ATTACHMENT B

PROJECT NAME AND CASE NO. ***Sunol Valley Water Treatment Plant Expansion, Case No. 2006.0137E***

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
			Responsible Party	**Reviewing & Approval Party**		
AESTHETICS						
AES-2	Project construction could damage scenic resources that contribute to a scenic public setting	Implement Mitigation Measure BIO-1d	-	-	-	-
AES-6	Project operations could permanently damage scenic resources	Implement Mitigation Measure BIO-1d	-	-	-	-
CULTURAL RESOURCES						
CR-1	Project construction could result in impacts to paleontological resources	**Mitigation Measure CR-1a: Conduct Preconstruction Surveys for Significant Paleontological Resources in Areas of Undetermined and High Paleontological Sensitivity** Before construction begins, the SFPUC shall retain a California Registered Professional Geologist with appropriate expertise or a qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology's Conformable Impact Mitigation Guidelines Committee (1995) to conduct a more detailed evaluation of potential paleontological resources in those areas of the project identified as undetermined or highly sensitive for paleontological resources, namely areas of Holocene, Pleistocene, which occur where the treated water reservoir, flocculation and sedimentation basin, wash water recovery basin, and chlorine contact tank facilities would be constructed. The following shall be adhered to: • The evaluation shall include a thorough literature-based and field-reconnaissance survey of the highly sensitive and undetermined areas where surficial excavation activities are planned. The field survey shall be limited to identifying potentially significant features at the surface. • The evaluation shall be documented in a report to be submitted for review and approval by the SFPUC prior to the start of construction. • If the evaluation and survey result in the discovery of a paleontological resource exposed at the surface, or confirm the potential for impacts on significant paleontological resources, Mitigation Measures CR-1c and CR-1d shall also be implemented. Mitigation Measure CR-1a shall be implemented as a safeguard regardless of the identified likelihood of potential impacts.	1. CM Team (Paleontologist or a California registered professional geologist)	1. SFPUC BEM	1. Obtain and review resume or other documentation of consulting paleontologist's qualifications. Conduct preconstruction paleontological surveys and document. Include documentation of qualifications of paleontologist (e.g., resume).	1. Preconstruction
		Mitigation Measure CR-1b: Paleontological Resources Worker Awareness Training Before construction begins, the SFPUC shall ensure that all construction personnel receive paleontological resources awareness training that includes information on the possibility of encountering fossils during construction; the types of fossils likely to be seen, based on finds in the site vicinity; and proper procedures in the event fossils are encountered. Worker training shall be prepared by a qualified paleontologist as defined by the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee, 1995) or other appropriate personnel (e.g., California Registered Professional Geologist with appropriate expertise) experienced in teaching non-specialists.	1. CM Team (Paleontologist)	1. SFPUC BEM	1. Ensure that training program is developed and that all personnel attend prior to beginning work and sign training sign-in sheet. Maintain file of sign-in sheets.	1. Preconstruction

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		Mitigation Measure CR-1c: Perform Preconstruction Surface Salvage of Any Significant Paleontological Resources Discovered If a significant paleontological resource is discovered at the ground's surface as a result of pre-construction surveys conducted per Mitigation Measure CR-1a and cannot be avoided through exclusion of the area from project disturbance (e.g., through the installation of exclusion fencing), the SFPUC shall retain a California-Registered Professional Geologist with appropriate expertise or a qualified professional paleontologist as defined by the Society of Vertebrate Paleontology's Conformable Impact Mitigation Guidelines Committee (1995) to salvage and treat the resource prior to construction in the immediate vicinity of the find. Salvage of the resource would include recovering the item and properly documenting, preparing, and curating the find. Treatment of the resource may include preparation and recovery of fossil materials for housing in an appropriate museum or university collection, and may also include preparation of a report for publication describing the find. No construction activities at the location of the find shall be allowed until the salvage operation is completed and authorization is provided by the SFPUC.	1. CM Team (Paleontologist)	1. SFPUC BEM	1. Conduct paleontological salvage activities. Prepare written report of salvage activities. Include documentation of qualifications of paleontologist (e.g., resume).	1. Pre-construction, if necessary
		Mitigation Measure CR-1d: Conduct Paleontological Resources Monitoring during Construction in Areas of Undetermined and High Paleontological Sensitivity, as Required If determined necessary after implementation of Mitigation Measure CR-1a, the SFPUC shall retain a qualified paleontologist as defined by the Society of Vertebrate Paleontology's Conformable Impact Mitigation Guidelines Committee (1995) to conduct on-site monitoring for unanticipated discovery of potentially significant paleontological resources during initial ground-disturbing activities (e.g., grading and excavation) in the areas with geological units identified as highly sensitive for paleontological resources and as field-verified by the qualified paleontologist. After initial ground disturbance activities in the paleontologically sensitive areas, monitoring shall cease but a paleontologist shall be retained on-call by the SFPUC throughout the project in the event of an unanticipated find during subsequent construction activities. The monitor will have authority to divert grading or excavation away from exposed surfaces temporarily in order to examine disturbed areas more closely, and/or recover fossils.	1. SFPUC EMB 2. CM Team 3. CM Team (Paleontologist)	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Ensure that measures applying to paleontological discovery are incorporated in contract documents. 2. Monitor to ensure that the contractor implements measures in contract documents, report noncompliance, and ensure corrective action. 3. File documentation of paleontologist's qualifications (e.g., resume). Document paleontological monitoring activities in logs. In the event of a discovery, confirm suspension of work, examine fossil, and report as required.	1. Design 2. Construction 3. Construction
		Mitigation Measure CR-1e: Stop Work if Known or Suspected Paleontological Resources Are Encountered If fossil materials are discovered during any project-related activity, all ground-disturbing work within 50 feet of the find shall stop immediately until the paleontological monitor can assess the nature and importance of the find and recommend appropriate treatment. Recommendations for treatment shall be consistent with SVP guidelines (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee, 1995) and may include preparation and recovery of fossil materials so they can be housed in an appropriate museum or university collection.	1. CM Team	1. SFPUC BEM	1. If required, prepare a Recovery Plan to mitigate effects of the project. Proceed with recommendations of paleontologist.	1. Construction
CR-2	Project construction could result in impacts on unknown or known pre-historic and historic-era archaeological resources	**Mitigation Measure CR-2: Procedures to be Followed in the Event of an Accidental Discovery (Including Implementation of an Archaeological Monitoring and Testing Program)** To avoid any potential adverse effect from the proposed project on accidentally discovered buried or submerged historical resources as defined in CEQA Guidelines Section 15064.5(a)(c), the SFPUC shall distribute the San Francisco Planning Department archaeological resource "ALERT" sheet to the project's prime contractor; to any project subcontractor (including firms providing services such as demolition, excavation, grading, foundation, or pile driving), or utilities firm involved in soils disturbing activities within the project site.	1. SFPUC EMB	1. SFPUC BEM	1. Ensure that measures related to archaeological discoveries are included in contract documents.	1. Design

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		The "ALERT" sheet shall provide workers notice that archaeological remains may be encountered during excavation and instructions on what to do if evidence of an archaeological site is encountered. Prior to any soils disturbing activities being undertaken, each contractor shall be responsible for ensuring that the "ALERT" sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. The SFPUC shall provide the Environmental Review Officer (ERO) with a signed affidavit from the responsible parties (prime contractor, subcontractor[s], and utilities firm) to the ERO confirming that all field personnel have received copies of the ALERT Sheet.	2. CM Team	2. SFPUC BEM	2. Ensure that all personnel attend environmental training prior to beginning work, receive "ALERT" sheet, and sign the training sign-in sheet. Maintain file of sign-in sheets. Monitor to ensure that the contractor implements measures in contract documents, report noncompliance and ensure corrective action.	2. Preconstruction and Construction
		Should any indication of an archaeological resource be encountered during any soils disturbing activity of the project, the contractor and/or the SFPUC shall immediately notify the ERO and shall immediately suspend any soils disturbing activities within 150 feet of the discovery until the ERO has determined what additional measures should be undertaken.	3. CM Team (Archeologist)	3. SFPUC BEM	3. Ensure that all potential discoveries are reported as required and that the contractor suspends work in the vicinity. Mobilize an archaeologist to the area if the ERO determines that an archaeological resource may be present.	3. Construction
		If the ERO determines that an archaeological resource may be present within the project site, the SFPUC shall retain the services of a qualified archaeological consultant. The archaeological consultant shall advise the ERO as to whether the discovery is an archaeological resource, retains sufficient integrity, and is of potential scientific/historical/cultural significance. If an archaeological resource is present, the archaeological consultant shall identify and evaluate the archaeological resource. The archaeological consultant shall make a recommendation as to what action, if any, is warranted. Based on this information, the ERO may require, if warranted, specific additional measures to be implemented by the SFPUC.	4. CM Team (Archaeologist)	4. SFPUC BEM and ERO	4. Evaluate the potential discovery and advise ERO as to the significance of the discovery. Proceed with recommendations, evaluations, and implementation of additional measures in consultation with ERO. Prepare and submit Final Archaeological Resources Report.	4. Construction
		Measures might include: preservation in situ of the archaeological resource; an archaeological monitoring program; and/or an archaeological testing program. If an archaeological monitoring program or archaeological testing program is required, it shall be consistent with the San Francisco Planning Department's Major Environmental Analysis Division (MEA) guidelines for such programs. The ERO may also require that the SFPUC immediately implement a site security program if the archaeological resource is at risk from vandalism, looting, or other damaging actions.				
		The project archaeological consultant shall submit an accidental discovery Archaeological Data Recovery Report (ADRR) to the ERO which, in addition to the usual contents of the ADRR, includes an evaluation of the historical significance of any discovered archaeological resource, as well as describing the archaeological and historical research methods employed in the archaeological monitoring/data recovery program(s) undertaken, and presenting, analyzing, and interpreting the recovered data. Information that may put at risk any archaeological resource shall be provided in a separate removable insert within the final report. Copies of the Draft ADRR shall be sent to the ERO for review and approval. Once approved by the ERO, copies of the ADRR shall be distributed as follows: • California Archaeological Site Survey: NWIC [Northwest Information Center] shall receive one copy, and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. • The San Francisco Planning Department MEA shall receive three copies of the FARR, along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. The SFPUC shall receive copies of all documents prepared in conformance with this mitigation measure. In instances of high public interest or interpretive value, the ERO may require a different final report content, format, and distribution from that presented above.				

