Appendix E

Mitigation Monitoring and Reporting Program

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E Mitigation Monitoring and Reporting Program

The California Environmental Quality Act (CEQA) requires that when a lead agency adopts a mitigated negative declaration, it shall prepare and adopt a mitigation monitoring and reporting program (MMRP) for all required mitigation measures (CEQA Guidelines Section 15097). This MMRP is intended to be used by City of Santa Cruz (City) staff, its contractors, and mitigation monitoring personnel to ensure compliance with mitigation measures during project construction and implementation. Mitigation measures identified in this MMRP were developed during the preparation of the Initial Study prepared for the Anadromous Salmonid Habitat Conservation Plan.

The MMRP is provided in Table E-1 and includes all mitigation measures identified in the Initial Study and, for each measure, the party responsible for implementation and implementation timing. The MMRP also includes the City's standard construction practices applicable to the project, which would be implemented by the City and its contractors during project-related construction activities.

Table E-1. Anadromous Salmonid Habitat Conservation Plan Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
MITIGATION MEASURES		
Biological Resources		
MM BIO-1: Preconstruction Special-Status Plant Surveys and Compensation to Address Plant Species Not Otherwise Addressed by the Operations and Maintenance Habitat Conservation Plan (OMHCP). If ground-disturbing activities associated with planned construction project staging and work areas occur outside existing developed areas and maintained rights-of-way in areas where special-status plant species are likely to occur, a qualified biologist shall conduct a focused botanical survey for special-status plants for each species that is likely to occur in the project area. Additional surveys will be conducted during the appropriate bloom period where project timing may result in impacts. If special-status plant species are not detected, no further surveys or mitigation would be necessary. If special-status plant species are detected and direct impacts (i.e., ground disturbance resulting in removal of plants or any part of their root systems) cannot be avoided, the biologist shall map its location(s) and develop a botanical survey report. This report shall include the following information: a. A description of the special-status plant occurrence(s) that would be impacted by the activity(ies), including number of plants impacted and their microhabitat conditions; b. Analysis of species-specific requirements and considerations for revegetation success; c. A description of proposed methods for salvage and restoration of affected plants to the disturbance area after project completion; d. A description of specific performance standards for the revegetation site and associated monitoring, including a minimum success standard of the area attaining the equivalent number of pre-disturbance plants; and e. A description of adaptive management and associated remedial measures to be implemented if performance standards are not achieved.	City responsible for hiring qualified biologist to conduct surveys, prepare report, and implement salvage and restoration.	Conduct focused plant survey: Prior to construction and during appropriate bloom period. Plan preparation if special-status species are found: Prior to construction. Plan implementation: During construction.

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Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
MM BIO-2: Preconstruction Special-Status Wildlife Surveys to Address Wildlife Species Not Otherwise Addressed by the OMHCP. For planned construction projects, a qualified biologist shall conduct preconstruction surveys of all ground disturbance areas within off-pavement project footprint areas where special-status wildlife species are likely to occur to determine if ground-dwelling special-status wildlife species are present or are likely to occur prior to the start of construction. The survey area shall include all suitable habitat within the work areas, plus a 50-foot buffer where possible. The biologist will conduct these surveys no more than 48 hours prior to the beginning of construction.	City responsible for hiring qualified biologist to conduct surveys.	Preconstruction survey: No more than 48 hours prior to the initiation of construction activities.
MM BIO-3: Biological Construction Monitoring to Address Wildlife Species Not Otherwise Addressed by the OMHCP. A qualified biologist shall monitor vegetation removal and initial ground disturbing activities during all work hours for off-pavement work where special-status wildlife species are likely to occur. The frequency and characteristics of monitoring will be determined by the qualified biologist during the implementation of MM BIO-2. During construction, the biological monitor shall keep a daily observation and photo log to document monitoring, construction activities, any non-compliance issues and remedial actions taken, and wildlife species observations, including any relocation of individuals to identified relocation sites (see below). These logs shall be included in weekly (or more frequently as warranted) monitoring reports to City staff and/or regulatory agency staff, as relevant. If the biologist observes the presence of special-status wildlife or determines that they could move into the work area during construction, the biologist shall determine the closest appropriate relocation site. The biologist shall identify suitable habitats as potential release sites prior to start of construction activities or during construction, and relocate the species out of harm's way. The habitat values of release sites shall be as high as, or better than, those of the site impacted by project construction activities. Relocation of special-status species individuals shall only be conducted by biologists authorized to do so by the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife.	City responsible for hiring qualified biologist to conduct construction monitoring.	Conduct construction monitoring: During construction.
Cultural and Tribal Cultural Resources		
MM CUL-1: Historical Built Environment Resources. Potentially significant impacts of construction projects on potential historical built environment resources shall be addressed through the following measures:	City responsible for hiring a qualified cultural resource specialist and architectural	Conduct records search and evaluate resources: Prior to or during project design.

