

Exhibit B

Rooney Ranch Wind Repowering Project Mitigation Monitoring and Reporting Program

Purpose of and Need for Monitoring

In compliance with CEQA, a program EIR (PEIR) was prepared and certified (November 12, 2014) for the repowering of the Altamont Pass Wind Resource Area (APWRA); the proposed Rooney Ranch Wind Repowering Project is consistent with the APWRA Repowering Program and tiers from that PEIR. Significant impacts of the Rooney Ranch project are therefore mitigated through implementation of mitigation measures identified in the APWRA PEIR, as applicable. This Mitigation Monitoring and Reporting Program (MMRP) is required as a condition of approval of the requested Notice to Proceed (NTP) to construct and operate the repowered Rooney Ranch wind energy facility. The *Implementation Checklist* prepared for the proposed project identified potentially significant impacts in the resource areas listed below, as well as mitigation measures to reduce these impacts to a less-than-significant level where possible.

Significant impacts pertaining to the following resource areas would be reduced to a less-than-significant level by mitigation measures identified in the PEIR.

- Aesthetics
- Exposure of sensitive receptors to substantial air pollutant concentrations during construction
- Biological resources other than birds and bats
- Cultural resources
- Geology, soils, mineral resources, and paleontological resources
- Conflicts with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of greenhouse gases
- Hazards
- Water quality
- Construction traffic

Impacts that cannot be reduced to less-than-significant levels, even with implementation of mitigation measures identified in the PEIR, are listed below.

- Air quality impacts associated with construction
- Impacts on avian species, including raptors, and bats

As noted in the *Implementation Checklist*, many of the studies and analyses specified in this MMRP are required prior to ground-disturbing activities and are expected to have substantial effects on siting decisions, project layout, and the ultimate number and possibly type of wind turbine selected. Several of these studies have been completed and are included in the Checklist Supporting Information. The following preconstruction studies and analyses required by this MMRP have been implemented as part of the project's CUP application submittal.

- **Mitigation Measure BIO-3a: Conduct preconstruction surveys for habitat for special status wildlife species.**

A Biological Resources Technical Report prepared for the Rooney Ranch project is attached to the *Environmental Analysis* as Appendix B.

- **Mitigation Measure CUL-2a: Conduct a preconstruction cultural field survey and cultural resources inventory and evaluation.**

A Cultural Resources Survey Report completed for the Rooney Ranch project was attached (in part) to the *Environmental Analysis* as Appendix C. (The complete contents remain confidential to protect resources that have been identified.)

- **Mitigation Measure NOI-1: Perform project-specific noise studies and implement measures to comply with County noise standards for adverse noise impacts due to wind turbine operations.**

Preconstruction noise studies completed for the proposed project are attached to the *Environmental Analysis* as Appendix D.

CEQA requires that a lead agency adopt an MMRP for the measures the agency has proposed to avoid or mitigate significant environmental effects (CEQA Guidelines Section 15097). The purpose of this MMRP is to ensure that the applicable PEIR mitigation measures identified in the APWRA *Implementation Checklist* are implemented for this tiered project, and to identify who is responsible for their implementation.

Table MMRP-1, which follows this introductory section, identifies the PEIR mitigation measures required for the proposed Rooney Ranch Wind Repowering Project, the parties responsible for implementing and monitoring the measures, the timing of each measure, and a summary of the actions necessary to implement and monitor each measure.

Mitigation Monitoring and Reporting Program

The MMRP has been prepared for the proposed project in accordance with Public Resources Code 21081.6, which specifies that when a public agency makes findings required by paragraph (1) of subdivision (a) of Section 21081, it “shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment.” Public Resources Code 21081.6 further specifies that the MMRP will “ensure compliance during project implementation.”

This MMRP is intended to ensure the effective implementation of mitigation measures that are within the City of Santa Clara’s authority to implement, including monitoring where identified, throughout all phases of development and operation of the proposed program.