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CR-3	Project construction could potentially disturb buried human remains	**Mitigation Measure CR-3: Protection of Human Remains if Encountered during Excavation Activities** If human remains are encountered during construction, the location shall be protected, and there shall be no further excavation or disturbance of the location and any nearby area that may contain human remains. SFPUC shall retain a qualified archaeologist immediately to assess the situation. The treatment of human remains and of associated or unassociated funerary objects discovered during any soil-disturbing activity shall comply with applicable State laws. This shall include immediate notification of the County Coroner and, in the event of the Coroner's determination that the human remains are Native American, notification of the California State Native American Heritage Commission (NAHC), who shall appoint a Most Likely Descendant (MLD) (PRC Section 5097.98). The archaeological consultant, SFPUC, and MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours to reach agreement on these matters. If the MLD and the other parties do not agree on the reburial method, the project will follow Section 5097.98(b) of the California Public Resources Code, which states that "the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.	1. CM Team 2. CM Team 3. CM Team (Archeologist)	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Ensure that contract documents include measures related to discovery of human remains. 2. If human remains are encountered, temporarily redirect activities, notify County Coroner and qualified archaeologist and notify ERO. Confirm suspension of work and later startup of work in accordance with mitigation measure. 3. Evaluation remains along with County Coroner. If remains are Native American, contact NAHC and MLD and determine treatment and disposition of remains in consultation with NAHC and MLD.	1. Design 2. Construction 3. Construction
TRANSPORTATION AND CIRCULATION						
TRANS-1	Project construction could result in an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system	**Mitigation Measure TRANS-1: Preparation and Implementation of Traffic Control Plan** The SFPUC shall ensure that the construction contractor prepares and successfully implements a project-specific traffic control plan. The traffic control plan shall contain the appropriate level of detail necessary to minimize traffic impacts and hazards on Calaveras Road, including adequate consideration for both motorized vehicle traffic and bicycle traffic. This traffic control plan shall be approved by the Alameda County Public Works Agency prior to construction. At a minimum, the plan shall include the following: • Advance warning signs shall be installed on Calaveras Road to the south and north of the project access points (namely to the SVWTP area and to the spoils disposal areas) advising motorists of the construction zone ahead to minimize hazards associated with activities immediately adjacent to Calaveras Road and the entry and egress of project-related vehicles. • Either flaggers, illuminated signs, a temporary stoplight, a flashing yellow light, or a combination of these methods shall be utilized to slow approaching traffic at project access points throughout the construction period. • Pedestrian and bicycle access and circulation shall be maintained during project construction, where safe to do so. • All equipment and materials shall be stored in designated contractor staging areas on or adjacent to the work area, in such a manner as to minimize obstruction of traffic.	1. SFPUC EMB 2. CM Team 3. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Ensure that requirement to prepare a Traffic Control Plan and applicable measures are included in contract documents. 2. Ensure contractor submits a Traffic Control Plan and verify it complies with the requirements, including preparation by a qualified civil engineer (i.e., obtain resume). Submit to agencies for review and ensure recommendations are incorporated as appropriate. 3. Monitor to ensure that the contractor implements measures in the Traffic Control Plan and contract documents, report noncompliance, and ensure corrective action.	1. Design 2. Preconstruction 3. Construction

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		• Locations shall be identified for parking by construction workers, either within the work areas or, if necessary, at a nearby location with transport provided between the parking location and the work area. • To the extent applicable, the traffic control plan shall conform to the Caltran's Manual of Traffic Controls for Construction and Maintenance Work Zones. • To the extent applicable, the traffic control plan shall confirm to the California Manual on Uniform Traffic Control Devices. Spoils hauling shall be limited to non-peak hours (a.m. peak hour is between 7 a.m. and 9 a.m. [weekdays] and p.m. peak hour is between 4 p.m. and 6 p.m. [weekdays]). Spoils hauling trips to any of the identified disposal sites shall be limited to only occur on Calaveras Road and shall not entail use of I-680, the I-680 ramps at Calaveras Road, or any other roads in the vicinity of the site.				
TRANS-3	Project construction could substantially increase hazards due to a design	Implement Mitigation Measure TRANS-1	-	-	-	-
NOISE AND VIBRATION						

NOI-1	Project construction could temporarily expose persons to or generate noise levels in excess of standards established in the Alameda County Noise Ordinance	**Mitigation Measure NOI-1: Implementation of Noise Controls**
		To mitigate for potential noise-related impacts, the project shall implement the following noise control measures:
		• Pile driving activities shall be prohibited during the evening and nighttime hours (7 p.m. to 7 a.m. Monday through Friday and 5 p.m. to 8 a.m. Saturday and Sunday).
		• If noise from any construction activities exceeds 50 dBA at the nearest residences, then the following noise reduction measures shall be implemented to limit noise levels to 50 dBA:
		  • Reduce the number of pieces of construction equipment that operate simultaneously.
		  • Provide temporary barriers around noise-generating equipment.
		• Total project-related haul and delivery truck volumes on any particular haul truck route shall be limited to 80 trucks per hour to minimize noise.
		• Haul and delivery trucks shall be prohibited from operating within 200 feet of any residential uses during the nighttime hours (10 p.m. to 7 a.m.). If sensitive receptors are beyond 200 feet from the haul route, then limited truck operations shall be allowed during the more sensitive nighttime hours, however, noise generated by these operations cannot exceed the 50-dBA sleep interference criterion at the closest receptors. If trucks must operate during these hours and residential uses are located within 200 feet of the haul route, then deliveries shall be made to staging areas outside residential areas, and transferred to the construction site during daytime hours (7 a.m. to 7 p.m.).
		• If nighttime construction is anticipated, then the SFPUC shall send out a notice to residences located within 3,000 feet of the project work area, which contains the proposed start date and provides contact information for reporting complaints related to noise.
		The SFPUC shall designate a project liaison to respond to noise complaints during construction.
		The name and phone number of the liaison shall be conspicuously posted at construction areas and on all advanced notifications.
			1. SFPUC EMB
			
			2.CM Team
			
			3. CM Team (Communications)
				1. SFPUC BEM
				
				2. SFPUC BEM
				
				3. SFPUC BEM
					1. Ensure that noise control requirements, including providing advance notification of construction activities to allow SFPUC to distribute notices, are included in contract documents.
					
					2. Provide advance notification of construction activities to residences. Maintain records of notices
					
					3. Monitor to ensure that the contractor implements measures in contract documents, report noncompliance, and ensure corrective action.
						1. Design
						
						2. Preconstruction
						
						3. Construction

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		• If noise complaints are received, and noise levels are exceeding the thresholds of 70 dBA Leq during the day or 50 dBA Leq at night, then the SFPUC shall require its contractors to implement additional noise controls, such as using best available noise control techniques (including mufflers, intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) for noise generating equipment. As necessary, noise monitoring shall be performed to determine if these thresholds are exceeded. • The SFPUC shall maintain documentation of complaints received, actions taken to resolve problems, and effectiveness of these actions.				
NOI-3	Project construction could generate a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project	Implement Mitigation Measure NOI-1	-	-	-	-
AIR QUALITY						
AIR-2	Construction emissions of PM_{10}, $PM_{2.5}$, ROG, and NO_X could violate air quality standards	**Mitigation Measure AIR-2a: Implementation of Dust Control Plan** The SFPUC shall develop a Dust Control Plan. All construction contractors retained for the proposed project shall be required to implement the Dust Control Plan. The plan shall include the following elements: • Roles and responsibilities for contractor staff and SFPUC staff assigned to implement dust control measures. • List of minimum dust control measures to be used. All contractors shall use the appropriate "BAAQMD Dust Control Measures" listed in Mitigation Measure AIR-2b. • Methods to select the appropriate dust control measures for any given construction activity at the site. • Methods and schedules for inspecting the effectiveness of the chosen dust control measures. • Contingency measures to implement corrective action, if inspections reveal the minimum list of dust control measures are not adequate for any given activity. • Procedures for recordkeeping and reporting for dust control measures.	1. SFPUC EMB 2. CM Team 3. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Ensure that requirement for contractor to prepare and submit a Dust Control Plan be incorporated in contract documents. 2. Ensure that contractor prepares and submits a Dust Control Plan and verify that it complies with requirements. 3. Monitor to ensure that the contractor implements measures in the Dust Control Plan and contract documents, report noncompliance, and ensure corrective action.	1. Design 2. Preconstruction 3. Construction
		Mitigation Measure AIR-2b: Implementation of BAAQMD Dust Control Measures The SFPUC shall ensure, through construction-contract specification, that its contractor(s) implement control measures for construction emissions of PM_{10} in order to comply with BAAQMD Feasible Control Measures for Construction Emissions of PM_{10} as listed below. • All active construction areas shall be watered at least twice daily. • All trucks hauling soil, sand, and other loose debris shall be covered or all trucks shall be required to maintain at least 2 feet of freeboard on public roads. • All unpaved access roads, parking areas, and staging areas at construction sites shall either be paved, watered three times daily, or nontoxic soil stabilizers shall be applied.	1. SFPUC EMB 2. CM Team	1. SFPUC EMB 2. SFPUC BEM	1. Ensure that applicable basic, enhanced and/or optional dust control measures are included in contract documents. 2. Monitor to ensure that the contractor implements measures in contract documents, report noncompliance, and ensure corrective action.	1. Design 2. Construction