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Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
a. **Identify Potential Historical Built Environment Resources.** When planned construction projects (Covered Activities or elements of the Conservation Strategy) are being pursued by the City, a qualified cultural resource specialist meeting the Secretary of the Interior's Professional Qualifications Standards shall review the project site and conduct a California Historical Resources Information System (CHRIS) records search, if a recent search (within 5 years) of the project site is not otherwise available and such a records search is determined to be warranted by the cultural resource specialist due to the presence of historic-era buildings or structures. If there are no previously recorded resources or historic-era buildings or structures located on the site, no further action is warranted. If these project site review efforts indicate a potential for historical resources, all buildings and structures within the project site that are 45 years or older shall be identified and measure b shall be implemented.	historian to conduct records search and evaluate potential historic built environment resources.	
b. **Evaluate Potential Historical Built Environment Resources.** Should potential historical built environment resources be identified within the specific site(s), prior to project implementation, the City shall retain a qualified architectural historian meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) to record such potential resources based on professional standards and formally assess their significance per Section 106 of the National Historic Preservation Act (NHPA) and California Environmental Quality Act (CEQA). A Built Environment Inventory and Evaluation Report shall be prepared by the architectural historian to evaluate resources over 45 years of age under all applicable significance criteria, including the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and local designation criteria and integrity requirements. No further work shall be required for historic-era built environment properties, buildings, or structures 45 years old or older at sites that are not found to meet the historical significance criteria. If a resource is found to be eligible for listing under the applicable significance criteria and therefore is considered a cultural resource pursuant to the NHPA and/or CEQA, the resource shall be avoided or preserved in place such that it continues to convey its historical significance unless the Water Director determines that avoidance or preservation in place would preclude the construction of important structures or infrastructure, or require exorbitant expenditures, and the resource therefore will have to be modified through		

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Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
design such that it may not be able to convey its historic significance. Where avoidance or preservation in place is not possible for these reasons, the City will retain a qualified architectural historian who meets the Secretary of the Interior's Professional Qualifications Standards to prepare a subsequent technical report. This required report will assess the proposed project design plans and/or schematics in conjunction with the subject historic property and determine whether the proposed design conforms with the Secretary of the Interior's Standards for the Treatment of Historic Properties, specifically, the Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Structures). The City shall modify the proposed design, as needed, to ensure that the Secretary of the Interior's Standards are met such that the historic property continues to convey its historical significance.		
MM CUL-2: Identify Unique Archaeological Resources, Historical Resources of an Archaeological Nature, and Subsurface Tribal Cultural Resources. This measure shall be implemented for planned construction projects involving excavation, grading, and/or disturbance in native soils to address potentially significant impacts on unique archaeological resources, historical resources of archaeological nature, and subsurface tribal cultural resources. A qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards shall conduct a California Historical Resources Information System (CHRIS) records search, a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, and an intensive surface reconnaissance within the specifically defined project site to identify potential unique archaeological resources, historical resources of an archaeological nature, and tribal cultural resources within or near the project site. The sensitivity of the location for discovering unknown resources shall also be identified. The qualified archaeologist will prepare a technical report with the results of the above. The qualified archaeologist shall attempt to ascertain whether any identified archaeological sites qualify as unique archaeological resources, historical resources of an archaeological nature, or subsurface tribal cultural resources. If known or identified resources of these kinds are present, procedures shall be implemented under the City's standard construction practices #15 and #16 for determining if a resource is potentially eligible for the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), or local register.	City responsible for hiring a qualified archaeologist to conduct records search and survey.	Include measure in construction specifications and contracts: Prior to construction. Identifying and evaluate cultural resources: Prior to construction.

