Project Features *(these are common measures applicable to all Caltrans projects)*

Table 2. Project Features for Biological and Water Quality Resources

Measure Number	Measure Description
PF-BIO-01	**Environmentally Sensitive Area Delineation.** Before the start of construction, environmentally sensitives areas (ESAs), including wetlands and habitats suitable for sensitive species, will be shown on the project plans. The bid solicitation package special provisions will specify acceptable fencing material and prohibited construction-related activities in these areas. Prior to construction in or near ESAs, a project biologist will delineate the ESAs in the field using signage, flagging, wildlife exclusion fencing (WEF), or other site markers as appropriate.
PF-BIO-02	**Wildlife Exclusion Fencing.** Before ground-disturbing activities commence, high-visibility WEF (suitable for amphibian and small mammal exclusion) will be installed along environmentally sensitive area boundaries to protect special-status animal species and to keep them from entering the project footprint. Maintenance of the WEF will occur regularly and as requested by the project biologist in coordination with the Resident Engineer. Repair and maintenance costs for the fence shall be a bid item in the project contract.
PF-BIO-04	**Site Restoration.** All temporarily disturbed areas and staging areas will be cleaned up and recontoured to original grade or designed contours. All construction-related materials will be removed after construction, site clean-up, and restoration activities are complete. Temporarily impacted areas where vegetation was removed will be revegetated within one growing season of completion of Project activities.
PF-BIO-05	**Landscaping and Revegetation Plan.** Vegetation and trees removed by construction operations within the Project limits will be replaced according to Caltrans policy. Appropriate native species will be used to the maximum extent possible, and trees, shrubs, and groundcover will be selected for drought tolerance and disease resistance. Mulch will be applied to planted areas to reduce weed growth, conserve moisture, and minimize maintenance operations. A 3-year plant establishment period will be included in the final revegetation plan. Caltrans will develop and implement a 5- to 10-year post-construction vegetation monitoring plan for planted areas.
PF-BIO-07	**Approved Project Biologist.** Prior to initiation of the construction, the qualifications of the biological monitor(s) will be submitted to the United States Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) Fisheries, and the California Department of Fish and Wildlife (CDFW), as appropriate for the respective jurisdictions, for approval. Such approved biologists are hereafter referred to as the project biologist(s).
PF-BIO-08	**Biological Monitoring.** The project biologist(s) will be on site during initial ground-disturbing activities in previously undisturbed areas, during work that occurs in wetlands or in waters below mean higher high water (MHHW) elevation, and thereafter as needed to fulfill the role of the project biologist as specified in Project permits. The project biologist(s) will keep copies of applicable permits in their possession when on site.

Measure Number	Measure Description
	Prior to any initial ground-disturbing activity, the project biologist(s) will conduct work site surveys for the presence of special-status plant and animal species no less than 48 hours before work. The project biologist(s) will implement appropriate avoidance measures in the field and in coordination with the Resident Engineer to ensure that any identified special-status species or ESAs are clearly marked for avoidance.
PF-BIO-09	**Staging Areas.** Vehicle, barge, and equipment staging will be restricted to the areas reviewed, analyzed, and considered during the environmental review process. If new staging areas are required, they will require their own environmental review for potential impacts, and may require additional regulatory action.
PF-BIO-10	**Construction Site Best Management.** The following site restrictions will be implemented to avoid or minimize potential effects on listed species and their habitats, pursuant to Caltrans Standard Specifications and Special Provisions. • **Speed Limit.** Vehicles will not exceed 15 miles per hour in the Project footprint, to reduce dust and excessive soil disturbance. • **Trash Control.** Food and food-related trash items will be secured in sealed trash containers and removed from the site at the end of each day. • **Pets.** Pets will be prohibited from entering the Project limits during construction. • **Firearms.** Firearms will be prohibited within the Project limits, except for those carried by authorized security personnel or local, state, or federal law enforcement officials.
PF-BIO-11	**Vegetation Removal.** Native vegetation will be cleared only when necessary and will be cut above soil level, except in areas that will be excavated. A truck with a chipper will be used for chipping the removed trees. All vegetation will be conducted within appropriate species protection work windows.
PF-BIO-12	**Tree Protection**. Only trees that require removal will be removed. Whenever possible, trees will be trimmed rather than removed. Retained trees will be safeguarded during construction through the following measures: • Protected trees will be fenced around the dripline to limit construction impacts to the root zone. • No construction equipment, vehicles, or materials will be stored, parked, or staged within the tree dripline. Work will not be performed within the dripline of the remaining trees without consultation with the project biologist. If trees are damaged during construction and become unhealthy or die, the damaged tree(s) will be removed and replaced.
PF-BIO-13	**Invasive Plant Control.** Noxious weeds will be controlled in the Project construction site in accordance with Caltrans' Highway Design Manual Topic 110.5, "Control of Noxious Weeds – Exotic and Invasive Species" and Executive Order 13112 (Invasive Species), and by methods approved by a Caltrans' landscape architect or vegetation control specialist. To minimize the spread of nonnative invasive plants (NNIPs), any borrow material, erosion-control material (i.e., fiber rolls), and seed mixtures for erosion

