile of US 101 will not change, the Build Alternative does not constitute significant "new" development within the floodplain. In addition, because the surrounding areas are already developed with urban land uses associated with the City of Larkspur and Town of Corte Madera, the Build Alternative will not induce new development to occur within the floodplain beyond what already exists. . Because of the relatively small amount of additional runoff generated by new impervious surfaces, combined with the fact the primary source of flooding in the Greenbrae/Twin Cities Corridor is due to tidal flooding in the San Francisco Bay, the Build Alternative will have a negligible effect on the

amount of water flowing into and out of San Francisco Bay, and will therefore have no hydraulic impact on the base floodplain within the Greenbrae/Twin Cities Corridor. The proposed improvements would not place any housing with 100-year floodplain. Proposed structures would not impede or redirect flood flows. Additionally, the proposed improvements would not expose people or structures to a significant flood risk. See **Subsection 2.3.1, Hydrology and Floodplains,** for further details.

The Build Alternative will not result in significant impacts to water quality or storm water runoff. Construction activities and roadway operations will be regulated, and include protective measures. The project will not violate any water quality standards, deplete groundwater supplies, alter drainage patterns, or create capacity in exceeding run off. See **Subsection 2.3.2, Water Quality and Storm Water Runoff,** for further details.

Land Use and Planning/Population and Housing

The Build Alternative consists of improvements to an existing roadway, and will not divide an established community. Construction of the proposed transportation facilities under the Build Alternative will require property acquisitions from approximately 16 parcels. All acquisitions will be small slivers of property at the edge of existing property frontage, which primarily consists of landscaped areas and parking areas. No displacement and/or relocation of existing businesses or residences are anticipated from these partial acquisitions. See **Subsection 2.2.3, Community Impacts,** for further details.

The Build Alternative is within an existing urban context that is highly developed and will not alter the use of land in the area. The Build Alternative does not conflict with any applicable habitat conservation plan or natural community conservation plan. See **Subsection 2.2.1, Land Use,** for further details.

Noise

A significant noise increase is defined as an increase of 12 dBA or more from existing conditions to design-year conditions. Based on the results from the noise modeling assessment, implementation of the Build Alternative will generally increase noise levels in the study area from 0 to 2 dBA. The increase in noise levels generated by the Build Alternative would therefore not constitute a significant impact. The Build Alternative would comply with Caltrans' standards for construction noise minimization measures that prevent significant increases in temporary noise levels. In addition, the project is not within an airport land use plan or within the vicinity of a private airstrip. See **Subsection 2.3.7, Noise,** for further details.

Transportation and Traffic

The purpose of the Build Alternative is to reduce traffic congestion within the Greenbrae/Twin Cities Corridor by alleviating the short merging, diverging, and weaving areas along US 101. The Build Alternative intends to improve the efficiency of US 101, and improve safety, without increasing overall capacity through the corridor. This will be accomplished through the reconfiguration of existing US 101 interchanges, and the construction of auxiliary lanes and collector-distributor roadways. The proposed improvements will alleviate the conflicts caused by closely spaced interchanges, thereby improving traffic operations and safety, which will also improve emergency access. The Build Alternative would not conflict with any applicable transportation plans, policies, or programs. See **Subsection 2.2.5, Traffic and Transportation,** for further details.

Utilities and Service Systems

The Build Alternative will require the relocation and adjustments to existing gas, water, sewer, electric transmission lines and street lighting. Utility coordination and verification will be required during the final design phase of the project. The locations of the utilities will not be determined until final design, in coordination with the affected utility. The Build Alternative will not require new utility infrastructure to be built and will have no impact to water supply, wastewater, storm water and drainage facilities, and landfill systems. The Build Alternative will not conflict with federal, state, and local solid waste regulations nor will it exceed wastewater treatment requirements of the Regional Water Quality Control Board. See **Subsection 2.2.4, Utilities,** for further details.

A.1.4 Significant Environmental Effects of the Build Alternative

Aesthetics

Impact VIS-1: Tree removal and introduction of concrete roadway structures will decrease the visual quality of the project viewshed.

With the implementation of Caltrans' design standards, aesthetic treatments, and **Mitigation Measure VIS-1**, visual impacts resulting from construction of the Build Alternative will be reduced to a less-than-significant level.

Mitigation Measure VIS-1: Comply with Local Tree Removal Ordinance

Trees removed from Larkspur, Corte Madera, and Greenbrae rights-of-way shall be mitigated through coordination with respective agencies. The specific tree replacement ratio shall be determined during the permit review process. The City of Larkspur Heritage tree ordinance stipulates that the removal of trees with a 50 inch circumference or greater, measured at 2 feet above grade, requires a permit. The Town of Corte Madera tree ordinance stipulates that the removal of trees, with the exception of eight undesirable species, requires a permit. If, after coordination with the City of Larkspur and Town of Corte Madera planning departments, one or more of the trees removed are determined to be a protected heritage tree or a tree that requires a permit for removal, a permit will be acquired from the respective planning department prior to removal. The Planning Commission(s) may require replacement trees in a 1:1 ratio, or in a reasonable number depending on the type and size of the tree(s) removed and the recommendations of a qualified arborist.

Biology

Impact BIO-1: Implementation of the Build Alternative could have a significant impact on the following sensitive, special-status species: California clapper rail, California black rail, and salt marsh harvest mouse.

Impact BIO-2: Implementation of the Build Alternative could have a significant impact on northern coastal salt marsh, a designated natural community of special concern.

Impact BIO-3: Implementation of the Build Alternative could have a significant impact on federally protected wetlands and other waters of the U.S.

Impact BIO-4: Dewatering and/or pile driving may require capture and relocation of protected fish species within Corte Madera Creek.

Implementation of **Mitigation Measures BIO 1** through **BIO-16** would reduce adverse effects to wetlands and waters of the U.S., special-status species, and movement of protected fish species

within Corte Madera Creek, thereby reducing significant impacts to biological resources to a less-than-significant level.

Mitigation Measure BIO-1: Restoration of Wetland Habitat

Caltrans shall coordinate with USACE, USFWS, and CDFG to establish mitigation measures to offset impacts to tidal salt marsh and designated waters of the U.S. in accordance with Section 404 and Section 401 of the CWA and Porter-Cologne Water Quality Control Act, Federal Endangered Species Act (FESA), and California Endangered Species Act (CESA). Permanent, direct impacts to waters of the U.S. shall be mitigated through the restoration or creation of wetland habitat. For this area, habitat shall be created, restored, or preserved at a proposed 1:1 ratio. Alternately, mitigation credits may be purchased through an approved mitigation bank, if available. If no mitigation bank is available, mitigation may be accomplished through support of existing or planned conservation projects. This mitigation shall be implemented through coordination with the USACE, USFWS, CDFG, and RWQCB, and is subject to review and approval.

Mitigation Measure BIO-2: Replant/Re-Seed Salt Marsh Habitat

All salt marsh habitat along the banks of Corte Madera Creek temporarily affected by the Build Alternative shall be planted or re-seeded with native grasses and plant species to stabilize the slopes and bare ground against erosion. Examples include: saltgrass (*Distichlis spicata*), dwarf spikerush (*Eleocharis parvula*), alkali heath (*Frankenia salina*), marsh gumplant (*Grindelia stricta*), and pickleweed (*Salicornia pacifica*). This may include hydro seeding and shall occur after ground disturbing construction activities are completed. The plant selection and reseeding efforts shall be clearly identified in a project-specific mitigation and monitoring plan approved by the USACE and RWQCB.

Mitigation Measure BIO-3: Maintain Adequate Fish Passage

The project contractor(s) shall allow adequate fish passage upstream and downstream of the proposed improvements along Corte Madera Creek. Adequate water depth and channel width must be maintained at all times for fish passage. If the workspace is isolated from flowing water (i.e. use of a cofferdam), the diversion shall remain in place during construction and be removed immediately after work is completed in a manner that will allow flow to resume with the least disturbance to the substrate.

Mitigation Measure BIO-4: Fish Safe Dewatering

If dewatering within the open waters of Corte Madera Creek is required, either a pump shall remove water to an upland disposal site, or a filtering system shall be used to collect the water. Water returned to the creek must meet the water quality objectives outlined by the San Francisco Bay RWQCB's Basin Plan, including but not limited to the following:

- Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 Nephelometric Turbidity Units (NTU).
- The pH shall not be depressed below 6.5 nor raised above 8.5. This encompasses the pH range usually found in waters within the basin. Controllable water quality factors shall not cause changes greater than 0.5 units in normal ambient pH levels.

- The temperature of any cold or warm freshwater habitat shall not be increased by more than 5 degrees Fahrenheit (2.8 degrees Celsius) above natural receiving water temperature.

The pump intake shall be fitted with a fish exclusion device that meets the National Marine Fisheries Service fish screening criteria. This includes openings that are no bigger than either 3/32-inch or 1/4-inch depending on the presence of fry or fingerling salmon species.

Mitigation Measure BIO-5: Presence of Biologist during Dewatering

During dewatering activities, a fisheries biologist approved by USFWS, CDFG, and/or NMFS shall be present to salvage individual fish, should they be present. Fish shall be netted, placed in a bucket of water, and immediately moved to a downstream portion of the creek. Records of species, relative size, and number of individuals will be kept. If a federal or state-listed fish species is identified, the biologist shall notify the resident engineer who will then contact CDFG and/or NMFS immediately to report the finding. Periodic checks of the work area shall occur to ensure that fish have not re-entered the work area.

Mitigation Measure BIO-6: Placement of Non-toxic Structures in Streams

All materials placed in the creek such as pilings and retaining walls, shall be non-toxic. Any combination of wood, plastic, cured concrete, steel pilings, or other materials used for in-channel structures shall not contain coatings, treatments, or consist of substances deleterious to aquatic organisms that may leach into the surrounding environment in amounts harmful to aquatic organisms.

Mitigation Measure BIO-7: Minimize Disturbance from Construction Access

Disturbance to existing grades and vegetation shall be limited to the actual site of the proposed project improvements and necessary construction access routes. Placement of all roads, staging areas, and other facilities shall avoid and limit disturbance to streambank or stream channel habitat to the minimum area necessary to complete the work. When possible, existing ingress or egress points shall be used, and/or work shall be performed from the top of the creek banks. Obvious barriers to fish passages shall be removed to facilitate upstream movement.

Mitigation Measure BIO-8: Erosion Control

Erosion control and sediment detention devices (e.g., well-anchored sandbag coffer dams, straw bales, “Aqua Dam,” or silt fences) shall be incorporated into the project design and implemented at the time of construction. These devices shall be in place during construction activities. If necessary, these devices shall be in place after construction for the purposes of minimizing fine sediment and sediment/water slurry input into flowing water and for detaining sediment laden water on site. These devices shall be placed at all locations where the likelihood of sediment input exists. A supply of erosion control materials shall be kept on hand to cover small sites that may become bare and to respond to sediment emergencies.

Mitigation Measure BIO-9: Fish Impact Pile Driving Avoidance Timeline

Impact pile driving activities located within Corte Madera Creek, up to the mean higher high water line, and on land at the NB US 101/Sir Francis Drake Boulevard off-ramp location shall be restricted to June 15 through October 15 to reduce potential adverse effects to protected fish. Pile driving shall occur only during daylight hours from one hour after sunrise to one hour before sunset. This is to ensure that pile driving does not occur at dawn or dusk, during peak salmon migration and feeding times.

Mitigation Measure BIO-10: Fish Pile Driving Attenuation Requirements

Piles shall be installed using a vibratory hammer to the extent practicable, to minimize impact pile driving. If pile driving is required, sound attenuation devices may be used to reduce impacts to fish species. Attenuation devices shall include a minimum of one, or a combination, of the following: Air bubble curtains, cofferdams, isolation casings, and/or cushion blocks. The number of piles driven per day shall be limited, and hyrdroacoustic monitoring shall be conducted to avoid exceeding the 187 dB accumulated sound energy level (SEL) for fish weighing 2 grams or greater and the 183 dB accumulated SEL for fish weighing less than 2 grams. Sound pressure levels (SPL) may not exceed 206 dB peak.

Mitigation Measure BIO-11: Provide Environmental Awareness Training

Before the onset of construction activities, a qualified biologist shall conduct an educational program for all construction personnel. At a minimum the training will include:

- A description of potential special-status species' within the BSA and their respective habitats.
- The occurrence of these species within the BSA, an explanation of the status of these species, and the species' protection under the FESA and CESA.
- The measures that are being implemented to conserve the species and their habitats as they relate to the work site, and the work site boundaries within which construction may occur.
- A fact sheet conveying this information for distribution to the construction personnel and other personnel who may enter the site.

Upon completion of the program, all personnel shall sign a form stating that they have attended the program and understand all the avoidance and minimization measures and implications of the FESA and CESA.

Mitigation Measure BIO-12: USFWS-approved Biologist Consultation

Caltrans shall consult with the USFWS to designate an approved biologist that shall be on-site during all construction activities that occur within the BSA. Qualifications of the biologist(s) must be presented to the USFWS for review and written approval prior to groundbreaking. The biologist shall perform preconstruction surveys and project monitoring. The biologist's findings shall be presented to Caltrans for any necessary consultation and compliance with USFWS (or other agencies) requirements. The Department shall consult with federal and/or state agencies as necessary.

Mitigation Measure BIO-13: Post Construction Compliance Form

A post-construction compliance report shall be prepared by the on-call biologist, which shall be provided to the USFWS within forty (40) working days following project completion or within sixty (60) calendar days of any break in construction activity lasting more than forty (40) working days. Any compliance forms prepared by the biologist shall be provided to Caltrans for consultation with the USFWS, as required for compliance with federal mandates.

Implementation of the avoidance measures and Mitigation Measure BIO-1 and BIO-2 would indirectly reduce the potentially adverse effects impacts of the Build Alternative on those special status species with habitat in the wetlands and other waters, including northern coastal salt marsh. Additionally, the following measures shall be implemented to reduce impacts to the salt marsh harvest mouse, California clapper rail, and the California black rail.

Mitigation Measure BIO-14: California Clapper Rail Impact Pile Driving Avoidance Timeline

Impact pile driving activities located within 800 feet of the Corte Madera Marsh Ecological Preserve, or any other known active California clapper rail breeding habitat, shall occur between September 1 and January 31 to reduce potential impacts to this species. If impact pile driving must occur during the period from February 1 to August 31, then full protocol-level surveys shall be conducted during the breading season within the year construction activities are proposed. These surveys shall be initiated in middle/late January following a minimum two-week cessation of any on-going construction work. Construction shall not be allowed to continue until the protocol-level surveys have been completed and the USFWS and CDFG have reviewed the results and given approval for impact pile driving to continue. If the USFWS or CDFG determines that, based on the protocol-level surveys, impact pile driving may disturb nesting clapper rails, then construction shall not be allowed to begin until September 1. If impact pile driving is to occur during the clapper rail breeding season in the following year, then protocol-level surveys and the mandatory construction cessation period must be implemented the following year, as well.