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Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
This measure shall also be implemented for planned construction projects that include ground disturbance in native soils if the most current CHRIS records search and NAHC SLF search for the location exceeds five years old.		
Geology and Soils		
MM GEO-1: Paleontological Resources Impact Mitigation Program and Paleontological Monitoring. Potentially significant impacts to unique paleontological resources from planned construction projects that would include ground disturbance of native soils shall be addressed through the following measures: a. **Identify Potential Paleontological Resources.** A qualified paleontologist pursuant to the Society of Vertebrate Paleontology (SVP) 2010 guidelines, or more recent version if available, shall conduct a paleontological records search from the Natural History Museum of Los Angeles County and conduct a desktop geological and paleontological review for planned construction projects that would include ground disturbance of native soils to identify all paleontological sites within or near the project site prior to the start of construction. The sensitivity of the site for discovering unknown paleontological resources shall also be identified. The qualified paleontologist will prepare a brief technical report with the results of the above. If known or identified resources are present on the site, or if the site has moderate to high sensitivity for paleontological resources, measure b shall be implemented. b. **Develop Paleontological Resources Impact Mitigation Program.** Prior to commencement of any grading activity on construction sites with moderate to high paleontological sensitivity or that may have such sensitivity at depth, the City shall retain a qualified paleontologist pursuant to the SVP 2010 guidelines, or more recent version if available. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the Proposed Project. The PRIMP can be written to include all infrastructure components located in sites with moderate to high paleontological sensitivity. The PRIMP shall be consistent with the SVP guidelines and shall, at a minimum, contain the following elements:	City responsible for hiring qualified paleontologist to prepare the PRIMP and conduct worker training and monitoring. City responsible for inclusion of paleontological resource protection clauses in construction specifications and contracts.	Include measure in construction specifications and contracts: Prior to construction. Identifying potential paleontological resources: Prior to construction. PRIMP preparation and worker training: Prior to site grading or excavation. Monitoring: During grading and ground disturbance as specified in the PRIMP.

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Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
▪ Introduction to the project, including project location, description of grading activities with the potential to impact paleontological resources, and underlying geologic units. ▪ Description of the relevant laws, ordinances, regulations, and standards pertinent to the project and potential paleontological resources. ▪ Requirements for preconstruction meeting attendance by the qualified paleontologist and/or their designee and worker environmental awareness training for grading contractors that outlines laws protecting paleontological resources and the types of resources that may be encountered on site. ▪ Identification of locations where full-time paleontological monitoring within geological units with high paleontological sensitivity is required within the project or programmatic sites based on construction plans and/or geotechnical reports. ▪ Requirements and frequency of paleontological monitoring spot-checks below a depth of five feet below the ground surface in areas underlain by Holocene sedimentary deposits. ▪ The types of paleontological field equipment the paleontological monitor shall have on-hand during monitoring. ▪ Discoveries treatment protocols and paleontological methods (including sediment sampling for microinvertebrate and microvertebrate fossils). ▪ Requirements for adequate reporting and collections management, including daily logs, monthly reports, and a final paleontological monitoring report that details the monitoring program and includes analyses of recovered fossils and their significance and the stratigraphy exposed during construction. ▪ Requirements for collection and complete documentation of fossils identified within the project site prior to construction and during construction, including procedures for temporarily halting construction within a 50-foot radius of the find while documentation and salvage occurs and allowing construction to resume once collection and documentation of the find is completed. Prepared fossils along with copies of all pertinent field notes, photos, maps, and the final paleontological monitoring report shall be deposited in a scientific institution with paleontological collections. Any curation costs shall be paid for by the City.		

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Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
Hazards and Hazardous Materials		
MM HAZ-1: Review of Hazardous Materials Site Databases. Prior to planned construction projects for new or replacement pipelines where ground disturbance is required, a review of hazardous materials site databases will be conducted within 0.5 miles of the project site where the construction is proposed (project site). Each site identified within 0.5 miles of the project site will be reviewed for environmental contamination that could impact the project site, including soil, soil vapor, and groundwater contamination. If soil, soil vapor, and/or groundwater contamination is identified in the review that has the potential to be disturbed and released during construction, MM HAZ-2 will be implemented.	City responsible for review of hazardous site databases, or for hiring a qualified technician to conduct such a database review.	Review of hazardous materials site databases: Prior to construction.
MM HAZ-2: Hazardous Materials Contingency Plan. Prior to commencement of any planned pipeline construction projects where soil, soil vapor, and/or groundwater contamination has been identified per MM HAZ-1, a Hazardous Materials Contingency Plan (HMCP) shall be developed that addresses known and suspected impacts in soil, soil vapor, and groundwater from releases on or near the project sites. The HMCP shall include training procedures for identification of contamination. The HMCP shall describe procedures for assessment, characterization, management, and disposal of hazardous constituents, materials, and wastes, in accordance with all applicable state and local regulations. Contaminated soils and/or groundwater shall be managed and disposed of in accordance with local and state regulations. These regulations include hazardous material transportation (California Department of Transportation and Department of Toxic Substances Control [DTSC]), hazardous waste regulations (U.S. Environmental Protection Agency and DTSC), worker health and safety during excavation of contaminated materials (California Division of Occupational Safety and Health Administration), and local disposal requirements (DTSC and landfill-specific). The HMCP shall include health and safety measures, which may include but are not limited to periodic work breathing zone monitoring and monitoring for volatile organic compounds using a handheld organic vapor analyzer in the event impacted soils are encountered during excavation activities.	City responsible for hiring a qualified engineer to develop plan. City responsible for inclusion of plan implementation in construction specifications and contracts. Contractor to implement plan during construction.	Include measure in construction specifications and contracts if required by MM HAZ-2: Prior to construction. Development of plan: Prior to initiation of construction activities. Implementation of plan: During construction.