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		• All paved access roads, parking areas, and staging areas at construction sites shall be swept daily (with water sweepers). If visible soil material is carried onto adjacent public streets, adjacent streets shall be swept daily (with water sweepers). • All inactive construction areas (previously graded areas inactive for 10 days or more) shall be hydroseeded or nontoxic soil stabilizers shall be applied. • Exposed stockpiles (dirt, sand, etc.) shall be enclosed, covered, and watered, or nontoxic soil binders shall be applied. • As feasible, traffic speeds on unpaved roads shall be limited to 15 miles per hour. • Sandbags or other erosion-control measures shall be installed to prevent silt runoff to public roadways. • Disturbed areas shall be replanted as quickly as possible. • Wheel washers shall be installed for all exiting trucks, or all trucks and equipment leaving the site shall be washed off. • Wind-breaks or trees/vegetative wind-breaks shall be installed at windward side(s) of construction areas. • Excavation and grading activity shall be suspended when winds exceed 25 mph. • The area subject to excavation, grading, and other construction activity at any one time shall be limited.				
		Mitigation Measure AIR-2c: Implementation of BAAQMD Exhaust Control Measures To further limit exhaust emissions, SFPUC shall implement the following exhaust controls: • Grid power shall be used instead of diesel generators at all construction sites where it is feasible to connect to grid power. While it may not be practical to connect to grid power for pipeline projects (since construction sites keep moving along the alignments), grid power shall be used for projects with fixed locations, such as tunnel entry and exit shafts/portals. • All contracts specifications shall include Sections 2480 and 2485, Title 13, California Code of Regulations, which limit the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds, both California- or non-California-based trucks) to 30 seconds at a school or 5 minutes at any location. In addition, the use of diesel auxiliary power systems and main engines shall be limited to 5 minutes when within 100 feet of homes or schools while the driver is resting. • All contracts specifications shall include Section 93115, Title 17, California Code of Regulations, Airborne Toxic Control Measure for Stationary Compression Ignition Engines, which specifies fuel and fuel additive requirements; emission standards for operation of any stationary, diesel-fueled, compression-ignition engines. • A schedule of low-emissions tune-ups shall be developed and such tune-ups shall be performed on all equipment, particularly for haul and delivery trucks. A log of required tune-ups shall be maintained and a copy of the log shall be submitted to the SFPUC on a monthly basis for review. • Low-sulfur fuels shall be used in all stationary and mobile equipment.	1. SFPUC EMB 2. CM Team	1. SFPUC BEM 2. SFPUC BEM	1. Ensure that applicable measures are included in contract documents, including requirement for monthly submittal of tune-up log. 2. Monitor to ensure that the contractor implements measures in contract documents including monthly submittal of tune-up log, report noncompliance, and ensure corrective action.	1. Design 2. Construction
RECREATION						
REC-1	Project construction could temporarily impact recreation use of Calaveras Road during project construction	Implement Mitigation Measure TRANS-1	-	-	-	-

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UTILITIES AND SERVICE SYSTEMS						
UTL-2	Temporary disruption to regional and local utilities	**Measure UTL-2: Avoid Conflicts with Existing Utilities and Coordinate Efforts with Affected Utilities** The SFPUC shall implement the following measures to avoid conflicts with existing utilities and, should they occur, respond in an appropriate and timely manner. • Notify residents and businesses in the project area of potential utility service disruption two to four days in advance of construction. • Prior to excavation, locate overhead and underground utility lines that may be encountered during excavation work prior to opening an excavation. • While any excavation is open, protect, support, or remove underground utilities as necessary to safeguard employees. • Develop an emergency response plan in the event of conflicts with other utilities prior to commencing construction activities. • Promptly work with the utility owner to reconnect any disconnected utility lines if encountered and impacted. • Coordinate final construction plans and specifications with affected utilities.	1. SFPUC EMB 2. CM Team (Communications) 3. CM Team 4. CM Team 5. CM Team 6. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM 4. SFPUC BEM 5. SFPUC BEM 6. SFPUC BEM	1. Ensure that utility lines that may be encountered are identified in contract documents. Ensure that contract document includes requirement for contractor to prepare an Emergency Response Plan, provide advance notification of construction activities to allow SFPUC to distribute notices, and confirm utility line information by safe and acceptable means. 2. Provide notification to neighbors as required. Maintain records of notifications. 3. Ensure contractor submits an Emergency Response Plan and verify it complies with the requirements. 4. Verify that the contractors contact USA Alert and receive notification from utilities in accordance with Cal OSHA regulations. 5. Obtain report documenting notification of local fire department from contractor if damage to a gas utility results in a leak or suspected leak, or whenever damage to any utility results in a threat to public safety. 6. Monitor to ensure that contractor implements measures in contract documents, report noncompliance, and ensure corrective action.	1. Design 2. Construction 3. Preconstruction 4. Preconstruction 5. Construction 6. Construction
BIOLOGICAL RESOURCES						
BIO-1	Temporary and Permanent Loss of Suitable Habitat for and Potential Injury or Mortality of California Tiger Salamander	**Mitigation Measure BIO-1a: Conduct Mandatory Biological Resources Awareness Training for All Project Personnel** The SFPUC shall ensure that mandatory biological resources awareness training is provided to all construction personnel as follows: • The training shall be developed and provided by a USFWS-approved biologist familiar with the special-status species that may occur in the project area. The training program shall be approved by an SFPUC staff biologist prior to implementation if prepared by a consulting biologist. • The training shall be provided before any work occurs in the project area, including equipment mobilization, vegetation clearing or site grading. • The training shall provide educational information on the natural history of the special-status species potentially occurring in the project area, a discussion of required mitigation measures to avoid impacts on the special-status species, and discuss penalties for not complying with biological mitigation requirements.	1. CM Team 2. CM Team (Approved Biologist)	1. SFPUC BEM 2. SFPUC BEM	1. Obtain and review resume or other documentation of consulting biologist's qualifications, including obtaining agency approval if required. 2. Ensure that training program is developed and that all personnel attend prior to beginning work and sign training sign-in sheet. Maintain file of sign-in sheets.	1. Preconstruction 2. Preconstruction and Construction

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		• The training shall also include education regarding the importance of preventing the spread of invasive non-native species. • If new construction personnel are added to the project, the contractor shall ensure that new personnel receive training before they start working. 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.				
		Mitigation Measure BIO-1b: Install Wildlife Exclusion Fencing along the Perimeter of the Construction Work Area and Implement General Measures to Avoid Impacts to Special-Status Species and Sensitive Natural Communities To prevent special-status species from moving through the project area, the SFPUC or its contractors shall install temporary exclusion fencing around the project boundaries (including access roads, staging areas, etc.) within 1 week prior to the start of construction activities. 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, including any off-site mitigation areas and access thereto. The fence shall be made of suitable material that does not allow any of the animals listed above to pass through or over, and the bottom shall be buried to a depth of at least 6 inches such that these species cannot crawl under the fence. In addition, the fence shall include one-way funnels to allow special-status wildlife species to escape if they become trapped within the site. The exclusion fencing shall not cross Alameda Creek, but shall be installed around the perimeter of the construction work areas on both sides of Alameda Creek to confine California red-legged frogs to the creek channel and discourage them from moving into the work area from the creek. A USFWS-approved biological monitor shall be on-site during installation of the fencing to survey for and relocate any animals to the outside the work area boundaries. Federally listed species shall only be relocated if authorized by the USFWS. State-listed species shall only be relocated if authorized by CDFG. The exclusion fencing shall be removed only after construction of the project is entirely completed. Exclusionary construction fencing and explanatory signage shall be placed around the perimeter of sensitive vegetation communities that could be impacted by construction activities throughout the period during which such impacts could occur. Signage shall explain the nature of the sensitive resource and that no impact to the community is allowed. The fencing shall include a buffer zone of at least 20 feet between the resource and construction activities. All exclusionary fencing shall be maintained in good condition throughout the construction period. The SFPUC shall avoid and minimize impacts on native mature trees (defined as trees that are 6 inches diameter at breast height [dbh], or 10 inches dbh aggregate for multi-trunk trees) by implementing the following measures: • A qualified arborist (defined as an International Society of Arboriculture [ISA] certified arborist or a consulting arborist who is a member of the American Society of Consulting Arborists [ASCA]) or a qualified biologist shall identify the location of fencing to be installed around trees to be retained.	1. SFPUC EMB 2. SFPUC CM Team (Certified arborist or biologist) 3. CM Team (Biologist) 4. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM 4. SFPUC BEM	1. Ensure that contract documents include applicable wildlife protection measures (e.g., fencing requirements, monitoring requirements, seasonal restrictions, buffer zones, placement of protective mats, speed limits, etc.) and requirements related to tree protection. Design project to minimize tree removal 2. Document installation of fencing around trees to be retained. 3. Obtain and review resume or other documentation of consulting biologist's qualifications, including obtaining agency approval if required. Monitor wildlife exclusion fence installation and document activity in monitoring logs. 4. Monitor to ensure that contractor implements applicable measures (e.g., delineates work zones; ensures presence of a biological monitor where/when required; installs specialty/exclusion fencing, implements buffers; installs tree protection, etc.) in contract documents. Report noncompliance and ensure corrective action.	1. Design 2. Preconstruction 3. Preconstruction and Construction 4. Construction

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
			Responsible Party	**Reviewing & Approval Party**		
		• Prior to the start of construction, the SFPUC or its contractors shall install a 4-foot tall fence at the limits of construction, outside the dripline of all trees that are to be retained that are within 50 feet of any grading, road improvements, underground utilities, or other development activity (identified in the field via flagging by the qualified arborist or biologist). Also prior to construction, the SFPUC shall verify that the temporary construction fencing is installed and approved by a qualified arborist or biologist. Any encroachment within these areas must first be approved by a qualified arborist or biologist and the SFPUC. • For native trees on slopes, a silt fence shall be installed at the upslope base of the protective fencing to prevent soil from drifting down over the root zone (defined as the extent of the tree dripline) if work shall be performed upslope of any such trees. • The contractor shall be required to perform any necessary pruning using the "Pruning Guidelines" adopted by the California Department of Forestry and Fire Protection and consistent with the Alameda County Tree Ordinance. In addition, the SFPUC shall ensure that the following general measures are implemented by the contractor to prevent and minimize impacts to special-status species and sensitive natural communities: • Project-related vehicles shall observe a 15-mph speed limit on unpaved roads in the project area. • 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 which shall be removed weekly. Construction personnel shall not feed or otherwise attract fish or wildlife to the project area. • No pets shall be allowed in the project area. • No firearms shall be allowed in the project area. • If vehicle or equipment maintenance is necessary, it shall be performed in the designated staging areas. • All workers and construction activities shall occur away from sensitive natural communities. • If trenches greater than 2 feet are left open overnight, the trench shall either be covered at the end of the work day (e.g., with plywood or other hard material) or one or more escape ramps (constructed of earth fill or wooden planks) shall be provided. Before such holes are filled, they shall be thoroughly inspected for trapped animals. • 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. The construction foreman or 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 CDFG warden or biologist (as applicable) within 1 working day of the incident. The SFPUC shall follow up with written notification to USFWS and/or CDFG (as applicable) within 5 working days of the incident. All observations of special-status species shall be recorded on CNDDB field sheets and sent to CDFG by the SFPUC or representative biological monitor.				

