

**Sunol Pipeline Project - Mitigation Monitoring and Reporting Program**

Mitigation Measure	Responsible Party	Reviewing and Approving Party	Monitoring and Reporting Actions	Implementation Schedule
<b>Biological Resources</b>				
<p><b>Mitigation Measure M-BI-1a: General Protection Measures</b></p> <p>The SFPUC shall ensure that the following general measures are implemented by the contractor(s) during construction to minimize or avoid impacts on biological resources:</p> <ul style="list-style-type: none"> <li>Construction contractor(s) shall minimize the extent of the construction disturbance as much as feasible.</li> <li>Prior to the start of construction, the construction contractor, in coordination with a qualified biologist, shall install 4-foot-tall temporary exclusion fencing at selected locations along the work area boundaries where there is suitable habitat for special-status species. In addition, fencing shall be installed outside the driplines of all trees to be retained that are located within 50 feet of any grading, road improvements, underground utilities, or other construction activity. A qualified biologist and the SFPUC must first approve any encroachment beyond these fenced areas. The contractor shall maintain the temporary fencing until all construction activities are completed.</li> <li>Project-related vehicles shall observe a 15-mile-per-hour speed limit on unpaved roads in the work area, or as otherwise determined by the applicable regulatory agencies.</li> <li>The contractor shall provide closed garbage containers for the disposal of all food-related trash items (e.g., wrappers, cans, bottles, food scraps). All garbage shall be collected daily from the project site and placed in a closed container, from which garbage shall be removed weekly.</li> <li>Construction personnel shall not feed or otherwise attract fish or wildlife in the project area.</li> <li>No pets shall be allowed in the project area.</li> <li>No firearms shall be allowed in the project area.</li> <li>Staging areas shall be located at least 50 feet from riparian habitat, creeks, and wetlands, where feasible.</li> <li>If vehicle or equipment fueling or maintenance is necessary, it shall be performed in the designated staging areas.</li> <li>In cases where excavations require dewatering, the intakes shall be screened with a maximum mesh size of 5 millimeters.</li> </ul>	1. SFPUC EMB	1. SFPUC EMG	1. Ensure that contract documents identify staging area restrictions and include requirements for contractor to install temporary exclusion fencing, screen dewatering intakes, and general measures to minimize or avoid impacts on biological resources.	1. Design
	2. SFPUC CM Team (qualified biologist)	2. SFPUC EMG	2. Monitor installation of exclusion fencing. Identify placement of construction fencing around trees to be retained and verify proper installation of fencing.	2. Construction
	3. SFPUC CM Team (qualified biologist)	3. SFPUC EMG	3. Monitor to ensure that the contractor implements measures in contract documents and maintains exclusion fencing in good condition throughout construction. Report noncompliance and ensure that corrective actions are implemented. Document activities in monitoring logs.	3. Construction
<p><b>Mitigation Measure M-BI-1b: Worker Training and Awareness Program</b></p> <p>The SFPUC shall ensure that mandatory biological-resources awareness training is provided to all construction personnel as follows:</p> <ul style="list-style-type: none"> <li>The training shall be developed and provided by a qualified biologist or construction compliance manager familiar with the sensitive species that may occur in the project area. If a consulting biologist prepares the training program, SFPUC staff shall approve the program prior to implementation.</li> <li>The training shall be provided before any work, including vegetation clearing and grading, occurs within the work area boundaries.</li> <li>The training shall provide education on the natural history of the special-status species potentially occurring in the project area, and discuss the required mitigation measures to avoid impacts on the special-status species and the penalties for failing to comply with biological mitigation requirements.</li> <li>If new construction personnel are added to the project, the contractor shall ensure that they receive training prior to starting work. The subsequent training of personnel can include a videotape of the initial training and/or the use of written materials rather than in-person training by a biologist.</li> </ul>	1. SFPUC EMB	1. SFPUC EMG	1. Ensure that the contract documents include the requirement that all construction personnel attend biological resources awareness training.	1. Design
	2. SFPUC CM Team (qualified biologist)	2. SFPUC EMG	2. Prepare a project-specific biological-resources awareness program. Include documentation of qualifications of the consulting biologist developing the training program (e.g., resume). Refer to mitigation measure for specific training requirements.	2. Pre-construction