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Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
Noise		
MM NOI-1: Construction Vibration Effects on Historic Structures. Prior to the use of construction equipment in the vicinity of a structure that has been determined to be a historical resource under the California Environmental Quality Act, a vibration damage threshold will be established by a qualified engineer, acoustical engineer, vibration specialist, or Institute of Noise Control Engineering (INCE) Board certified professional under the direction of the City. The vibration damage threshold will be developed through the evaluation of the condition of the structure, underlying soil conditions, and type of construction operation to be performed. At the City's direction, a construction vibration monitoring plan will be prepared and implemented prior to the use of construction equipment near the structure. The monitoring plan shall report on the vibration damage threshold and the methods used to develop the threshold. The plan shall also establish the methodology for characterizing the existing baseline vibration levels present on the site, operational construction vibration monitoring consistent with the established threshold, and reporting to be completed during project construction. Should the construction vibration analysis undertaken during the preparation of the monitoring plan reveal that the proposed construction methods would exceed the vibration threshold established for the structure, alternative construction methods will be used to avoid potential vibration-related damage to the structure during construction.	City responsible for hiring a qualified engineer to develop threshold and prepare plan. Contractor responsible for implementation during construction.	Development of threshold and plan: Prior to the initiation of construction activities. Implementation of measure: During construction.
STANDARD CONSTRUCTION PRACTICES		
1. Erosion Control. Implement and maintain effective erosion and sediment control measures at all times of the year. Measures may include: a. Install silt fencing, fiber or straw wattles, and/or rice straw bales on slopes and along limits of work/construction areas to break up and filter surface runoff. b. Utilize additional erosion control including native duff, jute netting, etc. c. Utilize additional sediment control including fencing, dams, barriers, berms, traps, and associated basins. d. Cover of stockpiled spoils.	City responsible for inclusion of measure in construction specifications and contracts and periodic inspection. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.

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e. Install rolling dips and revegetation on temporary accessways. f. Physical stabilization/revegetation of disturbed or graded areas including staging areas, prioritizing the use of native species for revegetation where appropriate. g. Install sediment containment measures for all active and inactive stockpiles, spoil disposal sites, concrete wash sites, stabilization structures, and other debris areas, such as Visqueen plastic sheeting, fiber or straw wattles, gravel bags, and hydroseed. h. Locate construction storage areas outside of any stream channel, and a minimum distance of 65 feet away from any jurisdictional aquatic resource. i. All erosion and sediment control materials shall avoid the use of plastic mesh. j. Prior to and following all rain events, all erosion and sediment control devices shall be inspected for their performance and repaired immediately if they are found to be deficient.		
2. Restoration. Implement post-construction restoration on temporarily disturbed areas such as staging, new access routes, or work areas. Post-construction restoration may include: a. De-compact soils if necessary. b. Restore disturbed natural communities by replanting native species appropriate for the site, such as from native riparian, wetland, or upland communities. Planted material may include native seed mixes, pole cuttings, and/or container stock as appropriate.	City responsible for replanting.	Upon completion of construction.
3. Wind Erosion Control. Implement wind erosion control measures as necessary to prevent construction-related dust generation. Measures may include: a. Water active construction areas to control fugitive dust. b. Apply hydroseed and/or non-toxic soil binders to exposed cut and fill areas after cut and fill operations. c. Cover inactive storage piles. d. Cover trucks hauling dirt, sand, or loose materials off site. e. Install appropriately effective track-out capture methods at the construction site for all exiting vehicles.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.

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4. Trash Control. Implement housekeeping measures to manage trash and debris pollution. These measures may include: a. Use covered trash containers. b. Remove trash from the work site daily and before an extended period of no construction activity, including weekends. c. Ensure all trash and debris is removed from the work area at the end of construction activities.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
5. Containment of Work Area (Spill Prevention). Implement hazardous materials containment measures to prevent fuel, oil, or any other substances from polluting aquatic or terrestrial habitats. Measures may include: a. Prepare a spill response plan to allow a prompt and effective response to any accidental spills. b. Inform all workers of the importance of preventing spills and the appropriate measures to take in the event of a spill. c. Ensure emergency spill kits are available on site at all times, including spill skits in all vehicles and heavy equipment. d. Locate refueling, maintenance, and staging a minimum distance of 65 feet away from any jurisdictional aquatic resource. e. Store hazardous materials within an established containment area and store all gas, oil, or other substance that could be considered hazardous in water-tight containers within secondary containment. f. Implement appropriate containment measures to minimize the potential for hazardous spills from heavy equipment such as external grease and oil or from leaking hydraulic fluid, fuel, or oil. g. Check all equipment daily for leaks.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
6. Worker Training. Conduct a worker environmental awareness program (WEAP), prior to the onset of any mobilization-construction activities within the project work area. All construction personnel shall take the training prior to on-site work, and any additional personnel joining the work crew shall receive the same training before	City responsible for hiring qualified biologist or trained designee to conduct training.	Training: Prior to construction and prior to new work crews coming onto the site.