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
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		• The spread of invasive non-native plant species and plant pathogens shall be avoided or minimized by implementing the following measures:
		  • Construction equipment shall arrive at the project clean and free of soil, seed, and plant parts to reduce the likelihood of introducing new weed species.
		  • 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.
		  • Certified, weed-free, imported erosion-control materials (or rice straw in upland areas) shall be used exclusively, if possible.
		  • To reduce the movement of invasive weeds into uninfested areas, the contractor shall stockpile topsoil removed during excavation of trenches or test pits, which shall be subsequently replaced during re-establishment of disturbed project areas.
		  • Trees within the project site areas shall be assessed for symptoms of sudden oak death and the potential presence of *Phytophthora ramorum*. If diseased trees are identified within the work area, site controls shall be utilized to minimize the spread of infected plant and soil material to other project locations by segregating any removal material from other plant and soil material and by providing for vehicle/equipment wash down before moving equipment to other work locations. The Alameda County registered professional forester shall be consulted prior to disposal of any diseased trees. Soil removed from the immediate vicinity of an infected tree shall not be used for site restoration and may require disposal at a landfill.
		Implementation of these measures during construction and site restoration shall be verified by a biological or environmental monitor.				

		Mitigation Measure BIO-1c: Conduct Pre-Construction Surveys and Monitor Construction Activities for California Tiger Salamander, California Red-Legged Frog, Western Pond Turtle, and Alameda Whipsnake **Pre-Construction Surveys** Prior to initial ground-disturbance activities, a USFWS-approved biologist shall survey the construction area and the immediate vicinity for the presence of California tiger salamanders, California red-legged frogs, and Alameda whipsnakes, as follows: • California tiger salamander. Not more than 2 weeks prior to the onset of work activities (including equipment mobilization) and immediately prior to commencing work, the USFWS-approved biologist shall survey upland habitat in the project area suitable for California tiger salamanders and suitable refuge/burrow sites. As feasible, refuge/burrow areas identified within the project boundary shall be temporarily fenced and avoided. At locations where potential refuge/burrows are identified and cannot be avoided, the burrows shall be excavated by hand 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. Excavation and relocation shall only be conducted by USFWS-approved biologists and only in accordance with authorization by USFWS in a biological opinion. Preconstruction surveys shall also be conducted prior to the placement of and spoils in the North or South Quarry Pits, and any individuals found shall be relocated to suitable adjacent aquatic habitat.	1. SFPUC EMB 2. CM Team (Biologist) 3. CM Team (Biologist) 4. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM 4. SFPUC BEM	1. Ensure that contract documents include requirement for Contractor to provide advance notification of construction activities to SFPUC allow SFPUC to perform preconstruction surveys. 2. Obtain and review resume or other documentation of consulting biologist's qualifications, including obtaining agency approval if required. 3. Conduct preconstruction biological surveys and construction biological monitoring and related activities. Document activities in monitoring logs. 4. Monitor to ensure that contractor implements applicable measures in contract documents. Report noncompliance and ensure corrective action.	1. Design 2. Preconstruction 3. Preconstruction and Construction 4. Construction

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
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		• California red-legged frog. Not more than 2 weeks prior to the onset of work activities (including equipment mobilization) and immediately prior to commencing work the USFWS-approved biologist shall survey suitable aquatic habitat (Alameda Creek) and upland habitat in the project area for California red-legged frog. Surveys of Alameda Creek shall include the creek channel and associated riparian habitat within the project area and 1000 feet downstream of the project area. The biologist shall survey upland habitat for potential burrows/aestivation sites. The same methodology for the preconstruction surveys of upland habitat for burrows, fencing burrows, and for excavating and relocating individual animals, if found, shall be implemented as described above for California tiger salamander. Preconstruction surveys shall also be conducted prior to the placement of and spoils in the North or South Quarry Pits, and any individuals found shall be relocated to suitable adjacent aquatic habitat. • Western Pond Turtle. Not more than 2 weeks prior to the onset of work activities (including equipment mobilization) and immediately prior to commencing work, a qualified biologist shall survey suitable aquatic habitat (Alameda Creek) and upland habitat in the project area for western pond turtle. Surveys of Alameda Creek shall include the creek channel and associated riparian habitat within the project area and 1000 feet downstream of the project area. If any pond turtles are found within the creek, they shall be moved 0.25 mile downstream on the project area in Alameda Creek, as authorized by CDFG in a Memorandum of Understanding. The biologist shall survey upland habitat for the presence of nests containing pond turtle hatchlings and eggs. All nests containing hatchlings or eggs identified within the project boundary shall be temporarily fenced and avoided. • Alameda whipsnake. Not more than 2 weeks prior to the onset of work activities (including equipment mobilization) and immediately prior to commencing work, a USFWS-approved biologist shall conduct a reconnaissance survey of upland habitat in the project area suitable for Alameda whipsnake. If an Alameda whipsnake is found, the approved biologist shall relocate the species to out of the construction area. Excavation, relocation, or collapse of burrows of federally listed species shall only be conducted as authorized by the USFWS, for state-listed species as authorized by CDFG, or by both agencies for species that are protected at both the federal and state level. **Construction Monitoring** At the beginning of each workday during initial ground disturbance (including grading, excavation, and vegetation-removal activities) and during the rainy season, a USFWS-approved biologist shall conduct onsite monitoring for the presence of California tiger salamanders, California red-legged frogs, and Alameda whipsnakes in the area where ground disturbance would occur, as follows: • Survey Alameda Creek and the quarry-pit ponds prior to any ground disturbing or vegetation-removal activities at or near these areas. • Inspect the wildlife exclusion fence to ensure that it does not have any tears or holes, that the base of the fence is still buried, and that no individuals have been trapped on or outside of the fence. • Closely monitor any California tiger salamanders, California red-legged frogs, and Alameda whipsnakes if found along, on, or outside the fence until they move away from the construction area. If they do not move out of the construction area, a USFWS-approved biologist shall move them as specified below. • Check all open trenches or holes and under parked vehicles for the presence of California tiger salamanders, California red-legged frogs, and Alameda whipsnakes.				

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		If any of these species is found by the biological monitor or construction personnel within the work area, construction activities shall cease in the immediate vicinity of the individual until the USFWS and/or CDFG is contacted and the animal has been removed, as allowed by the USFWS's Biological Opinion for the project, from the construction area by a USFWS-approved biologist and is released near a suitable burrow or other suitable habitat at least 1,000 feet away from the construction area, or until the animal moves on its own away from the construction area. The biological monitor shall not stay onsite for the entire day, but shall remain on-call in case any of these animals are discovered and need to be moved. The SFPUC shall designate the SFPUC Resident Engineer as the point of contact in the event that a California tiger salamanders, California red-legged frogs, or Alameda whipsnakes is discovered onsite when the biological monitor is not present. The rainy season shall be determined by rainfall each year. Rainy season monitoring shall begin immediately after the first rainfall in the fall and continue until 3 weeks after the last rain in the spring. If it rains again after this time, then daily monitoring shall recommence until 3 weeks past these rains. During the non-rainy season, and 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 are being provided), project personnel are conducting checks beneath parked vehicles prior to their movement, that no individual animals are located outside or inside the construction fencing, and that all other required biological protection measures are being complied with.				
		Mitigation Measure BIO-1d: Prepare and Implement a Vegetation Restoration and Compensation Plan The SFPUC shall prepare a Vegetation Restoration and Compensation Plan (Plan) and shall ensure that the Plan is successfully implemented by the contractor. The Plan shall include, at a minimum, detailed specifications for invasive weed control, restoring all temporarily disturbed areas, compensating for the temporal impacts of temporary disturbance to water and wetlands, and compensating for the loss of all permanently disturbed areas in the project area. The plan shall also indicate the best time of year for seeding to occur. Plantings undertaken between April 15 and October 15 shall include regular watering to ensure adequate growth. To facilitate preparation of the Plan, prior to construction, the SFPUC shall ensure that additional pre-construction surveys of the areas are conducted by a qualified botanist (i.e., a botanist with experience in identifying plant species, plant communities, and wetlands in this area) to collect detailed baseline vegetation composition data including species occurrence, vegetation characterization (tree diameter size, etc.), and percent cover. The Plan shall be included in the SFPUC's permit-application packages submitted to the USACE, RWQCB, CDFG, and USFWS. The SFPUC shall ensure that a USFWS- and CDFG-approved biologist reviews restoration efforts in grassland areas and oversees restoration efforts in all of the other vegetation communities. Described below are the minimum restoration and compensation measures that shall be included in the Plan.	1. SFPUC EMB 2. SFPUC BEM (Qualified botanist for preconstruction vegetation) 3. SFPUC BEM	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Ensure that on-site restoration requirements, including sudden oak death controls (if necessary), and invasive species control measures are included in the contract documents (e.g., seed mix and invasive weed control). 2. Develop Vegetation Restoration and Compensation Plan in accordance with mitigation requirements, include documentation of qualifications of botanist (e.g., resume), and perform detailed vegetation surveys. Submit to applicable agencies and incorporate recommendations. 3. Design off-site habitat compensation in accordance with mitigation requirements through a coordinated program with other mitigation efforts, such as through a future Habitat Reserve Program (HRP). Submit to applicable agencies and incorporate recommendations.	1. Design 2. Preconstruction 3. Design

