

MITIGATION MONITORING AND REPORTING PROGRAM

The proposed Mitigation Monitoring and Reporting Program for the City of Modesto 2010 Water System Engineer's Report is presented in the following table.

Mitigation Measure	Responsibility	Action(s)	Timing
<i>Aesthetics</i>			
<p>Mitigation Measure AES-1: Locate Staging Areas Away from Public Areas For projects with potential for significant visual disturbance, construction staging areas for equipment, personal vehicle parking, and material storage will be sited as far as possible from residences, major roadways, parks, and other public areas. The City contract specifications will require that staging areas be identified in the documents prepared by construction contractors and subject to approval by the City. The City will not approve staging areas that are not sited as described above.</p>	<p>Public Works Department and Construction Contractor</p>	<p>City to include staging location specifications in construction contracts. Contractor to identify staging areas to City for review and approval.</p>	<p>Include measures during contracting. Approval of staging sites required prior to authorization of construction.</p>
<p>Mitigation Measure AES-2: Screen Staging and Construction Areas For projects with potential for significant visual disturbance, construction contracts will specify that staging areas will be located where opportunities for screening with existing topography and vegetation will be maximized. Security fencing placed around staging and construction areas will include slats or other screening sufficient to hide the area from the passing public. Screens used for this purpose should be of an earth tone or other appropriate neutral color. Any night lighting will include baffles that direct lighting onto the staging area and minimize light spillage onto adjoining properties.</p>	<p>Public Works Department and Construction Contractor</p>	<p>Include measures to screen staging / construction areas in construction contracts. Implement these screening measures.</p>	<p>Include measures during contracting. Implement measures during all phases of site preparation and construction activities.</p>
<p>Mitigation Measure AES-3: Design Fencing, Storage Tanks, and Booster Pump Station and Groundwater Well Buildings to Be Consistent with the Surrounding Setting Where wells, tanks, and pump stations are located in proximity to or are easily visible from residential areas or public roadways, the facility and fencing will be designed to be consistent with the surrounding setting, to the maximum extent feasible. If warranted, facility design will integrate such elements as color, materials, and pattern, as well as screening with landscape or other features to minimize the visual effect of the facility. Additionally, the facility may be setback from public view and tanks may be partially buried to minimize view obstructions. The City will submit plans for proposed above-ground facilities within the parkland identified in the City’s River Greenway Program, or within scenic corridors of outlying communities (such as the City of Waterford’s viewscape corridors), to the appropriate city or community planning department for approval of the adequacy of proposed visual enhancement measures. Colors will be unobtrusive earth tones, and paint will be matte or otherwise non-reflective. Where landscaping is used, the City will install an automatic irrigation system to ensure that sufficient water is supplied to support the landscaping. Any night lighting will include baffles that direct lighting onto the facility and minimize light spillage onto adjoining properties.</p>	<p>Public Works Department</p>	<p>Design program features to be consistent with surrounding setting. Submit designs to appropriate city or community planning department for approval.</p>	<p>During design phase of each component, as a condition of approval.</p>

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<i>Agricultural Resources</i>			
<p>Mitigation Measure AG-1: Compensate for a Loss of Farmland</p> <p>The California Farmland Conservancy Program is established under Public Resources Code Section 10200-10277 to promote the long-term preservation of agricultural lands in California through the use of agricultural conservation easements. In addition to funding provided for agricultural easement acquisition, Conservancy grant funds are available for projects that develop policy or planning oriented to agricultural land protection, and for improvements to land already under an agricultural conservation easement (e.g., erosion control, riparian area improvements, etc.). The program is authorized to accept donations from private entities if the Department of Conservation is the designated beneficiary of the donation and it uses the funds for purposes of the program in a county specified by the donor (Public Resources Code Section 10231.5).</p> <p>The loss of farmland associated with the proposed program could be partially mitigated through contribution to the Farmland Conservancy Fund, or to an equivalent program for funding farmland preservation in Stanislaus County, as a condition precedent to the issuance of necessary program approvals. The amount of such a contribution would allow the conservation of one acre of farmland in Stanislaus County for each acre of farmland converted by the proposed program. It would also reflect the then-current value of an agricultural easement on comparable prime agricultural land of equal size to the acreage of the farmland lost under the proposed program, and a 10% increment for program administration under the Farmland Conservancy Program, or an equivalent program for funding farmland preservation projects in Stanislaus County.</p> <p>The valuation of such an easement would be determined by the City in consultation with the California Department of Conservation. Where current information on such valuation is not available, the City would need to obtain an appraisal of the valuation of an agricultural easement on comparable agricultural land in the program vicinity to inform the City's determination as to valuation.</p> <p>Contribution to the California Farmland Conservancy, or an equivalent program, to fund farmland preservation projects in Stanislaus County would serve to compensate for the loss of farmland that directly results from the proposed program. However, preservation of Prime Farmland through agricultural easements on other Prime Farmland parcels would not mitigate the direct loss of Prime Farmland resulting from the program to a less-than-significant level.</p> <p>Restoration and/or recovery of Prime Farmland from existing urban uses to offset the loss of Prime Farmland would mitigate the loss caused by the proposed program. However,</p>	<p>Public Works Department</p>	<p>Contribute to Farmland Conservancy Fund, or contribute to an equivalent fund to preserve existing prime farmland in Stanislaus County.</p>	<p>Contribution required prior to project approvals.</p>

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such a measure would be unreasonably costly and inefficient and would, therefore, be infeasible.			
Air Quality			
<p>Mitigation Measure AIR-1: Implement SJVAPCD Regulation VIII Control Measures for Construction Emissions of PM10</p> <p>The following controls are required to be implemented by the City or its contractor at all construction sites.</p> <ul style="list-style-type: none"> ▪ All disturbed areas, including storage piles, that are not being actively used for construction purposes will be effectively stabilized to avoid dust emissions through application of water, a chemical stabilizer/suppressant, or by covering these areas with a tarp or other suitable cover or vegetative ground cover. ▪ All on-site unpaved roads and off-site unpaved access roads will be effectively stabilized to avoid dust emissions using water or a chemical stabilizer/suppressant. ▪ All land-clearing, grubbing, scraping, excavation, land-leveling, grading, cut-and-fill, and demolition activities will be effectively controlled to avoid fugitive dust emissions through the application of water during work or by presoaking. ▪ When materials are transported off-site, all material will be covered or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained. ▪ All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. The use of blower devices is expressly forbidden.) ▪ Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles will be effectively stabilized of fugitive dust emissions using sufficient water or chemical stabilizer/suppressant. ▪ Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday. ▪ Any site with 150 or more vehicle trips per day will prevent carryout and trackout. 	Public Works Department and Construction Contractor	<p>Include emissions control measures in construction contracts.</p> <p>Implement emissions controls.</p>	<p>Include measures during contracting.</p> <p>Implement measures during each phase of construction.</p>

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<p>Mitigation Measure AIR-2: Implement Enhanced Control Measures for Construction Emissions of PM10</p> <p>The following measures will be implemented by the City or its contractor at construction sites when required to mitigate significant PM10 impacts (note, these measures are to be implemented in addition to Regulation VIII requirements).</p> <ol style="list-style-type: none"> 1. Limit traffic speeds on unpaved roads to 15 mph. 2. Install sandbags or other erosion-control measures to prevent silt runoff. <p>The following measures are strongly encouraged at construction sites that are large in area, are located near sensitive receptors, or that warrant additional emissions reductions for any other reason.</p> <ol style="list-style-type: none"> 1. Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site. 2. Install wind breaks at windward sides of construction areas. 3. Suspend excavation and grading activity when winds exceed 20 miles per hour (mph). 4. Limit the area subject to excavation, grading, and other construction activity at any one time. 5. Regardless of the wind speed, an owner/operator must comply with Regulation VIII's 20% opacity limitation. 	<p>Public Works Department and Construction Contractor</p>	<p>Identify construction areas where mitigation for PM10 impacts is necessary. Include enhanced emissions control measures in construction contracts.</p> <p>Implement enhanced emissions controls.</p>	<p>Identify areas during design phase and include measures during contracting.</p> <p>Implement measures during each phase of construction.</p>
<p>Mitigation Measure AIR-3: Implement Control Measures for Operation Emissions of PM10 and for Ozone Precursors (ROG and NOx)</p> <p>In compliance with SJVAPCD rules, the City or its contractor shall install equipment with Best Available Control Technology, as indicated in a site-specific air quality analysis to reduce emissions below the SJVAPCD significance threshold. This measure will be implemented at all new or modified water system sites when required to mitigate significant PM10 and ozone impacts, as determined by a site-specific air quality analysis from the operation of proposed equipment.</p>	<p>Public Works Department and Construction Contractor</p>	<p>Conduct site-specific air quality analysis for operation of proposed program equipment.</p> <p>Incorporate or install equipment that would reduce emissions below significance thresholds.</p>	<p>Perform air quality analysis during design phase.</p> <p>Install appropriate equipment during construction.</p>