Measure Number	Measure Description
	control will meet the following Caltrans (2018) specifications as they relate to NNIP species: • Fiber roll must be premanufactured and roll-filled with rice or wheat straw, wood excelsior, or coconut fiber. Fiber roll must be covered with biodegradable jute, sisal, or coir fiber netting secured tightly at each end. Fiber rolls must be certified to be free of prohibited noxious weeds (those Rated "A" by California Department of Food and Agriculture [CDFA]). • Imported topsoil must be free from deleterious substances such as litter, refuse, toxic waste, stones larger than 1 inch in size, coarse sand, heavy or stiff clay, brush, sticks, grasses, roots, noxious weed seed, weeds, and other substances detrimental to plant, animal, and human health. • Seed must not contain any prohibited noxious weed seed, or more than 1.0 percent total weed seed by weight. • All equipment brought into work areas will be free of soil and plant matter. In work areas where CDFA-listed noxious weeds or California Invasive Plant Council Moderate- or High-Rated NNIP species occur in fruit or flower and may spread seed as a result of the Project, these NNIP species will be removed to an approved offsite disposal location.
PF-BIO-14	**Erosion Control Matting.** Plastic monofilament netting or similar material will not be used. Acceptable substitutes would include coconut coir matting or tackifying hydroseeding compounds.
PF-BIO-15	**Construction Lighting and Signage.** Construction area lighting will be used only where necessary for safety and signage. Downcast lighting and shielding to minimize lighting of natural areas will be used throughout the Project footprint.
PF-BIO-16	**Prevent Wildlife Entrapment.** To prevent inadvertent entrapment of special status animal species during construction, excavated holes or trenches more than 1 foot deep with walls steeper than 30 degrees will be covered at the close of each working day by plywood or similar materials. Alternatively, an additional 4-foot-high vertical barrier, independent of exclusionary fences, will be used to further prevent inadvertent animal entrapment. If it is not feasible to cover an excavation or provide an additional 4-foot-high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earthen fill or wooden planks will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped animal is discovered, the project biologist will be contacted, and they or their designee will immediately place escape ramps or other appropriate structures to allow the animal to escape, or USFWS and/or CDFW will be contacted by telephone for guidance as appropriate. All construction pipes, culverts, or similar structures that are stored at the project site for one or more overnight periods shall be securely capped before storage, or inspected by the project biologist before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a special-status species is discovered inside a pipe, the individual shall be allowed to leave of its own volition.
PF-WQ-01	**Water Quality Best Management Practices.** The contractor will adhere to the instructions, protocols, and specifications outlined in the most current Caltrans