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
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		Invasive Weed Control Measures Invasive weeds such as yellow star-thistle, purple star-thistle, Italian thistle, bull thistle, barb goat grass, and medusa head grass readily colonize soils that have been disturbed by grading or other mechanical disturbance. To avoid or minimize the introduction or spread of invasive weeds into uninfested areas, the SFPUC shall incorporate the following measures into the construction plans and specifications for work: • Construction equipment shall arrive at the project clean and free of soil, seed, and plant parts to reduce the likelihood of introducing new weed species. • 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. • Certified, weed-free, imported erosion-control materials (or rice straw in upland areas) shall be used exclusively. • The environmental awareness training program for construction personnel shall include an orientation regarding the importance of preventing the spread of invasive weeds. • To reduce the movement of invasive weeds into uninfested areas, the contractor shall stockpile topsoil removed during excavation of trenches or test pits, which shall be subsequently replaced during re-establishment of disturbed project areas. • Implementation of these measures during construction and site restoration shall be verified by a biological or environmental monitor. **Minimum Restoration Measures** Restoration areas are those areas that are disturbed on-site but would be restored to their baseline conditions as defined by the success criteria described below. In order to restore these areas, the SFPUC shall implement the following: • Stockpile the topsoil separately from subsoil, replace soil layers in the same order they were removed, and restore the natural grade and contours of the area. • For grassland vegetation areas, reseed the affected areas with a noninvasive native grass and forb seed mix. • For the perennial wetland removed during construction, replant the affected area with plants of similar size and in similar density as were removed. • For native trees (defined as trees that are 6 inches diameter at breast height or 10 inches for multi-tree trunks), replant affected areas with the same species with either three replacement trees of 15-gallon size for any native mature tree within the County right-of-way of Calaveras Road; or on an inch by inch basis for any native mature tree outside the County right-of-way or as otherwise agreed to with the USFWS and CDFG. **Minimum Compensation Measures** Compensation areas are those areas where vegetation plantings shall occur in off-site areas not disturbed by project construction to compensate for temporal and permanent vegetation losses on-site. In order to compensate for any such temporal and permanently disturbed areas, the SFPUC shall implement the following:	4. CM Team 5. CM Team 6. CM Team (Biological or Environmental Inspector) 7. SFPUC BEM 8. SFPUC NRLMD 9. SFPUC NRLMD	4. SFPUC BEM 5. SFPUC BEM 6. SFPUC BEM 7. SFPUC BEM 8. SFPUC NRLMD 9. SFPUC NRLMD	4. Ensure that environmental training includes information on invasive weed control measures. 5. If trees are found to have symptoms of sudden oak death, document that an Alameda County registered professional was consulted prior to disposal of any diseased trees. 6. Monitor to ensure that the contractor implements measures in contract documents for on-site revegetation, report noncompliance, and ensure corrective action. 7. Implement off site habitat compensation. 8. Perform and document long-term monitoring of on-site restoration. Provide documentation to the agencies as required. 9. Perform and document long-term monitoring of off-site habitat compensation areas. Provide documentation to the regulatory agencies as required.	4. Preconstruction 5. Construction 6. Construction 7. Construction and Monitoring (Post Construction) 8. Monitoring (Post Construction) 9. Monitoring (Post Construction)

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	Impact Summary	Mitigation Measure	Monitoring and Reporting Program			
			Implementation and Reporting		Monitoring and Reporting Actions	Implementation Schedule
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		• For all habitat types, replant other nearby existing disturbed areas on SFPUC property with similar species from locally collected propagules and implement legal instruments (such as conservation easements or similar development constraint and habitat management funding guarantees) to manage the areas for habitat resources in perpetuity (i.e., not to be used for other development projects) at a minimum ratio of 1 acre (or portion) restored to 1 acre (or portion) lost or greater acreage basis (as determined in consultation with applicable permitting agencies). • For grasslands, seed the compensation area with a noninvasive native grass and forb seed mix. • For the perennial wetland along the access road, reestablish a perennial wetland or replant riparian vegetation along Alameda Creek either in or near the project area on a minimum 1:1 or greater acreage basis (as determined in consultation with applicable permitting agencies) and implement legal instruments (such as conservation easements or similar development constraint and habitat management funding guarantees) to manage the areas for habitat resources in perpetuity (i.e., not to be used for other development projects). • As an alternative to the above compensation methods, or in combination with, the SFPUC may also contribute to a mitigation bank approved by the USFWS and/or CDFG for the affected vegetation types. **Minimum Success Criteria** The success criteria for restoring temporarily disturbed areas shall be as follows: • All areas of grassland, woodland, riparian, or wetlands not permanently disturbed shall be restored to their baseline condition. Percent cover and vegetation composition (other than non-native annual grassland) shall meet or exceed baseline cover and composition condition. • Temporarily impacted and restored upland areas shall be monitored at least once a year for at least 3 years or greater, as determined in consultation with applicable permitting agencies and/or as needed to verify whether the vegetation is fully established and self-sustaining. Monitoring of herbaceous and shrub species in wetlands shall be for at least 5 years or greater. Monitoring of riparian trees shall be for at least 10 years or greater. • If full maturity of slow-growing vegetation will take longer than 3 years (for upland vegetation), 5 years (wetland shrubs/herbaceous plants), or 10 years (riparian trees), such species shall be fully established and self-sustaining in order to meet the criteria and the monitoring period shall be extended accordingly to verify whether the vegetation is fully established and self-sustaining. • Upland restoration areas shall be monitored for invasive plants annually in the first 3-years following replanting. If invasive plants are found during the 3-year monitoring period, they shall be removed as necessary to support meeting the cover and vegetation composition success criteria. Wetland areas and riparian trees shall be monitored for the first 5 and 10 years, respectively, for invasive species. The relative cover of invasive plant species shall not exceed 5 percent in any year. Invasive plant species shall be defined as any highly invasive non-native species (Tier 1) or moderately invasive non-native species (Tier 2) listed in the Water Board's Fact Sheet for Wetland Projects. • The earliest that success criteria can first be met for upland vegetation is 3 years after restoration, for wetland vegetation is 5 years, and for riparian trees is 10 years. Maintenance and monitoring shall continue until the success criteria are met.				

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
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		• Alternatively, if success criteria cannot be met within 3 years for upland vegetation (or 5 or 10 years for wetland and riparian trees), the SFPUC may explore alternative mitigation options, such as off-site compensation or mitigation credits, with the applicable resource agencies. The success criteria for compensation planting for permanently disturbed areas shall be as follows: • All plantings shall replace permanent losses on at least a 1:1 basis on an acreage basis (or greater ratio as determined in consultation with applicable permitting agencies). Percent cover and vegetation composition for permanent new plantings shall be similar to a nearby reference site condition defined as a variation of no more than 30 percent from the reference site cover and composition condition. For wetland compensation areas, evidence of planned hydro-period (e.g. inundation duration) and positive field indicators of wetland hydrology (such as wetland vegetation, wetland soils and/or observed inundation) shall be established. • Compensation planting areas shall be monitored at least once a year for at least 5 years except that oak woodland compensation planting areas shall be monitored for at least 7 years. • If full maturity of slow-growing vegetation will take longer than 5 years (or oak trees will take longer than 7 years), such species shall be fully established and self-sustaining in order to meet the success criteria. • Compensation planting areas shall be monitored for invasive plants annually in the first 5 years following replanting (or 7 years for areas of oak woodland). If invasive plants are found during the 5-year monitoring period (or 7 year period), they shall be removed as necessary to support meeting the cover and vegetation composition success criteria. • Success criteria for invasive species shall be that the absolute cover of invasive species be less than 5 percent in any given year. • Success criteria shall be assessed within 5 years after restoration (or 7 years for oak woodland). Maintenance and monitoring shall continue until the success criteria are met. • Alternatively, if success criteria cannot be met within 5 years (or 7 years for oak woodland), the SFPUC may explore alternative mitigation options, such as off-site compensation or mitigation credits, with the applicable resource agencies.				
		Mitigation Measure BIO-1e: Compensate for Permanent Loss of Upland Habitat for California Tiger Salamander, California Red-Legged Frog, and Alameda Whipsnake The SFPUC shall compensate for any permanent loss of upland habitat for California tiger salamander, California red-legged frog, and Alameda whipsnake by either preserving suitable habitat within an off-site USFWS and CDFG-approved conservation area or through creation, enhancement or restoration of suitable habitat within the SFPUC Alameda Watershed near the project area. If off-site preservation is used as mitigation, permanent effects shall be compensated at a ratio of 1:1 or greater, as determined in consultation with USFWS and CDFG. If creation, enhancement, or restoration of upland habitat is used as mitigation, the SFPUC shall identify suitable mitigation sites immediately adjacent to existing habitat for these species in the project area and create, enhance or restore at least 1 acre of habitat for every acre permanently disturbed (1:1 ratio or greater, as determined in consultation with CDFG and USFWS).	1. SFPUC BEM 2. SFPUC BEM	1. SFPUC BEM 2. SFPUC BEM	1. Design off-site habitat compensation in accordance with mitigation requirements through a coordinated program with other mitigation efforts, such as through a future Habitat Reserve Program (HRP). Submit to applicable agencies and incorporate recommendations. 2. Implement off-site habitat compensation.	1. Design 2. Construction

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
			Responsible Party	**Reviewing & Approval Party**		
		Compensations areas shall be permanently restricted from development through binding conditions incorporated into a legal instrument such as a conservation easement. Where habitat impacts for any of these species overlap, mitigation shall be combined. That is, the loss of each habitat type shall be mitigated once. For each compensation site, proposed methods for compensation and proposed monitoring plan and success criteria shall be included in the Restoration and Compensation Plan that shall be developed by the SFPUC and approved by USFWS and CDFG prior to construction.	3. SFPUC NRLMD	3. SFPUC NRLMD	3. Perform and document long-term monitoring of off-site habitat compensation area(a) . Provide documentation to the regulatory agencies as required.	3. Monitoring (Post Construction)
BIO-2	Temporary and Permanent Loss of Suitable Habitat for and Potential Injury or Mortality of California Red-Legged Frog	Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-1e, HYD-1a and HYD-1b	-	-	-	-
BIO-3	Potential Degradation of Suitable Habitat and Potential Injury or Mortality of Foothill Yellow-Legged Frog and Western Pond Turtle	Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-1e, HYD-1a and HYD-1b	-	-	-	-
BIO-4	Temporary and Permanent Loss of Suitable Habitat for and Potential Injury or Mortality of Alameda Whipsnake	Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d and BIO-1e	-	-	-	-
BIO-5	Temporary and Permanent Loss of Suitable Habitat for and Potential Injury or Mortality of Western Burrowing Owl	Implement Mitigation Measures BIO-1a and BIO-d and the following: **Mitigation Measure BIO-5: Conduct Preconstruction Surveys for Active Burrowing Owl Burrows and Implement CDFG Guidelines for Burrowing Owl Mitigation, if Necessary** Preconstruction surveys shall be conducted to locate active burrowing owl burrows in the project area and in a 250-foot-wide buffer zone around the project area. The SFPUC shall retain a qualified biologist to conduct preconstruction surveys for active burrows according to CDFG guidelines (1995) two weeks prior to construction and immediately before construction. If no burrowing owls are detected during these surveys, no further mitigation is required. If burrowing owls are detected in the survey area, the following measures shall be implemented: • From February 1 through August 31 (the nesting season for burrowing owls), occupied burrows shall not be disturbed along with a 250-foot buffer zone or similar area established in coordination with CDFG.	1. SFPUC EMB 2. CM Team (Biologist) 3. CM Team (Biologist)	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Ensure that contract documents include requirement for Contractor to provide advance notification to SFPUC of construction activities to allow SFPUC to perform preconstruction surveys. 2. Obtain and review resume or other documentation of consulting biologist's qualifications. 3. Conduct preconstruction biological surveys and construction biological monitoring and related activities (e.g., flagging areas to be protected; flagging sensitive resource habitat; relocating or collapsing burrows as permitted/approved; establishing buffer zones; agency consultation; etc.). Document monitoring activities in logs. Consult with CDFG as required.	1. Design 2. Preconstruction 3. Preconstruction and Construction
		• From September 1 through January 31, which is the non-nesting season, when destruction of occupied burrows by project activities or construction within 250 feet of an occupied burrow is	4. CM Team	4. SFPUC BEM	4. Monitor to ensure that the contractor implements measures in contract documents	4. Construction