	3. SFPUC CM Team (qualified biologist)	3. SFPUC EMG	3. Monitor to ensure that all personnel attend training prior to beginning work and sign training sign-in sheet. Maintain file of sign-in sheets in project record. Report noncompliance and ensure corrective action.	3. Construction
<p><b>Mitigation Measure M-BI-1c: Minimize Disturbance to Riparian Habitat</b></p> <p>To minimize disturbance to creeks and riparian habitat, the SFPUC and its contractors shall conduct in-channel work in Arroyo de la Laguna during the dry season.</p> <p>A fish relocation plan shall be developed and submitted to the National Marine Fisheries Service for approval 30 days prior to in-channel construction work. This plan shall incorporate the latest National Marine Fisheries Service guidance relating to the capture and relocation of any stranded fish to an appropriate place, depending on the life stage of the fish and flow conditions in the vicinity.</p> <p>A National Marine Fisheries Service-approved biological monitor shall be present on site for all construction activities that could result in potential take (e.g., injury, mortality, or harassment) of covered fish species, including dewatering activities and fish relocation).</p> <p>Dewatering to create a dry work area shall be conducted in a manner that minimizes turbidity into nearby waters.</p>	1. SFPUC EMB	1. SFPUC EMG	1. Ensure that the contract documents include the requirement that in-channel work be conducted during the dry season and pump intakes (if pumping is required) be provisioned with National Marine Fisheries Service-approved fish screening.	1. Design

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<p>If pumping is necessary for channel diversion, the pump intakes shall be provisioned with National Marine Fisheries Service -approved fish screening, as outlined in National Marine Fisheries Service Fish Screening Criteria for Anadromous Salmonids (January 1997).</p>	2. SFPUC CM Team (qualified biologist)	2. SFPUC EMG	2. Prepare a project-specific fish relocation plan, including qualifications of monitoring biologist(s), and submit to the National Marine Fisheries Service for approval. Refer to mitigation measure for specific requirements.	2. Pre-construction
	3. SFPUC CM Team (qualified biologist)	3. SFPUC EMG	3. Monitor to ensure that the contractor implements measures in contract documents and fish relocation plan. Report noncompliance and ensure that corrective actions are implemented. Document activities in monitoring logs.	3. Construction
<p><b>Mitigation Measure M-BI-1d: Prevent Movement of Specific Species through the Work Areas</b></p> <p>To prevent California tiger salamander, California red-legged frog, Alameda whipsnake, and other special-status species from moving through the project area, the SFPUC or its contractors shall install temporary exclusion fencing at selected locations along the work area boundaries (including access roads, staging areas, etc.) prior to the start of project construction activities. Fencing locations will be based on observations of these specific species or the presence of habitats that are likely to support higher densities of these species. Other portions of the work area boundaries would not be fenced, based on coordination with the CDFW and USFWS. The SFPUC shall monitor disturbance areas to determine whether additional fencing is necessary to minimize potential impacts. The SFPUC shall ensure that the temporary fencing is continuously maintained until all construction activities are completed and that construction equipment is confined to the designated work areas. The fencing shall be made of suitable material that does not allow any of the animals listed above to pass through, and the bottom shall be buried to a depth of 6 inches (or to a sufficient depth as specified by the applicable resource agencies) so that these species cannot crawl under the fence.</p> <p>During fence installation, a qualified biological monitor shall be present onsite to relocate any animals to outside the work area boundaries. The biologist must be authorized by the federal (USFWS) and/or state (CDFW) regulatory agencies to relocate animals. After construction is completed, the exclusion fencing shall be removed.</p>	1. SFPUC EMB	1. SFPUC EMG	1. Ensure that contract documents include requirements for contractor to install temporary exclusion fencing at selected locations where there is suitable habitat for special-status species.	1. Design
	2. SFPUC CM Team (qualified biologist)	2. SFPUC EMG	2. Monitor installation of exclusion fencing and verify proper installation of fencing.	2. Pre-construction