Measure Number	Measure Description
	Construction Site Best Management Practices Manual and Caltrans Standard Specifications. At a minimum, protective measures will include the following: • The discharging of pollutants from vehicle and equipment cleaning into storm drains or watercourses will be disallowed. • Where feasible, storing or servicing vehicles and construction equipment, including fueling, cleaning and maintenance, will be performed at least 50 feet from aquatic habitat unless separated by a topographic or drainage barrier. If maintaining a buffer of 50 feet from aquatic habitat is not feasible, then Caltrans will implement primary and secondary containment and other measures as approved in the Storm Water Pollution Prevention Plan (SWPPP). • Where feasible, equipment will be maintained to prevent the leakage of vehicle fluids such as gasoline, oils, or solvents, and a spill response plan will be developed. Hazardous materials such as fuels, oils, or solvents, will be stored in sealable containers in a designated location at least 50 feet from aquatic habitats. If maintaining a buffer of 50 feet from aquatic habitat is not feasible, then Caltrans will implement primary and secondary containment and other measures as approved in the SWPPP. • Concrete wastes and water from curing operations will be collected and disposed of in appropriate washouts at least 50 feet from watercourses. • Temporary stockpiles will be covered. • Coir rolls or straw wattles will be installed along or at the base of slopes during construction to capture sediment. • Graded areas will be protected from erosion using a combination of silt fences, fiber rolls, and erosion control netting (jute or coir), as appropriate.
PF-WQ-02	**Temporary Dewatering Activities.** Groundwater extracted from temporary dewatering activities will be managed based on the groundwater quality in the Project area. Clean groundwater could be used for dust control, collected on site using desilting basins and/or tanks prior to discharging to receiving waters, or transported to a publicly owned treatment works.
PF-WQ-03	**Groundwater Treatment.** If the Project area contains contaminated groundwater or groundwater that may release contaminated plumes when disturbed, applicable permits and authorizations from the Regional Water Quality Control Board (RWQCB) would be obtained during the Project's final design phase. An active treatment system will be implemented, as necessary, and appropriate to treat contaminated groundwater exposed during excavation activities. Dewatering requirements and design of any necessary active treatment system would be determined during the project's final design or during construction.

Measure Number	Measure Description
PF-WQ-04	**Inclement Weather Restriction.** No new ground-disturbing work will occur during or within 24 hours of a rain event exceeding 0.2 inch, as measured by the National Oceanic and Atmospheric Administration Weather Service for Novato/Gnoss Field, California KDVO (NWS/FAA-MTR) base station, available at: https://www.wrh.noaa.gov/mesowest/getobext.php?wfo=mtr&sid=KDVO&num=72&raw=0. Approval from the state and/or federal agencies, as required in project permits to continue work during or within 24 hours of a rain event, will be considered on a case-by-case basis.

Avoidance and Minimization Measures

***Table 3. Project Specific* Avoidance and Minimization Measures**

Measure Number	Measure Description
AMM-BIO-01	**Wetlands Protection – Invasive Plants.** To prevent the introduction of nonnative invasive plant (NNIP) species such as smooth cordgrass (*Spartina alterniflora* and hybrids), stinkwort (*Dittrichia graveolens*), and prickly Russian thistle (*Salsola tragus*) into areas of tidal vegetation during construction and restoration activities, the following measures will be implemented: • The project biologist will conduct a NNIP assessment of areas subject to construction activities and will recommend specific measures to minimize the spread of NNIP species. • Wetland areas that are temporarily disturbed will be monitored during construction. All NNIP infestations discovered in the project area in wetland habitats will be controlled and removed upon discovery. • A long-term (5 years after project completion) vegetation monitoring plan for post-disturbance impacts in wetlands will be developed in coordination with the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) and implemented by the California Department of Transportation (Caltrans)
AMM-BIO-02	**Wetland Protection.** The following measures will be implemented in delineated wetland environmentally sensitive areas in the Project area: • Work in delineated wetlands where flooding has potential to occur will be scheduled outside of the wet-weather season. • Project activities will not occur within tidal marsh habitat within one hour before, during, and within one hour after an extreme tide event (i.e., 7.53 feet NAVD88 or higher) as measured at the Sonoma Creek Entrance NOAA Tide Station (Station ID 9415338: https://tidesandcurrents.noaa.gov/stationhome.html?id=9415338). Work is allowed to occur only within dewatered areas fully enclosed by cofferdams during this restriction.
AMM-BIO-03	**Tree Replacement, Landscaping, and Revegetation Plan.** During final design, Caltrans will develop a landscaping plan that will identify the location and number of trees that will be replanted in the right-of-way. Appropriate native species will be used to the maximum extent possible, and trees, shrubs, and groundcover will be selected for drought tolerance and disease resistance. Mulch will be applied to