Table MMRP-1. Mitigation Monitoring and Reporting Program

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|--|-----------------------------------|---|------------------|--|
| Aesthetics | | | | |
| Mitigation Measure AES-1: Limit construction to daylight hours Major construction activities will not be undertaken between sunset and sunrise or on weekends. Construction activity is specifically prohibited from using high-wattage lighting sources to illuminate work sites after sunset and before sunrise, with the exception of nighttime deliveries under the approved transportation control plan or other construction activities that require nighttime work for safety considerations. | During construction | City—adopt a Condition of Approval; Operator—ensure construction hours are maintained | City | Monitor compliance with Conditions of Approval |
| Mitigation Measure AES-2b: Maintain site free of debris and restore abandoned roadways Project sites will be cleaned of all derelict equipment, wind turbine components not required for the project, and litter and debris from old turbines and past turbine operations. Such litter and debris may include derelict turbines, obsolete anemometers, unused electrical poles, and broken turbine blades. In addition, abandoned roads that are no longer in use on such parcels will be restored and hydroseeded to reclaim the sites and remove their visual traces from the viewscape, except in cases where the resource agencies (USFWS and CDFW) recommend that the features be left in place for resource protection. All parcels with new turbines will be maintained in such a manner through the life of project operations and until the parcels are reclaimed in accordance with the approved reclamation plan. | During construction and operation | City—adopt a Condition of Approval; Operator—ensure that site conditions are maintained as required | City | Monitor compliance with Conditions of Approval |
| Mitigation Measure AES-2c: Screen surplus parts and materials Surplus parts and materials that are kept onsite will be maintained in a neat and orderly fashion and screened from view. This can be accomplished by using a weatherproof camouflage material that can be draped over surplus parts and materials stockpiles. Draping materials will be changed out to accommodate for seasonal variations so that surplus materials are camouflaged in an effective manner when grasses are both green and brown. | During construction and operation | City—adopt a Condition of Approval; Operator—ensure that site conditions are maintained as required | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|---|-----------------------|--|------------------|--|
| <p>Mitigation Measure AES-5: Analyze shadow flicker distance and mitigate effects or incorporate changes into project design to address shadow flicker</p> <p>Where shadow flicker could result from the installation of wind turbines proposed near residences (i.e., within 500 meters [1,640 feet] in a generally east or west direction to account for all seasons), the project applicant will prepare a graphic model and study to evaluate shadow flicker impacts on nearby residences. No shadow flicker in excess of 30 minutes in a given day or 30 hours in a given year will be permitted. If it is determined that existing setback requirements as established by the County are not sufficient to prevent shadow flicker impacts on residences, the City will require an increase in the required setback distances to ensure that residences are not affected. If any residence is nonetheless affected by shadow flicker within the 30-minute/30-hour thresholds, the applicant will implement measures to minimize the effect, such as relocating the turbine; providing opaque window coverings, window awnings, landscape buffers, or a combination of these features to reduce flicker to acceptable limits for the affected receptor; or shutting down the turbine during the period shadow flicker would occur. Such measures will be undertaken in consultation with the owner of the affected residence. If the shadow flicker study indicates that any given turbine would result in shadow flicker exceeding the 30-minute/30-hour thresholds and the property owner is not amenable to window coverings, window awnings, or landscaping and the turbine cannot be shut down during the period of shadow flicker, then the turbine will be relocated to reduce the effect to acceptable limits.</p> | During project design | City—adopt a Condition of Approval; Operator—ensure that thresholds are maintained as required | City | Monitor compliance with Conditions of Approval |
| Air Quality | | | | |
| <p>Mitigation Measure AQ-2a: Reduce construction-related air pollutant emissions by implementing applicable BAAQMD Basic Construction Mitigation Measures</p> <p>The project proponents will require all contractors to comply with the following requirements for all areas with active construction activities.</p> <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered as needed to maintain dust control onsite—approximately two times per day. • All haul trucks transporting soil, sand, or other loose material offsite will be covered. | During construction | City—adopt a Condition of Approval; Operator—ensure compliance | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|--|---------------------|--|------------------|--|
| <ul style="list-style-type: none"> • All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads will be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage will be provided for construction workers at all access points. • All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator. • Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. The air district's phone number will also be visible to ensure compliance with applicable regulations. | | | | |
| <p>Mitigation Measure AQ-2b: Reduce construction-related air pollutant emissions by implementing measures based on BAAQMD's Additional Construction Mitigation Measures</p> <p>The project proponents will require all contractors to comply with the following requirements for all areas with active construction activities.</p> <ul style="list-style-type: none"> • During construction activities, all exposed surfaces will be watered at a frequency adequate to meet and maintain fugitive dust control requirements of all relevant air quality management entities. • All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 mph, as measured at the Livermore Municipal Airport. • Wind breaks (e.g., trees, fences) will be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50% air porosity. | During construction | City—adopt a Condition of Approval; Operator—ensure compliance | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|--|--------|--------------------|------------------|--------------------|
| <ul style="list-style-type: none"> • Vegetative ground cover (e.g., fast-germinating native grass seed) will be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. • If feasible and practicable, the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time will be limited. • Construction vehicles and machinery, including their tires, will be cleaned prior to leaving the construction area to remove vegetation and soil. Cleaning stations will be established at the perimeter of the construction area. • Site accesses to a distance of 100 feet from the paved road will be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel. • Sandbags or other erosion control measures will be installed to prevent silt runoff to public roadways from sites with a slope greater than 1%. • The idling time of diesel powered construction equipment will be minimized to 2 minutes. • The project will develop a plan demonstrating that the offroad equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20% NO_x reduction and 45% PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. • Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). • All construction equipment, diesel trucks, and generators will be equipped with BACT for emission reductions of NO_x and PM. • All contractors will use equipment that meets ARB's most recent certification standard for offroad heavy duty diesel engines. <p>Implementation of Mitigation Measures AQ-2a and AQ-2b would ensure that impacts related to fugitive dust emissions in the SFBAAB would be less than significant. However, implementation of these measures would not reduce total ROG or NO_x emissions to a less-than-significant level (Table 3.3-11). This impact of total ROG and NO_x emissions would be significant and unavoidable.</p> | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| Mitigation Measures AQ-2a and AQ-2b would not reduce the onroad emissions in the SJVAB shown in Table 3.3-7, but these emissions would not exceed SJVAPCD's significance thresholds and are, therefore, less than significant. | | | | |
| Biological Resources | | | | |
| <p>Mitigation Measure BIO-1a: Conduct surveys to determine the presence or absence of special-status plant species</p> <p>Project proponents will conduct surveys for the special-status plant species within and adjacent to all project sites. All surveys will be conducted by qualified biologists in accordance with the appropriate protocols.</p> <p>Special-status plant surveys will be conducted in accordance with <i>Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities</i> (California Department of Fish and Game 2009) during the season that special-status plant species would be evident and identifiable—i.e., during their blooming season. No more than 3 years prior to ground-disturbing repowering activities and during the appropriate identification periods for special-status plants (Table 3.4-4), a qualified biologist (as determined by the City) will conduct field surveys within decommissioning work areas, proposed construction areas, and the immediately adjacent areas to determine the presence of habitat for special-status plant species. The project proponent will submit a report documenting the survey results to the City for review and approval prior to conducting any repowering activities. The report will include the location and description of all proposed work areas, the location and description of all suitable habitat for special-status plant species, and the location and description of other sensitive habitats (e.g., vernal pools, wetlands, riparian areas). Additionally, the report will outline where additional species and/or habitat-specific mitigation measures are required. This report will provide the basis for any applicable permit applications where incidental take of listed species may occur.</p> | Prior to site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-1b: Implement best management practices to avoid and minimize impacts on special-status species</p> <p>Project proponents will ensure that the following BMPs, in accordance with practices established in the EACCS, will be incorporated into individual project design and construction documents.</p> <ul style="list-style-type: none"> • Employees and contractors performing decommissioning and reclamation activities will receive environmental sensitivity training. Training will include | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|---|--------|--------------------|------------------|--------------------|
| <p>review of environmental laws, mitigation measures, permit conditions, and other requirements that must be followed by all personnel to reduce or avoid effects on special-status species during construction activities.</p> <ul style="list-style-type: none"> • Environmental tailboard trainings will take place on an as-needed basis in the field. These trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects on these species during decommissioning and reclamation activities. Directors, managers, superintendents, and the crew leaders will be responsible for ensuring that crewmembers comply with the guidelines. • Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the extent practicable. • Offroad vehicle travel will be avoided. • Material will be stockpiled only in areas that do not support special-status species or sensitive habitats. • Grading will be restricted to the minimum area necessary. • Prior to ground-disturbing activities in sensitive habitats, project construction boundaries and access areas will be flagged and temporarily fenced during construction to reduce the potential for vehicles and equipment to stray into adjacent habitats. • Vehicles or equipment will not be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area (i.e., a created berm made of sandbags or other removable material) is constructed. • Erosion control measures will be implemented to reduce sedimentation in nearby aquatic habitat when activities are the source of potential erosion. Plastic monofilament netting (erosion control matting) or similar material containing netting will not be used at the project. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds. • Significant earth moving-activities will not be conducted in riparian areas within 24 hours of predicted storms or after major storms (defined as 1-inch of rain or more). <p>The following will not be allowed at or near work sites for project activities: trash dumping, firearms, open fires (such as barbecues) not required by the activity, hunting, and pets (except for safety in remote locations).</p> | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|---|--|--|------------------|--|
| <p>Mitigation Measure BIO-1c: Avoid and minimize impacts on special-status plant species by establishing activity exclusion zones</p> <p>Where surveys determine that a special-status plant species is present in or adjacent to a project area, direct and indirect impacts of the project on the species will be avoided through the establishment of activity exclusion zones, within which no ground-disturbing activities will take place, including construction of new facilities, construction staging, or other temporary work areas. Activity exclusion zones for special-status plant species will be established around each occupied habitat site, the boundaries of which will be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. The establishment of activity exclusion zones will not be required if no construction-related disturbances will occur within 250 feet of the occupied habitat. The size of activity exclusion zones may be reduced through consultation with a qualified biologist and with concurrence from CDFW based on site-specific conditions.</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-1d: Compensate for impacts on special-status plant species</p> <p>All project proponents will avoid or minimize temporary and permanent impacts on special-status plants that occur on project sites and will compensate for impacts on special-status plant species. Although all impacts on large-flowered fiddleneck, diamond-petaled California poppy, and caper-fruited tropidocarpum will be avoided, impacts on other special-status plant species will be avoided to the extent feasible, and any unavoidable impacts will be addressed through compensatory mitigation.</p> <p>Where avoidance of impacts on a special-status plant species is infeasible, loss of individuals or occupied habitat of a special-status plant species occurrence will be compensated for through the acquisition, protection, and subsequent management in perpetuity of other existing occurrences at a 2:1 ratio (occurrences impacted: occurrences preserved). The project proponent will provide detailed information to the City and CDFW on the location of the preserved occurrences, quality of the preserved habitat, feasibility of protecting and managing the areas in-perpetuity, responsibility parties, and other pertinent information. If suitable occurrences of a special-status plant species are not available for preservation, then the project will be redesigned to remove features that would result in impacts on that species.</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|--|-----------------------------|--|------------------|--|
| <p>Mitigation Measure BIO-1e: Retain a biological monitor during ground-disturbing activities in environmentally sensitive areas</p> <p>All project proponents will retain a qualified biologist (as determined by the City) to conduct periodic monitoring of decommissioning, repowering, and reclamation activities that occur adjacent to sensitive biological resources (e.g., special-status species, sensitive vegetation communities, wetlands). Monitoring will occur during initial ground disturbance where sensitive biological resources are present and weekly thereafter or as determined by the City in coordination with a qualified biologist. The biologist will assist the crew, as needed, to comply with all project implementation restrictions and guidelines. In addition, the biologist will be responsible for ensuring that the project proponent or its contractors maintain exclusion areas adjacent to sensitive biological resources, and for documenting compliance with all biological resources– related mitigation measures.</p> | During all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-2: Prevent introduction, spread, and establishment of invasive plant species</p> <p>To avoid and minimize the introduction and spread of invasive nonnative plant species, all project proponents will implement the following BMPs.</p> <ul style="list-style-type: none"> • Construction vehicles and machinery will be cleaned prior to entering the construction area to remove vegetation and soil. Cleaning stations will be established at the perimeter of the construction area or at a nearby offsite location (no more than 1 mile from the project construction entry point). • Vehicles will be washed only at approved areas. No washing of vehicles will occur at job sites. • To discourage the introduction and establishment of invasive plant species, seed mixtures and straw used within natural vegetation will be either rice straw or weed-free straw, as allowed by state and federal regulation of stormwater runoff. <p>In addition, the project proponents will prepare and implement erosion and sediment control plans to control short-term and long-term erosion and sedimentation effects and to restore soils and vegetation in areas affected by construction activities (Mitigation Measures BIO-1b and WQ-1). Prior to initiating any construction activities that will result in temporary impacts on natural communities, a restoration and monitoring plan will be developed for temporarily affected habitats in each project area (Mitigation Measure BIO-5c). Restoration and monitoring plans will be submitted to the City and CDFW for approval. These plans</p> | During all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|---|--|--|------------------|--|