	3. SFPUC CM Team (qualified biologist)	3. SFPUC EMG	3. Monitor to ensure that the contractor implements measures in contract documents and maintains exclusion fencing in good condition throughout construction. Report noncompliance and ensure that corrective actions are implemented. Document activities in monitoring logs.	3. Construction
<p><b>Mitigation Measure M-BI-1e: Preconstruction Surveys and Construction Monitoring and Protocols for California Tiger Salamander, California Red-Legged Frog, and Alameda Whipsnake</b></p> <p><i>Preconstruction Surveys</i></p> <p>Prior to initial ground-disturbing activities in the project area, a qualified biologist shall survey the construction areas as well as undeveloped areas in the immediate vicinity for the presence of California tiger salamander, California red-legged frog, and Alameda whipsnake, as follows:</p> <ul style="list-style-type: none"> <li><i>California tiger salamander and California red-legged frog.</i> Not more than two weeks prior to the onset of work activities (including equipment mobilization) and immediately prior to commencing work, the qualified biologist shall survey upland habitat in the project area for California tiger salamander and California red-legged frog, and potential refuge or burrow/estivation sites. As feasible, burrow/estivation areas identified within the project boundaries shall be temporarily fenced (per Mitigation Measure M-BI-1d) and avoided. At locations where potential refuge/estivation burrows are identified and cannot be avoided, the burrows shall be excavated by hand or by other means approved by the CDFW and USFWS prior to construction. If a burrow is occupied, the individual animal shall be moved to a natural burrow or artificial burrow constructed of PVC pipe within 0.25 mile of the project area or other location as agreed to by the appropriate agencies.</li> <li><i>Alameda Whipsnake.</i> Not more than two weeks prior to the onset of work activities (including equipment mobilization) and immediately prior to commencing work, a qualified biologist shall conduct a reconnaissance survey of suitable upland habitat for Alameda whipsnake in the project area. If an Alameda whipsnake is found, the qualified biologist shall relocate the animal outside of the</li> </ul>	1. SFPUC EMB	1. SFPUC EMG	1. Ensure that contract documents include requirement for contractor to provide advance notification to SFPUC of construction activities to allow a qualified biologist to perform preconstruction surveys.	1. Design
	2. SFPUC CM Team (qualified biologist)	2. SFPUC EMG	2. Conduct pre-construction surveys. Install temporary fencing around refuge/burrow/estivation sites (if necessary).	2. Pre-construction
	3. SFPUC CM Team (qualified biologist)	3. SFPUC EMG	3. Conduct monitoring and inspections as specified by measure. Document activities in monitoring logs. Report noncompliance and ensure that corrective actions are implemented. Report observations to USFWS and/or CDFW as specified by measure.	3. Construction

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<p>construction area. Excavation, relocation, or collapse of burrows shall only be conducted as authorized by the USFWS (for federally listed species), by the CDFW (for state-listed species), or by both agencies (for species protected at both the federal and state levels). Relocation of federally listed species shall only be conducted as authorized by the USFWS, for state-listed species as authorized by CDFW, or by both agencies for species that are protected at both the federal and state level.</p> <p><i>Construction Monitoring Protocols</i></p> <p>At the beginning of each workday that includes initial ground disturbance, including grading, excavation, and vegetation-removal activities, a qualified biologist shall conduct onsite monitoring for the presence of California tiger salamander, California red-legged frog, and Alameda whipsnake in the area where ground disturbance shall occur, as follows:</p> <ul style="list-style-type: none"> <li>• Arroyo de la Laguna shall be surveyed prior to any ground-disturbing or vegetation removal activities at or near this creek.</li> <li>• Perimeter fences shall be inspected to ensure they do not have any tears or holes, that the bottoms of the fences are still buried, and that no individuals have been trapped in the fences.</li> <li>• Any California tiger salamander, California red-legged frog, or Alameda whipsnakes found along and inside the fence shall be closely monitored until they move away from the construction area.</li> <li>• All open trenches or holes and areas under parked vehicles shall be checked for the presence of California tiger salamander, California red-legged frog, and whipsnakes.</li> <li>• All excavated or deep-walled holes or trenches greater than 2 feet shall be covered at the end of each workday using plywood or similar materials or escape ramps shall be constructed of earth fill or wooden planks. Before such holes are filled, they shall be thoroughly inspected for trapped animals.