Measure Number	Measure Description
	planted areas to reduce weed growth, conserve moisture, and minimize maintenance operations. A 3-year plant establishment period will be included in the final revegetation plan. Caltrans will develop and implement a 5- to 10--year post-construction vegetation monitoring plan for planted areas.
AMM-BIO-04	**Estuarine Dewatering Work Window.** Dewatering in tidal waters will be scheduled to occur between June 1 and November 30. Work in dewatered areas may be done year-round.
AMM-BIO-05	**Turbidity Control.** During the expansion of the Tolay Creek Bridge abutments and at other locations where ground disturbance would be conducted below mean higher high water (MHHW), a silt-curtain, sheet pile, or gravel-bag cofferdam or other equivalent means will be installed as needed to minimize the generation of turbidity plumes in nearby tidal waters.
AMM-BIO-8	**Targeted Pre-Construction Plant Survey.** During final project design, an experienced botanist will conduct a final floristic survey in the project area during the appropriate blooming period for all special-status plant species with potential to occur that were not surveyed for previously. The survey does not need to cover the flowering period for species adequately surveyed for during September 2019 surveys. Surveys should be conducted following the same protocols from September 2019 surveys, *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities, prepared by CDFW*, dated March 20, 2018. If special-status plant species are discovered, they will be included as an environmentally sensitive area in project plans and specifications. If any listed species are discovered that could be impacted by project activities, Caltrans will consult with state and federal regulators with jurisdiction as appropriate, and California Native Plant Society if translocation of affected plants would be considered as an option.
AMM-BIO-9	**Special-Status Plant Monitoring.** If a special-status plant (e.g., soft bird's-beak, San Joaquin spearscale, saline clover) is discovered during construction monitoring in an area where ground-disturbing activities are proposed, they will be marked or fenced for avoidance with a 10-foot buffer. Ground-disturbing work near special-status plant species will proceed under supervision of a project biologist.
AMM-BIO-10	**Nesting Bird Protection.** • During the bird nesting season (typically February 1 through August 31; as early as January 1 for raptors), a project biologist will conduct pre-construction surveys for active bird nests no more than 7 days prior to the start of ground or vegetation disturbance events and every 14 days during project activities. • Tree and/or shrub removal or trimming will be conducted outside of bird nesting season. • If an active nest is identified during construction that may be impacted by project activities, a no-disturbance buffer of 250 feet for raptors and 50 feet for non-raptors will be established immediately, and the project biologist will be notified. A reduced or enlarged buffer, and other protection measures, will be implemented in accordance with project permit requirements, defined during final design, or in consultation with the appropriate wildlife agency.

Measure Number	Measure Description
AMM-BIO-15	**Stop-Work Authority.** Through the Resident Engineer or their designee, the project biologist(s) shall have the authority to stop project activities to minimize take of listed species or if he/she determines that any permit requirements are not fully implemented. If the project biologist(s) exercises this authority, the appropriate resource regulatory agencies shall be notified by telephone and email within 48 hours.
AMM-BIO-16	**Worker Environmental Awareness Training.** Before the onset of construction and within 3 days of any new worker arrival, a project biologist will conduct this training for all construction personnel. At a minimum, the training will include a description of all special-status species and their habitats; the potential occurrence of these species in the project area; an explanation of the status of these species and protection under Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and all other federal, state, and local regulatory requirements; the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries within which construction may occur. A fact sheet conveying this information will be prepared and distributed to all construction crews and project personnel entering the project footprint. Upon completion of the program, personnel will sign a form stating that they attended the program and understand all avoidance and minimization measures and implications of FESA, CESA, and all other federal, state, and local regulatory requirements.
AMM-BIO-17	**Discovery of Injured or Dead Special-Status Species.** Immediately upon discovery of any dead, injured, or entrapped special-status species regulated by USFWS, NOAA Fisheries, or CDFW, Caltrans will provide appropriate notifications to agency(s) with jurisdiction.
AMM-BIO-18	**Wildlife Species Relocation.** When listed or fully protected species for which incidental take has been authorized are present and it is determined that they could be injured or killed by construction activities, the project biologist, in coordination with USFWS and CDFW, would identify appropriate methods for capture, handling, exclusion, and relocation of individuals that could be affected. Where listed species cannot be captured, handled, excluded, or relocated, actions that could injure or kill individuals would be avoided or delayed until the species leaves the affected area.
AMM-BIO-19	**Construction Noise.** Operation of pile drivers will be limited to daylight hours when a project biologist is present.
AMM-BIO-46	**Minimize Light Effects on Wildlife.** Permanent lighting fixtures will be designed to minimize indirect effects on wildlife where feasible. Methods to minimize light effects are suggested in Effects of LED Lighting on Terrestrial Wildlife (Longcore 2023) and include the following recommendations: • Avoid installing lighting unless absolutely necessary, and only install lighting when/where there is a proven benefit. • Direct lighting only where needed, and use shielding to minimize light spillage into natural environments. • Minimize illumination, and select lighting that is no brighter than necessary. • Dim, extinguish, or limit lighting when not needed.