Mitigation Measure BIO-15: Halt Work if Special-status Species Observed in Work Area

In the event a California clapper rail or salt marsh harvest mouse enters the construction zone, work in the immediate vicinity of the California clapper rail or salt marsh harvest mouse shall halt and the USFWS-approved biologist, USFWS, and CDFG will be contacted immediately. All construction activities in the immediate vicinity of these species shall be suspended until the special-status species leaves the site voluntarily.

Mitigation Measure BIO-16: Take Reporting

Any contractor, employee, or agency personnel who inadvertently kills or injures a special-status species shall immediately report the incident to the on-site biologist. The on-site biologist shall contact Caltrans who shall then contact the USFWS or CDFG, depending on the special-status species, to report the dead or injured animal via electronic mail and telephone within one working day.

Construction and Seasonal Avoidance

The breeding seasons for the California clapper rail and California black rail are from February 1 to August 31 and from February 1 to June 30, respectively. The restricted work window for migratory salmon and steelhead (Central California Coast steelhead, Central California Coast coho, and Central Valley Chinook salmon) is from October 15 through June 15. Additionally, the northern California rainy season occurs from October 15 through April 15. Therefore, it is not feasible to construct the proposed project and avoid the breeding, migration, and rainy seasons. To accommodate construction and minimize impacts to special-status species, construction may occur during the California clapper rail and California black rail breeding seasons, but construction must adhere to the conditions described in the construction avoidance and minimization measures for the California clapper rail, California black rail, and salt marsh harvest mouse. These conditions involve conducting pre-construction surveys and procedures to follow in the event that an individual species is identified during those surveys. If no individuals are observed during the pre-construction surveys, then construction may proceed. However, if individuals are observed,

then USFWS and CDFG will be notified, and work will not proceed until authorization is obtained.

Work may occur during the rainy season in the upland areas (i.e., out of water) and must adhere to the erosion control measures and SWPPP as identified in the avoidance and minimization measures above. In-water work during October 15 through June 15 will be avoided, but work may occur if prior authorizations from the permitting agencies with jurisdiction are obtained.

Impact BIO-5: Implementation of the Build Alternative could remove trees protected under local tree preservation policies and/or ordinances.

Implementation of **Mitigation Measure VIS-1** would ensure that tree removal during project construction is performed in compliance with the local tree ordinances that stipulate which trees need to be replaced outside of Caltrans right-of-way.

A.1.5 Unavoidable Significant Environmental Effects

The Build Alternative will not have any environmental impacts that would remain significant after mitigation measures are incorporated.

CEQA Environmental Checklist

DISTRICT 4 – MRN – 101	PM 7.2/8.9	1A6600
Dist.-Co.-Rte.	P.M/P.M.	E.A.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant 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:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
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?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒

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 GHG 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.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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)?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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) 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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Appendix B

Alternatives Planned But Rejected

			Environmental	Highway Operations	Local Streets	Geometric Standards	Right-of-Way Impacts
Southbound							
SB	**1**	Bridge connection to Lucky, Variation A (On at Madera)	Impacts to Corte Madera Creek due to three new bridges. Visual Impacts of braided ramps in the Creek area. Noise impacts for residents on Lucky Drive. Noise impacts on Madera Boulevard.	Weave between Drake on-ramp and Fifer off-ramp is non-standard and short. Traffic queues expected on Drake on-ramp and will impact traffic on other proposed bridges. Two consecutive on-ramps to SB 101 impacts freeway. Removal of Madera On-ramp eliminates short weave between Madera and Tamalpais and add more traffic to Tamalpais I/C	Community opposes closure of Madera on-ramp as it impact business and residents. More traffic added onto Tamal Vista Boulevard. Design put more traffic on Lucky and impacts residential area. Two closely spaced intersections on Fifer could cause backups onto freeway.	Proximity of three structures at/around Lucky creates signing issues. Non-standard weaving sections and stopping sight distance expected. Two closely spaced intersection on Fifer will create conflicts. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires substantial R/W. Impacts residential and commercial properties along Lucky and Nellen.
SB	**2**	Bridge connection to Lucky, Variation B (Wornum On, Close Madera)	Impacts to Corte Madera Creek due to three new bridges. Visual Impacts of braided ramps in the Creek area. Noise impacts for residents on Lucky Drive. Noise impacts on Madera Boulevard.	Weave between Drake on-ramp and Fifer off-ramp is non-standard and short. Traffic queues expected on Drake on-ramp and will impact traffic on other proposed bridges. Three consecutive on-ramps to SB 101. Madera On-ramp eliminates short weave between Madera and Tamalpais and add more traffic to Tamalpais I/C	Community opposes closure of Madera on and off-ramps and it impact business and residents. More traffic added onto Tamal Vista Boulevard and Madera Boulevard. Design put more traffic on Lucky and impacts residential area. Two closely spaced intersections on Fifer could cause backups onto freeway.	Proximity of three structures at/around Lucky creates signing issues. Non-standard weaving sections and stopping sight distance expected. Two closely spaced intersection on Fifer will create conflicts. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires substantial R/W. Impacts residential and commercial properties along Lucky and Nellen.
SB	**3**	Close All Ramps Between SFDB and Tamalpais	Changing freeway access impacts businesses and residents. More traffic on Madera Blvd and Tamal Vista Blvd increase noise and air quality impacts	Community opposes closing existing on and off-ramps. Maintaining access to local streets is part of Purpose & Need. Local will not agree to changing freeway agreement. Adds more traffic at the Tamalpais I/C will require interchange modifications. Congestion on mainline will occur due to increased demand at Tamalpais I/C	Community opposes closure of Madera and Fifer on and off-ramp as it impact business and residents. Traffic back-up on SFDB on-ramp impacts traffic operations on Drake. Local traffic patterns changed and impacts many city streets. SFDB traffic must travel to Tamalpais I/.C to access city street south of the creek. Local business and residents impacted	Existing non-standard geometric standards unchanged. Interchange modification at Tamalpais required any may have I/C and ramp related design exceptions	Interchange modification at Tamalpais impacts will require additional rights of way and could impact shopping malls
SB	**4**	Diamond Interchange at Wornum with direct connection to Lucky	Impacts to Corte Madera Creek due to two new bridges. Visual impacts resulting from braided ramps above the creek area	Community opposes closing existing on and off-ramps. Maintaining access to local streets is part of Purpose & Need. Local will not agree to changing freeway agreement. Introduces new weave between SFDB and Wornum and between Wornum and Tamalpais. Adds more traffic at the Tamalpais I/C	Community opposes closure of Madera and Fifer on and off-ramps as it impact business and residents. More traffic added onto Tamal Vista Boulevard and Madera Boulevard creates impact to local streets. Introduces closely spaced intersections on Drake and impact traffic operations on Drake. Add more traffic on Lucky impacts residents on that street	Non-standard weaving sections and stopping sight distance expected. Two closely spaced intersection on Wornum will require design exceptions. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W add Lucky Dr. Impacts residential and commercial properties along Lucky and Nellen. Impacts residential properties along Lucky and Nellen.
SB	**5**	New Creek Crossing to Tamal Vista	Impacts to Corte Madera Creek due to new bridge. Changing freeway access impacts businesses and residents.	Community opposes closing existing on and off-ramps. Maintaining access to local streets is part of Purpose & Need. Local will not agree to changing freeway agreement. Adds more traffic at the Tamalpais I/C will require interchange modifications. Maintain access to local streets is part of Purpose & Need. Local will not agree to changing freeway agreement. Adds more traffic at the Tamalpais I/C will require interchange modifications. Congestion on mainline will occur due to increased demand at Tamalpais I/C	Community opposes closure of Madera and Fifer on and off-ramps as it impact business and residents. Traffic back-ups impact traffic operations on Drake. Introduces closely spaced intersections on Drake and impact traffic operations on Drake. Local traffic impacts on many city streets. Community concern over removal Madera ramps	Existing non-standard geometric standards unchanged. Interchange modification at Tamalpais required may have I/C and ramp related design exceptions	Requires R/W and impacts residential and commercial properties along Lucky. Adds more traffic to Tamal Vista Boulevard and requires right way for widening
SB	**6**	Braid to Fifer (SB-C, Variation A)	Impacts to Corte Madera Creek due to one new bridge. Local traffic patterns impacted with closure of excising on and off-ramps. Changing freeway access impacts businesses and residents. More traffic on Madera Boulevard increase noise and air quality impacts. Visual impacts resulting from braided ramps in the creek area	Community opposes closing existing on and off-ramps. Maintaining access to local streets is part of Purpose & Need. Local will not agree to changing freeway agreement. Local traffic from SFDB must traved to Tamalpais I/C to access city streets south of the creek. Traffic queues expected on Drake on-ramp and will impact traffic on other proposed bridges. Two consecutive on-ramps to SB 101 impacts freeway. Removal of Madera On-ramp eliminates short weave between Madera and Tamalpais and add more traffic to Tamalpais I/C	Community opposes closure of Madera and Fifer on and off-ramps as it impact business and residents. Traffic back-ups impact traffic operations on Drake. Introduces closely spaced intersections on Drake and impact traffic operations on Drake. Added more traffic on Lucky Drive and Madera Boulevard.	Two closely spaced intersections on Wornum will require design exceptions. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W and impacts residential and commercial properties along Lucky. Adds more traffic to Tamal Vista Boulevard and requires right way for widening

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			Environmental	Highway Operations	Local Streets	Geometric Standards	Right-of-Way Impacts
Southbound							
SB	**7**	Widen Tamal Vista/Madera for Local Traffic	Impacts to Corte Madera Creek due to new bridge. Local traffic patterns impacted with closure of excising on and off-ramps. Changing freeway access impacts businesses and residents. More traffic on Madera and Tamal Vista Boulevards increase noise and air quality impacts. Visual impacts resulting from braided ramps above the creek area	Community opposes closing existing on and off-ramps. Maintaining access to local streets is part of Purpose & Need. Local will not agree to changing freeway agreement. Adds more traffic at the Tamalpais I/C will require interchange modifications. Congestion on mainline will occur due to increased demand at Tamalpais I/C. Widening Tamal Vista Blvd does not provide relief for mainline.	Community opposes closure of Madera and Fifer on and off-ramps as it impact business and residents. Add traffic on Tamal Vista and Madera impacts city traffic operations	Direct connection to Lucky creates short weave. Two closely spaced intersections create on Lucky. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required. Interchange modification at Tamalpais required may have I/C and ramp related design exceptions	Requires R/W and impacts residential and commercial properties along Lucky. Adds more traffic to Tamal Vista Boulevard and requires right way for widening
SB	**8**	Dual Braided Ramps	Impacts to Corte Madera Creek due to new structure. Changing freeway access impacts businesses and residents. More traffic on Madera Boulevard increase noise and air quality impacts. Visual impacts resulting from braided ramps at the Town Center and over the creek area	Community opposes closing existing on and off-ramps. Maintaining access to local streets is part of Purpose & Need. Local will not agree to changing freeway agreement. Adds more traffic at the Tamalpais I/C will require interchange modifications. Congestion on mainline will occur due to increased demand at Tamalpais I/C	Community opposes closure of Madera and Fifer on and off-ramps as it impact business and residents. Closely spaced intersections created on Madera. Local traffic patterns impacted with closure of excising on and off-ramps. Traffic back-ups on Drake on-ramp impact traffic operations on Drake.	Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required. Interchange modification at Tamalpais required may have I/C and ramp related design exceptions. Unbalance interchange created at Madera.	Requires substantial R/W. Impacts Town Center Shopping Mall. Impacts residential and commercial properties along Lucky and Nellen.
SB	**9**	Barrier Separated Frontage Road	Impacts to businesses on the entire length along the freeway. Impacts to Corte Madera Creek due to new bridge. Visual impacts resulting from braided ramps in the creek area.	Community opposes closing existing on and off-ramps. Maintaining access to local streets is part of Purpose & Need. Local will not agree to changing freeway agreement. Adds more traffic at the Tamalpais I/C will require interchange modifications. Congestion on mainline will occur due to increased demand at Tamalpais I/C. Traffic queues expected on Drake on-ramp will impact SFDB.	Community opposes closure of Madera and Fifer on and off-ramps as it impact business and residents. Weaves exist between every access point on Frontage Road. SFDB traffic must travel to the Tamalpais I/C to access streets south of the creek	Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required. Interchange modification at Tamalpais required may have I/C and ramp related design exceptions.	Requires substantial R/W along entire length of project. Impacts Town Center Shopping Mall. Impacts residential and commercial properties.