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Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
			Responsible Party	**Reviewing & Approval Party**		
		unavoidable, a qualified biologist shall work with the SFPUC to enhance (e.g., enlarge or clear of debris) other existing, unsuitable burrows in the immediate project vicinity or to create new burrows (install artificial burrows) at a ratio of 2:1 on suitable lands, or as otherwise agreed to by the CDFG. Newly created burrows shall follow guidelines established by CDFG. Enhancement or creation of new burrows shall happen prior to passive relocation of owls. Passive relocation of owls shall be conducted only during the non-breeding season and prior to construction within 250 feet of an occupied burrow. Passive relocation techniques (e.g., installing one-way doors at burrow entrances) shall be used by a CDFG-approved biologist instead of trapping. At least 1 week should be allowed to accomplish passive relocation and to allow owls to acclimate to alternate burrows. The biologist shall identify when passive relocation and acclimation has been completed and construction may proceed in the former occupied burrow area. • If occupied burrows are found and the owls need to be relocated, the SFPUC shall offset the loss of foraging and burrow habitat in the project area by either acquiring mitigation credits or permanently protecting a minimum of 6.5 acres (per 1995 CDFG guidance) of foraging habitat per occupied burrow identified in the project area. The protected lands shall be located adjacent to the occupied burrowing owl habitat. The location of the protected lands shall be determined in coordination with CDFG. The SFPUC shall also prepare a monitoring plan and provide long-term management and monitoring of the protected lands. The monitoring plan shall specify success criteria, identify remedial measures, and require an annual report to be submitted to CDFG for a minimum of 5 years.			(i.e., compliance with any established avoidance or buffer zones), report noncompliance and ensure corrective action.	
BIO-6	Loss of Suitable Nest Trees and Potential Disturbance, Injury or Mortality of Nesting Special-Status and other Migratory Birds	Implement Mitigation Measure BIO-1a and the following: **Mitigation Measure BIO-6: Remove Trees and Shrubs during the Non-breeding Season (August 16–February 14) for Birds or Conduct Nesting Bird Surveys, and Establish No-Disturbance Buffers, as Appropriate** The SFPUC shall conduct construction and tree and shrub removal during the non-breeding season (generally August 16 through February 14) where feasible to avoid impacts to migratory birds including raptors. If construction activities must occur during the breeding season (February 15–August 15), the SFPUC shall: • Retain a qualified wildlife biologist who is experienced in identifying bird nests and breeding behaviors to conduct nesting-bird surveys in and within 500 feet of the project site. These surveys shall be conducted within 1 week prior to initiation of construction activities (including preconstruction activities such as fence installation) at any time between February 15 and August 15. If no active nests or roosts are detected during surveys, then no additional mitigation is required. • If migratory bird or raptor nests are found in the construction area or in the adjacent surveyed area, a no-disturbance buffer shall be established 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).	1. SFPUC EMB 2. CM Team (Biologist) 3. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Ensure that requirements related to tree removal is included in contract documents. 2. Conduct preconstruction biological surveys as required. Document monitoring activities in logs. Consult with agencies as required. 3. Monitor to ensure that the contractor implements measures in contract documents (i.e., timing restrictions and compliance with any established avoidance or buffer zones), report noncompliance and ensure corrective action.	1. Design 2. Preconstruction and Construction 3. Construction

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Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
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		The extent of these buffers shall be determined by a wildlife biologist in consultation with the applicable resource agencies (i.e., USFWS and/or CDFG) and shall depend on the level of noise or construction disturbance, line of sight between the nest and the disturbance activity, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors shall be analyzed and used by a qualified wildlife biologist to assist the USFWS and/or CDFG in making an appropriate decision on buffer distances. Trees and shrubs that contain nests may be removed after a qualified wildlife biologist determines that the young have fledged.				
BIO-7	Potential Disturbance, Injury or Mortality of and Loss of Potential Roosting Habitat for Pallid Bat	Implement Mitigation Measure BIO-1a and the following: **Mitigation Measure BIO-7: Conduct Preconstruction Surveys for Sensitive Bats and Implement Avoidance and Minimization Measures if Found** Within 1 week prior to tree removal, a qualified biologist shall survey any trees that shall be removed during project construction for roosting bats. Bats may be present any time of the year. The biologist shall thoroughly search trees that provide appropriate roosting habitat for bats (trees with foliage, cavities, or that are hollow) for bats or evidence of bats. If no roosting bats or evidence of bats are found, removal of trees may proceed. If bats are found or evidence of use by bats is present, trees shall be mapped and marked with flagging. The SFPUC shall ensure that the trees are not removed until CDFG has been consulted for guidance on measures to avoid and minimize disturbance of the bats. Measures may include deferring tree removal, monitoring trees and excluding bats from a tree until it is removed, and implementation of a temporary construction buffer to avoid disturbance of young before they are able to fly (for pallid bats, this period is between April and August).	1. SFPUC EMB 2. CM Team (Biologist) 3. CM Team (Biologist) 4. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM 4. SFPUC BEM	1. Ensure that contract documents include requirement for Contractor to provide construction schedule updates to SFPUC to allow SFPUC to perform preconstruction surveys, as necessary. 2. Obtain and review resume or other documentation of consulting biologist's qualifications. 3. Conduct preconstruction biological surveys and construction biological monitoring and related activities (e.g., flagging areas to be protected; establishing buffer zones; agency consultation; etc.). Document monitoring activities in logs. Consult with CDFG as required. 4. Monitor to ensure that the contractor implements measures in contract documents (i.e., compliance with any established avoidance or buffer zones), report noncompliance and ensure corrective action.	1. Design 2. Preconstruction 3. Preconstruction and Construction 4. Construction
BIO-10	Potential Disturbance, Injury, or Mortality of San Francisco Dusky-Footed Woodrat	Implement Mitigation Measure BIO-1a and the following: **Mitigation Measure BIO-10: Conduct Pre-Construction Surveys for Dusky-footed Woodrat and Implement Avoidance and Minimization Measures if Found** Not more than 2 weeks prior to disturbance or vegetation removal in suitable habitat for dusky-footed woodrat (riparian willow forest/scrub) a qualified biologist shall conduct a pre-construction survey for stick nests of woodrats. The survey shall be conducted in the riparian willow forest/scrub habitat along Alameda Creek. Locations of nests within the survey area shall be flagged and mapped. Woodrat nests within the construction areas shall be fenced and avoided. If it is determined that avoidance is not possible, the SFPUC shall consult with CDFG to determine if trapping woodrats (using live-traps) and disassembling nests is warranted.	1. SFPUC EMB 2. CM Team (Biologist) 3. CM Team (Biologist) 4. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM 4. SFPUC BEM	1. Ensure that contract documents include requirement for Contractor to provide advance notification to SFPUC of construction activities to allow SFPUC to perform preconstruction surveys. 2. Obtain and review resume or other documentation of consulting biologist's qualifications. 3. Conduct preconstruction biological surveys and construction biological monitoring and related activities (e.g., flagging areas to be protected; relocating as approved, establishing buffer zones; agency consultation; etc.). Document monitoring activities in logs. Consult with CDFG as required. 4. Monitor to ensure that the contractor implements measures in contract documents (i.e., compliance with any established avoidance or buffer zones), report noncompliance and ensure corrective action.	1. Design 2. Preconstruction 3. Preconstruction and Construction 4. Construction

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
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BIO-11	Dewatering during project construction could result in impacts on resident trout/other native fish	Implement Mitigation Measures BIO-1a, HYD-1a and HYD-1b	-	-	-	-
BIO-12	Temporary or permanent impacts on sensitive riparian and oak woodland natural communities	Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1d, and HYD-1a	-	-	-	-
BIO-13	Temporary and permanent impacts on wetlands or waters of the U.S. or of the state	Implement Mitigation Measures BIO-1a, BIO-1b, BIO-1d, and HYD-1a and the following: **Mitigation Measure BIO-13: Minimize Disturbance of Waters of the United States and Waters of the State, Including Wetlands** 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: • Avoid construction activities in saturated or ponded wetlands and streams (typically during the spring and winter) 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 of that necessary shall be avoided. • Install a silt fence adjacent to all wetlands and drainages to be avoided within 50 feet of any proposed construction activity and install signs that read, "Environmentally Sensitive Area – Keep Out." 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 on-site construction and any off-site mitigation area, if any. The SFPUC shall ensure that the temporary fencing is continuously maintained until all construction activities are completed. No construction activities, including movement of equipment, storage of materials or temporary stockpiling of spoil, shall be allowed within the fenced areas protecting wetlands. • To minimize the degradation of wetland soils and vegetation where avoidance is infeasible, protective practices such as use of 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). • Stabilize exposed slopes and streambanks immediately upon completion of construction activities. • During construction, continuously remove trees, shrubs, debris, or soils that are inadvertently deposited below the ordinary high-water mark of Alameda Creek, or any perennial wetland in the project area, in a manner that minimizes disturbance of the drainage bed and bank (e.g., manually). Such materials shall be setback at least 10 feet from any wetlands and drainages within the project site that are not otherwise directly disturbed by construction.	1.SFPUC EMB 2. SFPUC EMB 3. CM Team 4. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM 4. SFPUC BEM	1. Design project to minimize disturbance to waters of the United States and state. 2. Ensure that mitigation related to construction activities near or in waters and wetland are included in contract documents. 3. Identify boundaries of wetlands and other waters prior to installation of fencing. 4. Monitor to ensure that the contractor implements measures in contract documents, report noncompliance and ensure corrective action.	1. Design 2. Design 3. Preconstruction 4. Construction