</li> <li>• Project personnel shall be required to immediately report any harm, injury, or mortality of a special status species during construction (including entrapment) to the construction foreman or biological monitor, and the construction foreman or biological monitor shall immediately notify the SFPUC. The SFPUC shall provide verbal notification to the USFWS Endangered Species Office in Sacramento, California and/or to the local CDFW warden or biologist (as applicable) within one working day of the incident. The SFPUC shall follow up with written notification to the USFWS and/or CDFW (as applicable) within five working days of the incident. All observations of federally and state-listed species shall be recorded on California Natural Diversity Database field sheets and sent to the CDFW by the SFPUC or representative biological monitor.</li> </ul> <p>While it is not necessary that the biological monitor stay onsite for the entire day, the monitor shall remain on-call in case any of these animals are discovered and it is necessary to move them. The SFPUC shall designate an SFPUC representative as the point of contact in the event that a California tiger salamander, California red-legged frog, or Alameda whipsnake is discovered onsite when the biological monitor is not present.</p> <p>If the biological monitor or construction personnel find any of these species within the work area, construction activities shall cease in the immediate vicinity of the individual until: (1) the USFWS and/or CDFW are contacted and/or the animal has been removed from the construction area, in accordance with permits, by an approved biologist and released near a suitable burrow or other suitable habitat within 0.25 mile of the construction area, or (2) the animal moves away from the construction area on its own.</p> <p>Once all initial ground-disturbing activities are completed, the biological monitor shall perform spot checks of the project area at least once a week for the duration of construction to ensure that the perimeter fence is in good order, trenches are being covered if left open overnight (or escape ramps provided), project personnel are conducting checks beneath parked vehicles prior to their movement, and all other required biological protection measures are being followed.</p>				
<p><b>Mitigation Measure M-BI-1f: Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation</b></p> <p>The SFPUC shall prepare and implement a vegetation restoration plan with detailed specifications for minimizing the introduction of invasive weeds and restoring all temporarily disturbed areas, and shall ensure that the contractor successfully implements the plan. The plan shall indicate the best time of year for seeding to occur.</p> <p>To facilitate preparation of the plan, the SFPUC shall ensure that, prior to construction, a qualified botanist (i.e., one experienced in identifying sensitive plant species in the project area) performs additional preconstruction surveys of the areas to collect more detailed vegetation composition data, including species occurrence, vegetation characterization (tree diameter size, etc.), and percent cover of plant species. Photo documentation shall be used to show pre-project conditions.</p> <p>If required, the SFPUC shall provide the vegetation restoration plan to the United States Army Corps of Engineers, the CDFW, the Regional Water Quality Control Board, and the USFWS during the permitting process, as any vegetation to be removed may provide habitat for special-status species and may also be within areas under the jurisdiction of the United States Army Corps of Engineers and the Regional Water Quality Control Board. The minimum avoidance, minimization, and restoration measures as well as success criteria to be included in the vegetation restoration plan are described below.</p>	<p>1. SFPUC EMG (qualified botanist)</p> <p>2. SFPUC EMB</p> <p>3. SFPUC CM Team (qualified biologist)</p>	<p>1. SFPUC EMG, USACE, RWQCB, CDFW, and USFWS as applicable</p> <p>2. SFPUC EMG</p> <p>3. SFPUC EMG</p>	<p>1. Develop vegetation restoration plan in accordance with mitigation requirements. Submit to applicable agencies for approval.</p> <p>2. Ensure that contract documents include on-site vegetation restoration requirements, including invasive weed control measures and on-site restoration measures.</p> <p>3. Monitor to ensure that the contractor implements measures in contract documents. Document activities in monitoring logs. Report noncompliance and ensure that corrective actions are implemented.</p>	<p>1. Pre-construction</p> <p>2. Design</p> <p>3. Construction</p>