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			Environmental	Highway Operations	Local Streets	Geometric Standards	Right-of-Way Impacts
Northbound							
NB	**1**	Wornum Braid into Old Redwood onto SFDB	Potential visual impacts. On-ramp close to Old Redwood results in more noise impacts to trailer park site near Wornum.	City opposes closure of on and off-ramp at industrial as it impacts access to residential, commercial and businesses and would not sign Freeway Agreement. Access to SFDB is indirect.	SFDB off-ramp traffic funneled to Old Redwood Highway impacts street and intersections. Local traffic impacted and impacts business and residents east of Old Redwood Highway	Freeway over Wornum is not standard resulting in non-standard off-ramp to Industrial. Truck turns from Old Redwood Highway to on-ramp at Industrial is non-standard. Interchange spacing, intersection spacing, superelevation, outer separation, design exceptions required.	Impacts to trailer park site and business along Old Redwood Highway
NB	**2**	Close Industrial and Route All Traffic to Tamalpais	City opposes closure of on and off-ramp at Industrial as it impacts access to residential, commercial and businesses on Old Redwood Highway.	City opposes closure of on and off-ramp at industrial as it impacts access to residential, commercial and businesses and would not sign Freeway Agreement. Congestion on mainline will occur due to increased demand at Tamalpais I/C.	Community opposes closure of Industrial on and off-ramps as it impact business and residents. Access to shopping center is impacted. Traffic operations on Tamalpais and Old Redwood is impacted	No improvements to existing non-standard features along US 101.	Minimum changes to existing right of way
NB	**3**	Interchange at Wornum, Modify Old Redwood	Closure of ramps at Industrial impact access to businesses on Old Redwood Highway. Interchange at Wornum results in realignment of Old Redwood and impacts Shorebird Marsh Environmental sensitive area and trailer park site at Wornum	City opposes closure of on and off-ramp at industrial as it impacts access to residential, commercial and businesses and would not sign Freeway Agreement. Short weave between Tamalpais on-ramp and off-ramp to Wornum impacts freeway operations. Short weave between Wornum ohm-ramp and off-ramp to Drake impacts freeway operations and results in congestion.	Traffic operations on Tamalpais, Wornum, Old Redwood, Madera and Tamal Vista is impacted	Freeway over Wornum is not standard resulting in non-standard off-ramp to Wornum. Interchange spacing, intersection spacing, superelevation, profile, outer separation, design exceptions required. Construction new interchange to standard would require reconstruction of the US 101 freeway.	Requires substantial R/W. Impact Shore Bird Marsh, businesses, and Trail Park site at Wornum.
NB	**4**	Braid Over Creek, Variation A (Industrial Ramps)	New bridge over creek results in impacts to creek and wetlands. Bridge structure results in potential visual impacts	Short weave between Wornum on-ramp and off-ramp to Drake impacts freeway operations and results in congestion. .	SFDB off-ramp traffic funneled to Old Redwood Highway impacts street and intersections. Local traffic impacted and impacts business and residents east of Old Redwood Highway. SFDB interchange Impacted. Closely spaced intersections on SFDB impact operations	Profile for new bridge will have non-standard SSD. Two closure spaced intersection on Drake is non-standard. Weaving distance is short between Industrial on-ramp and Drake off-ramp. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W and impact businesses along Old Redwood Highway and near creek
NB	**5**	Braid Over Creek, Variation B (No Industrial Ramps)	City opposes closure of on and off-ramp at Industrial as it impacts access to residential, commercial and businesses. New bridge over creek results in impacts to creek and wetlands. Bridge structure results in potential visual impacts.	City opposes closure of on and off-ramp at industrial as it impacts access to residential, commercial and businesses and would not sign Freeway Agreement. Traffic on off-ramp to Drake could back up onto freeway	Community opposes closure of Industrial on and off-ramps as it impact business and residents. SFDB interchange Impacted. Closely spaced intersections on SFDB impact traffic operations	Profile for new bridge will have non-standard SSD. Two closure spaced intersection on Drake is non-standard. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W and impact businesses along Old Redwood Highway and near creek
NB	**6**	Braid Over Creek, Variation C (Separated SFDB Off-Ramps)	New bridge over creek results in impacts to creek. Bridge structure results in potential visual impacts.	Short weave between Wornum on-ramp and off-ramp to Drake impacts freeway operations and results in congestion. Traffic on off-ramp to Drake could back up onto freeway	SFDB off-ramp traffic funneled to Old Redwood Highway impacts street and intersections. SFDB interchange Impacted. Closely spaced intersections on SFDB impact traffic operations	Profile for new bridge will have non-standard SSD. Two closure spaced intersection on Drake is non-standard. Weaving distance is short between Industrial on-ramp and Drake off-ramp. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W and impact businesses along Old Redwood Highway and near creek
NB	**7**	Braid Over Creek, Variation D (New On/Off After Wornum)	New bridge over creek results in impacts to creek. Bridge structure results in potential visual impacts. More traffic is redirected to the Tamalpais Interchange resulting in potential air quality impacts.	Short weave between Wornum on-ramp and off-ramp to Drake impacts freeway operations and results in congestion. Consecutive off-ramps at SFDB. Weave created between Wornum and SFDB. Closely spaced intersections on SFDB could cause back-up onto mainline.	SFDB off-ramp traffic funneled to Old Redwood Highway impacts street and intersections. SFDB interchange Impacted. Closely spaced intersections on SFDB impact operations	Profile for new bridge will have non-standard SSD. Two closure spaced intersection on Drake is non-standard. Weaving distance is short between Industrial on-ramp and Drake off-ramp. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W and impact businesses along Old Redwood Highway and near creek
NB	**8**	Relocate Industrial Ramps, Variation A (Around Wornum)	More traffic on Old Redwood Highway potentially increase noise level at Trailer Park site near Wornum	Short weave between Wornum on-ramp and off-ramp to Drake impacts freeway operations and results in congestion.	Wornum and Redwood Highway traffic operations impacts. Three closely spaced intersections on Old Redwood Highway impact traffic operations	Weaving distance is short between Industrial on-ramp and Drake off-ramp. Spacing between Wornum intersection and ramp intersection is non-standard. Isolated on and off-ramps. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required. Unbalance interchange created.	Requires R/W and impact businesses along Old Redwood Highway
NB	**9**	Relocate Industrial Ramps, Variation B (After Wornum)	More traffic on Old Redwood Highway potentially increases noise level at Trailer Park site near Wornum	Short weave between Wornum on-ramp and off-ramp to Drake impacts freeway operations and results in congestion.	Wornum and Redwood Highway traffic operations impacts. Two closely spaced intersections on Old Redwood Highway impact traffic operations	Weaving distance is short between Industrial on-ramp and Drake off-ramp. Spacing between Wornum intersection and ramp intersection is non-standard. Isolated on and off-ramps. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W and impact businesses along Old Redwood Highway

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			Environmental	Highway Operations	Local Streets	Geometric Standards	Right-of-Way Impacts
Northbound							
NB	**10**	Relocate Industrial Ramps, Variation C (Before Wornum)	Closure of ramps at Industrial impact access to businesses on Old Redwood Highway. Interchange south of Wornum results in realignment of Old Redwood and impacts Shorebird Marsh Environmental sensitive area	Short weave between Wornum on-ramp and off-ramp to Drake impacts freeway operations and results in congestion.	Wornum and Redwood Highway traffic operations impacts. Two closely spaced intersections on Old Redwood Highway impact traffic operations	Weaving distance is short between Tamalpais on-ramp and off-ramp to Old Redwood Highway. Spacing between Wornum intersection and ramp intersection is non-standard. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W and impact Shore Bird Marsh
NB	**11**	New Creek Crossing to SFDB, Variation A	New bridge over creek results in impacts to creek and wetlands. Bridge structure results in potential visual impacts. More traffic on Old Redwood Highway results in noise impacts.	Short weave between Wornum on-ramp and off-ramp to Drake impacts freeway operations and results in congestion. Closely spaced intersections on SFDB could cause back-up onto mainline.	SFDB off-ramp traffic funneled to Old Redwood Highway impacts street and intersections. Two closely spaced intersections on SFDB impact traffic operations on Drake	No improvements to existing non-standard features along US 101. Weaving distance is short between Industrial on-ramp and off-ramp to Drake. Two closure spaced intersections on Drake is non-standard.	Requires R/W and impact businesses along Old Redwood Highway
NB	**12**	New Creek Crossing to SFDB, Variation B (Ramps at Wornum)	New bridge over creek results in impacts to creek and wetlands. Bridge structure results in potential visual impacts.	Short weave between Wornum on-ramp and off-ramp to Drake impacts freeway operations and results in congestion. Closely spaced intersections on SFDB could cause back-up onto mainline.	Traffic operations on Tamalpais, Wornum, and Old Redwood is impacted. Two closely spaced intersections on Wornum. Two closely spaced intersections on SFDB impact traffic operations on Drake	Weaving distance is short between Industrial on-ramp and off-ramp to Drake, and between Tamalpais on-ramp and Wornum off-ramp. Two closure spaced intersections on Drake is non-standard. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W and impact businesses along Old Redwood Highway
NB	**13**	New Creek Crossing to SFDB, Variation C (Roundabout)	New bridge over creek results in impacts to creek and wetlands. Bridge structure results in potential visual impacts. More traffic on Old Redwood Highway results in noise impacts.	Closely spaced intersections on SFDB could cause back-up onto mainline.	SFDB off-ramp traffic funneled to Old Redwood Highway impacts street and intersections. Two closely spaced intersections on Old Redwood Highway impact traffic operations	Weaving distance is short between Industrial on-ramp and off-ramp to Drake. Two closure spaced intersections on Drake is non-standard. Unbalance interchange created at Industrial Way. Interchange spacing, ramp design, profile, superelevation, outer separation, design exceptions required.	Requires R/W and impact businesses along Old Redwood Highway

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Appendix C

Section 4(f)

Appendix C

Section 4(f)

Introduction

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 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.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

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 Caltrans under its assumption of responsibility pursuant to 23 USC 327.

Description of Proposed Project

The California Department of Transportation (Caltrans), in cooperation with the Transportation Authority of Marin (TAM), propose modifications to several existing interchanges along US Highway 101 (US 101), between Tamalpais Drive in the Town of Corte Madera, and Sir Francis Drake Boulevard in the City of Larkspur. Collectively, the Town of Corte Madera and the City of Larkspur are known as the "Twin Cities". This segment of US 101 also includes an unincorporated area of Marin County known as Greenbrae that straddles both sides of the highway near Lucky Drive. Given the jurisdictional boundaries surrounding this segment of US 101, this area is commonly referred to as the Greenbrae/Twin Cities Corridor.

The Highway 101 Greenbrae/Twin Cities Corridor Improvement Project (project) will include the modification, realignment, addition, and/or removal of US 101 on- and off-ramps; the construction of auxiliary lanes and collector-distributor roadways; as well as the construction of new transit, bicycle, and

pedestrian facilities. In addition, the project will include the upgrading of traffic signals at several local roadway intersections. Implementation of the project will improve many of the design and operational deficiencies in the Greenbrae/Twin Cities Corridor, as discussed in **Chapter 1, Proposed Project**, of the Highway 101 Greenbrae/Twin Cities Corridor Improvement Project Initial Study/ Environmental Assessment (IS/EA).

List and Description of Section 4(f) Properties

Parks and Ecological Preserve

The developed areas that surround US 101 contain three parks and one ecological preserve, all of which are located within one mile of the proposed Build Alternative improvements (see **Figure C-1**). These include the Corte Madera Town Park, Heatherwood Park, Niven Park, and the Shorebird Marsh/Corte Madera Ecological Preserve. **Table C-1** lists the location of the three parks and the one ecological preserve, including the relative distance from US 101 and the proposed Build Alternative. The distance between the parks and recreational facilities and the Build Alternative will be relatively the same distance as compared to existing conditions because the Build Alternative would not substantially alter the location of US 101. Property of the nearby parks and ecological preserve identified in **Table C-1** will not be acquired or used as part of the Build Alternative, thereby avoiding direct effects to these Section 4(f) resources. As such, these facilities are evaluated under the "Resources Evaluated Relative to the Requirements of Section 4(f)" heading further below.

Table C-1: Parks and Recreational Facilities near US 101

Facility	Location Relative to US 101/Build Alternative	Primary Use	Jurisdictional Agency
Corte Madera Town Park	498 Tamalpais Drive 1,954 feet west of US 101	Recreation	Town of Corte Madera
Heatherwood Park	Midway Road at Diane Lane 3,432 feet west of US 101	Recreation	City of Larkspur
Niven Park	Barry Way at Drakes Landing Road 1,320 feet west of US 101	Recreation	City of Larkspur
Shorebird Marsh/Corte Madera Ecological Preserve	72 Industrial Way Adjacent to the east of US 101	Ecological Preserve	Town of Corte Madera

Bikeways

As shown on **Figure C-1**, there are many existing multi-use paths and bike lanes in and around the project vicinity, all of which are heavily used by pedestrians and bicyclists to reach residential, commercial, and community destinations, as well as local and regional transit facilities located along the US 101 corridor. Unimproved on-street bike routes are designated along Tamal Vista Boulevard, Redwood Highway (north of Wornum Drive), and Lucky Drive. Off-street bike paths run along Wornum Drive, Redwood Highway (south of Wornum Drive), the US 101/Sir Francis Drake Boulevard on-ramp, and north embankment of Corte Madera Creek. These bike routes and bike paths are primarily used for transportation as an integral part of the local transportation system and are not, in themselves, considered a recreational area protected under Section 4(f). However, Section 4(f) does apply to those bikeways (or portions thereof) designated or functioning primarily for recreation as part of the Bay Trail, and the realignment of the Bay Trail, as proposed under the Build Alternative, constitutes a "use" of this Section 4(f) resource (see detailed discussion below under the "Section 4(f) *de minimis* Determination" heading).

Traveling north to south within the Greenbrae/Twin Cities Corridor, the Bay Trail consists of a Class I bike path (off-street) along the north embankment of Corte Madera Creek, which connects to the separated bike path/sidewalk on the south side of the southbound US 101/Sir Francis Drake Boulevard on-ramp. Where on-ramp vehicles enter onto southbound US 101, the bike path separates from the highway and continues south until it reaches the Nellen Avenue pedestrian overcrossing. The Bay Trail follows the pedestrian overcrossing to the east side of US 101, and travels south along the Class III, unimproved bike route on Redwood Highway. At Wornum Drive, the Bay Trail then connects to the Class I bike paths that wind through the Shorebird Marsh/Corte Madera Ecological Preserve. **Figure C-2** provides a map showing the existing bicycle facilities that are part of the Bay Trail.

Segments of the Bay Trail are built, owned, and maintained by the State, cities, counties, park districts, and local nonprofit organizations, citizen groups, or businesses. **Figure C-2** depicts the jurisdictional boundaries for those agencies with authority over the existing Bay Trail alignment. Within the Greenbrae/Twin Cities Corridor, the majority of the Bay Trail alignment is within Caltrans' right-of-way. However, there are portions of the Bay Trail that fall outside of Caltrans' jurisdiction, including the Class I multi-use paths that wind through the Shorebird Marsh/Corte Madera Ecological Preserve (beginning south of Wornum Drive) and one small segment of Redwood Highway that fronts the Golden Gate Trailer Park and Cost Plus Plaza. These two small segments of the Bay Trail are owned and maintained by the Town of Corte Madera and the City of Larkspur, respectively.

Section 4(f) *de minimis* Determination

Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 USC 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). FHWA's final rule on Section 4(f) *de minimis* findings is codified in 23 CFR 774.3 and 23 CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to the Department pursuant to 23 USC 326 and 327, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

Bay Trail

Pedestrian and bicycle improvements proposed as part of the Build Alternative will connect to existing and planned pedestrian and bicycle facilities to the north (e.g., Central Marin Ferry Connection Multi-Use Pathway) and existing pedestrian and bicycle facilities to the south. As described in **Chapter 1, Proposed Project**, of the IS/EA, improved pedestrian and bicycle facilities (i.e., Class I bike paths and Class II bike lanes) will be provided along the NB US 101 off-ramp crossing of Corte Madera Creek, Redwood Highway, Wornum Drive, Tamal Vista Boulevard, Lucky Drive, and Fifer Avenue that will enhance the connectivity of the bicycle and pedestrian network in the area. These improvements will also include the removal of the existing non-ADA compliant pedestrian overcrossing at Nellen Avenue, replacing it with an ADA accessible multi-use pathway (off-road) along the Wornum Drive undercrossing. All of the proposed Class I pathways will comply with the requirements of the ADA.