| will include methods for restoring soil conditions and revegetating disturbed areas, seed mixes, monitoring and maintenance schedules, adaptive management strategies, reporting requirements, and success criteria. Following completion of project construction, the project proponents will implement the revegetation plans to restore areas disturbed by project activities to a condition of equal or greater habitat function than occurred prior to the disturbance. | | | | |
| <p>Mitigation Measure BIO-3a: Conduct preconstruction surveys for habitat for special-status wildlife species</p> <p>No more than 3 years prior to ground-disturbing repowering activities, a qualified biologist (as determined by the City) will conduct field surveys within decommissioning, repowering, and restoration work areas and their immediate surroundings to determine the presence of habitat for special-status wildlife species. The project proponent will submit a report documenting the survey results to the City for review prior to conducting any repowering activities. The report will include the location and description of all proposed work areas, the location and description of all suitable habitat for special-status wildlife species, and the location and description of other sensitive habitats (e.g., vernal pools, wetlands, riparian areas). Additionally, the report will outline where additional species- and/or habitat-specific mitigation measures are required. This report may provide the basis for any applicable permit applications where incidental take may occur.</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-3b: Implement measures to avoid, minimize, and mitigate impacts on vernal pool branchiopods and curved-footed hygroty diving beetle</p> <p>Where suitable habitat for listed vernal pool branchiopods and curved-footed hygroty diving beetle are identified within 250 feet (or another distance as determined by a qualified biologist based on topography and other site conditions) of proposed work areas, the following measures will be implemented to ensure that the repowering projects do not have adverse impacts on listed vernal pool branchiopods or curved-footed hygroty diving beetle. These measures are based on measures from the EACCS, with some modifications and additions. Additional conservation measures or conditions of approval may be required in applicable project permits (e.g., ESA incidental take permit).</p> <ul style="list-style-type: none"> • Avoid all direct impacts on sandstone rock outcrop vernal pools. | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|--|-----------------------------------|--|------------------|--|
| <ul style="list-style-type: none"> Ground disturbance will be avoided from the first day of the first significant rain (1 inch or more) until June 1, or until pools remain dry for 72 hours and no significant rain is forecast on the day of such ground disturbance. If vernal pools, clay flats, alkaline pools, ephemeral stock tanks (or ponds), sandstone pools, or roadside ditches are present within 250 feet of the work area (or another appropriate distance as determined by a qualified biologist on the basis of topography and other site conditions), the biologist will stake and flag an exclusion zone prior to construction activities. The width of the exclusion zone will be based on site conditions and will be the maximum practicable distance that ensures protection of the feature from direct and indirect effects of the project. Exclusion zones will be established around features whether they are wet or dry at the time. The exclusion zone will be fenced with orange construction zone and erosion control fencing (to be installed by construction crew). No herbicide will be applied within 100 feet of exclusion zones, except when applied to cut stumps or frilled stems or injected into stems. No broadcast applications will be allowed. Avoid modifying or changing the hydrology of aquatic habitats. Minimize the work area for stream crossings and conduct work during the dry season (June 1 through the first significant rain of the fall/winter). Install utility collection lines across perennial creeks by boring under the creek. <p>Where impacts cannot be avoided or minimized, compensatory mitigation will be undertaken in accordance with mitigation ratios and requirements developed under the EACCS (Appendix C). In the event that an incidental take permit is required, compensatory mitigation will be undertaken in accordance with the terms of the permit in consultation with USFWS.</p> | | | | |
| <p>Mitigation Measure BIO-5a: Implement best management practices to avoid and minimize effects on special-status amphibians</p> <p>All project proponents will ensure that BMPs and other appropriate measures, in accordance with measures developed for the EACCS, be incorporated into the appropriate design and construction documents. <i>Implementation of some of these measures will require that the project proponent obtain incidental take permits from USFWS (California red-legged frog and California tiger salamander) and from CDFW (California tiger salamander only) before construction begins.</i> Additional</p> | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|---|--------|--------------------|------------------|--------------------|
| <p>conservation measures or conditions of approval may be required in applicable project permits (e.g., ESA or CESA incidental take authorization). The applicant will comply with the State of California State Water Resources Control Board NPDES construction general requirements for stormwater.</p> <ul style="list-style-type: none"> • Ground-disturbing activities will be limited to dry weather between April 15 and October 31. No ground-disturbing work will occur during wet weather. Wet weather is defined as when there has been 0.25 inch of rain in a 24-hour period. Ground disturbing activities halted due to wet weather may resume when precipitation ceases and the National Weather Service 72-hour weather forecast indicates a 30% or less chance of precipitation. No ground-disturbing work will occur during a dry-out period of 48 hours after the above referenced wet weather. • Where applicable, barrier fencing will be installed around the worksite to prevent amphibians from entering the work area. Barrier fencing will be removed within 72 hours of completion of work. • Before construction begins, a qualified biologist will locate appropriate relocation areas and prepare a relocation plan for special-status amphibians that may need to be moved during construction. The proponent will submit this plan to USFWS and CDFW for approval a minimum of 2 weeks prior to the start of construction. • A qualified biologist will conduct preconstruction surveys immediately prior to ground-disturbing activities (including equipment staging, vegetation removal, grading). The biologist will survey the work area and all suitable habitats within 300 feet of the work area. If individuals (including adults, juveniles, larvae, or eggs) are found, work will not begin until USFWS and/or CDFW is contacted to determine if moving these life-stages is appropriate. If relocation is deemed necessary, it will be conducted in accordance with the relocation plan. Incidental take permits are required for relocation of California tiger salamander (USFWS and CDFW) and California red-legged frog (USFWS). Relocation of western spadefoot and foothill yellow-legged frog requires a letter from CDFW authorizing this activity. • No monofilament plastic will be used for erosion control. • All project activity will terminate 30 minutes before sunset and will not resume until 30 minutes after sunrise during the migration/active season from November 1 to June 15. Sunrise and sunset times are established by the U.S. | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|---|----------------------|--|------------------|--|
| <p>Naval Observatory Astronomical Applications Department for the geographic area where the project is located.</p> <ul style="list-style-type: none"> • Vehicles will not exceed a speed limit of 15 mph on unpaved roads within natural land cover types, or during offroad travel. • Trenches or holes more than 6 inches deep will be provided with one or more escape ramps constructed of earth fill or wooden planks and will be inspected by a qualified biologist prior to being filled. Any such features that are left open overnight will be searched each day prior to construction activities to ensure no covered species are trapped. Work will not continue until trapped animals have moved out of open trenches. • Work crews or the onsite biological monitor will inspect open trenches, pits, and under construction equipment and material left onsite in the morning and evening to look for amphibians that may have become trapped or are seeking refuge. • If special-status amphibians are found in the work area during construction and cannot or do not move offsite on their own, a qualified biologist who is USFWS and/or CDFW-approved under a biological opinion and/or incidental take permit for the specific project, will trap and move special-status amphibians in accordance with the relocation plan. Relocation of western spadefoot and foothill yellow-legged frog requires a letter permit from CDFW authorizing this activity. | | | | |
| <p>Mitigation Measure BIO-5b: Compensate for loss of habitat for special-status amphibians</p> <p>Where impacts on aquatic and upland habitat for special-status amphibians cannot be avoided or minimized, compensatory mitigation will be undertaken in accordance with mitigation ratios and requirements developed under the EACCS (Appendix C). In the event that take authorization is required, compensatory mitigation will be undertaken in accordance with the terms of the authorization in consultation with USFWS and/or CDFW.</p> | Prior to disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-5c: Restore disturbed annual grasslands</p> <p>Within 30 days prior to any ground disturbance, a qualified biologist will prepare a Grassland Restoration Plan in coordination with CDFW and subject to CDFW approval, to ensure that temporarily disturbed annual grasslands and areas planned for the removal of permanent roads and turbine pad areas are restored to</p> | Prior to disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>preproject conditions. The Grassland Restoration Plan will include but not be limited to the following measures.</p> <ul style="list-style-type: none"> • Gravel will be removed from areas proposed for grassland restoration. • To the maximum extent feasible, topsoil will be salvaged from within onsite work areas prior to construction. Imported fill soils will be limited to weed-free topsoil similar in texture, chemical composition, and pH to soils found at the restoration site. • Where appropriate, restoration areas will be seeded (hydroseeding is acceptable) to ensure erosion control. Seed mixes will be tailored to closely match that of reference site(s) within the program area and should include native or naturalized, noninvasive species sourced within the project area or from the nearest available location. • Reclaimed roads will be restored in such a way as to permanently prevent vehicular travel. <p>The plan will include a requirement to monitor restoration areas annually (between March and October) for up to 3 years following the year of restoration. The restoration will be considered successful when the percent cover for restored areas is 70% absolute cover of the planted/seeded species compared to the percent absolute cover of nearby reference sites. No more than 5% relative cover of the vegetation in the restoration areas will consist of invasive plant species rated as “high” in Cal-IPC’s California Invasive Plant Inventory Database (http://www.cal-ipc.org). Remedial measures prescribed in the plan will include supplemental seeding, weed control, and other actions as determined necessary to achieve the long-term success criteria. Monitoring may be extended if necessary to achieve the success criteria or if drought conditions preclude restoration success. Other performance standards may also be required as they relate to special-status species habitat; these will be identified in coordination with CDFW and included in the plan. The project proponent will provide evidence that CDFW has reviewed and approved the Grassland Restoration Plan. Additionally, the project proponent will provide annual monitoring reports to the City by January 31 of each year, summarizing the monitoring results and any remedial measures implemented (if any are necessary) during the previous year.</p> | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Mitigation Measure BIO-6: Conduct preconstruction surveys for western pond turtle and monitor construction activities if turtles are observed</p> <p>If it is determined through preconstruction surveys conducted pursuant to Mitigation Measure BIO-3a that suitable aquatic or upland habitat for western pond turtle is present within proposed work areas, the following measures, consistent with measures developed for the EACCS, will be implemented to ensure that the proposed project does not have a significant impact on western pond turtle.</p> <ul style="list-style-type: none"> • One week before and within 24 hours of beginning work in suitable aquatic habitat, a qualified biologist (one who is familiar with different species of turtles) will conduct surveys for western pond turtle. The surveys should be timed to coincide with the time of day and year when turtles are most likely to be active (during the cooler part of the day between 8 a.m. and 12 p.m. during spring and summer). Prior to conducting the surveys, the biologist should locate the microhabitats for turtle basking (logs, rocks, brush thickets) and determine a location to quietly observe turtles. Each survey should include a 30-minute wait time after arriving onsite to allow startled turtles to return to open basking areas. The survey should consist of a minimum 15-minute observation period for each area where turtles could be observed. • If western pond turtles are observed during either survey, a biological monitor will be present during construction activities in the aquatic habitat where the turtle was observed. The biological monitor also will be mindful of suitable nesting and overwintering areas in proximity to suitable aquatic habitat and will periodically inspect these areas for nests and turtles. • If one or more western pond turtles are found in the work area during construction and cannot or do not move offsite on their own, a qualified biologist will remove and relocate the turtle to appropriate aquatic habitat outside and away from the construction area. Relocation of western pond turtle requires a letter from CDFW authorizing this activity. | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-7a: Implement best management practices to avoid and minimize effects on special-status reptiles</p> <p>Where suitable habitat for Blainville’s horned lizard, Alameda whipsnake, or San Joaquin coachwhip is identified in proposed work areas, all project proponents will ensure that BMPs and other appropriate measures, in accordance with measures developed for the EACCS, be incorporated into the appropriate design and construction documents. <i>Implementation of some of these measures will require that</i></p> | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p><i>the project proponent obtain incidental take permits from USFWS and CDFW (Alameda whipsnake) before construction begins.</i> Additional conservation measures or conditions of approval may be required in applicable project permits (i.e., ESA incidental take permit).</p> <ul style="list-style-type: none"> • A qualified biologist will conduct preconstruction surveys immediately prior to ground-disturbing activities (e.g., equipment staging, vegetation removal, grading) associated with the program. If any Blainville's horned lizards, Alameda whipsnakes, or San Joaquin coachwhips are found, work will not begin until they are moved out of the work area to a USFWS- and/or CDFW-approved relocation site. Incidental take permits from USFWS and CDFW are required for relocation of Alameda whipsnake. Relocation of Blainville's horned lizard and San Joaquin coachwhip requires a letter from CDFW authorizing this activity. • No monofilament plastic will be used for erosion control. • Where applicable, barrier fencing will be used to exclude Blainville's horned lizard, Alameda whipsnake, and San Joaquin coachwhip. Barrier fencing will be removed within 72 hours of completion of work. • Work crews or an onsite biological monitor will inspect open trenches and pits and under construction equipment and materials left onsite for special-status reptiles each morning and evening during construction. • Ground disturbance in suitable habitat will be minimized. • Vegetation within the proposed work area will be removed prior to grading. Prior to clearing and grubbing operations, a qualified biologist will clearly mark vegetation within the work area that will be avoided. Vegetation outside the work area will not be removed. Where possible hand tools (e.g., trimmer, chain saw) will be used to trim or remove vegetation. All vegetation removal will be monitored by the qualified biologist to minimize impacts on special-status reptiles. • If special-status reptiles are found in the work area during construction and cannot or do not move offsite on their own, a qualified biologist who is USFWS- and/or CDFW-approved under an incidental take permit for the specific project will trap and move the animal(s) to a USFWS and/or CDFW-approved relocation area. Incidental take permits from USFWS and CDFW are required for relocation of Alameda whipsnake. Relocation of Blainville's horned lizard and San Joaquin coachwhip requires a letter from CDFW authorizing this activity. | | | | |