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<p><i>Invasive Weed Control Measures</i></p> <p>Invasive weeds such as yellow star-thistle, purple star-thistle, Italian thistle, bull thistle, and stinkwort readily colonize soils that have been disturbed by grading or other mechanical disturbance. The SFPUC shall incorporate the following measures into the construction plans and specifications to prevent the spread of invasive weeds into nearby areas:</p> <ul style="list-style-type: none"> <li>• Construction equipment shall arrive at the project area clean and free of soil, seed, and plant parts to reduce the likelihood of introducing new weed species.</li> <li>• Any imported fill material, soil amendments, gravel etc., required for construction and/or restoration activities that would be placed within the upper 12 inches of the ground surface shall be free of vegetation and plant material.</li> <li>• Certified, weed-free, imported erosion-control materials (or rice straw in upland areas) shall be used exclusively, as applicable (this measure concerns biological material and does not preclude the use of silt fences, etc.).</li> <li>• The environmental awareness training program for construction personnel shall include an orientation regarding the importance of preventing the spread of invasive weeds.</li> <li>• To reduce the seed bank in weed-dominated ruderal areas, the contractor shall mow, disk, apply spot-applications of herbicide to weeds, and/or remove weeds, as appropriate and as early as feasible prior to surface clearing and site preparation. Before construction equipment leaves the project area, any accumulation of plant debris, soil, and mud shall be washed off the equipment or otherwise removed onsite, and air filters shall be blown out.</li> <li>• The restoration plan shall specify measures to remove and/or control weeds in the project area.</li> <li>• No invasive species shall be used in any restoration plantings.</li> <li>• Implementation of these measures during construction and site restoration activities shall be verified and documented by a biological or environmental monitor.</li> </ul> <p><i>Minimum Restoration Measures</i></p> <p>Restoration areas are areas within the project area that would be disturbed during project-related construction activities but would subsequently be restored to their preconstruction conditions as defined by the success criteria described below. In order to restore these areas, the SFPUC shall ensure the following:</p> <ul style="list-style-type: none"> <li>• The SFPUC shall ensure that topsoil is salvaged during grading and earthmoving activities, stockpiled separately from subsoils, and protected from erosion (e.g., covered or watered); that composting amendments are added, if needed; and that potentially compacted construction work areas are properly prepared prior to reuse of the soil in the post-construction restoration of temporarily disturbed areas. The SFPUC shall ensure that a minimum of 12 inches of topsoil is salvaged, or if there is less than 12 inches of topsoil, as much as practicable.</li> <li>• For grassland and ruderal areas, the affected areas shall be reseeded with a native or non-invasive grass and forb seed mix. High seed application rates shall be used to help compete with the weedy seed bank.</li> <li>• For riparian and wetland habitats, the affected areas shall be replanted with similar plants of appropriate species and density as those removed. If possible, locally native stock shall be used.</li> <li>• For any isolated mature native tree (i.e., one that is not part of a woodland or riparian cover) to be removed that meets the criteria described below, the SFPUC shall ensure that replacement trees are planted within or in the vicinity of the project area as follows: <ul style="list-style-type: none"> <li>○ At a minimum, for each removed mature native tree (i.e., trees that are 6 inches in diameter at breast height [dbh] or ten inches aggregate dbh for multi-trunk trees), affected areas shall be replanted with the same species on an inch-by-inch basis for any native mature tree outside the county right-of-way or as otherwise agreed to in consultation with the USFWS and CDFW. For example, eight tube trees (each 1-inch in diameter) could be planted to replace one 8-inch native tree. Other tree sizes could also be used as long as the total dbh replaces the dbh of the removed tree or trees.</li> <li>○ Trees shall be replaced within the first year after the completion of construction or as soon as possible in an area where construction is completed during a favorable time period as determined by a qualified arborist or biologist.</li> <li>○ Replacement trees shall be planted in or near the area experiencing surface disturbance from project construction and in locations suitable for the replacement species.</li> <li>○ Selection of replacement sites and installation of replacement plantings shall be supervised by a qualified arborist or biologist. Irrigation of trees during the initial establishment period shall be provided as deemed necessary by a qualified arborist or biologist.</li> <li>○ A qualified arborist or biologist shall monitor newly planted trees at least twice a year for 5 years (7 years for oaks, 10 years for trees in riparian habitat).