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Biological Resources			
<p>Mitigation Measure BIO-1: Perform Focused Surveys for Special-Status Plant Species</p> <p>Prior to implementation of program activities at a site with grasslands, wetlands, or vernal pools, a qualified botanist will perform floristic surveys for special-status plant species. Floristic surveys will occur during the appropriate blooming period(s) for all special-status plant species with the potential to occur in the study area and at the specific site, as determined by the botanist.</p>	Public Works Department and Qualified Botanist	Retain qualified botanist to conduct pre-construction surveys for special status plant species.	Conduct surveys prior to start of construction activities.
<p>Mitigation Measure BIO-2: Avoid and Minimize Impacts on Special-Status Plant Species</p> <p>If special-status plant species are present, the program proponent will implement the following measures to avoid or minimize impacts on special-status plant species:</p> <ul style="list-style-type: none"> ▪ The program will be redesigned or modified to avoid direct and indirect impacts on special-status plant species, if feasible. ▪ Any special-status plant species occurrences near a program site will be protected by environmentally-sensitive area fencing (orange construction barrier fencing) installed around special-status plant species populations. The environmentally-sensitive area fencing will be installed at least 200 feet from the edge of the population where feasible, and where not feasible, the buffer will be large enough to adequately protect populations from program activities. Where special-status plant populations are located in wetlands, silt fencing also will be installed. The location of the fencing will be marked in the field with stakes and flagging, and shown on the construction drawings. The construction specifications will contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally-sensitive area. 	Public Works Department, Project Biologist, and Construction Contractor	<p>If pre-construction surveys indicate presence of special status plant species, modify program site designs or designate avoidance areas to protect special-status plant species.</p> <p>Provide fencing and construction specifications for surface disturbing activities within fenced avoidance areas.</p>	<p>As applicable, revise designs or include measures prior to start of construction activities.</p> <p>Monitor buffer areas throughout construction period.</p>
<p>Mitigation Measure BIO-3: Compensate for Unavoidable Impacts on Special-Status Plant Species</p> <p>If avoidance is not feasible, the program proponent will consult with either the DFG or USFWS, or both, depending upon which has jurisdiction, to determine whether transplantation of special-status plant species is feasible. If the agencies concur that it is a feasible mitigation measure, the botanist will develop and implement a Rare Plant Relocation, Management, and Protection Plan (Rare Plant Plan) in coordination with the</p>	Public Works Department and Qualified Botanist	Prepare a Rare Plant Plan in coordination with DFG and/or USFWS.	Prior to authorizing construction near affected areas.

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<p>appropriate agencies. The Rare Plant Plan will include the following components: relocation methods that will minimize the potential loss of plants from relocation, management plans and success criteria by which the mitigation can be measured for success, and regular monitoring to ensure that the plants are successfully transplanted. Success criteria shall require that at least 75% of the plants survive. The Rare Plant Plan will include specific, measurable triggers for adaptive management actions that will be necessary to ensure survival.</p> <p>The Rare Plant Plan will specify annual monitoring of the mitigation site for at least five years after planting, and will assess factors such as population size and density, recruitment, and individual plant health and vigor. Monitoring will also assess whether the mitigation requires adaptive management actions, such as collection and sowing of additional seed, tillage/disturbance within existing populations to induce establishment, installation of container plants, and control of exotic invasive vegetation (such as yellow star thistle) to ensure successful plant establishment and survival. The site will be evaluated at the end of the 5-year monitoring period to determine whether the mitigation has met the success criteria identified in the Rare Plant Plan. If success criteria are not met at that time, then mitigation activities and monitoring will continue until success criteria are met.</p> <p>As part of the Rare Plant Plan, the program proponent, in conjunction with a qualified restoration ecologist and/or botanist and the consulting agency, if any, will identify a suitable on- or off-site location for mitigation, and appropriate methods for seed collection, propagation, relocation, maintenance, and monitoring. Mitigation sites will be located within the range of the affected plant and contain suitable habitat sites. For annual plant species, the seed crop from the individuals to be lost will be collected and then sown on appropriate habitat located on the mitigation site. The individuals will not be removed until seeds have been collected. For perennial plant species, both the seed and the plants themselves will be salvaged and relocated to the mitigation site. The individuals will not be removed until seeds have been collected. Seed from the populations that will be affected may be collected and propagated at a native plant nursery prior to planting in order to increase the potential for establishment and survival.</p>			
<p>Mitigation Measure BIO-4: Conduct Preconstruction Surveys for the Valley Elderberry Longhorn Beetle and Its Elderberry Host Species Plant</p> <p>Following USFWS protocols, the program sites and a 100-foot-wide buffer surrounding such sites will be surveyed and mapped by a qualified biologist for the presence of the VELB and its elderberry host species plant (U.S. Fish and Wildlife Service 1999). Mitigation is not required for plants with no stems measuring 1.0 inch or greater in</p>	<p>Public Works Department and Qualified Biologist</p>	<p>Conduct preconstruction survey for Valley Elderberry Longhorn Beetle.</p>	<p>Prior to authorizing construction near affected areas.</p>

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<p>diameter at ground level. The survey will be considered valid for a period of 2 years. If plants larger than these are identified in the survey, Mitigation Measures BIO-5 and BIO-6 will be implemented.</p>			
<p>Mitigation Measure BIO-5: Agency Coordination and Consultation for Impacts on the Valley Elderberry Longhorn Beetle</p> <p>The USFWS has issued a programmatic formal consultation, pursuant to Section 7 of the ESA, regarding actions that the USACE may take on projects with limited impacts on the VELB or its elderberry host plant (U.S. Fish and Wildlife Service 1996). The geographic scope of this programmatic consultation is the area within the jurisdiction of the Sacramento Field Office of the USFWS, which covers the Central Valley, including Modesto and the surrounding area. The purpose of the programmatic document is to expedite consultations on proposed projects with relatively small impacts on the VELB. If a project meets the conditions outlined in the programmatic document, or if the USFWS determines that a project will have similar impacts to those described below, the project may be appended to the programmatic document.</p> <p>All projects implemented under the programmatic consultation must meet the following four criteria or be determined by the USFWS to have impacts similar in nature.</p> <ul style="list-style-type: none"> ▪ No designated critical habitat will be affected. ▪ Fewer than 25 elderberry plants will be affected. ▪ Fewer than 200 elderberry stems measuring 1.0 inch or greater in diameter exist at ground level in the action area. ▪ Less than 250 linear feet of undeveloped watercourse exist in the action area. <p>Implementation of some features of the proposed program may affect USACE jurisdictional habitat. Therefore, construction along the banks of the Tuolumne River or other riparian areas where the appropriately-sized elderberry habitat is found would require USACE approval and necessary permits. If any of the construction projects implementing the proposed Engineer’s Report meet all four of the above criteria, they may be appended to the programmatic document. However, early consultation with the USACE and USFWS is recommended to determine adequate procedure, as implementation of a construction project will require a formal wetland delineation and determination by the USACE, as well as modification and/or mitigation measures. It will also require agency approval. The USFWS’s conservation guidelines establish avoidance or replacement mitigation that would be appropriate for impacts on the elderberry shrub in the study area. The City will implement either or both Mitigation Measures BIO-6 and BIO-7 if appropriate in locations where construction would affect the VELB habitat.</p>	<p>Public Works Department and Project Biologist</p>	<p>Consult with USFWS and USACE for treatment of elderberry plants.</p>	<p>Prior to start of any construction activities.</p>