The removal of the Nellen Avenue pedestrian overcrossing will sever the existing Bay Trail alignment, which would constitute a use of a 4(f) resource. Traveling north to south within the Greenbrae/Twin

Cities Corridor, the Bay Trail will follow the existing Class I bike path (off-street) along the north embankment of Corte Madera Creek, which connects to the separated bike path/sidewalk on the south side of the southbound US 101/Sir Francis Drake Boulevard on-ramp. Where on-ramp vehicles enter onto southbound US 101, the Bay Trail will remain on the existing separated bike path, parallel to the highway, until it reaches Lucky Drive. Instead of crossing US 101 here, the Bay Trail will continue south along the proposed Class I (off-street) bike paths that will follow a short segment of Lucky Drive and Nellen Avenue. At the Nellen Avenue and Wornum Drive intersection, the Bay Trail will cross US 101 along the Class I multi-use path that is proposed as part of the Wornum Drive undercrossing. The Bay Trail will then connect to the existing Class I bike path at the end of Redwood Highway, and will continue through the Shorebird Marsh/Corte Madera Ecological Preserve. **Figures C-3** provides a map showing the proposed bicycle facilities that are considered part of the Bay Trail.

Upon completion, the majority of the Bay Trail realignment will remain within Caltrans' right-of-way. **Figure C-3** depicts the jurisdictional boundaries for those agencies with authority over the proposed Bay Trail alignment. Portions of the realignment that will fall outside of Caltrans' jurisdiction will include the small segment (two blocks) of Lucky Drive between US 101 and Nellen Avenue, and the trail's intersection with Fifer Avenue. These two small segments are owned and maintained by the community of Greenbrae (unincorporated Marin County) and the Town of Corte Madera, respectively. Portions of the Bay Trail along Redwood Highway (north of Wornum Drive), that currently fall within the City of Larkspur jurisdiction will be realigned to the west side of US 101. Under the Build Alternative, no portion of the realigned Bay Trail will fall under the jurisdiction of the City of Larkspur. No changes to the portions of the Bay Trail that are located south of Redwood Highway (Shorebird Marsh/Corte Madera Ecological Preserve) will occur as part of the Build Alternative.

To avoid potential access impacts to the Bay Trail, preliminary stage construction concepts have been developed as part of the Build Alternative to ensure that the existing bike paths and bike routes will remain open continuously either on the current alignment, or along detour routes. The proposed widening along Redwood Highway will occur first. This widening includes the construction of the proposed multi-use path on the east side of Redwood Highway. This new multi-use path will cross Corte Madera Creek and connect to the existing Class I bike paths on the south side of Sir Francis Drake Boulevard, which currently provide east-west access underneath US 101.

After these improvements are complete, the existing pedestrian crossing at Nellen Avenue will be closed for demolition. Pedestrians and cyclists using the crossing (and other parts of the Bay Trail) will be temporarily detoured onto the newly constructed multi-use path along Redwood Highway. The temporary detour will remain in place until the last stage of project construction, when the Bay Trail will be realigned as described above, crossing US 101 along the Wornum Drive undercrossing and joining the proposed multi-use path along the west side of US 101. The detour is expected to remain in place for up to one year. The newly constructed multi-use path along Redwood Highway would remain as part of the proposed pedestrian/bicycle improvements under the Build Alternative, but would not be designated as part of the Bay Trail. The Build Alternative will not require any additional work on, detours to, or closures of any other section of the Bay Trail located within the Shorebird Marsh/Corte Madera Ecological Preserve or north Corte Madera Creek.

A Transportation Management Plan (TMP) will be developed as part of the Build Alternative to address impacts to motor vehicle, bicycle, and pedestrian access during project construction. The plan will maintain continuous bicycle and pedestrian access as part of construction staging. The plan will include briefing local public officials and developing a public information program to notify the public of project progress and upcoming closures and detours. The public information program will include outreach to ridesharing agencies, transit operators, and neighborhood and special interest groups. As part of the TMP, detour signage will be posted at Bay Trail access points, as appropriate. Implementation of the TMP will avoid any adverse effects from the Build Alternative on the activities, features, and attributes that qualify the Bay Trail for protection under Section 4(f). As such, the realignment of the Bay Trail is considered minimal or *de minimis*. *De minimis* impact findings for parks and recreational facilities do not adversely affect the qualities, features, or attributes of the Section 4(f) resource.

Potential increases in ambient noise levels for the areas immediately adjacent to US 101 are discussed in **Section 2.3.7, Noise**, of the IS/EA, which concludes that the Build Alternative will not result in noise impacts in the area the new Bay Trail alignment will be located (see **Table 2.3-9, Greenbrae Marina Residences in Section 2.3.7, Noise**). Based on the results of the modeled noise levels in this area, the predicted increase in traffic noise under the Build Alternative will be too small to be perceived by the human ear. Traffic noise from the Build Alternative will not alter the qualities, features, or attributes of the proposed Bay Trail alignment.

In addition, the beneficial effects of the Build Alternative will outweigh any of the *de minimis* impacts on the Bay Trail. First, pedestrian and bicycle improvements proposed as part of the Build Alternative will enhance the connectivity of Bay Trail by providing a continuous network of ADA-compliant, Class I (off-street) bike paths throughout the Greenbrae/Twin Cities Corridor. Second, the proposed improvements will enhance the Bay Trail by providing ADA compliant pedestrian undercrossing at Wornum Drive.

Measures to Minimize Harm to the Section 4(f) Property

During construction, access through the Greenbrae/Twin Cities Corridor for Bay Trail users will be open continuously either on the current alignment, or along detour routes. A Transportation Management Plan (TMP) will be developed as part of the Build Alternative to address impacts to motor vehicle, bicycle, and pedestrian access during project construction. The plan will maintain bicycle and pedestrian access to the maximum extent feasible as part of construction staging. The plan will include briefing local public officials and developing a public information program to notify the public of project progress and upcoming closures and detours. The public information program will include outreach to ridesharing agencies, transit operators, and neighborhood and special interest groups. As part of the TMP, detour signage will be posted at Bay Trail access points, as appropriate.

Coordination

Information supporting the *de minimis* impact finding is included in IS/EA so that the public is given an opportunity to comment during the formal public review process. Caltrans, as assigned by the FHWA, is responsible for making the final determination on the *de minimis* finding. The determination also requires the following steps:

- The City of Larkspur, the Town of Corte Madera, and the Community of Greenbrae must agree, in writing, that the realignment of the Bay Trail will not adversely affect the features and attributes of the portions of the property that fall within their respective jurisdictions. This also involves documentation that these agencies have been informed of Caltrans' intent to make a *de minimis* finding based on that agreement. Caltrans and TAM will request such written agreement from the City of Larkspur, the Town of Corte Madera, and the Community of Greenbrae during the public review period for this document.
- The public must have an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) property. The public will have the opportunity to review and comment on the effects to the Bay Trail and Bay Trail realignment during the public review period for this document (refer to Section 3.6, Public Participation).

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

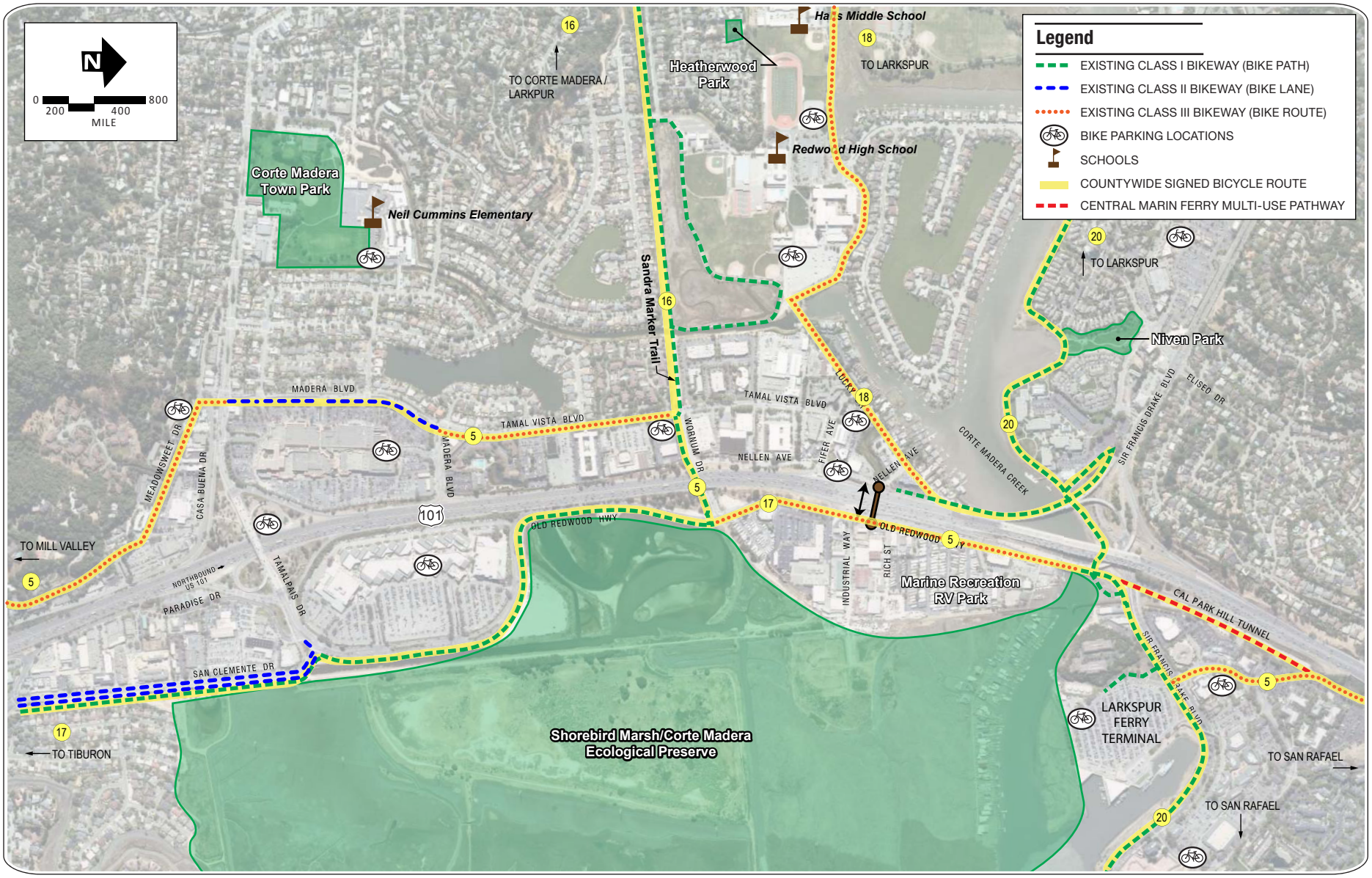
This section of the document discusses parks, recreational facilities, wildlife refuges and historic properties found within or adjacent to the project area that do not trigger Section 4(f) protection either because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not 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.

Parks and Ecological Preserve

The developed areas that surround US 101 contain three parks and one ecological preserve, all of which are located within one-mile of the proposed Build Alternative improvements (see **Figure C-1**). These include the Corte Madera Town Park, Heatherwood Park, Niven Park, and the Shorebird Marsh/Corte Madera Ecological Preserve. All four facilities are publically owned parkland and qualify for protection under Section 4(f). With implementation of the Build Alternative, the distance between the parks and ecological preserves and US 101 and proposed improvements will not change when compared to existing conditions because the Build Alternative will not substantially change the location of US 101. Property of the nearby parks and ecological preserve will not be acquired or used as part of the Build Alternative, thereby avoiding direct effects to these Section 4(f) resources. Potential noise impacts are discussed in **Section 2.3.7, Noise**, of the IS/EA which concludes that the Build Alternative will not result in a noise impact at the Shorebird Marsh/Corte Madera Ecological Preserve. Due to their distance from the project site, Corte Madera Town Park, Heatherwood Park, and Niven Park would not result in a perceptible increase in noise. The Build Alternative will therefore not alter the qualities, features, or attributes that qualify these resources for protection under Section 4(f). No Section 4(f) impacts would occur to the nearby parks or the Shorebird Marsh/Corte Madera Ecological Preserve identified in **Table C-1**. Therefore, the provisions of Section 4(f) are not triggered.

No-Build Alternative

The No-Build Alternative will make no physical or operational improvements that will require the use of the existing Section 4(f) resource within the study area. Therefore, the provisions of Section 4(f) are not triggered. The No-Build Alternative will not implement any operational improvements to pedestrian, bicycle, or transit facilities in the Greenbrae/Twin Cities Corridor. As such, the No-Build Alternative will not address the need for facility improvements, or provide for an ADA compliant pedestrian crossing across US 101.



Existing Parks and Recreational Facilities

Figure C-1

Source: Google Earth Maps, 2012.