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beginning work. All personnel shall sign a sign-in sheet showing that they received the training. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions. At a minimum the training or presentation, by a qualified biologist, shall include: a. Description of project boundaries. b. General provisions of the Migratory Bird Treaty Act, California Fish and Game Code, federal and state Endangered Species Acts, local ordinances and code, and any permits covering the work area. c. The necessity for adhering to the provision of these regulations. d. General measures for the protection of special-status species, including breeding birds and their nests. e. Basic identification and importance of special-status species that may occur on or near the project site. f. The special-status species habitat and how they may be encountered in the work area. g. Procedures to follow when they are encountered.		
7. Construction Monitoring. Conduct pre-construction clearance surveys, construction monitoring, and delineate work areas as required by species-specific measures in the City's Operations and Maintenance Habitat Conservation Plan (HCP), Anadromous Salmonid HCP, and Mount Hermon June Beetle Low-Effect HCP for all sites covered by a respective HCP when there is potential for impact to subject species.	City responsible for hiring qualified biologist to conduct construction monitoring.	Conduct construction monitoring: During construction.
8. Vegetation Protection (Trees). To protect on-site vegetation, implement the following measures: a. Minimize the potential for pathogen spread by sanitizing tools and equipment used in vegetation clearing including tree removal operations. b. If soil is collected on equipment, rinse equipment on site with to remove soil-borne pathogens and prevent transport to new sites. Alternatively, debris can be cleaned from tools/equipment via brushing, sweeping, or blowing with compressed air.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.

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c. If importing vegetative material for restoration purposes, ensure that material that has been produced in conformance with the latest horticultural standards in pest and disease avoidance and sanitation. d. Where applicable implement project-specific tree protection recommendations from an ISA Certified Arborist or a Registered Professional Forester.		
9. Vegetation Protection (Riparian). Minimize impacts to riparian vegetation when working in or adjacent to an active stream channel by implementing avoidance and minimization measures. These measures may include: a. Avoid disturbance to and limit pruning of existing vegetation whenever possible. b. Minimize removal of overstory trees that provide shade to the stream channel or banks through marking trees that are not to be removed. c. Trim vegetation using hand tools and maintain canopy, downed trees, and snags to the extent possible. d. Limit management of vegetation that is stabilizing the stream banks to trimming and pruning. e. Demarcate temporary access routes to limit extent of impacts. f. Restore impacted riparian vegetation with native species appropriate for the site.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations. Restoration: After construction.
10. In-Channel Erosion and Sedimentation Control. Implement streambed and bank protection measures for construction activities that are in or adjacent to streams and drainages. These measures may include: a. Avoid activities in any active flowing channels when possible. b. Time work during the low flow season (June – October) when possible, to avoid work in a wetted channel. c. Utilize equipment or methods that do not require access in the channel. d. If work within a wetted channel cannot be avoided, isolate and temporarily bypass flowing water around work area before beginning work. e. Select appropriate equipment to minimize disturbances such as tracked or wheeled vehicles depending on site conditions. f. Use “floating” platforms to distribute the weight of heavy equipment during mobilization in saturated soils.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.

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11. In-Channel Fish Species Protection. Decontaminate tools and equipment prior to entering waterways.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
12. In-Channel Dewatering Measures. Implement dewatering measures for projects that cannot avoid impacts when working in a flowing stream. Measures may include: a. Isolate the work area from the stream by diverting the entire streamflow around or through the work area by a pipe or open channel. b. The work area shall remain isolated from flowing water until any necessary erosion protection is in place. c. Where feasible, techniques shall be used to allow stream flow by gravity. d. All diversions shall maintain ambient flows. e. All water shall be discharged in a non-erosive manner using energy dissipators such as on: i. Gravel or vegetated bars. ii. Haybales, plastic, concrete. iii. In storm drains when equipped with filtering devices. f. All discharged water below the work area shall not be diminished or degraded by the diversion. g. Dirt, dust, or potential discharge material in the work area will be contained and prevented from entering the flowing channel.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.