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| <p>Mitigation Measure BIO-7b: Compensate for loss of habitat for special-status reptiles</p> <p>Where impacts on habitat for special-status reptiles cannot be avoided or minimized, compensatory mitigation will be undertaken in accordance with mitigation ratios and requirements developed under the EACCS (Appendix C). In the event that incidental take permits are required for Alameda whipsnake, compensatory mitigation will be undertaken in accordance with the terms of permits in consultation with USFWS and CDFW.</p> | Prior to disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-8a: Implement measures to avoid and minimize potential impacts on special-status and non-special-status nesting birds</p> <p>Where suitable habitat is present for raptors within 1 mile (within 2 miles for golden eagles) and for tree/shrub- and ground-nesting migratory birds (non-raptors) within 50 feet of proposed work areas, the following measures will be implemented to ensure that the proposed project does not have a significant impact on nesting special-status and non-special-status birds.</p> <ul style="list-style-type: none"> • Remove suitable nesting habitat (shrubs and trees) during the non-breeding season (typically September 1–January 31) for nesting birds. • To the extent feasible, avoid construction activities in or near suitable or occupied nesting habitat during the breeding season of birds (generally February 1–August 31). • If construction activities (including vegetation removal, clearing, and grading) will occur during the nesting season for migratory birds, a qualified biologist will conduct preconstruction nesting bird surveys within 7 days prior to construction activities. The construction area and a 1-mile buffer will be surveyed for tree-nesting raptors (except for golden eagles), and a 50-foot buffer will be surveyed for all other bird species. • Surveys to locate eagle nests within 2 miles of construction will be conducted during the breeding season prior to construction. A 1-mile no-disturbance buffer will be implemented for construction activities to protect nesting eagles from disturbance. Through coordination with USFWS, the no-disturbance buffer may be reduced to 0.5 mile if construction activities are not within line-of-sight of the nest. • If an active nest (other than golden eagle) is identified near a proposed work area and work cannot be conducted outside the nesting season (February 1– | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| August 31), a no-activity zone will be established around the nest by a qualified biologist in coordination with USFWS and/or CDFW. Fencing and/or flagging will be used to delineate the no-activity zone. To minimize the potential to affect the reproductive success of the nesting pair, the extent of the no-activity zone will be based on the distance of the activity to the nest, the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the species, and the dissimilarity of the proposed activity to background activities. The no-activity zone will be large enough to avoid nest abandonment and will be between 50 feet and 1 mile from the nest, or as otherwise required by USFWS and/or CDFW. | | | | |
| <p>Mitigation Measure BIO-8b: Implement measures to avoid and minimize potential impacts on western burrowing owl</p> <p>Where suitable habitat for western burrowing owl is in or within 500 feet of proposed work areas, the following measures will be implemented to avoid or minimize potential adverse impacts on burrowing owls.</p> <ul style="list-style-type: none"> • To the maximum extent feasible (e.g., where the construction footprint can be modified), construction activities within 500 feet of active burrowing owl burrows will be avoided during the nesting season (February 1–August 31). • A qualified biologist will conduct preconstruction take avoidance surveys for burrowing owl no less than 14 days prior to and within 24 hours of initiating ground-disturbing activities. The survey area will encompass the work area and a 500-foot buffer around this area. • If an active burrow is identified near a proposed work area and work cannot be conducted outside the nesting season (February 1–August 31), a no-activity zone will be established by a qualified biologist in coordination with CDFW. The no-activity zone will be large enough to avoid nest abandonment and will extend a minimum of 250 feet around the burrow. • If burrowing owls are present at the site during the non-breeding season (September 1–January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow. • If the designated no-activity zone for either breeding or non-breeding burrowing owls cannot be established, a wildlife biologist experienced in burrowing owl behavior will evaluate site-specific conditions and, in coordination with CDFW, recommend a smaller buffer (if possible) and/or other measure that still minimizes disturbance of the owls (while allowing reproductive success during | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>the breeding season). The site-specific buffer (and/or other measure) will consider the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity to background activities.</p> <ul style="list-style-type: none"> • If burrowing owls are present in the direct disturbance area and cannot be avoided during the non-breeding season (generally September 1 through January 31), burrowing owls may be excluded from burrows through the installation of one-way doors at burrow entrances. A burrowing owl exclusion plan, prepared by the project proponent, must be approved by CDFW prior to exclusion of owls. One-way doors (e.g., modified dryer vents or other CDFW-approved method) will be left in place for a minimum of 1 week and monitored daily to ensure that the owl(s) have left the burrow(s). Excavation of the burrow will be conducted using hand tools. During excavation of the burrow, a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel to maintain an escape route for any animals that may be inside the burrow. Owls will be excluded from their burrows as a last resort and only if other avoidance and minimization measures cannot be implemented. • Avoid destruction of unoccupied burrows outside the work area and place visible markers near burrows to ensure that they are not collapsed. • Conduct ongoing surveillance of the project site for burrowing owls during project activities. If additional owls are observed using burrows within 500 feet of construction, the onsite biological monitor will determine, in coordination with CDFW, if the owl(s) are or would be affected by construction activities and if additional exclusion zones are required. | | | | |
| <p>Mitigation Measure BIO-9: Compensate for the permanent loss of occupied habitat for western burrowing owl</p> <p>If construction activities would result in the removal of occupied burrowing owl habitat (determined during preconstruction surveys described in Mitigation Measure BIO-8a), this habitat loss will be mitigated by permanently protecting mitigation land through a conservation easement or by implementing alternative mitigation determined through consultation with CDFW as described in its <i>Staff Report on Burrowing Owl Mitigation</i> (California Department of Fish and Game 2012:11–13). The project proponent will work with CDFW to develop the compensation plan, which will be subject to City review and approval.</p> | Prior to disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Mitigation Measure BIO-10a: Implement measures to avoid and minimize potential impacts on San Joaquin kit fox and American badger</p> <p>Where suitable habitat is present for San Joaquin kit fox and American badger in and adjacent to proposed work areas, the following measures, consistent with measures developed in the EACCS, will be implemented to ensure that proposed projects do not have a significant impact on San Joaquin kit fox or American badger. <i>Implementation of some of these measures will require that the project proponent obtain incidental take permits from USFWS and CDFW (San Joaquin kit fox) before construction begins.</i> Additional conservation measures or conditions of approval may be required in applicable project permits.</p> <ul style="list-style-type: none"> • To the maximum extent feasible, suitable dens for San Joaquin kit fox and American badger will be avoided. • All project proponents will retain qualified approved biologists (as determined by USFWS) to conduct a preconstruction survey for potential San Joaquin kit fox dens (U.S. Fish and Wildlife Service 2011). Resumes of biologists will be submitted to USFWS for review and approval prior to the start of the survey. • Preconstruction surveys for American badgers will be conducted in conjunction with San Joaquin kit fox preconstruction surveys. • As described in U.S. Fish and Wildlife Service 2011, the preconstruction survey will be conducted no less than 14 days and no more than 30 days before the beginning of ground disturbance, or any activity likely to affect San Joaquin kit fox. The biologists will conduct den searches by systematically walking transects through the project area and a buffer area to be determined in coordination with USFWS and CDFW. Transect distance should be based on the height of vegetation such that 100% visual coverage of the project area is achieved. If a potential or known den is found during the survey, the biologist will measure the size of the den, evaluate the shape of the den entrances, and note tracks, scat, prey remains, and recent excavations at the den site. The biologists will also determine the status of the dens and map the features. Dens will be classified in one of the following four den status categories defined by USFWS (U.S. Fish and Wildlife Service 2011). <ul style="list-style-type: none"> ◦ Potential den: Any subterranean hole within the species' range that has entrances of appropriate dimensions and for which available evidence is sufficient to conclude that it is being used or has been used by a kit fox. Potential dens include (1) any suitable subterranean hole; or (2) any den or | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>burrow of another species (e.g., coyote, badger, red fox, ground squirrel) that otherwise has appropriate characteristics for kit fox use; or an artificial structure that otherwise has appropriate characteristics for kit fox use.</p> <ul style="list-style-type: none"> Known den: Any existing natural den or artificial structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records; past or current radiotelemetry or spotlighting data; kit fox sign such as tracks, scat, and/or prey remains; or other reasonable proof that a given den is being or has been used by a kit fox (USFWS discourages use of the terms <i>active</i> and <i>inactive</i> when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly). Known natal or pupping den: Any den that is used, or has been used at any time in the past, by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two; therefore, for purposes of this definition either term applies. Known atypical den: Any artificial structure that has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings. <p>Written results of the survey including the locations of any potential or known San Joaquin kit fox dens will be submitted to USFWS within 5 days following completion of the survey and prior to the start of ground disturbance or construction activities.</p> <ul style="list-style-type: none"> After preconstruction den searches and before the commencement of repowering activities, exclusion zones will be established as measured in a radius outward from the entrance or cluster of entrances of each den. Repowering activities will be prohibited or greatly restricted within these exclusion zones. Only essential vehicular operation on existing roads and foot traffic will be permitted. All other repowering activities, vehicle operation, material and equipment storage, and other surface-disturbing activities will be prohibited in | | | | |