</li> <li>○ Any trees planted as remediation for failed plantings shall be planted as stipulated here for original plantings, and shall be monitored for a period of 5 years (7 years for oaks and 10 years for trees in riparian habitat) following installation, or as otherwise determined by the applicable resource agencies.</li> </ul> </li> </ul> <p><i>Minimum Success Criteria</i></p> <p>Unless otherwise determined by the applicable resource agencies, the success criteria for restoring temporarily disturbed areas shall be as follows:</p> <ul style="list-style-type: none"> <li>• All temporarily disturbed areas shall be restored to approximate their baseline condition.</li> </ul>	<p>4. SFPUC EMG and NRLM</p>	<p>4. SFPUC EMG, NRLM, and USACE, RWQCB, CDFW, and USFWS as applicable</p>	<p>4. Conduct monitoring and maintenance of restored areas as specified by measure. Document achievement of success criteria.</p>	<p>4. Post Construction</p>

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<ul style="list-style-type: none"> <li>Vegetation within restoration areas shall be functional, fully established, and self-sustaining as evidenced by successive years of healthy vegetative growth; observed increase in vegetative cover, canopy cover, and/or plant height; successful flowering, seed set, and/or or vegetative reproduction over the 5-year monitoring period.</li> <li>Revegetation work shall start within one year of construction completion.</li> <li>Revegetation of grassland areas shall be monitored at least once a year for 5 years. With the exception of oak trees and trees in riparian habitat, which shall be monitored for 7 and 10 years, respectively, all other replacement trees shall be monitored for 5 years.</li> <li>Restoration areas shall be monitored for target invasive plants quarterly in the first 5 years following replanting. If invasive plants are found during the 5-year monitoring period, they shall be removed as necessary to support meeting the cover and vegetation composition success criteria.</li> <li>Monitoring and maintenance shall continue until the minimum success criteria specified in the table below are met, or as otherwise determined by the applicable resource agencies.</li> </ul> <p align="center"><b>MINIMUM SUCCESS CRITERIA FOR VEGETATION RESTORATION</b></p> <table border="1" data-bbox="242 620 1370 1044"> <thead> <tr> <th>Parameter</th> <th>Field Indicator/Measurement</th> </tr> </thead> <tbody> <tr> <td>Vegetative Cover</td> <td> <p><b>Grassland:</b> 70 percent absolute cover of typical native and naturalized grassland species known from the Sunol Region by the end of the fifth monitoring year.</p> <p><b>Individual Native Mature Trees:</b> 65 percent plant survivorship by the fifth monitoring year (by the seventh monitoring year for oaks, and tenth monitoring year for trees in riparian habitat).</p> <p><b>Arroyo de la Laguna Creek Channel and Riparian Habitat:</b> Greater than or equal to 45 percent canopy cover of target riparian species by the end of the fifth monitoring year.</p> </td> </tr> <tr> <td>Target Invasive Species</td> <td>No more than 10 percent absolute cover of target invasive species shall remain in any given restoration area by the end of the fifth monitoring year.</td> </tr> </tbody> </table>	Parameter	Field Indicator/Measurement	Vegetative Cover	<p><b>Grassland:</b> 70 percent absolute cover of typical native and naturalized grassland species known from the Sunol Region by the end of the fifth monitoring year.</p> <p><b>Individual Native Mature Trees:</b> 65 percent plant survivorship by the fifth monitoring year (by the seventh monitoring year for oaks, and tenth monitoring year for trees in riparian habitat).</p> <p><b>Arroyo de la Laguna Creek Channel and Riparian Habitat:</b> Greater than or equal to 45 percent canopy cover of target riparian species by the end of the fifth monitoring year.</p>	Target Invasive Species	No more than 10 percent absolute cover of target invasive species shall remain in any given restoration area by the end of the fifth monitoring year.				
Parameter	Field Indicator/Measurement									
Vegetative Cover	<p><b>Grassland:</b> 70 percent absolute cover of typical native and naturalized grassland species known from the Sunol Region by the end of the fifth monitoring year.</p> <p><b>Individual Native Mature Trees:</b> 65 percent plant survivorship by the fifth monitoring year (by the seventh monitoring year for oaks, and tenth monitoring year for trees in riparian habitat).</p> <p><b>Arroyo de la Laguna Creek Channel and Riparian Habitat:</b> Greater than or equal to 45 percent canopy cover of target riparian species by the end of the fifth monitoring year.</p>									
Target Invasive Species	No more than 10 percent absolute cover of target invasive species shall remain in any given restoration area by the end of the fifth monitoring year.									