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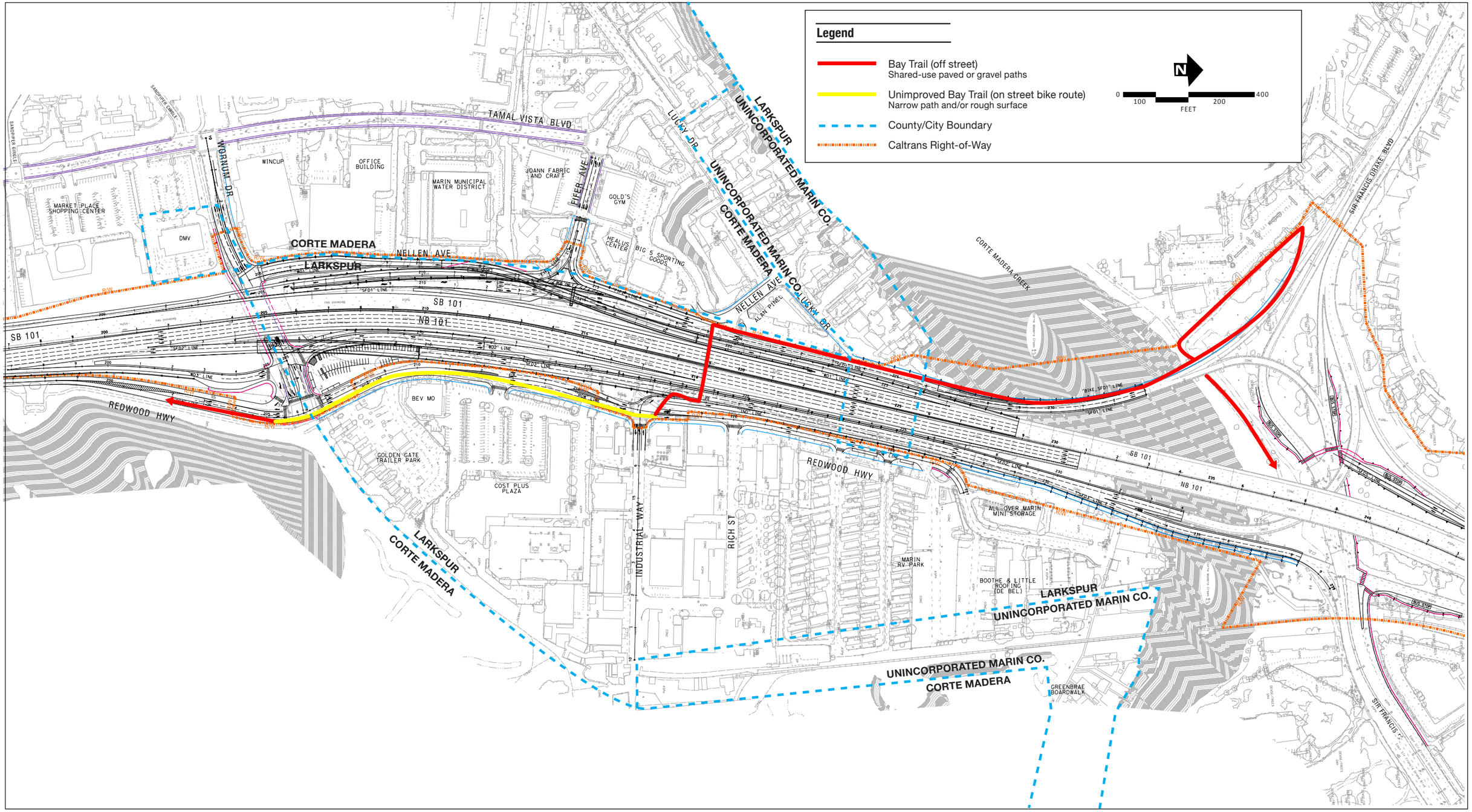
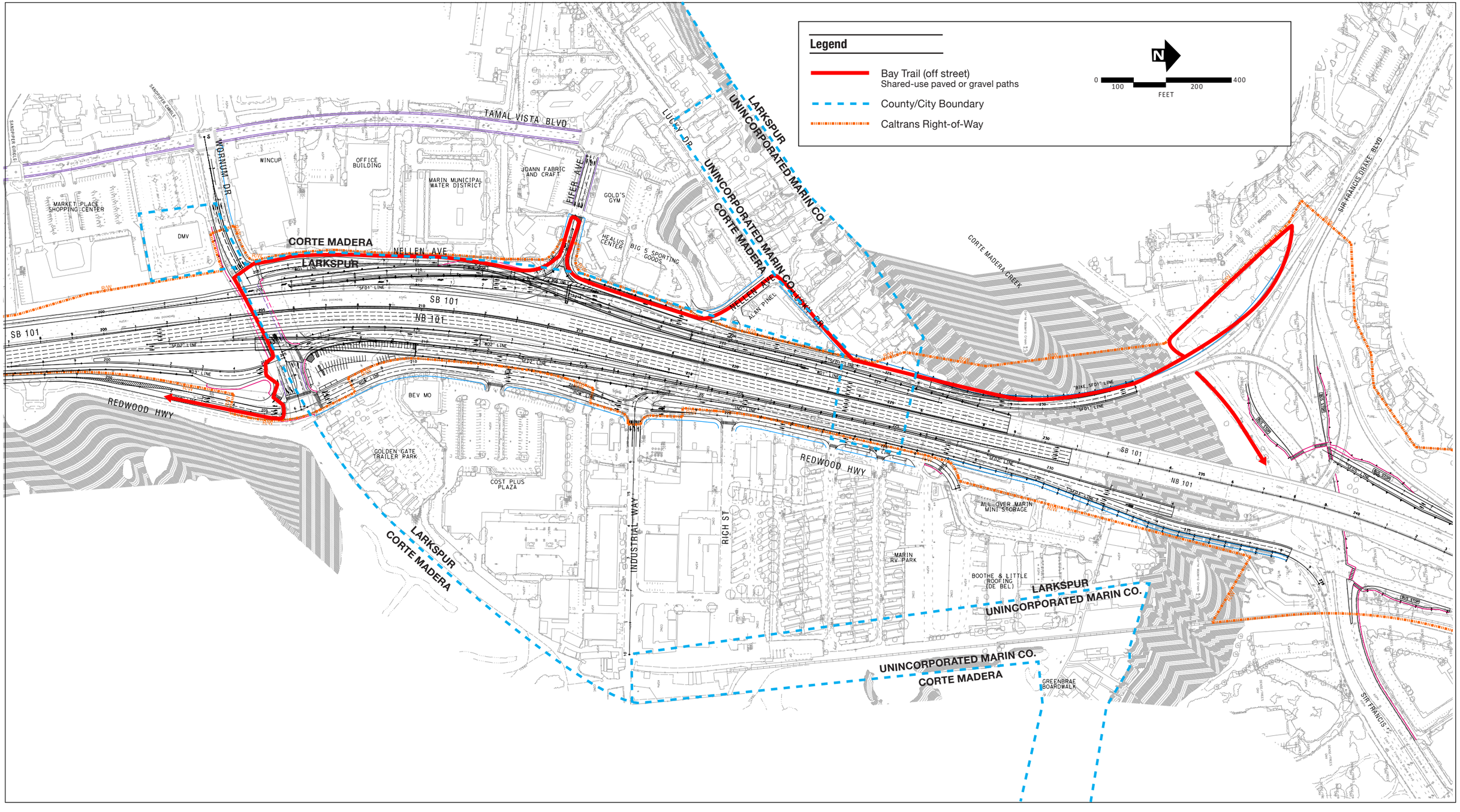


Existing Bay Trail Map

Figure C-2

Source: Caltrans, 2012c.

Figure C-2 Existing Bay Trail Map (Back)



Proposed Bay Trail Map Figure **C-3**

Source: Caltrans, 2012c.

Figure C-3 Proposed Bay Trail Map (Back)

Appendix D

Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
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March 16, 2012

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 Mario Solis, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353, TTY 711, fax (916) 324-1869, or via email: *mario_solis@dot.ca.gov*.

MALCOLM DOUGHERTY
Acting Director

Appendix E

Special Status Species with Potential to Occur in the Region

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

September 12, 2012

Document Number: 120912012521

Office of Environmental Planning
111 Grand Avenue
Oakland, CA 94623

Subject: Species List for Greenbrae Corridor Improvement Project

Dear: Caltrans District 4

We are sending this official species list in response to your September 12, 2012 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be December 11, 2012.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found here.

Endangered Species Division

TAKE PRIDE IN AMERICA

These buttons will not appear on your list.

Revise Selection

Print this page

Print species list before going on to letter.

Make Official Letter

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 120912012521

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- Haliotes cracherodii
  - black abalone (E) (NMFS)
- Haliotes sorenseni
  - white abalone (E) (NMFS)
- Icaricia icarioides missionensis
  - mission blue butterfly (E)
- Speyeria callippe callippe
  - callippe silverspot butterfly (E)
- Speyeria zerene myrtleae
  - Myrtle's silverspot butterfly (E)
- Syncaris pacifica
  - California freshwater shrimp (E)

Fish

- Acipenser medirostris
  - green sturgeon (T) (NMFS)

- Eucyclogobius newberryi
  - critical habitat, tidewater goby (X)
  - tidewater goby (E)

- Hypomesus transpacificus
  - delta smelt (T)

- Oncorhynchus kisutch
  - coho salmon - central CA coast (E) (NMFS)
  - Critical habitat, coho salmon - central CA coast (X) (NMFS)

- Oncorhynchus mykiss
  - Central California Coastal steelhead (T) (NMFS)
  - Central Valley steelhead (T) (NMFS)
  - Critical habitat, Central California coastal steelhead (X) (NMFS)
  - Critical habitat, Central Valley steelhead (X) (NMFS)

- Oncorhynchus tshawytscha
  - California coastal chinook salmon (T) (NMFS)
  - Central Valley spring-run chinook salmon (T) (NMFS)
  - Critical habitat, winter-run chinook salmon (X) (NMFS)
  - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Rana draytonii
  - California red-legged frog (T)

Reptiles

- Caretta caretta
  - loggerhead turtle (T) (NMFS)

- Chelonia mydas (incl. agassizi)
  - green turtle (T) (NMFS)

- Dermochelys coriacea
  - leatherback turtle (E) (NMFS)

- Lepidochelys olivacea
  - olive (=Pacific) ridley sea turtle (T) (NMFS)

Birds

- Brachyramphus marmoratus
  - Critical habitat, marbled murrelet (X)
  - marbled murrelet (T)

- Charadrius alexandrinus nivosus
  - western snowy plover (T)

- Diomedea albatrus
  - short-tailed albatross (E)

- Pelecanus occidentalis californicus
  - California brown pelican (E)

- Rallus longirostris obsoletus
  - California clapper rail (E)

- Sternula antillarum (=Sterna, =albifrons) browni
  - California least tern (E)

- Strix occidentalis caurina
  - northern spotted owl (T)

Mammals

- Arctocephalus townsendi
  - Guadalupe fur seal (T) (NMFS)

- Balaenoptera borealis
  - sei whale (E) (NMFS)

- Balaenoptera musculus
  - blue whale (E) (NMFS)

- Balaenoptera physalus
  - finback (=fin) whale (E) (NMFS)

- Enhydra lutris nereis
  - southern sea otter (T)

- Eubalaena (=Balaena) glacialis
  - right whale (E) (NMFS)

- Eumetopias jubatus
  - Critical Habitat, Steller (=northern) sea-lion (X) (NMFS)
  - Steller (=northern) sea-lion (T) (NMFS)

- Physeter catodon (=macrocephalus)
  - sperm whale (E) (NMFS)

- Reithrodontomys raviventris
  - salt marsh harvest mouse (E)

Plants

- Alopecurus aequalis var. sonomensis
  - Sonoma alopecurus (E)

- Arctostaphylos hookeri ssp. ravenii
  - Presidio (=Raven's) manzanita (E)

- Arenaria paludicola
  - marsh sandwort (E)

- Calochortus tiburonensis
  - Tiburon mariposa lily (T)
- Castilleja affinis ssp. neglecta
  - Tiburon paintbrush (E)
- Clarkia franciscana
  - Presidio clarkia (E)
- Hesperolinon congestum
  - Marin dwarf-flax (=western flax) (T)
- Holocarpha macradenia
  - Santa Cruz tarplant (T)
- Layia carnosa
  - beach layia (E)
- Lessingia germanorum
  - San Francisco lessingia (E)
- Pentachaeta bellidiflora
  - white-rayed pentachaeta (E)
- Streptanthus niger
  - Tiburon jewelflower (E)
- Trifolium amoenum
  - showy Indian clover (E)

Quads Containing Listed, Proposed or Candidate Species:

SAN QUENTIN (466B)

SAN FRANCISCO NORTH (466C)

SAN RAFAEL (467A)

BOLINAS (467B)

POINT BONITA (467D)

PETALUMA POINT (483C)

SAN GERONIMO (484C)

NOVATO (484D)

County Lists

No county species lists requested.

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.
See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.
- During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information

for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be December 11, 2012.

Appendix F

List of References

Appendix F:

List of References

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Caltrans. 2012c. Traffic Operations Report, Highway 101 Greenbrae/Twin Cities Corridor Improvement Project.

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Appendix G

Environmental Commitment Record

SUMMARY OF REQUIRED PERMITS AND ENVIRONMENTAL COMMITMENT -PS&E PHASE

TO: _____
ATTN.: _____
DESIGN OFFICE

PROJECT MANAGER:
PROJECT ENGINEER:

DATE: 09/14/2012
04-MRN-101-7.2/8.9
EA 1A6600
Highway 101 Greenbrae/Twin Cities Corridor Improvement Project

Below is a summary of the required permits, and environmental commitments that must be incorporated into the PS&E, for this project. Please contact_____@ _____ for further information.