Measure Number	Measure Description
	• Use warmer colored light (yellow, orange, and red) where possible.
California Red-Legged Frog Species-Specific Conservation Measures (*removed from this version because CRLF habitat is completely outside of BCDC jurisdiction*)	
AMM-BIO-21	
AMM-BIO-22	
AMM-BIO-23	
California Ridgway's Rail Species-Specific Conservation Measures	
AMM-BIO-24	**Ridgway's Rail and California Black Rail Surveys.** If Ridgway's rail or California black rail nesting habitat are present within 700 feet of the immediate project area and work would occur during the rail nesting season (February 1 through August 31), a protocol survey by a USFWS 10(a)1(A) permit holder for Ridgway's rail will be conducted to determine whether the species are present. Survey requirements and timing would be determined in consultation with USFWS and CDFW.
AMM-BIO-25	**Ridgway's Rail and California Black Rail Protocol-Level Surveys and Avoidance and Minimization Measures.** The following monitoring protocols and avoidance and minimization measures for Ridgway's rail and California black rail would be implemented where appropriate: • Ridgway's rail/California black rail Protocol-Level Surveys: Caltrans will conduct protocol-level surveys in areas where project construction activities may generate high sound pressure levels within 700 feet of suitable habitat for Ridgway's rail and California black rail. Protocol-level surveys in and surrounding the project area shall be initiated beginning between January 15 and February 1. A minimum of three surveys is required: each survey shall be 2 to 3 weeks apart, and the final survey shall be completed by March or mid-April. Surveys shall be completed prior to the initiation of construction, with 3 weeks remaining after completion of surveys, and before project initiation, to submit results to CDFW for review. Protocol-level survey requirements shall be followed as recommended in USFWS Site-Specific Protocol for Monitoring Marsh Birds (Wood et al. 2017). • Avoidance and Minimization: If Ridgway's rail or California black rail are determined to be present during protocol surveys, Caltrans would reinitiate consultation with USFWS • High Tide Restrictions: To reduce impacts to individual Ridgway's rail or California black rail, activities in or adjacent to suitable habitat for the species would not occur within one hour before, during, and within one hour after an extreme tide event (i.e., 7.53 feet NAVD88 or higher) as measured at the Sonoma Creek Entrance NOAA Tide Station (Station ID 9415338: https://tidesandcurrents.noaa.gov/stationhome.html?id=9415338). Work is allowed to occur only within dewatered areas fully enclosed by cofferdams during this restriction.
AMM-BIO-26	**Minimization for Ridgway's Rail Habitat and California Black Rail Habitat Effects**. **Restoration for Permanent Habitat Impacts:** Caltrans will minimize permanent impacts to Ridgway's rail and California black rail foraging by converting existing uplands to tidal marsh habitat at Tolay Creek.