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<p>Mitigation Measure BIO-6: Avoid Valley Elderberry Longhorn Beetle Habitat</p> <p>The City will avoid and protect VELB habitat whenever possible. If suitable habitat for the VELB occurs in the study area, these areas shall be designated as avoidance areas that will be protected from disturbance during construction. Any VELB habitat that cannot be avoided should be considered affected, and appropriate mitigation shall be implemented, as described under Mitigation Measure BIO-4.</p> <p>Core avoidance areas include all areas within 20 feet of the dripline of any elderberry plant with a stem measuring 1.0 inch or greater in diameter at ground level. Such core areas should not be disturbed during construction. Buffer avoidance areas include all the areas within 100 feet of any elderberry plant with a stem measuring 1.0 inch or greater at ground level. If complete avoidance within a 100-foot buffer cannot be provided, the USFWS must be consulted before any disturbances within the buffer area are considered. In addition, the USFWS must be provided with a map identifying the avoidance areas and written details describing the avoidance and protective measures. Protective measures include those listed below.</p> <ul style="list-style-type: none"> ▪ Temporary construction fencing will be constructed to provide a minimum setback of at least 20 feet from the dripline of each potential host elderberry plant. ▪ A tailgate education program on the VELB will be given to each construction worker and all personnel working within the project area to avoid adverse effects on the beetle. ▪ Signs every 50 feet along the edge of the fence will be placed along the exclusion fence to help identify the area as a protected area for the VELB, for the duration of construction. ▪ Restoration and maintenance activities should be implemented if activities occur within the 100-foot buffer zone. Restoration and maintenance activities include those listed below. ▪ Any damage done to the buffer area (area within 100 feet of elderberry plants) during construction must be restored. Erosion control must be provided, and appropriate native plants should be used for revegetation. ▪ Buffer areas must continue to be protected after construction. Measures such as fencing, signs, weeding, and trash removal are usually appropriate. ▪ No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 100 feet of any 	<p>Public Works Department, Project Biologist, and Construction Contractor</p>	<p>Designate avoidance areas for VELB habitats, provide fencing, education of workers, signs, and implement restoration and maintenance activities.</p>	<p>Establish buffer areas prior to start of construction and monitor throughout construction period.</p>

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<p>elderberry plant with one or more stems measuring 1.0 inch or greater in diameter at ground level.</p> <ul style="list-style-type: none"> ▪ The applicant must provide a written description of how the buffer areas are to be restored, protected, and maintained after construction is completed. ▪ Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within 5 feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through the careless use of mowing/trimming equipment). 			
<p>Mitigation Measure BIO-7: Transplant Elderberry Plants</p> <p>If elderberry shrubs cannot be avoided, elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level should be transplanted to a mitigation area. The following guidelines will be followed.</p> <ul style="list-style-type: none"> ▪ A qualified biologist will monitor the program and mitigation sites for the duration of the transplanting to ensure no unauthorized take or loss of individuals occurs. ▪ Elderberry plants will be transplanted after shrubs have lost their leaves and are dormant, usually from November through the first 2 weeks of February. ▪ Transplanting will be conducted according to standard procedures set forth by the USFWS, which include planting additional seedlings or cuttings at various ratios for plants removed for translocating. ▪ A mitigation area set aside for translocated plants will provide habitat for the beetle in perpetuity. The mitigation area should provide at least 1,800 square feet for each transplanted elderberry shrub and follow USFWS guidelines for other associated native plants to be planted within the area. This mitigation area will be weeded by mechanical means (no herbicides) once a year. <p>The mitigation area will be monitored for the general condition of the mitigation area, the condition of the elderberry plants, and the associated native plants for a period of 10 consecutive years, with surveys and reports every year. It may also be monitored for 15 years, with surveys and reports on years 1, 2, 3, 5, 7, 10, and 15. Reports will be provided to the USFWS.</p>	<p>Public Works Department and Qualified Biologist</p>	<p>If elderberry plants cannot be avoided, retain a qualified biologist to identify and monitor elderberry plants and implement USFWS procedures for transplanting elderberry plants.</p>	<p>Prior to authorizing construction near affected areas.</p> <p>Monitor mitigation areas for 10 years.</p>
<p>Mitigation Measure BIO-8: Avoid and Protect Burrowing Owls</p> <p>For those project sites containing suitable habitat, and in conformance with federal and state regulations regarding the protection of raptors, a preconstruction survey for burrowing</p>	<p>Public Works Department and Qualified Biologist</p>	<p>Retain qualified biologist to conduct preconstruction surveys</p>	<p>Survey, establish construction schedule and</p>

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<p>owls will be completed within a 250-foot buffer around the project site, in conformance with DFG guidelines, and prior to the start of construction. If no burrowing owls are located during these surveys, no additional action would be warranted. However, if breeding or resident owls are located on or immediately adjacent to the site, the following measures will be implemented.</p> <ul style="list-style-type: none"> ▪ No burrowing owls will be evicted from burrows during the nesting season (February 1 through August 31). Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from the DFG authorizing the eviction. ▪ A 250-foot buffer, within which no new activity would be permissible, would be maintained between project activities and nesting burrowing owls. This protected area would remain in effect until August 31 or at the DFG’s discretion (based upon monitoring evidence), until the young owls are foraging independently. ▪ If accidental take (disturbance, injury, or death of owls) occurs, the DFG would be notified immediately. 		<p>for burrowing owls. If found, establish construction schedule to avoid nesting season, identify buffer areas, and report accidental take to CDFG.</p>	<p>buffer area prior to start of construction activities and monitor during construction period.</p>
<p>Mitigation Measure BIO-9: Compensate for Loss of Burrowing Owl Habitat If a preconstruction survey finds that burrowing owls occupy the project site, and avoiding construction in occupied areas is not feasible, then habitat compensation on off-site mitigation lands will be implemented. Habitat management lands comprising existing burrowing owl foraging and breeding habitat will be acquired and preserved. An area of 6.5 acres (the amount of land found to be necessary to sustain a pair or an individual owl) will be secured for each pair of owls or for an individual, in the case of an odd number of birds. As part of an agreement with the DFG, the City will secure the performance of its mitigation duties by providing the DFG with security in the form of funds that would:</p> <ul style="list-style-type: none"> ▪ allow for the acquisition and preservation of 6.5 acres of habitat management lands. ▪ provide initial protection and enhancement activities on the habitat management lands, potentially including such measures as fencing, trash cleanup, artificial burrow creation, grazing or mowing, and any habitat restoration deemed necessary by DFG, ▪ establish an endowment for the long-term management of the habitat management lands, and ▪ reimburse the DFG for reasonable expenses incurred as a result of the approval and implementation of this agreement. 	<p>Public Works Department and Project Biologist</p>	<p>If avoidance of burrowing owl habitat is not feasible, work with CDFG to secure a habitation mitigation agreement.</p>	<p>Prior to start of any construction activities.</p>