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
PERMITS AND AGREEMENTS								
	Section 404 Permit – Nationwide	ED						
	Section 10 Permit (required only if the Coast Guard declines to assert its jurisdiction)	ED						
	Section 9 Permit	ED						
	Section 7 Consultation for Threatened and Endangered Species	ED						
	1602 Agreement	ED						
	Section 401 Permit	ED						
	BCDC Coastal Development Permit	ED						
MITIGATION	***Biology***							
	Mitigation Measure BIO-1: Restoration of Wetland Habitat Caltrans shall coordinate with USACE, USFWS, and CDFG to establish mitigation measures to offset impacts to tidal salt marsh and designated waters of the U.S. in accordance with Section 404 and Section 401 of the CWA and Porter-Cologne Water Quality Control Act, Federal Endangered Species Act (FESA), and California Endangered Species Act (CESA). Permanent, direct impacts to waters of the U.S. shall be mitigated through the restoration or creation of wetland habitat. For this area, habitat shall be created, restored, or preserved at a proposed 1:1 ratio. Alternately, mitigation credits may be purchased through an approved mitigation bank, if available. If no mitigation bank is available, mitigation may be accomplished through support of existing or planned conservation projects. This mitigation shall be implemented through coordination with the USACE, USFWS, CDFG, and RWQCB, and is subject to review and approval.	ED	Y	Contract Biologist	Pre-Construction			
	Mitigation Measure BIO-2: Replant/Re-Seed Salt Marsh Habitat All salt marsh habitat along the banks of Corte Madera Creek temporarily affected by the Build Alternative shall be planted or re-seeded with native grasses and plant species to stabilize the slopes and bare ground against erosion. Examples include: saltgrass (Distichlis spicata), dwarf spikerush (Eleocharis parvula), alkali heath (Frankenia salina), marsh gumplant (Grindelia stricta), and pickleweed (Salicornia pacifica). This may include hydro seeding and shall occur after ground disturbing construction activities are completed. The plant selection and reseeding efforts shall be clearly identified in a project-specific mitigation and monitoring plan approved by the USACE and RWQCB.	ED	Y	Contract Biologist	Post-Construction			
	Mitigation Measure BIO-3: Maintain Adequate Fish PassageThe project contractor(s) will allow adequate fish passage upstream and downstream of the proposed improvements along Corte Madera Creek. Adequate water depth and channel width must be maintained at all times for fish passage. If the workspace is isolated from flowing water (i.e. use of a cofferdam), the diversion will remain in place during construction and be removed immediately after work is completed in a manner that will allow flow to resume with the least disturbance to the substrate.	ED	Y	Contractor	Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
MITIGATION	**Mitigation Measure BIO-4: Fish Safe Dewatering** If dewatering within the open waters of Corte Madera Creek is required, either a pump will remove water to an upland disposal site, or a filtering system will be used to collect the water. Water returned to the creek must meet the water quality objectives outlined by the San Francisco Bay RWQCB's Basin Plan, including but not limited to the following: • Waters will be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge will not be greater than 10 percent in areas where natural turbidity is greater than 50 Nephelometric Turbidity Units (NTU). • The pH will not be depressed below 6.5 nor raised above 8.5. This encompasses the pH range usually found in waters within the basin. Controllable water quality factors will not cause changes greater than 0.5 units in normal ambient pH levels. • The temperature of any cold or warm freshwater habitat will not be increased by more than 5 degrees Fahrenheit (2.8 degrees Celsius) above natural receiving water temperature. The pump intake will be fitted with a fish exclusion device that meets the National Marine Fisheries Service fish screening criteria. This includes openings that are no bigger than either 3/32-inch or 1/4-inch depending on the presence of fry or fingerling salmon species.	ED	Y	Contract Biologist	Construction			
	Mitigation Measure BIO-5: Presence of Biologist during Dewatering During dewatering activities, a fisheries biologist approved by USFWS, CDFG, and/or NMFS will be present to salvage individual fish, should they be present. Fish will be netted, placed in a bucket of water, and immediately moved to a downstream portion of the creek. Records of species, relative size, and number of individuals will be kept. If a federal or state-listed fish species is identified, the biologist will notify the resident engineer who will then contact CDFG and/or NMFS immediately to report the finding. Periodic checks of the work area will occur to ensure that fish have not re-entered the work area.	ED	Y	Contract Biologist	Construction			
	Mitigation Measure BIO-6: Placement of Non-toxic Structures in Streams All materials placed in the creek such as pilings and retaining walls, will be non-toxic. Any combination of wood, plastic, cured concrete, steel pilings, or other materials used for in-channel structures will not contain coatings, treatments, or consist of substances deleterious to aquatic organisms that may leach into the surrounding environment in amounts harmful to aquatic organisms.	ED	Y	Contractor	Construction			
	Mitigation Measure BIO-7: Minimize Disturbance from Construction Access Disturbance to existing grades and vegetation will be limited to the actual site of the the proposed project improvements and necessary construction access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance to streambank or stream channel habitat to the minimum area necessary to complete the work. When possible, existing ingress or egress points will be used, and/or work will be performed from the top of the creek banks. Obvious barriers to fish passages will be removed to facilitate upstream movement.	ED	Y	Contractor	Construction			
	Mitigation Measure BIO-8: Erosion Control Erosion control and sediment detention devices (e.g., well-anchored sandbag coffer dams, straw bales, "Aqua Dam" , or silt fences) will be incorporated into the project design and implemented at the time of construction. These devices will be in place during construction activities. If necessary, these devices will be in place after construction for the purposes of minimizing fine sediment and sediment/water slurry input into flowing water and for detaining sediment laden water on site. These devices will be placed at all locations where the likelihood of sediment input exists. A supply of erosion control materials will be kept on hand to cover small sites that may become bare and to respond to sediment emergencies.	ED	Y	Contractor	Construction			
	Mitigation Measure BIO-9: Fish Impact Pile Driving Avoidance Timeline Impact pile driving activities located within Corte Madera Creek, up to the mean higher high water line, and on land at the NB US 101/Sir Francis Drake Boulevard off-ramp location will be restricted to June 15 through October 15 to reduce potential adverse effects to protected fish. Pile driving will occur only during daylight hours from one hour after sunrise to one hour before sunset. This is to ensure that pile driving does not occur at dawn or dusk, during peak salmon migration and feeding times.	ED	Y	Contractor	Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
MITIGATION	**Mitigation Measure BIO-10: Fish Pile Driving Attenuation Requirements** Piles will be installed using a vibratory hammer to the extent practicable, to minimize impact pile driving. If pile driving is required, sound attenuation devices may be used to reduce impacts to fish species. Attenuation devices will include a minimum of one, or a combination, of the following: Air bubble curtains, cofferdams, isolation casings, and/or cushion blocks. The number of piles driven per day will be limited, and hyrdroacoustic monitoring will be conducted to avoid exceeding the 187 dB accumulated sound energy level (SEL) for fish weighing 2 grams or greater and the 183 dB accumulated SEL for fish weighing less than 2 grams. Sound pressure levels (SPL) may not exceed 206 dB peak.	ED	Y	Contractor	Construction			
	Mitigation Measure BIO-11: Provide Environmental Awareness Training Before the onset of construction activities, a qualified biologist will conduct an educational program for all construction personnel. At a minimum the training will include: • A description of potential special-status species' within the BSA and their respective habitats. • The occurrence of these species within the BSA, an explanation of the status of these species, and the species' protection under the FESA and CESA. • The measures that are being implemented to conserve the species and their habitats as they relate to the work site, and the work site boundaries within which construction may occur. • A fact sheet conveying this information for distribution to the construction personnel and other personnel who may enter the site. Upon completion of the program, all personnel will sign a form stating that they have attended the program and understand all the avoidance and minimization measures and implications of the FESA and CESA.	ED	Y	Contract Biologist	Pre-Construction			
	Mitigation Measure BIO-12: USFWS-approved Biologist Consultation Caltrans will consult with the USFWS to designate an approved biologist that will be on-site during all construction activities that occur within the BSA. Qualifications of the biologist(s) must be presented to the USFWS for review and written approval prior to groundbreaking. The biologist will perform preconstruction surveys and project monitoring. The biologist's findings will be presented to Caltrans for any necessary consultation and compliance with USFWS (or other agencies) requirements. The Department will consult with federal and/or state agencies as necessary.	ED	Y	Contract Biologist	Pre-Construction			
	Mitigation Measure BIO-13: Post Construction Compliance Form A post-construction compliance report will be prepared by the on-call biologist, which will be provided to the USFWS within forty (40) working days following project completion or within sixty (60) calendar days of any break in construction activity lasting more than forty (40) working days. Any compliance forms prepared by the biologist will be provided to Caltrans for consultation with the USFWS, as required for compliance with federal mandates.	ED	Y	Contract Biologist	Post-Construction			
	Mitigation Measure BIO-14: California Clapper Rail Impact Pile Driving Avoidance Timeline Impact pile driving activities located within 800 feet of the Corte Madera Marsh Ecological Preserve, or any other known active California clapper rail breeding habitat, will occur between September 1 and January 31 to reduce potential impacts to this species. If impact pile driving must occur during the period from February 1 to August 31, then full protocol-level surveys will be conducted during the breading season within the year construction activities are proposed. These surveys will be initiated in middle/late January following a minimum two-week cessation of any on-going construction work. Construction will not be allowed to continue until the protocol-level surveys have been completed and the USFWS and CDFG have reviewed the results and given approval for impact pile driving to continue. If the USFWS or CDFG determines that, based on the protocol-level surveys, impact pile driving may disturb nesting clapper rails, then construction will not be allowed to begin until September 1. If impact pile driving is to occur during the clapper rail breeding season in the following year, then protocol-level surveys and the mandatory construction cessation period must be implemented the following year, as well.	ED	Y	Contract Biologist	Pre-Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
MITIGATION	**Mitigation Measure BIO-15: Halt Work if Special-status Species Observed in Work Area** In the event a California clapper rail or salt marsh harvest mouse enters the construction zone, work in the immediate vicinity of the California clapper rail or salt marsh harvest mouse will halt and the USFWS-approved biologist, USFWS, and CDFG will be contacted immediately. All construction activities in the immediate vicinity of these species will be suspended until the special-status species leaves the site voluntarily.	ED	Y	Contractor	Construction			
	Mitigation Measure BIO-16: Take Reporting Any contractor, employee, or agency personnel who inadvertently kills or injures a special-status species will immediately report the incident to the on-site biologist. The on-site biologist will contact Caltrans who will then contact the USFWS or CDFG, depending on the special-status species, to report the dead or injured animal via electronic mail and telephone within one working day.	ED	Y	Contract Biologist	Construction			
	Visual/Aesthetics							
	Mitigation Measure VIS-1: Comply with Local Tree Removal Ordinance Trees removed from Larkspur, Corte Madera, and Greenbrae rights-of-way shall be mitigated through coordination with respective agencies. The specific tree replacement ratio shall be determined during the permit review process. The City of Larkspur Heritage tree ordinance stipulates that the removal of trees with a 50 inch circumference or greater, measured at 2 feet above grade, requires a permit. The Town of Corte Madera tree ordinance stipulates that the removal of trees, with the exception of eight undesirable species, requires a permit. If, after coordination with the City of Larkspur and Town of Corte Madera planning departments, one or more of the trees removed are determined to be a protected heritage tree or a tree that requires a permit for removal, a permit will be acquired from the respective planning department prior to removal. The Planning Commission(s) may require replacement trees in a 1:1 ratio, or in a reasonable number depending on the type and size of the tree(s) removed and the recommendations of a qualified arborist.	ED	Y	Contractor	Pre-Construction			
ENVIRONMENTAL COMMITMENTS	***Land Use/Community Impacts/Traffic and Transportation***							
	During construction, access through the Greenbrae/Twin Cities Corridor for Bay Trail users will be open continuously either on the current alignment, or along detour routes. A Transportation Management Plan (TMP) will be developed as part of the Build Alternative to address impacts to motor vehicle, bicycle, and pedestrian access during project construction. The plan will maintain bicycle and pedestrian access to the maximum extent feasible as part of construction staging. The plan will include briefing local public officials and developing a public information program to notify the public of project progress and upcoming closures and detours. The public information program will include outreach to ridesharing agencies, transit operators, and neighborhood and special interest groups. As part of the TMP, detour signage will be posted at Bay Trail access points, as appropriate.	ED	Y	Contractor	Pre-Construction/Construction			
	TAM will continue to implement a comprehensive community outreach program including ongoing outreach and coordination with affected property owners to minimize the impacts of access disruption or alterations as part of both project design and during construction. In order to maintain visibility of local businesses where elevated highway structures are proposed, TAM will work with the local agencies and property owners along Fifer, Lucky, Wornum, and Redwood Highway to assist in raising the heights of business signs, as requested. During the Plans, Specifications, and Estimates phase of the project, a detailed Transportation Management Plan will be developed to facilitate property access during construction. The objective of the Transportation Management Plan will be to minimize the effects that construction activities will have on the traveling public. At a minimum, the Traffic Management Plan will include a public awareness campaign, including outreach and coordination with affected property owners to minimize the impacts of access disruption or alterations as part of both project design and during construction. TAM will notify affected businesses, residences, police, and emergency services at least one week in advance of any lane or roadway closures or impacts related to access. The Traffic Management Plan will specify timeframes for roadway and lane closures.	ED	Y	Contractor	Pre-Construction/Construction			
	During the Plans, Specifications, and Estimates (PS&E) phase of the project, a detailed Transportation Management Plan will be developed to facilitate access during construction. The objective of the Transportation Management Plan will be to minimize the impacts that construction activities will have on the traveling public. The plan will include press releases to notify and inform motorists, business community groups, local entities, emergency services, police, and elected officials of upcoming road closures and detours.	ED	Y	Contractor	Pre-Construction/Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
ENVIRONMENTAL COMMITMENTS	***Utilities***							
	Complete utility coordination and verification will be required during the final design phase of the project. The locations of the utilities will not be determined until final design, in coordination with the affected utility.	ED	Y	Contractor	Pre-Construction			
	Visual/Aesthetics							
	In accordance with Caltrans' protocol and Design–Policy DES-4.1 of the Marin Countywide Plan, highway structures will be designed to preserve and enhance views to scenic natural resources where feasible and avoid blocking views to regional landmarks from well-traveled local streets and multi-use paths.	ED	N	Contractor	Pre-Construction			
	Aesthetic treatments for retaining walls and structures will help integrate new highway elements into the urban design of adjacent local streets. Aesthetic treatments will include adding texture and architectural detailing to highway barriers and natural marsh images to retaining walls. The final decision of the types of aesthetic treatments to highway structures will be made during the final design process, through coordination with local communities. The local character of Redwood Highway, Fifer Avenue, Lucky Drive, Wornum Drive, and recreation trails will be maintained and made more appealing to pedestrians by sidewalk and bikeway improvements, pedestrian lighting, and other pedestrian and bicyclist amenities along the street, parking lots, and recreation trails. Opportunities to consolidate or reduce the number of highway signs will be investigated during final design. For the bus stops, context sensitive aesthetic treatments that reflect Larkspur's and Corte Madera's community image will be incorporated into these features, where feasible.	ED	Y	Contractor	Pre-Construction/Construction			
	The design of the proposed Build Alternative improvements will minimize the use of roadway lighting to the maximum extent allowable by Caltrans' and local design standards. The design will incorporate lighting fixtures with features that minimize night-time glare and sky glow. Where new light fixtures are added, the Build Alternative will use lamps and/or light shields that minimize glare and sky glow by directing light downward cast onto the street, and away from buildings and the sky.	ED	Y	Contractor	Pre-Construction/Construction			
	Construction activities are anticipated to occur primarily during daylight hours. If nighttime construction is needed, procedures shall be taken to direct the light inward toward the construction site and minimize glare for motorists and residents near the construction site.	ED	Y	Contractor	Construction			
	Measures shall be employed to return affected sites to preconstruction conditions as much as possible. These activities may include, but not be limited to, site grading and seeding, trimming trees and shrubs lightly damaged by construction, site clean-up, and replacement of shrubs, groundcover, and protected trees (refer to discussion regarding impacts to migratory birds in Section 2.4.4, Animal Species).	ED	Y	Contractor	Post-Construction			
	Trees and shrubs removed from Caltrans' right-of-way shall be replaced with native plant species. Approximately 1.4 acres of native trees will be replaced within Caltrans right-of-way where trees will not affect traveler safety and where growing conditions are favorable. A landscape plan will be developed and replanting areas shall be refined during the final design phase. The replanting palette will include species native to Marin County and appropriate for the location and landscape function, and may include coast live oak, blue blossom (Ceanothus thyrsiflorus), toyon (Heteromeles arbutifolia), redwood, and Douglas fir.	ED	Y	Contractor	Construction/Post Construction			