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| <p>the exclusion zones. Barrier fencing will be removed within 72 hours of completion of work. Exclusion zones will be established using the following parameters.</p> <ul style="list-style-type: none"> ○ Potential and atypical dens: A total of four or five flagged stakes will be placed 50 feet from the den entrance to identify the den location. ○ Known den: Orange construction barrier fencing will be installed between the work area and the known den site at a minimum distance of 100 feet from the den. The fencing will be maintained until construction-related disturbances have ceased. At that time, all fencing will be removed to avoid attracting subsequent attention to the den. ○ Natal/pupping den: USFWS will be contacted immediately if a natal or pupping den is discovered in or within 200 feet of the work area. ● Any occupied or potentially occupied badger den will be avoided by establishing an exclusion zone consistent with a San Joaquin kit fox potential burrow (i.e., four or five flagged stakes will be placed 50 feet from the den entrance). ● In cases where avoidance is not a reasonable alternative, limited destruction of potential San Joaquin kit fox dens may be allowed as follows. <ul style="list-style-type: none"> ○ Natal/pupping dens: Natal or pupping dens that are occupied will not be destroyed until the adults and pups have vacated the dens and then only after consultation with USFWS. Removal of natal/pupping dens requires incidental take authorization from USFWS and CDFW. ○ Known dens: Known dens within the footprint of the activity must be monitored for 3 days with tracking medium or an infrared camera to determine current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use. If kit fox activity is observed during this period, the den will be monitored for at least 5 consecutive days from the time of observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged by partially plugging its entrance(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied will the den be excavated under the direction of a biologist. If the fox is still present after 5 or more consecutive days of monitoring, the den may be excavated when, in the judgment of the biologist, it is temporarily vacant, such as during the fox's normal foraging activities. Removal of known dens requires incidental take authorization from USFWS and CDFW. | | | | |