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
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HYDROLOGY AND WATER QUALITY						
HYD-1	Project construction could degrade water quality of Alameda Creek and wetlands as a result of erosion and sedimentation or a hazardous materials release	**Mitigation Measure HYD-1a: Construction Water Quality Best Management Practices** Consistent with the requirements of the State Water Resources Control Board General Permit for Storm Water Discharges Associated with Construction Activity, the proposed project will be undertaken in accordance with a project-specific Storm Water Pollution Prevention Plan (SWPPP). The San Francisco Bay Regional Water Quality Control Board (RWQCB), the primary agency responsible for protecting water quality within the project area, is responsible for reviewing and ensuring compliance with the SWPPP. This review is based on the general permit issued by the State Water Resources Control Board. The recommended Best Management Practices (BMPs), subject to the review and approval of the RWQCB, include the following measures. However, the measures themselves may be altered, supplemented or deleted during the RWQCB's review process, since the RWQCB has final authority over the terms of the SWPPP. **Scheduling** • Schedule construction to minimize ground disturbance during the rainy season. • Sequence construction activities to minimize the amount of time that soils remain disturbed. • Stabilize all disturbed soils as soon as possible following the completion of ground disturbing work in any area of the project site. • Provide plans to stabilize soil with vegetation or physical means in the event rainfall is expected. • Install erosion and sediment control BMPs prior to the start of any ground disturbing activities. **Erosion and Sedimentation** • Preserve existing vegetation at areas where no construction activity is planned or where construction activity will occur at a later date. • Stabilize and revegetate disturbed areas as soon as possible after construction with planting, seeding, and/or mulch (e.g., straw or hay, erosion control blankets, hydromulch, or other similar material) except in actively cultivated areas. • Install silt Fences, coir rolls and other suitable measures around the perimeter of the project site and staging areas and around riparian buffers, storm drains, temporary stockpiles, spoil areas, stream channels, swales, down-slope of all exposed soil areas and other locations determined necessary to prevent offsite sedimentation. • Install temporary slope breakers during the rainy season on slopes greater than 5 percent where the base of the slope is less than 50 feet from a water body, wetland, or road crossing at spacing intervals required by the RWQCB. • Use filter fabric or other appropriate measures to prevent sediment from entering storm drain inlets. • Detain and treat stormwater and water produced by construction site dewatering using sedimentation basins, sediment traps, baker tanks or other measures to ensure that discharges to receiving waters meet applicable water quality objectives.	1. SFPUC BEM 2. CM Team 3. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Ensure that the contract documents require that the contractor design, install, and maintain stormwater controls. 2.Ensure SWPPP is submitted to RWQCB for review and implement recommendations. 3. Monitor to ensure that the contractor implements measures in contract documents, including applicable erosion control measures, SWPPP, water quality criteria and goals. Report noncompliance and ensure corrective action.	1. Design 2. Preconstruction 3. Construction

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
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		Groundwater/Dewatering • Prepare a dewatering plan prior to excavation specifying methods of water collection, transport, treatment and discharge of all water produced by construction site dewatering. • Impound water produced by dewatering in sediment retention basins or other holding facilities to settle the solids and provide treatment as necessary prior to discharge to receiving waters to meet San Francisco Bay Basin Plan water quality objectives. • Control discharges of water produced by dewatering to prevent erosion. • Locate sedimentation basins and other retention and treatment facilities away from waterways to prevent silt-bearing water from reaching streams. **Tracking Controls** • Grade and stabilize construction site entrances and exits to prevent runoff from the site, and to prevent erosion. • Take protective measures to prevent the loss of materials into Alameda Creek when crossing the site access bridge. • Install a tire washing facility at the site access to allow for tire washing when exiting the site. • Remove any soil or sediment tracked off paved roads during construction by street sweeping. **Non-Stormwater Control** • Place drip pans under construction vehicles and all parked equipment. • Check construction equipment for leaks regularly. • Wash construction equipment in a designated enclosed area regularly. • Contain vehicle and equipment wash water for percolation or evaporative drying away from storm drain inlets and to prevent run-off into Alameda Creek. • Refuel vehicles and equipment away from Alameda Creek and other waters to prevent run-on, runoff, and to contain spills. • Contain fueling areas to prevent run-on, runoff, and to contain spills. • Cover all storm drain inlets when paving or applying seals or similar materials to prevent the offsite discharge of these materials. **Waste Management and Hazardous Materials Pollution Control** • Remove trash and construction debris from the project area daily. • Locate sanitary facilities a minimum of 300-feet from Alameda Creek. • Maintain sanitary facilities regularly. • Store all hazardous materials in an area protected from rainfall and storm water run-on and prevent the offsite discharge of leaks or spills. • Minimize the potential for contamination of Alameda Creek and other waters by maintaining spill containment and clean up equipment onsite, and by properly labeling and disposing of hazardous wastes.				

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
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		• Locate waste collection areas close to construction entrances and away from roadways, storm drains, Alameda Creek and other waters. • Inspect dumpsters and other waste and debris containers regularly for leaks and remove and properly dispose of any hazardous materials and liquid wastes placed in these containers. Train construction personnel in proper material delivery, handling, storage, cleanup, and disposal procedures. **BMP Inspection, Maintenance, and Repair** • Inspect all BMPs on a regular basis to confirm proper installation and function. • Inspect all storm water BMPs daily during storms. • Inspect sediment basins, sediment traps, and other detention and treatment facilities regularly throughout the construction period. • Provide sufficient devices and materials (e.g. silt fence, coir rolls, erosion blankets, etc.) throughout project construction to enable immediate repair or replacement of failed BMPs. • Inspect all seeded areas regularly for failures, and remediate or repair immediately. **Monitoring and Reporting** • Provide the required documentation for SWPPP inspections, maintenance and repair requirements. • Maintain written records of inspections, spills, BMPs related maintenance activities, corrective actions, and visual observations of offsite discharge of sediment or other pollutants, as required by the RWQCB. • Monitor water quality to assess the effectiveness of control measures. **Post-Construction BMPs** • Revegetate all temporarily disturbed areas as required after construction activities are completed. • Remove any remaining construction debris and trash from the project site and area upon project completion. • Phase the removal of temporary BMPs as necessary to ensure stabilization of the site. • Maintain post-construction site conditions to avoid any unintended drainage channels, erosion or areas of sedimentation. • Correct post-construction site conditions as necessary to comply with the SWPPP and any other pertinent RWQCB requirements.				
		Mitigation Measure HYD-1b: Management of Dewatering Effluent Discharges To address potential impacts to receiving water quality during the construction period related to dewatering effluent discharges, the discharger shall: 1) prepare and implement a site-specific dewatering plan; and 2) fully comply with NPDES requirements. The type of NPDES permit (e.g., Waste Discharge Requirements, 401 Water Quality Certification, or General Permit) will be determined by the RWQCB.	1. SFPUC EMB 2. CM Team	1. SFPUC BEM 2. SFPIC BEM	1. Ensure that the contract documents require that the contractor design, install, and maintain dewatering controls, including submitting a Dewatering Plan. 2. Ensure that the contractor prepares and submits a Dewatering Plan and verify it complies with the requirements. Submit SWPPP to RWQCB for review and implement recommendations.	1. Design 2. Preconstruction

MITIGATION MONITORING AND REPORTING PROGRAM						
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		Dewatering Plan–The dewatering plan shall specify how the water will be collected, contained, treated, monitored, and discharged to the vicinity storm drainage system. The plan, at a minimum, shall: • Identify methods for collecting and handling water onsite for treatment prior to discharge, including locations and capacity of settling basins, treatment ponds, and/or holding tanks. • Identify methods for treating water onsite prior to discharge, such as filtration, coagulation, sedimentation settlement areas, oil skimmers, pH adjustment, and other best management practices. • Establish procedures and methods for maintaining and monitoring dewatering operations to ensure that no breach in the process occurs that could result in exceedance of applicable water quality objectives. • Identify discharge locations and include details regarding how the discharge will be conducted to minimize erosion and scour. **NPDES Permit –** The discharger shall request a determination from the RWQCB as to the type of permit under which the project dewatering effluent discharges will be regulated. Based on that determination, the discharger shall prepare and submit all required and relevant project information so that the RWQCB can issue appropriate guidelines and requirements (e.g., numerical effluent limitations, monitoring and reporting requirements). At a minimum, the project discharges to surface waters shall not exceed water quality objective for receiving waters included in the current San Francisco Bay Region, Water Quality Control Plan (Basin Plan), including (but not limited to): • pH shall not be depressed below 6.5 nor raised above 8.5. • Turbidity shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU. • Temperature shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature. • Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses. • Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses. • Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses. • All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. The discharger shall comply with all monitoring and reporting requirements established by the RWQCB. Any exceedences of established narrative or numeric water quality objectives shall be reported to the RWQCB and corrective action taken. Corrective action may include an increase in residence time in treatment features (e.g., longer holding time in settling basins) and/or incorporation of additional treatment measures (e.g., addition of sand filtration prior to discharge).	3. CM Team	3. SFPUC BEM	3. Monitor to ensure that the contractor implements measures in contract documents, report noncompliance, and ensure corrective action.	3. Construction
HYD-2	Project construction could deplete groundwater resources and Alameda Creek flows	**Mitigation Measure HYD-2: Maintenance of Alameda Creek Flows during Construction Dewatering** The SFPUC shall complete the proposed tunneling during the dry season when Alameda Creek is expected to be dry to minimize effects on flow in Alameda Creek due to anticipated dewatering of the launching and receiving pits, if feasible. If dewatering of groundwater must occur while surface water is visible in Alameda Creek (within 150 feet north and south of the pipeline crossing), then the dewatering effluent shall be discharged directly to Alameda Creek or to an upland area immediately adjacent to the creek upstream of the dewatering activity to replace the surface flows.	1. SFPUC EMB 2. CM Team	1. SFPUC BEM 2. SFPUC BEM	1. Ensure that measures required for dewatering are incorporated in contract documents. 2. Ensure applicable measures are included in SWPPP.	1. Design 2. Construction