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<p>Mitigation Measure BIO-10: Compensate for Loss of Swainson’s Hawk Foraging Habitat</p> <p>If project facilities are constructed on lands identified as potential foraging habitat for Swainson’s hawks, then the loss will be mitigated by providing off-site habitat management lands, as described in the DFG protocol for the mitigation of impacts on Swainson’s hawks in the Central Valley (California Department of Fish and Game 1994).</p> <p>The final acreage of off-site management lands to be provided would depend on the distance between the project area and the nearest active nest site, as stated in DFG (1994). Prior to the grading of any site with potential foraging habitat, protocol-level surveys will be conducted to determine the nearest active nest. Based on these surveys, the City will compensate for losses, as guided by the DFG (1994), which states the following.</p> <p>Projects within one mile of an active nest tree shall provide:</p> <ul style="list-style-type: none"> – One acre of Habitat Management land (at least 10% of the Habitat Management land requirements shall be met by fee title acquisition or a conservation easement allowing for the active management of the habitat, with the remaining 90% of the Habitat Management lands protected by a conservation easement [acceptable to the DFG] on agricultural lands or other suitable habitats that provide foraging habitat for Swainson’s Hawk) for each acre of development authorized (1:1 ratio); or – One-half acre of Habitat Management land (all of the Habitat Management land requirements shall be met by fee title acquisition or a conservation easement [acceptable to the DFG] which allows for the active management of the habitat for prey production on the Habitat Management lands) for each acre of development authorized (0.5:1 ratio). <p>Projects within 5 miles of an active nest tree but greater than 1 mile from the nest tree shall provide 0.75 acres of Habitat Management land for each acre of urban development authorized (0.75:1 ratio). All Habitat Management lands protected under this requirement may be protected through fee title acquisition or conservation easement on agricultural lands or other suitable habitats that provide foraging habitat for Swainson’s Hawks.</p> <p>Projects within 10 miles of an active nest tree but greater than 5 miles from an active nest tree shall provide 0.5 acres of Habitat Management land for each acre of urban development authorized (0.5:1 ratio). All Habitat Management lands protected under this requirement may be protected through fee title acquisition or conservation easement (acceptable to the DFG) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson’s Hawks.</p> <p>Management Authorization holders/project sponsors shall provide for the long-term</p>	<p>Public Works Department and Qualified Ornithologist</p>	<p>For construction in areas identified as potential Swainson’s hawk habitat, work with CDFG to secure a habitation mitigation agreement.</p>	<p>Prior to start of any construction activities.</p>