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h. Removal of all foreign materials and temporary diversion structures such as, temporary fills, access ramps, diversion structures, or coffer dams shall be removed: i. When the work is complete. ii. As soon as reasonably possible, but no more than 72 hours after work is complete. i. Normal flows shall be restored to the affected stream as soon as is feasible or safe after completion. j. If water must be pumped around the work area, as gravity flow is not feasible: i. Pumps and hoses shall be screened to prevent vertebrate intake. ii. Sumps or basins may be used where appropriate to collect water (e.g., in channel with low flows). k. If a bypass diversion will be open channel design, the berm confining the channel may be constructed of material from the channel. l. Suitable site-specific conditions for a coffer dam installation up and downstream include: i. Proximity to the construction zone. ii. Type of construction activities to be conducted. m. If coffer dams installation is determined to be suitable for the site, construction shall be adequate to prevent seepage into or from the work area to the maximum extent feasible.		
13. In-Channel Species Capture and Relocation. Implement aquatic species capture and relocation during temporary water diversion to the extent feasible to minimize the potential for killing or harming native aquatic vertebrates in the work area. If the safety of the biologist conducting the capture may be compromised or if the equipment or gear is not reasonably effective for the operation, relocation is not required. Measures may include:	City responsible for hiring a qualified biologist to be present during dewatering and capture and relocate individuals if needed.	Biologist to be present during installation of coffer dam and dewatering.

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a. Work area may be isolated using fine mesh or block nets. b. Methods of removal will be determined based on the site conditions but may include electrofishing, dipnet, or seine. c. Relocation shall be done by a qualified biologist. d. Relocation shall be in a nearby suitable habitat. e. Handling and holding time will be minimized to the maximum extent practicable. f. As the work site is de-watered, the remaining pools will be inspected for presence of aquatic species suitable for relocation.		
14. In-Channel Restoration. Implement post-construction streambed and bank measures unless the pre-existing condition was detrimental to the channel condition as determined by a qualified biologist or hydrologist. Measures may include: a. Return streambed to as close to pre-project condition as possible. b. Return stream contours to original condition.	City responsible for inclusion of measure in construction specifications and contracts. Contractor responsible for implementation. City responsible for post-construction inspection.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction when work in flowing stream is unavoidable. Post-construction inspection.
15. Archaeological Resources. Any unrecorded archaeological resources (sites, features, and/or artifacts) exposed during construction are subject to protection and consideration under CEQA and the California Public Resources Code (PRC) as well as Section 106 of the National Historic Preservation Act (NHPA) as detailed in the Code of Federal Regulations (CFR). The CEQA Guidelines Section 15064.5(f) specifically addresses provisions the City of Santa Cruz will make regarding accidental discovery of historical or unique archaeological resources during construction. The responsibilities of the lead federal agency to avoid, minimize or mitigate adverse effects to a "historic property" (36 CFR Section 800.16) are detailed in 36 CFR Section 800.13[b] and would be applicable for a project with federal involvement by way of funding, permitting, approval authority, or other means. In general, the implementation procedures under CEQA and the NHPA in the case of an inadvertent archaeological discovery during construction are similar and are as follows:	City responsible for inclusion of measure in construction specifications and contracts. Contractor responsible for implementation. (Coordinate with the provisions of MM CUL-2.)	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. (Coordinate with the provisions of MM CUL-2.)

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Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
a. If archaeological resources are exposed immediately stop any construction work occurring within 100 feet which may further disturb the find. NOTE – This is a general guideline for the initial response, the exclusion zone may be contracted or expanded depending on the nature of discovery and type of construction activity proposed in the vicinity of the find. The duration of the exclusion zone will be determined by the City and the federal lead agency and is contingent on the approved course of action in response to the discovery. b. Immediately notify the City Project Manager who shall immediately notify the Water Department Deputy Director/Engineering Manager. c. A qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards will evaluate the state and federal significance of the find for eligibility to the California Register of Historical Resources (CRHR) and the National Register of Historic Places (NRHP) in coordination with City staff. d. The City will notify the lead federal agency within 24 hours of discovery. The notification shall describe the assessment of the NRHP eligibility of the resource, specify the NRHP criteria used to evaluate the property's eligibility, and propose actions to resolve any adverse effects. e. The federal lead agency will contact the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), and any interested locally affiliated Native American tribes. The SHPO, ACHP, and Native American tribes will respond within 48 hours of the notification. The federal lead agency shall consider any recommendations regarding National Register eligibility and proposed actions and notify the City of the appropriate actions. The federal lead agency official shall provide the SHPO and the ACHP a report of the actions when they are completed. f. Avoidance and/or minimization of impacts/effects is the preferred course of actions under both state and federal guidelines. If preservation in place is not possible because the Water Director determines that preservation in place would preclude the construction of important structures or infrastructure, or require exorbitant expenditures, additional study will likely be required. In coordination with the lead federal agency, the City will prepare a data recovery/treatment plan for retrieving important archaeological data relevant to the site's significance. The data recovery/treatment plan will be submitted to		