<p><b>Mitigation Measure M-BI-1g: Measures to Minimize Disturbance to Special-Status Bird Species</b></p> <p>As feasible, the SFPUC shall conduct tree and shrub removal in the project area and the habitat compensation areas during the nonbreeding season (generally August 16 through February 14) for migratory birds, raptors, and special-status bat species. If construction activities must occur during the breeding season for special-status birds (February 15 to August 15), the SFPUC shall retain a qualified wildlife biologist who is experienced in identifying birds and their habitat to conduct nesting-raptor surveys in and within 500 feet of the project area. Migratory bird surveys shall be conducted within 100 feet of all work areas (as feasible) unless otherwise directed by CDFW. All migratory bird and active raptor nests within these areas shall be mapped. These surveys must be conducted within two weeks prior to initiation of construction activities at any time between February 15 and August 15. If no active nests are detected during surveys, no additional mitigation is required. If migratory bird and/or active raptor nests are found in the project area or in the adjacent surveyed area, the SFPUC shall establish a no-disturbance buffer around the nesting location to avoid disturbance or destruction of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late June through mid-July). The extent of these buffers would be determined by a wildlife biologist in consultation with CDFW and would depend on the species' sensitivity to disturbance (which can vary among species); the level of noise or construction disturbance; line of sight between the nest and the disturbance; ambient levels of noise and other disturbances; and consideration of other topographical or artificial barriers. The wildlife biologist shall analyze and use these factors to assist the CDFW in making an appropriate decision on buffer distances.</p>	<p>1. SFPUC EMB</p> <p>2. SFPUC CM Team (qualified biologist)</p> <p>3. SFPUC CM Team (qualified biologist)</p>	<p>1. SFPUC EMG</p> <p>2. SFPUC EMG</p> <p>3. SFPUC EMG</p>	<p>1. Ensure that contract documents include requirement to conduct tree and shrub removal during the non-breeding season, where feasible, and to provide advance notification to SFPUC of construction activities to allow a qualified biologist to perform preconstruction surveys if construction must occur during the breeding season. Ensure contract documents include appropriate language about surveys and no-disturbance buffers from the measure.</p> <p>2. Conduct survey if construction activities are to occur during the breeding season and establish buffers (if necessary) in coordination with CDFW.</p> <p>3. Monitor active nests (if necessary) and document activities in monitoring logs.</p>	<p>1. Design</p> <p>2. Pre-construction</p> <p>3. Construction</p>						
<p><b>Mitigation Measure M-BI-1h: Conduct Preconstruction Surveys for Any Special-Status Bats Found and Implement Avoidance and Minimization Measures</b></p> <p>Not more than one week prior to tree removal, a qualified biologist (i.e., one familiar with the identification of bats and signs of bats) shall survey the trees to be removed for the presence of roosting bats. Bats may be present any time of the year. The biologist shall thoroughly search any trees that provide appropriate habitat (trees with foliage or cavities or that are hollow) for the presence of roosting bats or evidence of bats. If no roosting bats or evidence of bats are found in the trees, tree removal may proceed. If bats are found or evidence of use by bats is present, the biologist shall map and mark the trees with flagging. As appropriate, the SFPUC shall ensure that the trees are not removed until the CDFG [California Department of Fish Game/Wildlife] has been consulted for guidance on measures to avoid and minimize disturbance of the special status bats. Measures may include: monitoring trees and excluding bats from the tree(s) to be removed; timing tree removal to minimize disturbance to bats; and/or use of a construction buffer to avoid disturbance of young before they are able to fly (for pallid bats, this period is between April and August).</p>	<p>1. SFPUC EMB</p> <p>2. SFPUC CM Team (qualified biologist)</p>	<p>1. SFPUC EMG</p> <p>2. SFPUC EMG</p>	<p>1. Ensure that contract documents include requirement for contractor to provide advance notification to SFPUC of construction activities to allow a qualified biologist to perform survey prior to tree removal.</p> <p>2. Conduct pre-construction survey. If special-status bats are found or evidence of use by special-status bats is present, mark with flagging and consult with CDFW for guidance.</p>	<p>1. Design</p> <p>2. Pre-construction/ Construction</p>						

**Sunol Pipeline Project - Mitigation Monitoring and Reporting Program**

Mitigation Measure	Responsible Party	Reviewing and Approving Party	Monitoring and Reporting Actions	Implementation Schedule