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<p>management of the Habitat Management lands by funding a management endowment (the interest on which shall be used for managing the Habitat Management lands) at the rate of \$400 per Habitat Management acre (adjusted annually for inflation and varying interest rates).</p>			
<p>Mitigation Measure BIO-11: Conduct Preconstruction Surveys for Swainson’s Hawk Nests In order to ensure that nesting Swainson’s hawks will not be disturbed by construction activities, a qualified ornithologist will conduct preconstruction surveys of the project site and adjacent areas within 1 mile of the project site in developing areas where Engineer’s Report facilities are constructed, or within 1 mile of undeveloped properties that could have trees with active nests. Survey Period I occurs from January 1 to March 20; Period II, from March 20 to April 5; Period III, from April 5 to April 20; Period IV, from April 21 to June 10 (surveys are not recommended during this period because identification is difficult, as the adults tend to remain within the nest for longer periods of time); and Period V, from June 10 to July 30. No fewer than three surveys will be completed in at least each of the two survey periods immediately prior to project initiation. If a nest site is found, consultation with the DFG is required to ensure project initiation will not result in nest disturbance.</p>	<p>Public Works Department and Qualified Ornithologist</p>	<p>Retain qualified ornithologist to conduct at least 3 preconstruction surveys for Swainson’s hawk. If found, consult with CDFG.</p>	<p>Conduct the surveys in at least each of the two survey periods prior to start of construction activities.</p>
<p>Mitigation Measure BIO-12: Conduct Preconstruction Surveys for Nesting Birds For projects proposed in the Engineer’s Report that would be located in areas with habitat for nesting birds within 500 feet, construction will be avoided during the nesting season (generally between February 1 and August 31), where practical. If construction activities cannot be avoided during the nesting season, a preconstruction survey will be conducted by a qualified biologist to determine whether there are active nests on the site. The survey should be conducted no more than 30 days prior to construction. If the biologist determines that the area surveyed does not contain any active nests, then construction activities can commence without any further mitigation. If nests are found, Mitigation Measure BIO-13 will be implemented.</p>	<p>Public Works Department and Qualified Ornithologist</p>	<p>For construction in areas with habitat for nesting birds during the nesting season, retain qualified ornithologist to conduct surveys for active nests. If found, implement Measure BIO-13.</p>	<p>Assess site for potential nesting habitat prior to issuance of construction contracts. Conduct surveys within 30 days prior to start of construction.</p>
<p>Mitigation Measure BIO-13: Avoid and Minimize Impacts on Nesting Raptors and Other Migratory Birds To avoid disturbing any active migratory bird nests, construction activities will be conducted during the non-breeding season for these species (generally between September 1 and January 31). If active migratory bird nests are present on or adjacent to a project site and construction must occur during the breeding season, construction will not occur within 500 feet of an</p>	<p>Public Works Department and Qualified Ornithologist</p>	<p>Avoid construction during the nesting season. Otherwise, obtain DFG authorization, or maintain a 500 ft buffer from nests and retain qualified ornithologist to</p>	<p>Review construction timing or obtain DFG authorization prior to start of construction.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>active nest until the young have fledged, as determined by a qualified biologist, or until the project applicant receives written authorization from the DFG to proceed.</p>		<p>monitor nest for fledgling of young.</p>	<p>Monitor nests as needed until fledglings have emerged.</p>
<p>Mitigation Measure BIO-14: Avoid Habitat for Vernal Pool Branchiopods Prior to implementation of proposed projects in areas that could contain habitat for vernal pool branchiopods, the City will retain a qualified biologist to conduct surveys to determine whether vernal pools or seasonal wetlands will be directly or indirectly affected by construction activities. If potential habitat for special-status invertebrate species is found, the program proponent will avoid any habitats that may support special-status species by establishing a buffer zone for each resource. The sizes of buffer zones shall be determined in consultation with the USFWS. Where avoidance is not feasible, Mitigation Measures BIO-15 and BIO-16 will be implemented. Additionally, Mitigation Measures BIO-24 (Avoid or Minimize Disturbance to Wetlands) and BIO-26 (Confine Project Design and Construction to Minimize Impacts on Sensitive Habitats), as discussed below, may minimize impacts on vernal pool branchiopods.</p>	<p>Public Works Department and Qualified Biologist</p>	<p>For construction in areas with habitat for vernal pool species, retain qualified biologist to conduct preconstruction surveys and establish buffer zones. Implement additional mitigation measures as necessary.</p>	<p>Assess site for potential nesting habitat prior to issuance of construction contracts. Conduct surveys and establish buffer zones prior to start of construction.</p>
<p>Mitigation Measure BIO-15: Conduct Protocol-Level Surveys for Vernal Pool Branchiopods If it is not feasible to avoid vernal pool crustacean habitat (both directly and indirectly), a qualified biologist with a 10(a)(1)(A) permit for vernal pool branchiopods will complete protocol-level surveys to determine whether vernal pool branchiopods are present in the identified suitable habitat. If a listed species is found, Mitigation Measure BIO-16 will be required. Alternately, the program proponent may choose to assume that relevant water bodies are occupied by listed vernal pool branchiopods.</p>	<p>Public Works Department and Qualified Biologist</p>	<p>Conduct protocol-level surveys to determine presence of vernal pool branchiopods for projects where habitat avoidance is not feasible. If found or assumed present, Implement Measure BIO-16.</p>	<p>Conduct surveys or assume presence prior to start of construction.</p>
<p>Mitigation Measure BIO-16: Compensate for Impacts on Vernal Pool Branchiopods If protocol surveys determine that the proposed program would have direct or indirect impacts on vernal pool branchiopods, the program proponent will compensate for these impacts by preserving additional habitat for these species using USFWS-approved compensation ratios, as described below. The program proponent will preserve suitable habitat at a ratio to be determined during consultation with USFWS, typically at 3:1 (3 acres preserved for every 1 acre of habitat directly or indirectly affected). Preservation credits must be acquired from a USFWS-</p>	<p>Public Works Department and Project Biologist</p>	<p>Coordinate with USFWS to compensate for impacts on vernal pool branchiopods.</p>	<p>Purchased or establish mitigation prior to start of ground-disturbing activities.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>approved mitigation bank or conservation area. This mitigation may involve:</p> <ul style="list-style-type: none"> ▪ purchasing vernal pool preservation or creation credits at an existing mitigation bank if approved by the USFWS, or ▪ paying sufficient funds into a USFWS-approved species fund to support habitat preservation and restoration for these species. <p>Final compensation requirements and mitigation ratios for the program will be determined through consultation with the USFWS. The exact cost to purchase preservation credits for program-related impacts will be determined at the time of purchase. Mitigation credits will be purchased, or a conservation area and management plan will be established, prior to any ground-disturbing activities, including grading, in the program area.</p>			
<p>Mitigation Measure BIO-17: Avoid Habitat for California Tiger Salamander</p> <p>The program proponent will retain a qualified biologist to conduct surveys to determine whether potential habitat for California tiger salamander will be directly or indirectly affected by construction activities. If potential habitat is found, the program proponent will avoid the habitat by establishing a buffer zone for each resource. The sizes of buffer zones should be determined in consultation with the USFWS and DFG. Where avoidance is not feasible, Mitigation Measures BIO-18 and BIO-19 will be implemented. Mitigation Measures BIO-24 (Avoid or Minimize Disturbance to Wetlands) and BIO-26 (Confine Project Design and Construction to Minimize Impacts on Sensitive Habitats), as discussed below, may minimize impacts on California tiger salamander also.</p>	<p>Public Works Department and Qualified Biologist</p>	<p>Retain a qualified biologist to conduct preconstruction surveys and establish buffer zones for California tiger salamander.</p>	<p>Conduct survey prior to start of construction activities.</p>
<p>Mitigation Measure BIO-18: Conduct Protocol-Level Surveys for California Tiger Salamander</p> <p>If it is not possible to avoid California tiger salamander habitat, a qualified biologist with authorization from the USFWS and DFG will complete protocol-level surveys in accordance with the <i>Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander</i> (U.S. Fish and Wildlife Service and California Department of Fish and Game 2003) to determine whether California tiger salamanders are present in the identified suitable habitat. If presence is determined, Mitigation Measure BIO-19 will be required.</p> <p>Alternately, the program proponent may choose to assume that the relevant water bodies are occupied by California tiger salamander.</p>	<p>Public Works Department and Qualified Biologist</p>	<p>Retain a qualified biologist to conduct protocol-level surveys to determine presence of CTS for projects where habitat avoidance is not feasible.</p> <p>If found or assumed present, Implement Measure BIO-19.</p>	<p>Conduct surveys or assume presence prior to start of construction activities.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>Mitigation Measure BIO-19: Compensate for Impacts on California Tiger Salamander</p> <p>If California tiger salamander presence is determined or assumed, consultation with the USFWS will be required. The general mitigation guidelines associated with Section 7 consultation for California tiger salamander are as follows, and will be used as the ratios for mitigation of any impacts under the Engineer’s Report. Permanent effects on aquatic and upland habitat will be compensated at a ratio of 3:1. Temporary effects on aquatic and upland habitat will be compensated at a ratio of 1.1:1.</p> <p>This mitigation may involve one of these options:</p> <ul style="list-style-type: none"> ▪ purchasing mitigation credits at an existing mitigation bank, or ▪ paying sufficient funds into a USFWS-approved species fund to support habitat preservation and restoration for this species. <p>Final compensation requirements and mitigation ratios for impacts associated with the proposed program will be determined through consultation with the USFWS. The exact cost to purchase preservation credits for program-related impacts will be determined at the time of purchase. Mitigation credits will be purchased prior to any ground-disturbing activities, including grading, in the study area.</p>	<p>Public Works Department and Project Biologist</p>	<p>Coordinate with USFWS to compensate for impacts to CTS.</p>	<p>Purchased or establish mitigation prior to start of ground-disturbing activities.</p>
<p>Mitigation Measure BIO-20: Conduct Preconstruction Surveys for and Minimize Impacts on Western Pond Turtles</p> <p>Preconstruction surveys for western pond turtles in suitable aquatic and upland habitat will be conducted by a qualified biologist 2 weeks before and 24 hours before the start of construction activities in streams, irrigation canals, and sloughs where suitable habitat exists. If a turtle is located within the construction area, the turtle will be relocated out of this area (with authorization from the DFG), and exclusion fence will be installed to prevent the movement of turtles back into the construction area. Additionally, the following minimization measures will be implemented.</p> <ul style="list-style-type: none"> ▪ The project proponent will minimize grading and construction activities along the banks of streams, irrigation canals, and sloughs and within 1,000 feet of these areas between October 15 and April 15 in order to reduce potential mortality to hibernating turtles. ▪ If a turtle becomes trapped during construction activities within the waterway, the turtle will be removed from the work area and placed downstream from the project site. 	<p>Public Works Department and Qualified Biologist</p>	<p>Retain a qualified biologist to conduct preconstruction surveys for Western pond turtles in streams, irrigation canals, and sloughs where suitable habitats exist.</p> <p>Install exclusionary fencing, avoid nesting areas, and relocate individuals if found in the work area.</p>	<p>Conduct survey 2 weeks before and 24 hours before start of construction.</p> <p>Establish buffers and install fencing prior to start of construction.</p> <p>Monitor site throughout construction period.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<ul style="list-style-type: none"> ▪ The construction area will be clearly defined, using orange barrier fencing, in order to minimize disturbance to riparian vegetation and western pond turtle habitat. <p>If nesting areas for western pond turtles are identified in the study area during preconstruction surveys, a buffer of 300 feet will be established between the nesting site and the construction area. Buffers will be indicated by temporary fencing if construction begins before the nesting period ends (egg laying to emergence of hatchlings normally extends from April to November).</p>			
<p>Mitigation Measure BIO-21: Avoid Habitat for Riparian Woodrat and Riparian Brush Rabbit</p> <p>For proposed projects that could affect well-developed riparian habitat, the City will retain a qualified biologist to conduct surveys to determine whether potential habitat for riparian woodrat and riparian brush rabbit will be directly or indirectly affected by construction activities. If potential habitat is found, the project proponent will avoid the habitat by establishing a buffer zone for each resource. The size of the buffer zones will be determined in consultation with the USFWS and DFG. Where avoidance is not feasible, Mitigation Measures BIO-22 and BIO-23 will be implemented. Mitigation Measures BIO-26 (Confine Project Design and Construction to Minimize Impacts on Sensitive Habitats) and BIO-29 (Protect Riparian Corridors), as discussed below, may minimize impacts on riparian woodrat and riparian brush rabbit.</p>	<p>Public Works Department and Qualified Biologist</p>	<p>Retain a qualified biologist to conduct preconstruction surveys for woodrat and brush rabbit habitat in project sites with well-developed riparian areas.</p> <p>Establish buffer areas if potential habitat is found.</p> <p>If avoidance is not feasible, implement Measures BIO-22 and BIO-23.</p>	<p>Conduct survey and establish buffers to start of construction.</p>
<p>Mitigation Measure BIO-22: Conduct Surveys for Riparian Woodrat and Riparian Brush Rabbit</p> <p>If the potential habitat area cannot be avoided, surveys for these species will be conducted by a qualified biologist in compliance with survey methods for riparian brush rabbit (also applicable to riparian woodrat) (Williams and Kelly 1993), or any more recently published USFWS revised survey protocols. These surveys require a special 10(a)(1)(A) permit for the individuals undertaking the surveys. Surveys should be conducted within 30 days before any ground-disturbing activities. If either species is found, Mitigation Measure BIO-23 will be implemented to reduce this impact to a less-than-significant level.</p>	<p>Public Works Department and Qualified Biologist</p>	<p>Retain a qualified biologist to conduct preconstruction surveys for woodrat and brush rabbit in accordance with USFWS protocols.</p> <p>If species are found, implement Measures BIO-23.</p>	<p>Conduct survey 30 days prior to any ground disturbance.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>Mitigation Measure BIO-23: Consult with the USFWS to Conduct Monitoring for Riparian Woodrat and Riparian Brush Rabbit/ Environmental Training for Construction Crews</p> <p>If riparian woodrat or riparian brush rabbit are found during surveys conducted under Mitigation Measure BIO-22 and the proposed project would remove occupied habitat or potentially directly or indirectly affect either of these species, formal consultation with USFWS will be initiated. At a minimum, the following protection measures would be implemented.</p> <ul style="list-style-type: none"> ▪ Potential habitat area will be fenced off with silt fencing or an equivalent barrier, with the exception of the vehicle and pedestrian bridge construction areas, to prevent rabbits and woodrats from accessing work areas. Riparian habitat outside of all construction areas should be avoided to the greatest extent practical. ▪ All construction personnel will participate in a USFWS-approved worker environmental awareness program. A qualified biologist approved by the USFWS will inform all construction personnel about the biology and habitat of riparian brush rabbit and riparian woodrat. Proof of this instruction will be submitted to the USFWS. 	<p>Public Works Department and Construction Contractor and Qualified Biologist</p>	<p>Initiate formal consultation with USFWS, install barrier fencing, and retain a qualified biologist to conduct worker training.</p> <p>Submit proof of training to USFWS.</p>	<p>Prior to the start of construction.</p> <p>Implement avoidance measures throughout construction period.</p>
<p>Mitigation Measure BIO-24: Avoid or Minimize Disturbance to Waters, Wetlands, or Riparian Areas</p> <p>Prior to construction, waters and wetlands areas will be delineated by a qualified biologist in accordance with the delineation standards of the USACE. Riparian areas will also be delineated and mapped by a qualified biologist. Projects will be designed to avoid disturbance to waters, wetlands, and riparian areas, including vernal pools and riparian communities along rivers and streams. Avoidance of these areas will include siting structures a minimum of 100 feet from the outermost edge of the wetland or water.</p> <p>Waters, wetlands, and riparian areas near the program sites will be protected by appropriate environmentally-sensitive area fencing. This will consist of orange construction barrier fencing or silt fencing for all wetlands and waters. The fencing will be installed at least 200 feet from the edge of the sensitive area where feasible, and where not feasible, the buffer will be large enough to adequately protect the sensitive area from project activities. The location of the fencing will be marked in the field with stakes and flagging, and shown on the construction drawings. The construction specifications will contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally-sensitive</p>	<p>Public Works Department, Qualified Biologist, and Construction Contractor</p>	<p>Retain a qualified biologist to delineate waters and wetland areas in accordance with USACE standards and obtain permits for work near wetlands.</p> <p>Implement avoidance measures, including adjustment of project siting, establish buffer zones and specifications for construction-related operations as appropriate.</p> <p>Restore temporarily disturbed areas with</p>	<p>Conduct delineation, establish buffer areas, and project siting changes prior to any ground disturbance.</p> <p>Include construction specifications in construction contracts.</p> <p>Implement avoidance and minimization measures and</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>area.</p> <p>If complete avoidance is not possible, then disturbance will be minimized to the maximum extent possible, and restoration of any temporarily-disturbed area will occur after project work is complete. New vegetation will consist of similar native species to those removed. Activities within or near wetlands (and waters of the U.S.) will occur under and comply with permits from the USACE and other relevant agencies (e.g., RWQCB, DFG). Any permanent disturbance to Sensitive habitats would be addressed through implementation of Mitigation Measure BIO-25.</p>		<p>native species and mitigate permanent disturbances with implementation of Measure BIO-25.</p>	<p>comply with permits throughout construction period.</p> <p>Revegetate areas once project is completed.</p>
<p>Mitigation Measure BIO-25: Mitigate for Permanent Disturbance to Sensitive Habitats</p> <p>Where wetlands or other sensitive habitats cannot be avoided or restored on-site, replacement habitat at a nearby off-site location will be provided in accordance with the requirements of the applicable federal or state agency. The replacement habitat will be equivalent to the nature of the habitat lost, and will be provided at a ratio suitable to ensure that, at a minimum, there is no net loss of habitat acreage or value. The replacement habitat will be set aside in perpetuity for habitat use. At a minimum, a ratio of 3 replacement acres for every 1 acre of high-quality riparian or wetland habitat lost will be provided, consistent with typical USFWS and DFG requirements.</p>	<p>Public Works Department and Project Biologist</p>	<p>Mitigate permanent disturbances with replacement habitat consistent with USFWS and DFG requirements.</p>	<p>Prior to start of construction.</p>
<p>Mitigation Measure BIO-26: Confine Project Design and Construction to Minimize Impacts on Sensitive Habitats</p> <p>Work in or near streams, wetlands, and vernal pools will be confined to the dry season between May 1 and October 1. Road widths at stream or wetland crossings will be minimized, and roads will be constructed at right angles to reduce adverse impacts on riparian corridors.</p>	<p>Public Works Department and Construction Contractor</p>	<p>Confine work schedule in or near streams wetlands or vernal pools to the dry season.</p> <p>Design projects to minimize adverse impacts on riparian corridors.</p>	<p>Implement sensitive designs during planning and development phase of projects.</p> <p>Incorporate construction schedules in contract language prior to issuance.</p>
<p>Mitigation Measure BIO-27: Preserve Habitat Values</p> <p>To the extent feasible, within the identified riparian corridors, environmentally-sensitive habitat areas will be protected against any significant disruption of habitat values, and only uses consistent with these values will be allowed (e.g., nature education and research, fishing, and habitat enhancement and protection).</p>	<p>Public Works Department</p>	<p>Design projects in riparian corridors to be consistent with habitat values of the area.</p>	<p>Ensure designs are consistent with riparian habitat values as a condition of project design approval.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>Mitigation Measure BIO-28: Preserve Native Trees Preserve existing and mature native trees to the extent feasible, except when such trees are diseased or otherwise constitute a hazard to persons or property. During construction, all activities and storage of equipment will occur outside the drip lines of any trees to be preserved. Any native trees over 2 inches in diameter at breast-height (DBH) that are removed by project activities will be replaced at a replacement ratio of at least 1:1. The exact replacement ratio will be determined in coordination with local tree ordinance requirements, if any exist.</p>	Public Works Department and Construction Contractor	Preserve existing trees to extent feasible. Conduct construction activities outside of drip-lines of preserved trees, and replace native trees at a ratio of a least 1:1.	During project design phase as a condition of project approval. Include protection language in construction contracts.
<p>Mitigation Measure BIO-29: Protect Riparian Corridors To the extent feasible, all areas within identified riparian corridors will be maintained in a natural state or limited to recreation and open space uses. Recreation will be limited to passive forms of recreation, with any facilities constructed to not be intrusive to wildlife or sensitive species.</p>	Department of Public Works	Limit development and uses in riparian corridor areas to passive recreation or open space.	As a condition of project approval.
<p>Mitigation Measure BIO-30: Use Native Species for Landscaping New landscaping within or immediately adjacent to the identified riparian corridors will employ native species ecologically consistent with natural riparian habitats.</p>	Department of Public Works	Use only native species for landscaping installation.	During project design phase as a condition of project approval.
<p><i>Cultural Resources</i></p>			
<p>Mitigation Measure CR-1: Implement Plan to Address Discovery of Unanticipated Buried Cultural Resources If buried cultural resources (such as chipped stone or groundstone, historic debris, or building foundations) are inadvertently discovered during ground-disturbing activities, work will stop in that area and within a 100-foot radius of the find, and a “no work” zone will be established that uses appropriate flagging to delineate the boundary of this zone. The City will retain the services of a qualified archaeological consultant who will visit the discovery site as soon as practicable. The archaeological consultant will perform minor hand excavation to describe the archaeological resources present, and will assess the amount of disturbance. The archaeologist will then assess whether the discovery retains sufficient integrity, is an archaeological resource, and is of potential scientific/historic/cultural significance, according to NRHP and CRHR guidelines. The consulting archaeologist will, at a minimum, provide the City with a written and digital photographic documentation of all observed materials. Based on the assessment, the City will identify the CEQA and NHPA Section 106 cultural-resources compliance procedures</p>	Department of Public Works, Construction Contractor, and Qualified Archaeologist	Stop work if buried cultural resources are discovered during ground-disturbing activities and retain a qualified archeologist to determine the significance of the resource. Prepare a treatment plan for City approval if resources are significant.	During all phases of ground-disturbing construction activities. Approval and implementation of treatment plan required to resume construction.