ENVIRONMENTAL COMMITMENTS		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
	Cultural Resources							
	If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archeologist can assess the nature and significance of the find	ED	Y	Contractor	Construction			
	If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities will cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the District 4 Environmental Branch so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.	ED	N	Contractor	Construction			
	Hydrology and Floodplain							
	Because of the prominence of fish and wildlife habitat within the Greenbrae/Twin Cities Corridor, and the fact that a majority of the improvements will be constructed within a floodplain, construction of the Build Alternative will be planned so as to avoid adverse effects to the natural and beneficial floodplain values to the maximum extent practicable. Any impacts to the natural and beneficial floodplain values will be mitigated with re-vegetation, storm water treatment, or other requirements as designated by the relevant permits.	ED	Y	Contractor	Pre-Construction			
	Water Quality and Storm Water Runoff							
	Construction activities will adhere to Caltrans' Statewide NPDES and the Marin County NPDES permit which regulate storm water discharges from activities on the highway and local roadways, respectively. Additionally, the project engineer or construction contractor will be required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) in compliance with the RWQCB San Francisco Basin Plan and the Construction General Permit. The Build Alternative will utilize appropriate measures to decrease effects to all water resources in the study area. Disturbed soil areas will be minimized, and existing vegetation will be maintained to the maximum extent practicable. Work during the rainy season will also be limited to avoid effects to storm water runoff. • No discharge of pollutants from vehicle and equipment cleaning will be allowed into the storm drain or water courses. • Vehicle and equipment fueling and maintenance operations must be at least 100 ft from water courses, unless separated by a topographic or drainage barrier. • Concrete waste will not be allowed into water courses and will be collected in washouts. Water from curing operations will be properly disposed of offsite. • Dust control measures will be implemented, including the use of water trucks and the application of tackifiers to control dust in excavation and fill areas, installing a layer of rock upon temporary access road entrances and exits, and covering temporary stockpiles when required. • Coir rolls will be installed along or at the base of slopes during construction to capture sediment. • Protection of graded areas from erosion will occur using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas. • Use of bio-filtration strips and swales to receive stormwater discharges from the adjacent roadway, or other impervious surfaces will be incorporated.	ED	N	Contractor	Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
ENVIRONMENTAL COMMITMENTS	The contractor will submit the Storm Water Pollution Prevention Plan to the Resident Engineer for approval prior to the start of construction. As the authorized Caltrans representative on a construction project, the Resident Engineer is responsible for initial approval and annual certification of the project Storm Water Pollution Prevention Plan.	ED	N	Contractor	Pre-Construction			
	Work in and around Corte Madera Creek may require a temporary diversion of the Creek's water flow if construction occurs during the rainy season, or if required as part of the permits and agreements with the previously mentioned agencies. The depth to groundwater will be confirmed in a project-specific geotechnical report. If excavations are deeper than the groundwater table, a dewatering permit may be required from the RWQCB and the contract documents must address dewatering BMP measures. Practices commonly used for dewatering operations may involve desilting basins. Sediment/desilting basins serve as a temporary basin for the purpose of temporarily detaining runoff in order to allow sediment to settle out before the runoff drains to the nearest water body or publicly owned waste water treatment facility. Section 2.4, Biological Environment, includes detailed descriptions of the measures that will be taken to protect water quality during construction activities in and around Corte Madera Creek.	ED	N	Contractor	Pre-Construction			
	Permanent measures that control pollutant discharges from roadway runoff are considered and implemented for all new or reconstructed facilities. These measures reduce pollutants from entering waterways. The drainage and landscape elements listed below can be utilized as design pollution prevention BMPs for the Build Alternative, as specified by the Design Engineer. The following elements will be considered as design pollution prevention BMPs: • Consideration of downstream effects related to potentially increased flow: The Build Alternative will increase the amount of impervious area along US 101, which will result in an increase in velocity and volume of downstream flow. Erosion control will be applied to minimize erosion downstream from potentially increased discharge. • Preservation of existing vegetation: At all locations, preserving existing vegetation is beneficial. The Build Alternative will avoid any disturbance beyond what will be necessary to widen the existing transportation facilities. • Concentrated flow conveyance systems: The Build Alternative proposes to create and modify existing ditches, dikes, and berms. No significant impacts are anticipated to occur due to increases in flow volume or velocities. • Slope/Surface Protection Systems: The Build Alternative will create or modify existing slopes. Necessary erosion control features will be incorporated for work along existing slopes. When practicable, slope stability and erosion concerns will be reduced by maintaining or matching existing slopes.	ED	Y	Contractor	Construction			
	Geology							
	Under the Build Alternative, any new structures will be constructed in compliance with Caltrans' standard design and construction guidelines. Caltrans' standard design and construction guidelines incorporate engineering standards that address seismic risks. No avoidance, minimization, or mitigation measures will be required beyond the implementation of Caltrans' standard design and construction guidelines. Site specific subsurface soil conditions and groundwater conditions within the Greenbrae/Twin Cities Corridor should be verified during the Plans, Specifications, and Estimates phase.	ED	N	Contractor	Pre-Construction			
	With respect to worker safety during construction, the Occupational Safety and Health Act (OSHA) require employers to comply with hazard-specific safety and health standards. Pursuant to Section 5(a)(1) of the OSHA, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Potential seismic-related hazards to workers during construction are expected to be less than substantial with compliance with the OSHA and compliance with Caltrans' standard design and construction guidelines.	ED	N	Contractor	Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
ENVIRONMENTAL COMMITMENTS	To address potential soil erosion or the loss of top soil as a result of excavation and earth moving construction activities associated with the Build Alternative, erosion control measures will be implemented during construction in accordance with the best management practices outlined in the SWPPP.	ED	Y	Contractor	Construction			
	Hazardous Waste/Materials							
	In accordance with Caltrans' Standard Special Provision 07-330, the contractor will be notified that increased concentrations of aerially deposited lead may be present in the construction area, and will be required to prepare a Lead Compliance Plan to prevent or minimize worker exposure. Within proposed construction areas, representative soils samples will be collected and analyzed for total lead and soluble lead. Proper waste characterization and disposal of lead-containing materials will be conducted in accordance with Title 22 of the California Code of Regulations and Section 25157.8 of the California Health and Safety Code.	ED	N	Contractor	Construction			
	Any railroad ties associated with past land uses encountered during excavation activities will be managed and disposed of as treated-wood waste in accordance with DTSC requirements. Yellow thermoplastic and yellow paint striping and markings on existing roadways will be analyzed for lead chromate prior to disturbance or removal in accordance with Chapter 7 of Caltrans' Construction Manual, and/or handled and disposed of according to local, state, and federal regulations. Asphalt-concrete and Portland cement concrete grindings will be reused in accordance with San Francisco Bay Regional Water Quality Control Board Water guidelines for Caltrans' projects or transported offsite for recycling or disposal.	ED	N	Contractor	Construction			
	In accordance with Caltrans protocol, a Site Safety Plan will be prepared and implemented prior to initiation of any construction/development activities to reduce potential health and safety hazards to workers and the public. All of the above-mentioned health risks will be provided to project contractors to be incorporated into their Health and Safety and Hazard Communication Programs.	ED	N	Contractor	Pre-Construction			
	Soil and/or groundwater sampling will be conducted by a licensed professional to evaluate the potential presence of hazardous materials in soil and groundwater within the study area prior to construction and earthwork activities. The sampling will be performed in accordance with a work plan that has been reviewed and approved by Caltrans, and will address following areas of concern: • Petroleum constituents in soil and groundwater from Sites 1, 3 and 4 on Table 2.3-3 and Figure 2-14; • Petroleum constituents in soil and groundwater in the area of partial acquisition from Site 2 on Table 2.3-3 and Figure 2-14); • Petroleum constituents in groundwater from Sites 5 through 7 on Table 2.3-3 and Figure 2-14; • Aerially-deposited lead in exposed shallow soils within approximately 30 feet of the existing pavement of US 101; and • Hazardous materials in soil from former railroad operations along Wornum Drive and San Clemente Drive. Soil and groundwater analytical results will be screened against the San Francisco Bay Regional Water Quality Control Board environmental screening levels (ESLs) to determine the appropriate actions that will ensure the protection of construction workers, future site users, and the environment. Implementation of the subsurface sampling in these areas is anticipated to cost approximately $100,000. Soil analytical results shall also be screened against hazardous waste thresholds to determine soil management options. If soil and/or groundwater contamination is identified above the San Francisco Bay Regional Water Quality Control Board ESLs, the sampling results will be submitted to the local and state regulatory agency for determination of potential remediation requirements. Remediation will be performed in accordance with the regulatory agency requirements for the protection of public health and the environment. A report summarizing the investigation activities, findings, conclusions, and any recommendations regarding the soil and/or groundwater contamination shall be submitted to Caltrans for review and approval. Soil and groundwater sampling would likely be a three-month endeavor, assuming property access and approval of the work plan is provided in a timely fashion.	ED	N	Contractor	Pre-Construction/ Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
ENVIRONMENTAL COMMITMENTS	If soil and/or groundwater contamination is identified that could pose a risk to human health or the environment, construction for the project will be conducted under a Construction Risk Management Plan (CRMP) to protect construction workers, the general public, and the environment. The levels of contamination will be documented in the CRMP to ensure that soil and groundwater is stored, managed, and disposed of in a manner protective of human health and the environment, and in accordance with applicable laws and regulations. The CRMP will: (1) provide procedures for evaluating, handling, storing, testing, and disposing of soil and groundwater during project excavation and dewatering activities; (2) describe required worker health and safety provisions for all workers potentially exposed to hazardous materials in accordance with California OSHA requirements, including hazard communication provisions (Title 8 CCR 5194); and (3) designate personnel responsible for implementation of the CRMP. The disposal of soils potentially containing aerially-deposited lead (within approximately 30 feet of the existing pavement of US 101) is anticipated to cost $1.1 million if the lead levels are classified as non-hazardous waste (Class II landfill) and $1.9 million if the lead levels are classified as hazardous waste (Class I landfill). Similarly, the disposal of contaminated soils classified as hazardous waste (Class I landfill) from private properties acquired for the construction of the project is anticipated to cost approximately $65,000 per contaminated property. The timing of the soil/groundwater management would be construction-dependent (i.e., off-site soil disposal would match the rate of excavation work).	ED	N	Contractor	Pre-Construction/ Construction			
	Hazardous building materials surveys will be conducted by a qualified professional for structures proposed for renovation as part of the Build Alternative. Lead-based paint and asbestos-containing material shall be included in the hazardous materials building surveys for buildings constructed prior to 1978 and 1981, respectively. All loose and peeling lead-based paint will be removed by a certified contractor(s) in accordance with local, state, and federal requirements. All other hazardous materials will be removed from structures in accordance with California OSHA regulations.	ED	N	Contractor	Pre-Construction/ Construction			
	Air Quality							
	The Build Alternative would require demolition of the existing pedestrian overcrossing and, therefore, will be required to comply with all asbestos control and precautionary measures as well as the administrative requirements of the rule. Demolition of existing buildings and structures will be subject to BAAQMD Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing). BAAQMD Regulation 11, Rule 2 is intended to limit asbestos emissions from demolition or renovation of structures and the associated disturbance of asbestos-containing waste material generated or handled during these activities. The rule addresses the national emissions standards for asbestos along with some additional requirements. The rule requires the Lead Agency and its contractors to notify BAAQMD of any regulated renovation or demolition activity. This notification includes a description of structures and methods utilized to determine whether asbestos-containing materials are potentially present. All asbestos-containing material found on the site must be removed prior to demolition or renovation activity in accordance with BAAQMD Regulation 11, Rule 2, including specific requirements for surveying, notification, removal, and disposal of material containing asbestos. Therefore, projects that comply with Regulation 11, Rule 2 will ensure that asbestos containing materials would be disposed of appropriately and safely.	ED	N	Contractor	Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
ENVIRONMENTAL COMMITMENTS	Implementation of the following measures will avoid or minimize any air quality impacts resulting from construction activities: • The construction contractor shall comply with Caltrans' Standard Specifications in Section 14 (2010). a) Section 14-9.01 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. b) Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18. • Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the right of way line depending on local regulations. • Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas. • Wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions. • Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.• Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities. • Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.	ED	N	Contractor	Construction			
	Establish Environmentally Sensitive Areas (ESAs) or their equivalent near sensitive air receptors within which construction activities involving extended idling of diesel equipment will be prohibited, to the extent feasible. • Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic. • Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation. • Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter. • Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads. • Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may need to use controls such as dampened straw. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.	ED	N	Contractor	Construction			
	Noise							
	Because of the configuration and location of the proposed Build Alternative and highly developed and build-out nature of the corridor, noise barriers are the only feasible form of noise abatement. Based on preliminary design data, all noise barriers will reduce noise levels by at least 5 dBA at affected receivers with the exception of noise barriers 2, 2A, 3. However, because the cost to construct each noise barrier will be greater than the reasonable allowance allocated, the preliminary recommendation for all locations is no noise abatement. The final noise abatement decision will be made at the end of the public review process for the environmental document, and will be in the final environmental document	ED	N	Contractor	Pre-Construction/Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
ENVIRONMENTAL COMMITMENTS	Section 14-8.02 of Caltrans' Standard Specifications will be implemented to minimize noise effects from construction. Section 14-8.02 states that construction noise shall not exceed a maximum sound level (Lmax) of 86 dBA at 50 feet from job site activities between the hours of 9 p.m. to 6 a.m. Further, contractors shall equip internal combustion engines with manufacturer-recommended mufflers. Operation of internal combustion engines on the job site without the appropriate muffler shall be prohibited. In addition, the following measures will be implemented to further minimize noise effects from construction: • All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust. • As directed by Caltrans, the contractor will implement appropriate additional noise abatement measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.	ED	N	Contractor	Construction			
	Wetlands and Other Waters							
	Prior to the start of construction, barrier fencing will be established around all waters of the U.S. to delineate the boundary between where construction activities are allowed and prohibited. The fencing will prevent construction encroachment into the surrounding prohibited areas. The final project plans will depict the locations where fencing will be installed and how it will be installed. The special provisions of the bid package will clearly describe acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities. In addition, hydrologic features (i.e., topographic depressions, roadside ditches, culverts, etc.) outside the BSA will not be manipulated (i.e., re-routed, dredged, filled, graded, etc.). This will reduce potential impacts to wetlands outside of the BSA that may be hydrologically connected to wetlands within the BSA.	ED	Y	Contractor	Pre-Construction			
	In conformance with Caltrans' standards, Storm Water Pollution Prevention Plans (SWPPP) that includes erosion control best management practices (BMPs) will be developed to minimize any wind or water-related erosion. The SWPPP will provide guidance for design staff to include provisions in construction contracts to include measures to protect sensitive areas and to prevent and minimize storm water and non-storm water discharges. The Build Alternative will be constructed in a manner that avoids erosion and prevents accumulation of silt in drainage ways. This may be done through the use of erosion dams, temporary ground covers, and detention or settling structures. An erosion control plan will be incorporated into the SWPPP. Protective measures will include, at a minimum: • No discharge of pollutants from vehicle and equipment cleaning will be allowed into the storm drain or water courses. • Vehicle and equipment fueling and maintenance operations must be at least 100 feet from water courses, unless separated by a topographic or drainage barrier. • Concrete waste will not be allowed into water courses and will be collected in washouts. Water from curing operations will be properly disposed of offsite. • Dust control measures will be implemented, including the use of water trucks and the application of tackifiers to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering temporary stockpiles when required. • Coir rolls will be installed along or at the base of slopes during construction to capture sediment. • Protection of graded areas from erosion will occur using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas. • Use of bio-filtration strips and swales to receive stormwater discharges from the adjacent roadway, or other impervious surfaces will be incorporated.	ED	Y	Contractor	Pre-Construction/Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
ENVIRONMENTAL COMMITMENTS	The following restrictions on construction activities will be implemented to avoid or minimize effects on wetlands within the BSA: • A speed limit of 15 miles per hour in unpaved areas of the BSA will be enforced to reduce dust and excessive soil disturbance. • Construction staging, storage, and parking areas will be located within the existing right-of-way and outside of any prohibited work areas. Access routes and the number and size of staging and work areas will be limited to the minimum necessary to construct the proposed project. Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading. • All food and food-related trash items will be enclosed in sealed trash containers and removed completely from the site at the end of each day. • No pets from construction and project personnel will be allowed anywhere in the proposed project work area during construction. • No firearms will be allowed on the project site except for those carried by authorized security personnel or local, state, or federal law enforcement officials. • All equipment will be maintained to prevent leaks of automotive fluids such as gasoline, oils, or solvents. A Spill Response Plan will be prepared. Hazardous materials such as fuels, oils, solvents, etc. will be stored in sealable containers and designated locations at least 100 feet (30 m) from wetlands and aquatic habitats.	ED	Y	Contractor	Construction			
	• Servicing of vehicles and construction equipment including fueling, cleaning, and maintenance will occur at least 100 feet (30 m) from any aquatic habitat, unless the activities are separated by topographic or drainage barrier or unless the activities are located at an already existing gas station. Staging areas may occur closer to the proposed project activities as required. • Construction in inundated drainage will be conducted with coffer dams to isolate dewatered areas from active channel habitats. • Use of herbicides will be restricted in the prohibited areas (i.e., tidal salt marsh habitat). All slopes or unpaved areas temporarily affected by the project will be reseeded with native grasses and shrubs to stabilize the slopes and bare ground against erosion. Following construction, native (and non-native if appropriate) plant species will be planted at the disturbed area.	ED	Y	Contractor	Construction			
	Work within Corte Madera Creek up to the mean higher high water line, or any inundated drainage or channel hydrologically connected to Corte Madera Creek, will be conducted outside the accepted salmon and steelhead migratory period of October 15 through June 15. This timeline also incorporates the standard avoidance timeline of the Central and Northern California rainy season of October 15 through April 15. In-water work during October 15 through June 15 will be avoided, but work may occur if prior authorizations from the permitting agencies with jurisdiction are obtained. Work within upland areas (i.e., not in-water work) conducted during the rainy season will require the implementation of BMPs described in the SWPPP.	ED	Y	Contractor	Construction			
	Following the construction of the Build Alternative, all materials used to maintain flow and divert water from the BSA during the construction period, including coffer dams, pipes, filter fabric, fill material, and gravel, will be removed. All excess soil will be disposed at an approved upland site.	ED	Y	Contractor	Post-Construction			
	Animal Species							
	Shrub and tree trimming and/or removal activities associated with the Build Alternative will be conducted outside the nesting season (generally between February 1 and August 31). If shrub and tree removal is scheduled to occur during the nesting season, a qualified wildlife biologist, familiar with the species and habitats in the BSA, will conduct preconstruction surveys for nesting birds with suitable nesting habitat in the BSA. Surveys for nesting birds with suitable nesting habitat in the BSA will be conducted within one week prior to the initiation of construction activities within those habitats. If no active nests are detected during surveys, construction may proceed. If active nests are detected then buffer areas around the nest sites will be established, as described below.	ED	Y	Contact Biologist	Pre-Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
ENVIRONMENTAL COMMITMENTS	A no-disturbance buffer will be established around nests identified during preconstruction surveys. A 300-foot buffer for raptors and a 50-foot buffer for non-raptors will be established around nests, unless a qualified wildlife biologist determines that the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise, and other topographic or artificial barriers require a larger buffer area or allow for a smaller buffer size. The purpose of the buffer is to avoid disturbance or destruction of the nest until after the breeding season, or until a wildlife biologist determines the young have fledged (usually late-June to mid-July). Within this buffer, all non-essential construction activities (e.g., equipment storage, meetings) will be avoided. However, construction activities can proceed if the biological monitor determines the individual is not likely to abandon the nest during construction.	ED	Y	Contract Biologist	Pre-Construction/Construction			
	As part of the Build Alternative, approximately 1.4 acres of native trees will be replaced within Caltrans right-of-way where trees will not affect traveler safety and where growing conditions are favorable. A landscape plan will be developed and replanting areas shall be refined during the final design phase. The replanting palette will include species native to Marin County and appropriate for the location and landscape function, and may include coast live oak, blue blossom (Ceanothus thyrsiflorus), toyon (Heteromeles arbutifolia), redwood, and Douglas fir.	ED	Y	Contract Biologist	Pre-Construction			
	Threatened and Endangered Species							
	The breeding seasons for the California clapper rail and California black rail are from February 1 to August 31 and from February 1 to June 30, respectively. The restricted work window for migratory salmon and steelhead (Central California Coast steelhead, Central California Coast coho, and Central Valley Chinook salmon) is from October 15 through June 15. Additionally, the northern California rainy season occurs from October 15 through April 15. Therefore, it is not feasible to construct the proposed project and avoid the breeding, migration, and rainy seasons. To accommodate construction and minimize impacts to special-status species, construction may occur during the California clapper rail and California black rail breeding seasons, but construction must adhere to the conditions described in the construction avoidance and minimization measures for the California clapper rail, California black rail, and salt marsh harvest mouse. These conditions involve conducting pre-construction surveys and procedures to follow in the event that an individual species is identified during those surveys. If no individuals are observed during the pre-construction surveys, then construction may proceed. However, if individuals are observed, then USFWS and CDFG will be notified, and work will not proceed until authorization is obtained. Work may occur during the rainy season in the upland areas (i.e., out of water) and must adhere to the erosion control measures and SWPPP as identified in the avoidance and minimization measures above. In-water work during October 15 through June 15 will be avoided, but work may occur if prior authorizations from the permitting agencies with jurisdiction are obtained.	ED	Y	Contract Biologist	Pre-Construction/Construction			
	A Service-approved biologist, with previous salt marsh harvest mouse experience, will conduct preconstruction surveys for the salt marsh harvest mouse prior to project initiation.	ED	Y	Contract Biologist	Pre-Construction			
	Where vegetation removal is required near the salt marsh, work will be conducted using hand-held tools to enable wildlife to escape. If any areas with pickleweed or vegetation within 50 feet from the edge of pickleweed need to be cleared for project activities, vegetation will be removed only with non-mechanized hand tools (i.e. trowel, hoe, rake, and shovel). No motorized equipment, including weed wackers or lawn mowers, will be used to remove this vegetation. Vegetation will be removed to bare ground or stubble no higher than 1 inch. Breaks in the exclusion fencing may be left to allow mice to escape the devegetation area. The area will then be sealed off completely after all of the vegetation has been removed. Vegetation will be removed under the supervision of the Service-approved biologist. If a mouse of any species is observed within the areas being removed of vegetation, the Service will be notified. Vegetation removal may begin when no mice are observed and will start at the edge farthest from the salt marsh or the poorest habitat and work its way towards the salt marsh or the better salt marsh habitat.	ED	Y	Contractor	Construction			