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participating tribes and agencies for review and comment prior to implementation. g. If the inadvertent discovery location cannot be avoided, and continuing work would have an adverse effect on the site, the federal agency, in coordination with the City, SHPO, and Native American tribes as appropriate, will need to draft and finalize a Memorandum of Agreement for the treatment of the historic property before work can proceed. h. Implementation of the data recovery/treatment plan may include archaeological excavations, technical and laboratory analysis, and further consultation and coordination with Native American tribal representatives. i. A full written report will be prepared to include the results of all technical analyses and special studies will be provided to participating tribes and agencies for review and comment. The report will be filed with the Northwest Information Center and will also provide for the permanent curation of recovered materials.		
16. Archaeological Resources (Human Remains). In California, the illegal possession of human remains is a felony, punishable by imprisonment (California Penal Code Section 1170[h]; Public Resources Code 5097.99[a] and [b]). Inadvertent discoveries of human remains exposed during construction on non-federal lands are subject to protection under CEQA and the NHPA. In accordance with Section 7050.5 of the California Health and Safety Code and the NHPA, if potential human remains are found, immediately notify the City, the lead federal agency, and the Santa Cruz County Coroner of the discovery. The Santa Cruz County Coroner will provide a determination within 48 hours of notification. No further excavation or disturbance of the identified material, or any area reasonably suspected to overlie additional remains, can occur until a determination has been made. a. If human remains are exposed immediately stop any construction work occurring within 100 feet which may further disturb the find. NOTE – This is a general guideline for the initial response, the exclusion zone may be contracted or expanded depending on the nature of discovery and type of construction activity proposed in the vicinity of the find. The duration of the exclusion zone is contingent on the course of action mandated by the City and lead federal agency.	City responsible for inclusion of measure in construction specifications and contracts. Contractor responsible for implementation. (Coordinate with the provisions of MM CUL-2.)	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. (Coordinate with the provisions of MM CUL-2.)

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b. If the Santa Cruz County Coroner determines that the remains are, or are believed to be, Native American, the coroner will notify the Native American Heritage Commission (NAHC) within 24 hours and all the actions described in these Standard Construction Practices regarding Inadvertent Archaeological Discoveries shall be followed. c. In accordance with California Public Resources Code, Section 5097.98 and Section 106 of the NHPA, the NAHC must immediately notify those persons it believes to be the Most Likely Descendant (MLD) from the deceased Native American. d. Within 48 hours of this notification, the MLD will recommend to the City and lead federal agency her/his preferred treatment of the remains and associated grave goods. e. The ultimate disposition of the remains will be coordinated between the City, the federal agency, the MLD, the landowner, and the NAHC (if necessary). f. The lead federal agency will have additional government-to-government consultation requirements per the requirements of Section 106 [36 CFR § 800.2(c)(2)(ii)] which cannot be delegated to non-federal entities.		
17. Nighttime Construction. For nighttime construction projects, notify adjacent property owners of nighttime construction schedules and identify a Construction Noise Coordinator. The contact number for the Construction Noise Coordinator will be included on notices distributed to neighbors regarding planned nighttime construction activities. The Construction Noise Coordinator will be responsible for responding to any local complaints about construction noise. When a complaint is received, the Construction Noise Coordinator shall notify the City within 48 hours of the complaint, determine the cause of the noise complaint, and implement as possible reasonable measures to resolve the complaint, as deemed acceptable by the City.	City responsible for inclusion of measure in construction specifications and contracts. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction.
18. Fire Suppression. For construction in wildlands or in the wildland-urban interface, internal combustion engine equipment shall include spark arrestors, fire suppression equipment (e.g. fire extinguishers and shovels) shall be stored on site during use of such mechanical equipment, and construction activities shall not be conducted during red flag warnings issued by the California Department of Forestry and Fire Protection (CAL FIRE) unless adequate fire protection measures are implemented in compliance with federal, state, and local fire prevention and protection regulations and guidance. Fire safety measures will be detailed in a	City responsible for inclusion of measure in construction specifications and contracts. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction.