Mitigation Measure	Responsibility	Action(s)	Timing
<p>to be implemented.</p> <p>If the find appears to not meet the NRHP or CRHR criteria of significance, work can continue while being monitored by the consulting archaeologist.</p> <p>If the archaeologist determines that the resources are significant, avoidance of additional impacts is preferred. However, if avoidance is not possible, the consulting archaeologist will prepare and submit a treatment plan to the City. Following federal and state guidelines and professional standards, the treatment plan (or data-recovery plan) will provide detailed research design and methodology for test excavations and archival research to identify and evaluate the resources. The treatment plan will provide for at least the activities listed below.</p> <ul style="list-style-type: none"> ▪ <i>Conduct test excavations and archival research to determine resource significance.</i> When avoidance is infeasible, the treatment plan will outline how evaluations of potentially significant archaeological resources will be conducted, including archival research and test excavation, and evaluation methods necessary to determine eligibility for listing in the CRHP. ▪ <i>Data recovery excavations of significant archaeological resources that cannot be avoided.</i> If, following identification and evaluation efforts, archaeological sites and historic resources are determined to meet the criteria for inclusion in the CRHR, and avoidance or redesign of the project is not feasible, then research and fieldwork to recover and analyze the data contained in that site will be conducted. This work may involve additional archival and historical research, excavation, presentation of the results in a technical report, curation of the recovered artifacts and accompanying data, and analysis of the artifacts, features, and other data discovered. Native American consultation will continue throughout data recovery efforts. 			
<p>Mitigation Measure CR-2: Implement Plan to Address the Discovery of Human Remains</p> <p>If remains of Native American origin are discovered during program-related construction, it will be necessary to comply with state laws concerning the disposition of Native American burials, which fall within the jurisdiction of the NAHC. If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the County coroner has been informed and has determined that no investigation of the cause of death is required. However, if the remains are of Native American origin:</p> <ul style="list-style-type: none"> ▪ within 24 hours of notification of the discovery, the NAHC will contact a Native 	<p>Department of Public Works, Construction Contractor, and Qualified Archaeologist</p>	<p>Notify county coroner of any discovered remains.</p> <p>Comply with NAHC for treatment of Native American remains.</p>	<p>Upon discovery.</p> <p>Proper treatment required to resume construction.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>American most likely descendent (MLD) to make a recommendation regarding appropriate treatment of human remains,</p> <ul style="list-style-type: none"> ▪ the most likely descendants of the deceased Native Americans have made a recommendation to the landowner or person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98, or ▪ the NAHC has been unable to identify a descendant, or the descendant failed to make a recommendation within 48 hours after being notified. ▪ According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and the disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC within 24 hours. 			
<p>Mitigation Measure CR-3: Minimize Potential Adverse Impacts on Paleontological Resources</p> <p>To minimize potential adverse impacts on unique, scientifically- important paleontological resources, the City or its contractors will do the following.</p> <ul style="list-style-type: none"> ▪ Before the start of grading or excavation activities in locations where there has not been previous development or where construction would occur at depths below existing foundations, roads, or trenches, construction personnel involved with earthmoving activities will be informed of the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction activities, and proper notification procedures, should fossils be encountered. This worker training will be prepared and presented by a qualified paleontologist or, alternatively, may be presented by a qualified archaeologist at the same time as any recommended cultural resources-awareness training. <p>If paleontological resources are discovered during earthmoving activities, the construction crew will immediately cease work in the vicinity of the find, and the City Planning Division will be notified. A qualified paleontologist will evaluate the resource and prepare a proposed mitigation plan in accordance with SVP guidelines (1996). The proposed mitigation plan will include, at a minimum, a field survey of additional construction areas, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by the lead agency to be</p>	<p>Department of Public Works, Construction Contractor, and Qualified Paleontologist</p>	<p>Retain a qualified paleontologist to provide worker training in areas without previous development or when activities would occur at depths below existing infrastructure.</p> <p>Stop work if buried resources are discovered and notify City Planning Division.</p> <p>Retain a qualified paleontologist to prepare a mitigation plan determine the significance of the resource.</p>	<p>Provide worker training prior to earth-disturbing activities.</p> <p>Upon discovery, proper treatment required to resume construction.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>necessary and feasible will be implemented before construction activities can resume at the site where the paleontological resources were discovered.</p>			
<p><i>Geology, Soils, and Mineral Resources</i></p>			
<p>Mitigation Measure GEO-1: Conduct Project-Specific Geotechnical Investigation Prior to Construction During project design, project-specific geotechnical investigations and reports will be prepared by registered engineers to detect site conditions that could result in liquefaction, construction on expansive soils, or other potential hazards and to identify appropriate design requirements that would prevent damage to structures. Site-specific geological data and recommendations by a registered engineer will be incorporated into project design, thereby reducing any impacts due to liquefaction.</p>	<p>Public Works Department</p>	<p>Conduct geotechnical investigation for each program component.</p>	<p>Concurrent with project design and development phase.</p>
<p><i>Hazards and Hazardous Materials</i></p>			
<p>Mitigation Measure HAZ-1: Prepare a Risk Assessment Prior to Construction Activity Prior to the commencement of construction activities, the City or its contractor will prepare a risk assessment and establish procedures to address the identification, excavation, handling, and disposal of hazardous materials in accordance with ASTM Standard 1527-05, “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” and the EPA “All Appropriate Inquiries” standards and practices (40 CFR 312). An environmental database search of regulatory-listed hazardous materials sites contained in local, regional, state, and federal databases for the program site and within a 0.5-mile radius of the site will be performed by a qualified professional as part of this assessment. If contaminated soil or groundwater is encountered, the City will notify the appropriate local environmental management agencies and local fire departments. The City will ensure that any identified environmental site conditions that may represent a risk to public health and safety will be remediated in accordance with federal, state, and local environmental laws and regulations. All recommendations in the risk assessment will be implemented by the City and all its representatives, including contractors and earthwork construction workers, such that people are not exposed to adverse conditions on the program site as a result of discovering existing sources of contamination.</p>	<p>Public Works Department and Construction Contractor</p>	<p>Conduct risk assessment and establish hazardous materials protocol for each program component.</p>	<p>Prior to start of construction activities.</p>
<p>Mitigation Measure HAZ-2: Control Contamination Resulting from Previously Unidentified Hazardous Waste Materials Prior to the onset of construction, all construction workers will be trained in the identification of potentially contaminated soil and water, including the characteristics of</p>	<p>Public Works Department and Construction Contractor</p>	<p>Conduct worker training for hazardous materials. Stop work immediately</p>	<p>Provide training prior to start of construction activities.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>potential contamination, such as discolored soil, oils or sheens on water, and unusual odors. In the event that hazardous materials are encountered during construction, all construction activities in the area of the discovery will stop, and the City or its contractors will conduct hazardous materials investigations to identify the nature and extent of contamination and evaluate potential impacts on program construction. If necessary, the City or its contractors will implement remediation measures consistent with all applicable local, state, and federal codes and regulations. Construction will not resume until remediation is complete. If waste disposal is necessary, the City will ensure that all hazardous materials removed during construction are handled and disposed of by a licensed waste-disposal contractor and are transported by a licensed hauler to an appropriately-licensed and permitted disposal or recycling facility, in accordance with local, state, and federal requirements.</p>		<p>if hazardous materials are discovered and implement appropriate treatment measures.</p>	<p>Implement measures during entire construction period.</p>
<i>Hydrology and Water Quality</i>			
<p>Mitigation Measure HYD-1—Prepare and Implement a Drilling-Contingency (or “Frac-out”) Plan during Microtunneling</p> <p>The City or its contractor will prepare and implement a Drilling-Contingency Plan to manage the inadvertent release, or “frac-out,” of drilling fluids. If the contractor prepares the plan, it will be subject to approval by the City before tunneling can begin. The Drilling-Contingency Plan will include measures to minimize the potential for a frac-out (e.g., pre-planning of the drilling profile based on ground conditions such that potential release of the fluids is minimized); provide for the timely detection of frac-outs; and ensure an organized, timely, and “minimum-impact” response in the event of a frac-out and release of drilling fluid.</p> <p>The City will ensure that drilling fluids contain only water and bentonite or similar inert substances (i.e., contain no environmental pollutants) and that any drilling fluids used in microtunneling processes for installation of underground pipelines. If on-site containment and dewatering methods are used, the City and its contractors will ensure the contained materials are not susceptible to runoff during a storm event. This shall be achieved by installing a barrier (e.g., silt fence or dirt berm) along the creek or canal side of the launching and receiving pits for the drilling (start and end points of the microtunnel) to prevent drill fluids from the work area from being carried to the water body. Drilling fluids will be dewatered on-site if approved by regulatory permitting agencies and/or properly disposed of off-site.</p> <p>In addition to the above specifications, the Drilling-Contingency Plan will require, at a minimum, the following measures and content:</p> <ul style="list-style-type: none"> ▪ A monitor to be on site during drilling operations to look for observable inadvertent 	<p>Public Works Department and Construction Contractor</p>	<p>Prepare a Drilling Contingency Plan and submit for City approval.</p> <p>Implement Plan specification.</p>	<p>City approval of plan prior to start of tunneling activities.</p> <p>Implement measures throughout tunneling activities.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>release or frac-out conditions or lowered pressure readings on drilling equipment that may indicate a potential frac-out.</p> <ul style="list-style-type: none"> ▪ If the contractor and/or drilling-machine operator suspect that there is a frac-out (i.e., notices a loss of circulation of drilling fluid and cuttings do not show a large quantity of gravel) or drilling fluid is observed at the surface, all work will stop, including the recycling of drilling fluid. The location and extent of the frac-out will be determined. The contractor will implement measures to stop the frac-out, such as reducing the drilling pressure or thickening the drilling fluid (e.g., by using less water). ▪ If the drilling fluid does not surface, no other actions will be taken. ▪ If the drilling fluid surfaces, the affected area will be surrounded with a barrier (e.g., silt fence) to prevent further dissemination of the fluid. If the drilling fluid is released into a water body (creek or canal) when there is flow and there is a visible plume, a sediment boom or curtain shall be installed downstream of the frac-out to attempt to capture the released drilling fluid. The drilling fluid will then be removed using the minimum amount of equipment needed to remove it (e.g., manually or by suction hose using a vacuum truck) in order to minimize impacts to the surface area where the frac-out occurred. ▪ Upon implementation of the response measures described above, and the frac-out is contained, drilling may resume. ▪ The City will ensure that the frac-out plan also includes notification procedures to applicable regulatory agencies (i.e., Water Board and USACE) for reporting frac-outs. The City will consult with these agencies to implement the most appropriate measures to protect water quality in the event of a frac-out. To this end, the City shall provide a copy of the plan to the USACE, Water Board, USFWS, and CDFG prior to construction, as part of the project permitting process. 			
<p>Mitigation Measure HYD-2: Conduct Floodplain Studies Prior to Program Design Prior to program design, the City of Modesto shall determine if the program area lies within a FEMA-identified 100-year floodplain. For program components constructed within a 100-year floodplain, the City shall retain a qualified registered civil engineer or licensed hydrologist to conduct the appropriate floodplain studies to determine whether the proposed floodplain encroachments could be constructed without increasing base flood elevations upstream or downstream of the proposed structures. If floodplain modeling indicates that the encroachments could be constructed without impacts on the base flood elevations, the City will work with FEMA and the State of California Reclamation Board to ensure that the</p>	<p>Public Works Department</p>	<p>Conduct floodplain assessment and implement appropriate floodplain modifications for each program component.</p>	<p>During project development and design phase.</p>