		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
ENVIRONMENTAL COMMITMENTS	To prevent salt marsh harvest mice from moving through the project site during construction, temporary exclusion fencing will be placed around a defined work area prior to the start of construction activities and immediately after the vegetation removal 2 feet inside the vegetation clearing perimeter. The fence will be made of a heavy plastic sheeting material or metal that does not allow salt marsh harvest mice to pass through or climb, and the bottom should be buried to a depth of 2 inches so that these species cannot crawl under the fence. Fence height will be at least 12 inches higher than the highest adjacent vegetation with a maximum height of 4 feet. All supports for the exclusion fencing must be placed on the inside of the BSA.	ED	Y	Contractor	Construction			
	A habitat mitigation and monitoring plan for the disturbed NCSM habitat will be developed for USACE and RWQCB review and approval prior to construction. Pickleweed, saltgrass and other native salt marsh species will be planted in the disturbed area and there will be three years of monitoring to ensure the successful establishment of these plantings. Success criteria for monitoring will be a minimum of 50 percent cover of native salt marsh plant species at the end of three years, with growth and survival rates that indicate a trend toward continued spread and growth of native salt marsh vegetation. During the monitoring visits, the qualified biologist will estimate the success rate of establishment of these native salt marsh species. A monitoring report will be provided to the USACE and RWQCB on November 30th of the first year following construction. This letter report will document the results of the monitoring.	ED	Y	Contract Biologist	Post-Construction			
	To prevent potential entrapment of salt marsh harvest mice in work equipment, any pipes or similar objects located in salt marsh harvest mice habitat will be capped prior to the end of the work day or inspected by the USFWS approved biologist prior to commencement of work activities the following day.	ED	Y	Contract Biologist	Construction			
	Work near the salt marsh will be scheduled to avoid extreme high tides (i.e., no work will occur near the salt marsh within two hours before or after extreme high tides, 6.0 feet National Geodetic Vertical Datum (NGVD) or above, as measured at the Golden Gate Bridge, or adjusted to the timing of local extreme high tide events in which the marsh plain is flooded, because protective cover for salt marsh harvest mouse and California clapper rail is limited, and activities could prevent them from reaching available cover. All equipment will be staged on paved roadways or shoulders and pullouts, away from the project site when not in use.	ED	Y	Contractor	Construction			
	A biologist approved by the USFWS and/or NMFS will monitor all construction activities within salt marsh habitat daily during initial ground disturbance and site preparation. The biological monitor will look for listed species during all excavation activities. If a salt marsh harvest mouse, or any mouse that construction personnel may believe is this species, is encountered during project construction, all work that could result in direct injury, disturbance, or harassment of the individual animal will immediately cease, the Resident Engineer and USFWS and/or NMFS approved biologist will be immediately notified. The biologist will monitor it until he/she determines that the animal(s) is not imperiled by predators or other dangers. The biologist will notify the Caltrans within one working day following any encounters with a potential salt marsh harvest mouse during construction via electronic mail and telephone. Prior to the start of daily construction activities during initial ground disturbance, the USFWS and/or NMFS approved biological monitor will inspect the salt marsh harvest mouse proof boundary fence to ensure that it is neither ripped nor has holes and that the base is still buried. The fenced area will also be inspected to ensure that no mice are trapped in it. Any mice found along and outside the fence will be closely monitored until they move away from the construction area.	ED	Y	Contract Biologist	Construction			

ENVIRONMENTAL COMMITMENTS		Ref.	NSSP Y/N	Responsible Staff	Timing	Action Taken		Date
	Construction and Seasonal Avoidance							
	The breeding seasons for the California clapper rail and California black rail are from February 1 to August 31 and from February 1 to June 30, respectively. The restricted work window for migratory salmon and steelhead (Central California Coast steelhead, Central California Coast coho, and Central Valley Chinook salmon) is from October 15 through June 15. Additionally, the northern California rainy season occurs from October 15 through April 15. Therefore, it is not feasible to construct the proposed project and avoid the breeding, migration, and rainy seasons. To accommodate construction and minimize impacts to special-status species, construction may occur during the California clapper rail and California black rail breeding seasons, but construction must adhere to the conditions described in the construction avoidance and minimization measures for the California clapper rail, California black rail, and salt marsh harvest mouse. These conditions involve conducting pre-construction surveys and procedures to follow in the event that an individual species is identified during those surveys. If no individuals are observed during the pre-construction surveys, then construction may proceed. However, if individuals are observed, then USFWS and CDFG will be notified, and work will not proceed until authorization is obtained. Work may occur during the rainy season in the upland areas (i.e., out of water) and must adhere to the erosion control measures and SWPPP as identified in the avoidance and minimization measures above. In-water work during October 15 through June 15 will be avoided, but work may occur if prior authorizations from the permitting agencies with jurisdiction are obtained.							
	Invasive Species							
	Prior to construction, surveys will be conducted within the BSA for high priority noxious weeds, as defined in Table 2.4-7. Any populations of these species observed during the preconstruction weed surveys will be mapped. The disposal of soil and plant materials from any of these mapped areas into natural habitats, such as coast live oak woodland or wetlands and waters, will be prohibited.	ED	Y	Contract Biologist	Pre-Construction			
	In compliance with the EO 13112, and subsequent guidance from the FHWA, the landscaping and erosion control included in the project will not use species listed as invasive. Erosion control species will be certified "weed free" to reduce the chances of introducing a new invasive species to the area.	ED	N	Contract Biologist	Construction			
	If invasive species are found in or adjacent to the construction areas, or another invasive habitat threat is identified (e.g., such as the sudden oak death fungal pathogen), construction equipment will be inspected and pressure washed prior to initial entry into the project limits.	ED	Y	Contract Biologist	Construction			

A copy of the project PS&E must be sent to Environmental for review before finalization.

cc: Design, Senior Envir. Plan., File

OFFICE CHIEF OF ENVIRONMENTAL PLANNING DATE

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