Measure Number	Measure Description
	Restoration for Temporary Habitat Impacts. Caltrans will minimize temporary impacts during construction to Ridgway's rail and California black rail foraging habitat by restoring disturbed areas to pre-project conditions through in-kind, on-site habitat restoration at a 1:1 ratio.
AMM-BIO-47	**In-Air Noise Monitoring Plan.** During impact pile driving activities that are within 700 feet of suitable Ridgway's rail or California black rail nesting habitat, Caltrans will monitor in-air sound pressure levels. Caltrans will prepare an in-air monitoring plan for approval by USFWS and CDFW that includes monitoring to verify that construction noise levels do not exceed estimated impacts. In-air noise levels from pile driving outside the rail nesting season will not be monitored or restricted.
Salt Marsh Harvest Mouse Species-Specific Conservation Measures	
AMM-BIO-27	**Salt Marsh Harvest Mouse Pre-Construction Surveys.** A USFWS- and CDFW-approved project biologist(s) will conduct pre-construction habitat assessments no less than 7 days prior where suitable or potentially suitable habitat for salt marsh harvest mouse occurs and could be disturbed by construction activities in the project area. <u>If a SMHM or mouse species that could be perceived as a SMHM is discovered within 50 feet of the work area during construction, work in the immediate area will stop immediately. The individual will be allowed to leave the work area of its own volition at which time the Service-approved biologist will determine if the individual is no longer at risk of harm. If the individual(s) do not leave or flee the work area, they may be flushed or relocated from the work area by the Service-approved project biologist. Work may proceed only after the Service-approved project biologist has confirmed that all SMHM have left the work area and within a 50-foot perimeter.</u>
AMM-BIO-28	**Salt Marsh Harvest Mouse Impact Avoidance and Minimization.** Wildlife Exclusion Fencing (WEF) will be implemented in areas of potential habitat prior to ground disturbance as follows: • All supports for the exclusion fencing shall be placed on the inside of the work area to prevent salt marsh harvest mouse from climbing the stakes into the work area. • The salt marsh harvest mouse-proof exclusion fencing shall be at least 2 feet high, but no higher than 4 feet. • The fencing shall be made of a heavy plastic sheeting material that is too smooth for salt marsh harvest mouse to climb. • The toe of the fence shall be buried in the ground to prevent salt marsh harvest mouse from crawling or burrowing underneath it. • A 4-foot buffer shall be maintained free of vegetation around the exclusion fencing and work areas. • The final design and proposed location of the fencing shall be reviewed and approved by USFWS prior to placement. • WEF is not required where temporary construction mats are placed in marsh vegetation. Where temporary construction mats will be placed on marsh vegetation in potential salt marsh harvest mouse habitat, the following measures will be implemented:

Measure Number	Measure Description
	• A project biologist will be on site during all placement and removal of temporary construction mats, and during all work activities conducted on temporary construction mats. • The project biologist will work in front of mats to be placed in potential salt marsh harvest mouse habitat immediately before and during placement to determine presence of any salt marsh harvest mouse individuals. • During mat removal, the project biologist will inspect locations where mats are removed to confirm that no salt marsh harvest mice are present where mats are placed prior to, during, and immediately after mat removal. • • <u>If a SMHM or mouse species that could be perceived as a SMHM is discovered within 50 feet of the work area, work in the immediate area will stop immediately. The individual will be allowed to leave the work area of its own volition at which time the Service-approved biologist will determine if the individual is no longer at risk of harm. If the individual(s) do not leave or flee the work area, they may be flushed or relocated from the work area by the Service-approved project biologist. Work may proceed only after the Service-approved project biologist has confirmed that all SMHM have left the work area and within a 50-foot perimeter.</u>
AMM-BIO-29	**Salt Marsh Harvest Mouse Monitoring Protocols.** The following protocols will be followed during biological monitoring at project locations where salt marsh harvest mouse identified in pre-construction surveys may occur: • A project biologist with previous salt marsh harvest mouse experience will be on site during all construction activities. • Salt marsh harvest mouse is a fully protected species under California Fish and Game Code and may not be handled or captured at any time. • If any small mouse is discovered during construction, work will cease in the immediate vicinity of the individual until CDFW and USFWS are contacted or the individual(s) leave the work area on their own. • The project biologist will oversee installation of WEF for salt marsh harvest mouse. • Salt marsh harvest mouse exclusion fencing will be checked daily to ensure it has no holes and its base remains buried; the fence will be inspected to ensure that no mice are trapped. If a mouse is trapped by the fence, work will stop within 50 feet of the discovery and the project biologist will monitor the individual(s) until they move away from the immediate work area. • During vegetation removal in wetlands covered with pickleweed and/or salt grass (or other potential mouse habitat, as determined by project permits or the project biologist), the project biologist will mark and inspect areas to be cleared immediately prior to vegetation removal, and will oversee removal work to ensure that salt marsh harvest mice and nests are clear of the work area. • All vegetation removal will proceed away from the work area and toward contiguous areas of suitable habitat to allow any salt marsh harvest mice in the exclusion area to passively relocate into adjacent habitat. • Initial removal of pickleweed, salt-grass, and other vegetation in the marked areas will be done using hand tools exclusively. Initial removal may commence until topsoil is visible.