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<p>design is appropriate and that all necessary permits are acquired prior to construction.</p> <p>If the floodplain studies indicate that base flood elevations would increase due to construction of the structures, then other appropriate modifications will be considered to offset the increases. If no feasible options are available to offset modeled increases in base flood elevations, then the proposed fill placement will not be constructed.</p>			
Noise			
<p>Mitigation Measure NOISE-1: Employ Noise-Reducing Construction Practices</p> <p>The following measures will be implemented by the City or its contractor to reduce adverse effects from construction noise:</p> <ul style="list-style-type: none"> ▪ locating stationary equipment as far as practical from noise-sensitive land uses, ▪ using sound-control devices on equipment that are more effective than devices originally provided on the equipment, ▪ using noise-reducing enclosures around noise-generating equipment, and ▪ installing temporary barriers between noise sources and noise-sensitive land uses, or taking advantage of existing barrier features (terrain and structures) to block sound transmission. <p>When determining haul truck routes, consideration will be given to altering haul routes to avoid sensitive receptors when feasible.</p>	Public Works Department and Construction Contractor	<p>Determine whether construction would occur near sensitive receptors; if so, require noise-reduction measures in construction contracts.</p> <p>Implement construction noise control measures.</p>	<p>Make determinations and include measures prior to issuing construction contracts.</p> <p>Implement measures during all phases of construction.</p>
<p>Mitigation Measure NOISE-2: Limit Nighttime Construction Noise</p> <p>When feasible, the City and its contractor will ensure that no construction activities are conducted within 550 feet of a residence outside the hours of 7 a.m.–9 p.m. on weekdays and 9 a.m.–9 p.m. on Saturdays, Sundays, and state or federal holidays</p>	Public Works Department and Construction Contractor	<p>Maintain awareness of adjacent residential areas near construction sites.</p> <p>Include measures in contracts stipulating restricted work hours if closer than 550ft of residences.</p>	<p>Incorporate measures in construction contracts.</p> <p>Implement measures during all phases of construction.</p>
<p>Mitigation Measure NOISE-3: Employ Noise-Reducing Methods During Operations</p> <p>The City will implement noise-reducing methods so that noise from well operations does not exceed County noise-level standards at adjacent residences. Measures to be implemented may include:</p> <ul style="list-style-type: none"> ▪ restricting engine installations to beyond 250 feet for electric motors and beyond 	Public Works Department	<p>Include noise control methods to reduce operational noise.</p>	<p>During project development and design phase.</p>