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Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
Fire Safety Program on a project-by-project basis. Red flag warnings and fire weather watches are issued by CAL FIRE based on weather patterns (low humidity, strong winds, dry fuels, etc.) and listed on their website (https://www.fire.ca.gov/programs/communications/red-flag-warnings-fire-weather-watches/).		
19. Preconstruction Nesting Bird Surveys. Vegetation removal activities shall be conducted outside the bird nesting season (February 1 through August 31) as possible to avoid direct impacts to nesting birds. For construction and vegetation removal activities occurring during the nesting season, a preconstruction survey of the work areas for active bird nests shall be conducted by a qualified wildlife biologist no more than seven days prior to the start of vegetation removal or construction activities. Once construction has started, if there is a break in activities that exceeds seven days, another survey shall be conducted. If at any time during construction or vegetation removal activities an active bird nest is found, the nest shall be flagged and the biologist shall determine an appropriate no-disturbance buffer based on the species' sensitivity to disturbance. The buffer shall be avoided until the nest is vacated or the young have fledged. The no-disturbance buffer shall be demarcated in the field with flagging and stakes or construction fencing as determined appropriate by the biologist.	City responsible for hiring qualified biologist to conduct surveys.	Nesting bird pre-construction survey: Within seven days prior to initiation of construction activities or resuming of construction activities if there is a break in activities that exceeds seven days.
20. Standard Sensitivity Training. The City shall include a standard clause in every construction contract that requires cultural resource sensitivity training for workers prior to conducting earth disturbance in the vicinity of a documented cultural-resource-sensitive area, should one be identified in the future. Prior to site mobilization or construction activities, a qualified archaeologist with training and experience in California prehistory and historical-period archaeology shall conduct the cultural resources awareness training for all construction personnel. The training format may be in person, virtual, or a video recording. The training shall address the identification of buried cultural deposits, including Native American and historical-period archaeological deposits and potential tribal cultural resources, and cover identification of typical prehistoric archaeological site components including midden soil, lithic debris, and dietary remains as well as typical historical-period remains such as glass and ceramics. The training must also explain procedures for stopping work if suspected resources are encountered. Any personnel joining the work crew subsequent to the training shall also receive the same training before beginning work.	City responsible for hiring a qualified archaeologist to conduct training. Contractor responsible for implementation.	Include measure in construction specifications and contracts: Prior to construction. Training: Prior to construction and prior to new work crews coming onto the site.

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21. Standard Paleontological Clauses in Construction Contracts. The City shall include standard clauses in construction contracts for projects located in areas with moderate to high paleontological sensitivity. A standard clause shall be included that requires paleontological resource sensitivity training for workers prior to conducting earth disturbance activities. A standard inadvertent discovery clause shall also be included that indicates that in the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot-radius buffer. Once documentation and collection of the find is completed, the monitor will allow grading to recommence in the area of the find.	City responsible for hiring qualified paleontologist to conduct worker training and monitoring. City responsible for inclusion of paleontological resource protection clauses in construction specifications and contracts.	Include measure in construction specifications and contracts: Prior to construction. Worker training: Prior to site grading or excavation. Monitoring: During grading and ground disturbance.
22. Construction Noise. The following measures shall be implemented during construction activities: ▪ Restrict construction activities and use of equipment that have the potential to generate significant noise levels (e.g., use of concrete saw, mounted impact hammer, jackhammer, rock drill, etc.) to between the hours of 8:00 a.m. and 5:00 p.m., unless specifically identified work outside these hours is authorized by the City's Water Director as necessary to allow for safe access to a construction site, safe construction operations, efficient construction progress, and/or to account for prior construction delays outside of a contractor's control (e.g., weather delays). ▪ Construction activities requiring operations continuing outside of the standard work hours of 8:00 a.m. and 5:00 p.m. (e.g., borehole drilling operations) shall locate noise generating equipment as far as possible from noise-sensitive receptors, and/or within an acoustically rated enclosure (meeting or exceeding Sound Transmission Class [STC] 27), shroud or temporary barrier as needed to prevent the propagation of sound into the surrounding areas in excess of the 60 dBA nighttime (10:00 p.m. to 8:00 a.m.) and 75 dBA daytime (8:00 a.m. to 10:00 p.m.) criteria at the nearest sensitive receptor. Noisy construction equipment, such as temporary pumps that are not submerged, aboveground conveyor systems, and impact tools will likely require location within such an acoustically rated enclosure, shroud or barrier to meet these above criteria. Impact tools, in particular, shall have the working area/impact area shrouded or	City responsible for inclusion of construction noise requirements in construction specifications and contracts. Contractor responsible for implementation during construction.	Include measure in construction specifications and contracts: Prior to construction. Implementation of measure: During construction.

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shielded whenever possible, with intake and exhaust ports on power equipment muffled or suppressed. Impact tools may necessitate the use of temporary or portable, application-specific noise shields or barriers to achieve compliance. ▪ Portable and stationary site support equipment (e.g., generators, compressors, and cement mixers) shall be located as far as possible from nearby noise-sensitive receptors. ▪ Construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal-combustion-powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed the manufacturer's specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function, and minimization of noise. ▪ Construction equipment shall not be idled for extended periods of time (i.e., 5 minutes or longer) in the immediate vicinity of noise-sensitive receptors.		