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| <ul style="list-style-type: none"> ○ Potential dens: If incidental take permits have been received (from USFWS and CDFW), potential dens can be removed (preferably by hand excavation) by biologist or under the supervision of a biologist without monitoring, unless other restrictions were issued with the incidental take permits. If no take authorizations have been issued, the potential dens will be monitored as if they are known dens. If any den was considered a potential den but was later determined during monitoring or destruction to be currently or previously used by kit foxes (e.g., kit fox sign is found inside), then all construction activities will cease and USFWS and CDFW will be notified immediately. ● Nighttime work will be minimized to the extent possible. The vehicular speed limit will be reduced to 10 miles per hour during nighttime work. ● Pipes, culverts, and similar materials greater than 4 inches in diameter will be stored so as to prevent wildlife species from using these as temporary refuges, and these materials will be inspected each morning for the presence of animals prior to being moved. ● A representative appointed by the project proponent will be the contact for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative will be identified during environmental sensitivity training (Mitigation Measure BIO-1b) and his/her name and phone number will be provided to USFWS and CDFW. Upon such incident or finding, the representative will immediately contact USFWS and CDFW. ● The Sacramento USFWS office and CDFW will be notified in writing within 3 working days of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, and location of the incident, and any other pertinent information. | | | | |
| <p>Mitigation Measure BIO-10b: Compensate for loss of suitable habitat for San Joaquin kit fox and American badger</p> <p>Where permanent impacts on habitat for San Joaquin kit fox and American badger cannot be avoided or minimized, compensatory mitigation will be undertaken in accordance with mitigation ratios and requirements developed under the EACCS (Appendix C). In the event that incidental take permits are required for San Joaquin kit fox, compensatory mitigation will be undertaken in accordance with the terms of permits in consultation with USFWS and CDFW.</p> | Prior to disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Mitigation Measure BIO-11a: Prepare a project-specific avian protection plan</p> <p>All project proponents will prepare a project-specific APP to specify measures and protocols consistent with the program-level mitigation measures that address avian mortality. The project-specific APPs will include, at a minimum, the following components.</p> <ul style="list-style-type: none"> • Information and methods used to site turbines to minimize risk. • Documentation that appropriate turbine designs are being used. • Documentation that avian-safe practices are being implemented on project infrastructure. • Methods used to discourage prey for raptors. • A detailed description of the postconstruction avian fatality monitoring methods to be used (consistent with the minimum requirements outlined in Mitigation Measure BIO-11g). • Methods used to compensate for the loss of raptors (consistent with the requirements of Mitigation Measure BIO-11h). <p>Each project applicant will prepare and submit a draft project-specific APP to the City. The draft APP will be reviewed by the TAC for consistency and the inclusion of appropriate mitigation measures that are consistent with the PEIR and recommended for approval by the City. Each project applicant must have an approved Final APP prior to commercial operation.</p> | Prior to site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-11b: Site turbines to minimize potential mortality of birds</p> <p>Siting of turbines—using analyses of landscape features and location-specific bird use and behavior data to identify locations with reduced collision risk—may result in reduced fatalities (Smallwood et al. 2009). All project proponents will conduct a siting process and prepare a siting analysis to select turbine locations to minimize potential impacts on bird and bat species. Proponents will utilize existing data as well as collect new site-specific data as part of the siting analysis.</p> <p>Project proponents will utilize currently available guidelines such as the Alameda County SRC guidelines for siting wind turbines (Alameda County SRC 2010) and/or other currently available research or guidelines to conduct siting analysis. Additionally, project proponents will use the results of previous siting efforts to inform the analysis and siting methods as appropriate such that the science of</p> | Prior to site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

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| <p>siting continues to be advanced. All project proponents will collect field data that identify or confirm the behavior, utilization, and distribution patterns of affected avian and bat species prior to the installation of turbines. Project proponents will collect and utilize available existing information, including but not necessarily limited to: siting reports and monitoring data from previously installed projects; published use and abundance studies and reports; and topographic features known to increase collision risk (trees, riparian areas, water bodies, and wetlands).</p> <p>Project proponents will also collect and utilize additional field data as necessary to inform the siting analysis for golden eagle. As required in Mitigation Measure BIO-8a, surveys will be conducted to locate golden eagle nests within 2 miles of proposed project areas. Siting of turbines within 2 miles of an active or alternative golden eagle nest or active golden eagle territory will be based on a site-specific analysis of risk based on the estimated eagle territories, conducted in consultation with USFWS.</p> <p>Project proponents will utilize methods (i.e., computer models) to identify dangerous locations for birds and bats based on site-specific risk factors informed by the information discussed above. The project proponents will compile the results of the siting analyses for each turbine and document these in the project-level APP, along with the specific location of each turbine.</p> | | | | |
| <p>Mitigation Measure BIO-11c: Use turbine designs that reduce avian impacts</p> <p>Use of turbines with certain characteristics is believed to reduce the collision risk for avian species. Project proponents will implement the design-related measures listed below.</p> <ul style="list-style-type: none"> • Turbine designs will be selected that have been shown or that are suspected to reduce avian fatalities, based on the height, color, configuration, or other features of the turbines. • Turbine design will limit or eliminate perching opportunities. Designs will include a tubular tower with internal ladders; external catwalks, railings, or ladders will be prohibited. • Turbine design will limit or eliminate nesting or roosting opportunities. Openings on turbines will be covered to prevent cavity-nesting species from nesting in the turbines. • Lighting will be installed on the fewest number of turbines allowed by FAA regulations, and all pilot warning lights will fire synchronously. Turbine lighting | Prior to site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

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| will employ only red or dual red-and-white strobe, strobe-like, or flashing lights (U.S. Fish and Wildlife Service 2012). All lighting on turbines will be operated at the minimum allowable intensity, flashing frequency, and quantity allowed by FAA (Gehring et al. 2009; U.S. Fish and Wildlife Service 2012). Duration between flashes will be the longest allowable by the FAA. | | | | |
| <p>Mitigation Measure BIO-11d: Incorporate avian-safe practices into design of turbine-related infrastructure</p> <p>All project proponents will apply the following measures when designing and siting turbine-related infrastructure. These measures will reduce the risk of bird electrocution and collision.</p> <ul style="list-style-type: none"> • Permanent meteorological stations will avoid use of guy wires. If it is not possible to avoid using guy wires, the wires will be at least 4/0 gauge to ensure visibility and will be fitted with bird deterrent devices. • All permanent meteorological towers will be unlit unless lighting is required by FAA. If lighting is required, it will be operated at the minimum allowable intensity, flashing frequency, and quantity allowed by FAA. • To the extent possible, all powerlines will be placed underground. However, lines may be placed aboveground immediately prior to entering the substation. All aboveground lines will be fitted with bird flight diverters or visibility enhancement devices (e.g., spiral damping devices). When lines cannot be placed underground, appropriate avian protection designs must be employed. As a minimum requirement, the collection system will conform with the most current edition of the Avian Power Line Interaction Committee guidelines to prevent electrocutions. • Lighting will be focused downward and minimized to limit skyward illumination. Sodium vapor lamps and spotlights will not be used at any facility (e.g., laydown areas, substations) except when emergency maintenance is needed. Lighting at collection facilities, including substations, will be minimized using downcast lighting and motion-detection devices. The use of high-intensity lighting; steady-burning or bright lights such as sodium vapor, quartz, or halogen; or other bright spotlights will be minimized. Where lighting is required it will be designed for the minimum intensity required for safe operation of the facility. Green or blue lighting will be used in place of red or white lighting. | Prior to site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