<b>Mitigation Measure M-BI-3: Avoidance and Protection Measures for Jurisdictional Water Bodies</b> The SFPUC and its contractors shall minimize impacts on waters of the United States and waters of the state, including wetlands, by implementing the following measures: <ul style="list-style-type: none"> <li>Construction activities in saturated or ponded wetlands and streams (typically during the spring and winter) shall be avoided to the maximum extent feasible. Where wetlands or other water features must be disturbed, the minimum area of disturbance necessary for construction shall be identified and the area outside avoided.</li> <li>Where feasible, a silt fence shall be installed adjacent to all wetlands and drainages to be avoided within 50 feet of any proposed construction activity, and signs installed indicating the required avoidance. No equipment mobilization, grading, clearing, or storage of equipment or machinery, or similar activity, shall occur until a representative of the SFPUC has inspected and approved the fencing installed around these features. This restriction applies to both onsite construction and any offsite mitigation area. The SFPUC shall ensure that the temporary fencing is continuously maintained until all construction activities are completed. No construction activities, including equipment movement, material storage, or temporary spoil stockpiling, shall be allowed within the fenced areas protecting wetlands.</li> <li>To minimize the degradation of wetland soils and vegetation where avoidance is infeasible, protective practices such as geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, geotextile fabric) or vehicles with balloon tires shall be employed in saturated conditions (e.g., when there is noticeable rutting due to saturated conditions and mixing of topsoil and subsoil).</li> <li>In areas of temporary disturbance, the bed and banks of Arroyo de la Laguna shall be restored to pre-construction conditions after construction is complete.</li> <li>Exposed slopes and streambanks shall be stabilized immediately upon the completion of construction activities.</li> <li>The banks of Arroyo de la Laguna shall be stabilized (if disturbed during construction) using a non-vegetative material that will bind the soil initially and break down within a few years (e.g., jute mat). More aggressive erosion control treatments shall be implemented as needed for stabilization, such as geotextile mats, excelsior blankets, or other soil stabilization products. The following bank stabilization materials shall not be used below the mean high-water mark: hydraulic mulch, tackifiers, hydroseeding, soil binders, and straw mulch.</li> </ul>	1. SFPUC EMB	1. SFPUC EMG	1. Ensure that contract documents include wetland protection measures and streambank stabilization measures, as specified in the mitigation measure.	1. Design
	2. SFPUC CM Team	2. SFPUC EMG	2. Monitor to ensure that the contractor implements measures in contract documents. Document activities in monitoring logs. Report noncompliance and ensure that corrective actions are implemented.	2. Construction
<b>Hydrology and Water Quality</b>				
<b>Mitigation Measure M-HY-1b: Creek Restoration and Revegetation</b> Following installation of the replacement pipeline at the Arroyo de la Laguna crossing, the SFPUC shall revegetate the disturbed creek banks with native vegetation and restore the geometry of the disturbed creek channel to pre-existing conditions. Plantings shall be monitored and maintained for up to five years to ensure stabilization of the creek channel. This mitigation measure shall be implemented in conjunction with Mitigation Measure M-BI-1f (Prepare and Implement a Vegetation Restoration Plan and Compensatory Mitigation).	1. SFPUC EMB	1. SFPUC EMG	1. Ensure that contract documents include creek restoration measures, including restoring the geometry of the disturbed creek channel to pre-existing conditions.	1. Design
	2. SFPUC CM Team (qualified biologist)	2. SFPUC EMG	2. Monitor to ensure that the contractor implements measures in contract documents. Document activities in monitoring logs. Report noncompliance and ensure that corrective actions are implemented.	2. Construction
	3. SFPUC EMG, SFPUC NRLM	3. SFPUC EMG, NRLM, and USACE, RWQCB, CDFW, and USFWS as applicable	3. Conduct monitoring and maintenance of restored areas as specified by measure. Document achievement of success criteria.	2. Post Construction
<b>Cumulative</b>				
Implement Mitigation Measures M-BI-1a, M-BI-1b, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-1f, M-BI-1g, M-BI-1h, M-BI-3, and M-HY-1b				

Notes:

- CDFW = California Department of Fish and Wildlife
- CM = Construction Management
- EMB = Engineering Management Bureau
- EMG = Environmental Management Group
- NRLM = Natural Resources Land Management
- RWQCB = Regional Water Quality Control Board
- SFPUC = San Francisco Public Utilities Commission
- USACE = United States Army Corps of Engineers
- USFWS = United States Fish and Wildlife Service