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			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
			Responsible Party	**Reviewing & Approval Party**		
		The groundwater shall be discharged in a manner that does not cause erosion or scour and is evenly distributed among the active creek channels. To prevent discharge of sediment-laden water directly into the creek, the SFPUC shall implement a method to remove sediment from the groundwater prior to discharging it to Alameda Creek, such as the use of a sedimentation basin, Baker Tank, filter bags, or discharging to a vegetated upland area where sediments can settle out before the water enters Alameda Creek. These measures shall be included in the project SWPPP. All discharges shall also be required to comply with required permits from the RWQCB. If direct discharge of groundwater to the creek is not permitted by the RWQCB, alternative methods for replenishing the flows in the creek would be acceptable, as permitted and approved by the RWQCB.	3. CM Team	3. SFPUC BEM	3. Monitor to ensure that the contractor implements measures in contract documents, report noncompliance, and ensure corrective action.	3. Construction
HYD-3	Project construction activities could temporarily alter site drainage patterns	Implement Mitigation Measure HYD-1a	-	-	-	-
HYD-7	Project operation could result in increased stormwater runoff due to new impervious surfaces	**Mitigation Measure HYD-7: Incorporate Alameda County Clean Water Program Design Measures to Accommodate Additional Runoff from New Impervious Surfaces** To ensure that the 4.6 acres of new impervious surfaces do not adversely impact the banks and channel of Alameda Creek or its water quality, the SFPUC shall incorporate design measures such that, consistent with the Alameda County Clean Water Program, post-project runoff does not exceed the pre-project rates and durations and treatment is provided to remove pollutants prior to discharge to Alameda Creek. The SFPUC shall achieve this by implementing one or more of the below design methods or other proven method: • Using Low Impact Development (LID) measures such as bioretention facilities, pervious asphalt, flow through planter boxes, infiltration basins, cisterns, and other such methods. • Removing existing impervious area and restoring it to a pervious condition. • Installing an energy dissipation structure and oil/sand separator along with other low impact design measures to minimize runoff. The SFPUC shall qualitatively demonstrate the selected design measures would result in post-project runoff equal to or less than pre-project rates, such as through sizing low impact development methods according to the Contra Costa County Stormwater C.3 Guidebook and the use of the Bay Area Hydrograph Model, or other modeling equivalent to the modeling required by the Alameda County NPDES and C.3 requirements and the Alameda County Clean Water Program for projects that exceed 1 acre of impervious surface. The SFPUC shall submit the proposed measures to the RWQCB for review and approval.	1. SFPUC EMB 2. SFPUC EMB 3. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Incorporate BMPs into project design per mitigation measure. The SFPUC shall submit the proposed measures to the RWQCB for review and approval. 2. Ensure requirements for BMPs are included in contract documents. 3. Monitor to ensure contractor property installs BMPs, report noncompliance, and ensure corrective action.	1. Design 2. Design 3. Construction
HAZARDS AND HAZARDOUS MATERIALS						
HAZ-1	Construction of the proposed project could create potential hazards through transportation, use, and disposal of hazardous materials	**Mitigation Measure HAZ-1a: Soil Investigation Prior to Construction** Prior to project construction, the SFPUC shall perform a soil investigation to determine the presence of chemical residues within shallow soils. Samples shall be collected from surface soils (from ground surface to 1.5 feet below the surface) in each of the proposed work areas and spoils sites that will be disturbed during project construction. These samples shall be analyzed for total copper, arsenic, lead, mercury and organochlorine pesticides. The results of the soil investigation shall be used to ensure spoils reuse and disposal meet the reuse criteria established by the SWRCB, determine if specific soils management and disposal procedures for contaminated materials are required, and determine if construction worker health and safety procedures for working with contaminated materials are required.	1. SFPUC BEM 2. CM Team	1. SFPUC BEM and RWQCB 2. SFPUC BEM	1. Perform preconstruction sampling. 2. Ensure results of soil sampling are provided to contractor for incorporation in the Construction Risk Management Plan.	1. Design 2. Preconstruction

MITIGATION MONITORING AND REPORTING PROGRAM						
Impact No.	**Impact Summary**	**Mitigation Measure**	**Monitoring and Reporting Program**			
			Implementation and Reporting		**Monitoring and Reporting Actions**	**Implementation Schedule**
			Responsible Party	**Reviewing & Approval Party**		
		Mitigation Measure HAZ-1b: Preparation of a Construction Risk Management Plan The SFPUC shall prepare and implement a Construction Risk Management Plan (CRMP) that addresses hazardous materials and other worker health and safety issues that may arise during construction. The SFPUC shall ensure the CRMP includes the following details at a minimum: • Results from shallow surface sampling conducted per Mitigation Measure HAZ-1a, to determine any necessary contaminated soils and groundwater management procedures. • A site-specific Health and Safety Plan (HASP) prepared by a qualified health and safety professional in accordance with applicable laws, rules, and regulations. The HASP shall include all required measures to protect construction workers and the general public by including engineering controls, monitoring, and security measures to prevent unauthorized entry to the construction area and to reduce hazards outside the construction area. If prescribed exposure levels were exceeded, personal protective equipment shall be required for workers in accordance with state and federal regulations. Submission of the CRMP to the SFPUC, or any review of the contractor's CRMP or HASP by the SFPUC, shall not be construed as approval of the adequacy of the contractor's health and safety professional, the contractor's HASP, or any safety measure taken in or near the construction site. The contractor shall be solely and fully responsible for compliance with all laws, rules and regulations applicable to health and safety of persons during the performance of the construction work. • Soil management, reuse, and disposal procedures for excavated materials that are determined to be contaminated. • Treatment, handling, and disposal procedures for encountered groundwater determined to be contaminated. • Construction-worker health and safety procedures to address the possibility of encountering unknown contamination or subsurface hazards, such as previously unreported tanks or wells. • Fire-prevention measures including smoking in disturbed areas only and disposing of cigarette butts in waste bins, parking in non-vegetated areas, portable fire extinguishers shall be kept within ten feet of flammable or combustible liquid storage sites, welding and cutting operations, and compliance with the requirements of the California PRC, beginning with Section 4427. • Emergency-response procedures, including keeping spill cleanup materials such as absorbent pads onsite and procedures for the containment and cleanup of accidental releases of hazardous materials used or stored during construction activities. • Procedures for notification of SFPUC emergency coordinators and neighboring facilities in the event that construction activities require a temporary closure of Calaveras Road, which could interfere with emergency response or evacuation plans. • In the event of a reportable spill or other emergency incident, the contractor shall notify the SFPUC and applicable agencies in accordance with guidance from the California Office of Emergency Services (OES), as well as the Alameda County Water District (ACWD).	1. SFPUC EMB 2. CM Team 3. CM Team	1. SFPUC BEM 2. SFPUC BEM 3. SFPUC BEM	1. Ensure that requirement for contractor to prepare and submit a site health and safety plan, CRMP, measures for use and storage of hazardous materials and fire prevention are included in contract documents. 2. Ensure that contractor prepares and submits a CRMP and verify that it complies with requirements. 3. Monitor to ensure that the contractor implements measures in the CRMP and contract documents, report noncompliance, and ensure corrective action.	1. Design 2. Preconstruction 3. Construction
HAZ-2	Construction of the proposed project could create the potential for upset and accident conditions involving the	Implement Mitigation Measures HAZ-1a and HAZ-1b	-	-	-	-

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	release of hazardous materials in the environment					
HAZ-3	Construction of the proposed project could create the potential to encounter hazardous materials in soil and groundwater	Implement Mitigation Measures HAZ-1a and HAZ-1b	-	-	-	-
AGRICULTURAL RESOURCES						
AG-1	Operation of the proposed project could result in conversion of farmlands to non-agricultural uses	**Mitigation Measure AG-1: Compensation for loss of Unique Farmland** The SFPUC shall compensate for the conversion of Unique Farmland to non-agricultural use for spoils disposal, as indicated below: • As compensation for the permanent loss of 21 acres of Unique Farmland at the Nursery Sites 1 and 2 spoils placement areas, the SFPUC shall dedicate an irrevocable agricultural conservation easement permanently setting aside 21 acres of Unique Farmland in or near the Sunol Valley for exclusive agricultural use. • As an alternative to the dedication required above, the SFPUC shall contribute funds to a local agricultural land conservancy to establish a conservation easement to protect an equivalent acreage of similarly valued land in the area.	1. SFPUC Real Estate	1. SFPUC BEM	1. Document equivalent set-aside on SFPUC land or contribution to land conservancy.	1. Construction
CUMULATIVE						
CUM-1	Cumulative traffic increases on Calaveras Road	**Mitigation Measure CUM-1: Combined Sunol Valley Traffic Control Plan** The SFPUC or its construction contractor(s) shall develop a Sunol Valley Traffic Control Plan that coordinates the project-specific traffic control plans developed as part of Mitigation Measure TRANS-1 and identifies additional measures to minimize the impacts of construction traffic on Calaveras Road and I-680. As applicable, these measures shall be developed consistent with the standards of Alameda County and Caltrans and could include: • Additional traffic control devices, such as traffic signals at key intersections providing access to local roadways and land uses. Traffic signals could facilitate access onto Calaveras Road at intersections and also allow for gaps in truck traffic flow to facilitate access from driveways along Calaveras Road. • Additional traffic control personnel at key locations to facilitate vehicular traffic flow during peak periods of truck activity. • Adjustments in truck arrival and departure schedules for the various facilities (e.g., staggering departures). • Public information regarding periods when construction traffic on Calaveras Road would be greatest. Working with Caltrans to determine if warning signs, such as a “Slow Trucks” sign (California Code W51), would be appropriate to inform drivers that slow-moving trucks may interfere with the flow of traffic on I-680.	1. SFPUC EMB 2. CM Team (Traffic Construction Coordinator) 3. CM Team	1. SFPUC BEM 2. SFPUC BEM and CM Team 3. SFPUC BEM	1. Ensure that applicable measures that are identified in the coordinated plan are also included in contract documents. 2. Coordinate individual project traffic control plans and develop a coordinated plan that includes measures that address traffic resulting from multiple projects in the Sunol Valley. 3. Monitor to ensure that the contractor implements measures in the contract documents, report noncompliance, and ensure corrective action.	1. Design 2. Preconstruction and Construction 3. Construction

BAAAQMD = Bay Area Air Quality Management District
BEM = (SFPUC) Bureau of Environmental Management
CEQA = California Environmental Quality Act
CDFG = California Department of Fish and Game
CM Team = (SFPUC) Construction Management Bureau and Construction Management Consultant
dBA = A-weighted decibel
EMB = (SFPUC) Engineering Management Bureau
ERO = (SF Planning Department) Environmental Review Officer
MEA = San Francisco Planning Department, Major Environmental Analysis Division
MLD = Most Likely Descendant
NACH = Native American Heritage Commission
NRLMD = (SFPUC) Natural Resources and Lands Management Division
RWQCB = Regional Water Quality Control Board
SFPUC = San Francisco Public Utilities Commission
USFWS = U.S. Fish and Wildlife Service