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| <p>Mitigation Measure BIO-11e: Retrofit existing infrastructure to minimize risk to raptors</p> <p>Any existing power lines in a specific project area that are owned by the wind project operator and that are associated with electrocution of an eagle or other raptor will be retrofitted within 30 days to make them raptor-safe according to Avian Power Line Interaction Committee guidelines. All other existing structures to remain in a project area during repowering will be retrofitted, as feasible, according to specifications of Mitigation Measure BIO-11c prior to repowered turbine operation.</p> | During operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-11f: Discourage prey for raptors</p> <p>All project proponents will apply the following measures when designing and siting turbine-related infrastructure. These measures are intended to minimize opportunities for fossorial mammals to become established and thereby create a prey base that could become an attractant for raptors.</p> <ul style="list-style-type: none"> • Rodenticide will not be utilized on the project site to avoid the risk of raptors scavenging the remains of poisoned animals. • Boulders (rocks more than 12 inches in diameter) excavated during project construction may be placed in aboveground piles in the project area so long as they are more than 500 meters (1,640 feet) from any turbine. Existing rock piles created during construction of first- and second-generation turbines will also be moved at least 500 meters (1,640 feet) from turbines. • Gravel will be placed around each tower foundation to discourage small mammals from burrowing near turbines. | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-11g: Implement postconstruction avian fatality monitoring for all repowering projects</p> <p>A postconstruction monitoring program will be conducted at each repowering project for a minimum of 3 years beginning on the commercial operation date (COD) of the project. Monitoring may continue beyond 3 years if construction is completed in phases. Moreover, if the results of the first 3 years indicate that baseline fatality rates (i.e., nonrepowered fatality rates) are exceeded, monitoring will be extended until the average annual fatality rate has dropped below baseline fatality rates for 2 years, and to assess the effectiveness of adaptive management measures specified in Mitigation Measure BIO-11i. An additional 2 years of monitoring will be implemented at year 10 (i.e., the tenth anniversary of the COD).</p> | During operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Project proponents will provide access to qualified third parties authorized by the City to conduct any additional monitoring after the initial 3-year monitoring period has expired and before and after the additional 2-year monitoring period, provided that such additional monitoring utilizes scientifically valid monitoring protocols.</p> <p>A technical advisory committee (TAC) will be formed to oversee the monitoring program and to advise the City on adaptive management measures that may be necessary if fatality rates substantially exceed those predicted for the project (as described below in Mitigation Measure BIO-11i). The TAC will have a standing meeting, which will be open to the public, every 6 months to review monitoring reports produced by operators in the program area. In these meetings, the TAC will discuss any issues raised by the monitoring reports and recommend to the City next steps to address issues, including scheduling additional meetings, if necessary.</p> <p>The TAC will comprise representatives from the County (including one or more technical consultants, such as a biostatistician, an avian biologist, and a bat biologist), and wildlife agencies (CDFW, USFWS). Additional TAC members may also be considered (e.g., a representative from Audubon, a landowner in the program area, a representative of the operators) at the discretion of the County. The TAC will be a voluntary and advisory group that will provide guidance to the City. To maintain transparency with the public, all TAC meetings will be open to the public, and notice of meetings will be given to interested parties.</p> <p>The TAC will have three primary advisory roles: (1) to review and advise on project planning documents (i.e., project-specific APPs) to ensure that project-specific mitigation measures and compensatory mitigation measures described in this PEIR are appropriately and consistently applied, (2) to review and advise on monitoring documents (protocols and reporting) for consistency with the mitigation measures, and (3) to review and advise on implementation of the adaptive management plans.</p> <p>Should fatality monitoring reveal that impacts exceed the baseline thresholds established in this PEIR, the TAC will advise the City on requiring implementation of adaptive management measures as described in Mitigation Measure BIO-11i. The City will have the decision-making authority, as it is the organization issuing the CUPs. However, the TAC will collaboratively inform the decisions of the City.</p> <p>Operators are required to provide for avian use surveys to be conducted within the project area boundaries for a minimum of 30 minutes duration. Surveyors will be qualified and trained and subject to approval by the City.</p> | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Carcass surveys will be conducted at every turbine for projects with 20 or fewer turbines. For projects with more than 20 turbines, such surveys will be required at a minimum of 20 turbines, and a sample of the remaining turbines may be selected for carcass searches. The operator will be required to demonstrate that the sampling scheme and sample size are statistically rigorous and defensible. Where substantial variation in terrain, land cover type, management, or other factors may contribute to significant variation in fatality rates, the sampling scheme will be stratified to account for such variation. The survey protocol for sets and subsets of turbines, as well as proposed sampling schemes that do not entail a search of all turbines, must be approved by the City in consultation with the TAC prior to the start of surveys.</p> <p>The search interval will not exceed 14 days for the minimum of 20 turbines to be surveyed; however, the search interval for the additional turbines (i.e., those exceeding the 20-turbine minimum) that are to be included in the sampling scheme may be extended up to 28 days or longer if recommended by the TAC.</p> <p>The estimation of detection probability is a rapidly advancing field. Carcass placement trials, broadly defined, will be conducted to estimate detection probability during each year of monitoring. Sample sizes will be large enough to potentially detect significant variation by season, carcass size, and habitat type.</p> <p>Operators will be required to submit copies of all raw data forms to the County and City annually, will supply raw data in a readily accessible digital format to be specified by the County, and will prepare raw data for inclusion as appendices in the annual reports. The intent is to allow the County and City to conduct independent analyses and meta-analyses of data across the APWRA, and to supply these data to the regulatory agencies if requested.</p> <p>Annual reports submitted to the County and City will provide a synthesis of all information collected to date. Each report will provide an introduction; descriptions of the study area, methods, and results; a discussion of the results; and any suitable recommendations. Reports will provide raw counts of fatalities, adjusted fatality rates, and estimates of project-wide fatalities on both a per MW and per turbine basis.</p> | | | | |