Mitigation Measure	Responsibility	Action(s)	Timing
<p>1,250 feet for propane-powered motors from residences, where feasible, or</p> <ul style="list-style-type: none"> ▪ using sound attenuation enclosures designed to achieve noise reductions sufficient to comply with City and County standards for noise-generating elements of the operation, when no other feasible control method is available. 			
<i>Cumulative Impacts</i>			
<p>Mitigation Measure CUM-1: Greenhouse Gas Calculations and Emissions Reduction Measures</p> <p>The City or its contractors shall calculate the anticipated greenhouse gas emissions associated with each program component at the time that the component is ripe for project-level CEQA analysis. This shall include a calculation of both construction and operational emissions. The City or its contractors will then identify and implement greenhouse gas emission reduction measures to reduce or offset greenhouse gas emissions, with a goal of no net emissions. The measures chosen shall represent the best available technology that is economically achievable at the time of project implementation and, as applicable to the given project, will implement the best performance standards recommended by the San Joaquin Valley Air Pollution Control District. Examples of measures during construction may include the use of electric or hybrid-engine construction equipment instead of equipment that uses gasoline or diesel-powered engines. Similarly, during operations, use of electric equipment in place of gasoline or diesel powered equipment will be preferred, along with other potential measures such as installation of solar panels to supply power, purchase of carbon offsets, etc.</p>	<p>Public Works Department</p>	<p>Calculate GHG emissions associated with each program component and identify emission reduction measures.</p>	<p>Concurrent with CEQA-level analysis of each program component.</p> <p>Implement measures during project development and design phase.</p>