Measure Number	Measure Description
	• After initial removal is complete and once topsoil is visible, mowing with a string trimmer or mower may proceed (if necessary), with the project biologist walking in front of the mower and stopping work as needed to allow mice to relocate.
AMM-BIO-30	**Minimization for Salt Marsh Harvest Mouse**. **Restoration for Permanent Habitat Impacts:** Caltrans will minimize permanent impacts to salt marsh harvest mouse habitat by converting existing uplands to tidal marsh habitat at Tolay Creek. **Restoration for Temporary Habitat Impacts:** Caltrans will minimize temporary impacts during construction to salt marsh harvest mouse habitat by restoring disturbed areas to pre-project conditions through in-kind, on-site habitat restoration at a 1:1 ratio.
Longfin Smelt Species-Specific Conservation Measures	
AMM-BIO-31	**Temporary Pile Installation Noise Minimization.** Whenever possible, temporary in-water piles will be installed and removed using vibratory methods. All sheet piles will be installed with vibratory methods. Temporary piles will be completely removed as feasible. Where temporary piles cannot be fully extracted, they will be cut 3 feet below existing mudline. In upland areas out of waters and wetlands, an impact hammer may be used if the vibratory methods cannot adequately install the pile. This measure does not apply to CIDH piles.
AMM-BIO-33	**Fish Monitoring.** During dewatering where fish may be present a NOAA Fisheries-approved project biologist will be on site to observe work for conformance with permits and authorizations and monitor for any potential fish take.
AMM-BIO-34	**Fish Relocation.** At least 90 days prior to the start of in-water work with potential to strand or entrap fish, Caltrans will develop a fish relocation plan and submit it to NOAA Fisheries and CDFW for approval. All biologists monitoring dewatering actions will be qualified and approved by NOAA Fisheries and CDFW to conduct fish collections in a manner that minimizes all potential risks to listed fish. The agency-approved project biologist(s) will be on site to observe dewatering activities and to capture/rescue any fish that are observed in isolated areas during dewatering activities.
AMM-BIO-35	**Minimization for Chinook Salmon, Steelhead, Green Sturgeon, Longfin Smelt and Delta Smelt Habitat.** Caltrans will offset temporary impacts during construction to anadromous fish habitat by restoring disturbed areas to pre-project conditions through in-kind, on-site habitat restoration at a 1:1 ratio.
AMM-BIO-37	**In-Water Impact Pile Driving Attenuation.** All in-water impact pile driving in water depths greater than 2 feet at any time during work will use an underwater sound pressure attenuation system (e.g., a dewatered cofferdam or a bubble curtain system).
AMM-BIO-38	**Hydroacoustic Monitoring.** During all impact pile driving events, Caltrans will monitor in-water sound pressure levels relative to the 187 decibel (dB) cumulative sound exposure level and 206 dB peak pressure (Peak) level. A hydroacoustic monitoring plan for impact pile driving will be developed and

Measure Number	Measure Description
	provided at least 90 days prior to impact pile driving for review and approval by NMFS. Vibratory pile driving will not be monitored.
AMM-BIO-41a	**Tolay Creek Bridge Replacement.** Caltrans will replace the existing Tolay Creek Bridge with a 375-foot-long, pile-supported bridge; and remove existing fill in the historic Tolay Creek channel to improve hydrology, increase tidal prism, and create new habitat for special-status species. Tolay Creek Bridge replacement is anticipated to create 1.13 acres of new waters from existing uplands. AMM-BIO-41a is proposed by Caltrans to fully address permanent impacts on special-status species, special-status species habitat, and jurisdictional waters. Any other or additional minimization or mitigation required will be determined during final design of the project in consultation with regulatory agencies with jurisdiction.
AMM-WQ-01	**Offsite Stormwater Treatment.** Offsite treatment to address the site's limited onsite stormwater treatment capacity will be coordinated with appropriate mitigation project proponents and the RWQCB during the project's final design phase. The project will be programmed to meet the requirements of Caltrans' current municipal separate storm sewer system and National Pollutant Discharge Elimination System (NPDES) permits, (SWRCB 2013) following the guidelines and procedures outlined in Caltrans' latest Statewide Storm Water Management Plan to address stormwater runoff; and in accordance with Memorandum of Caltrans Post-Construction Stormwater and Hydromodification Standards (SFRWQCB 2008).