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| <p>Mitigation Measure BIO-11h: Compensate for the loss of raptors and other avian species, including golden eagles, by contributing to conservation efforts</p> <p>Discussion</p> <p>Several options to compensate for impacts on raptors are currently available. Some are targeted to benefit certain species, but they may also have benefits for other raptor and non-raptor species. For example, USFWS’s ECP Guidelines currently outline a compensatory mitigation strategy for golden eagles using the retrofit of high-risk power poles (poles known or suspected to electrocute and kill eagles). The goal of this strategy is to eliminate hazards for golden eagles. However, because the poles are also dangerous for other large raptors (e.g., red-tailed hawk, Swainson’s hawk), retrofitting them can benefit such species as well as eagles. Similarly, although the retrofitting of electrical poles may have benefits for large raptors, such an approach may provide minimal benefits for smaller raptors such as American kestrel and burrowing owl. Consequently, additional measures would be required components of an overall mitigation package to compensate for impacts on raptors in general.</p> <p>The Secretary of the Interior issued Order 3330 on October 31, 2013, outlining a new approach to mitigation policies and practices of the Department of the Interior. This approach recognizes that certain strategies aimed at some species (e.g., raptors) can provide substantial benefit to others (e.g., non-raptors) and to the ecological landscape as a whole. The landscape-scale approach to mitigation and conservation efforts is now central to the Department’s mitigation strategy. Although the Order was intended for use by federal agencies and as such is not directly applicable to the City, it is evident that such an approach would likely have the greatest mitigation benefits, especially when considering ongoing and long-term impacts from wind energy projects.</p> <p>With these considerations in mind, the City has outlined several options that are currently available to compensate for impacts on raptors and other avian species. The options discussed below are currently considered acceptable approaches to compensation for impacts on raptors and other species. Although not every option is appropriate for all species, it is hoped that as time proceeds, a more comprehensive landscape-level approach to mitigation will be adopted to benefit a broader suite of species than might benefit from more species-specific measures. The City recognizes that the science of raptor conservation and the understanding of wind-wildlife impacts are continuing to evolve and that the suite of available</p> | Prior to startup and during operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| compensation options may consequently change over the life of the proposed projects. | | | | |
| Conservation Measures | | | | |
| <p>To promote the conservation of raptors and other avian species, project proponents will compensate for raptor fatalities estimated within their project areas. Mitigation will be provided in 10-year increments, with the first increment based on the estimates (raptors/MW/year) provided in this PEIR for the Vasco Winds Project (Table 3.4-10) or the project-specific EIR for future projects. The Vasco Winds fatality rates were selected because the Vasco turbines are the most similar to those likely to be proposed for future repowering projects and consequently represent the best available fatality estimates. Each project proponent will conduct postconstruction fatality monitoring for at least 3 years beginning at project startup (date of commercial operation) and again for 2 years at year 10, as required under Mitigation Measure BIO-11g, to estimate the average number of raptors taken each year by each individual project. The project proponent will compensate for this number of raptors in subsequent 10-year increments for the life of the project (i.e., three 10-year increments) as outlined below. Mitigation Measure BIO-11g also requires additional fatality monitoring at year 10 of the project. The results of the first 3 years of monitoring and/or the monitoring at year 10 may lead to revisions of the estimated average number of raptors taken, and mitigation provided may be adjusted accordingly on a one-time basis within each of the first two 10-year increments, based on the results of the monitoring required by Mitigation Measure BIO-11g, in consultation with the TAC.</p> <p>Prior to the start of operations, project proponents will submit for City approval an avian conservation strategy, as part of the project-specific APP outlined in Mitigation Measure BIO-11a, outlining the estimated number of raptor fatalities based on the number and type of turbines being constructed, and the type or types of compensation options to be implemented. Project proponents will use the avian conservation strategy to craft an appropriate strategy using a balanced mix of the options presented below, as well as considering new options suggested by the growing body of knowledge during the course of the project lifespan, as supported by a Resource Equivalency Analysis (REA) (see example in Appendix C) or similar type of compensation assessment acceptable to the City that demonstrates the efficacy of proposed mitigation for impacts on raptors.</p> <p>The City Planning Director, in consultation with the TAC, will consider, based on the REA, whether the proposed avian-conservation strategy is adequate, including</p> | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>consideration of whether each avian conservation strategy incorporates a landscape-scale approach such that the conservation efforts achieve the greatest possible benefits. Compensation measures as detailed in an approved avian conservation strategy must be implemented within 1 year of the date of commercial operations. Avian conservation strategies will be reviewed and may be revised by the City every 10 years, and on a one-time basis in each of the two 10-year increments based on the monitoring required by Mitigation Measure BIO-11g.</p> <ul style="list-style-type: none"> Retrofitting high-risk electrical infrastructure. USFWS's ECP Guidelines outline a compensatory mitigation strategy using the retrofit of high-risk power poles (poles known or suspected to electrocute and kill eagles). USFWS has developed an REA (U.S. Fish and Wildlife Service 2013a) as a tool to estimate the compensatory mitigation (number of retrofits) required for the take of eagles. The REA takes into account the current understanding of eagle life history factors, the effectiveness of retrofitting poles, the expected annual take, and the timing of implementation of the pole retrofits. The project proponents may need to contract with a utility or a third-party mitigation account (such as the National Fish and Wildlife Foundation) to retrofit the number of poles needed as demonstrated by a project-specific REA. If contracting directly, the project proponent will consult with utility companies to ensure that high-risk poles have been identified for retrofitting. Proponents will agree in writing to pay the utility owner/operator to retrofit the required number of power poles and maintain the retrofits for 10 years and will provide the City with documentation of the retrofit agreement. The first retrofits will be based on the estimated number of eagle fatalities as described above in this measure or as developed in the project-specific EIR for future projects. Subsequent numbers of retrofits required for additional 10-year durations will be based on the results of project-specific fatality monitoring as outlined in Mitigation Measure BIO-11g. If fewer eagle fatalities are identified through the monitoring, the number of future required retrofits may be reduced through a project-specific REA. Although retrofitting poles has not been identified as appropriate mitigation for other large raptors, they would likely benefit from such efforts, as they (particularly red-tailed and Swainson's hawks) constitute the largest non-eagle group to suffer electrocution on power lines (Avian Power Line Interaction Committee 2006). Measures outlined in an approved Eagle Conservation Plan and Bird and Bat Conservation Strategy. Project proponents may elect to apply for programmatic eagle take permits from USFWS. The programmatic eagle take | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>permit process currently involves preparation of an ECP and a Bird and Bat Conservation Strategy (BBCS). The ECP specifies avoidance and minimization measures, advanced conservation practices, and compensatory mitigation for eagles—conditions that meet USFWS’s criteria for issuance of a permit. The BBCS outlines measures being implemented by the applicant to avoid and minimize impacts on migratory birds, including raptors. If programmatic eagle take permits are obtained by project proponents, those permit terms, including the measures outlined in the approved ECP and BBCS, may constitute an appropriate conservation measure for estimated take of golden eagles and other raptors, provided such terms are deemed by the City to be comparable to or more protective of raptors than the other options listed herein.</p> <ul style="list-style-type: none"> Contribute to raptor conservation efforts. Project proponents will contribute funds, in the amount of \$580/raptor, in 10-year increments to local and/or regional conservation efforts designed to protect, recover, and manage lands for raptors, or to conduct research involving methods to reduce raptor fatalities or increase raptor productivity. The \$580 amount is based on the average cost to rehabilitate one raptor at the California Raptor Center, affiliated with the UC Davis School of Veterinary Medicine, which receives more than 200 injured or ill raptors annually (Stedman pers. comm.). Ten-year installments are more advantageous than more frequent installments for planning and budgeting purposes. <p>The funds will be contributed to an entity or entities engaged in these activities, such as the East Bay Regional Park District and the Livermore Area Regional Park District. Conservation efforts may include constructing and installing nest boxes and perches, conducting an awareness campaign to reduce the use of rodenticide, and conducting research to benefit raptors. The specific conservation effort to be pursued will be submitted to the City for approval as part of the avian conservation strategy review process. The donation receipt will be provided to the City as evidence of payment.</p> <p>The first contributions for any given project will be based on the estimated number of raptor fatalities as described above in this measure or as developed in the project-specific EIR for future projects. Funds for subsequent 10-year installments will be provided on the basis of the average annual raptor fatality rates determined through postconstruction monitoring efforts, allowing for a one-time adjustment within each 10-year increment after the results of the monitoring efforts are available. If fewer raptor fatalities are determined through</p> | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>the monitoring effort, the second installment amount may be reduced to account for the difference between the first estimated numbers and the monitoring results.</p> <ul style="list-style-type: none"> Contribute to regional conservation of raptor habitat. Project proponents may address regional conservation of raptor habitat by funding the acquisition of conservation easements within the APWRA or on lands in the same eco-region outside the APWRA, subject to City approval, for the purpose of long-term regional conservation of raptor habitat. Lands proposed for conservation must be well-managed grazing lands similar to those on which the projects have been developed. Project proponents will fund the regional conservation and improvement of lands (through habitat enhancement, lead abatement activities, elimination of rodenticides, and/or other measures) using a number of acres equivalent to the conservation benefit of the raptor recovery and conservation efforts described above, or as determined through a project-specific REA (see example REA in Appendix C). The conservation lands must be provided for compensation of a minimum of 10 years of raptor fatalities, as 10-year increments will minimize the transaction costs associated with the identification and conservation of lands, thereby increasing overall cost effectiveness. The conservation easements will be held by an organization whose mission is to purchase and/or otherwise conserve lands, such as The Trust for Public Lands, The Nature Conservancy, California Rangeland Trust, or the East Bay Regional Parks District. The project proponents will obtain approval from the City regarding the amount of conserved lands, any enhancements proposed to increase raptor habitat value, and the entity holding the lands and/or conservation easement. Other Conservation Measures Identified in the Future. As noted above, additional conservation measures for raptors may become available in the future. Conservation measures for raptors are currently being developed by USFWS and nongovernmental organizations (e.g., American Wind Wildlife Institute)—for example, activities serving to reduce such fatalities elsewhere, and enhancing foraging and nesting habitat. Additional options for conservation could include purchasing credits at an approved mitigation bank, credits for the retirement of windfarms that are particularly dangerous to birds or bats, the curtailment of prey elimination programs, and hunter-education programs that remove sources of lead from the environment. Under this option, the project proponent may make alternative proposals to the City for conservation measures—based on an | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| REA or similar compensation assessment—that the City may accept as mitigation if they are deemed by the City to be comparable to or more protective of raptor species than the other options described herein. | | | | |
| <p>Mitigation Measure BIO-11i: Implement an avian adaptive management program</p> <p>If fatality monitoring described in Mitigation Measure BIO-11g results in an estimate that exceeds the preconstruction baseline fatality estimates (i.e., estimates at the nonrepowered turbines as described in this PEIR) for any focal species or species group (i.e., individual focal species, all focal species, all raptors, all non-raptors, all birds combined), project proponents will prepare a project-specific adaptive management plan within 2 months following the availability of the fatality monitoring results. These plans will be used to adjust operation and mitigation to the results of monitoring, new technology, and new research to ensure that the best available science is used to minimize impacts to below baseline. Project-specific adaptive management plans will be reviewed by the TAC, revised by project proponents as necessary, and approved by the City. The TAC will take current research and the most effective impact reduction strategies into account when reviewing adaptive management plans and suggesting measures to reduce impacts. The project-specific adaptive management plans will be implemented within 2 months of approval by the City. The plans will include a stepped approach whereby an adaptive measure or measures are implemented, the results are monitored for success or failure for a year, and additional adaptive measures are added as necessary, followed by another year of monitoring, until the success criteria are achieved (i.e., estimated fatalities are below the baseline). Project proponents should use the best measures available when the plan is prepared in consideration of the specific adaptive management needs. For example, if only one threshold is exceeded, such as golden eagle fatalities, the plan and measures used will target that species. As set forth in other agreements in the APWRA, project proponents may also focus adaptive management measures on individual or multiple turbines if those turbines are shown to cause a significantly disproportionate number of fatalities.</p> <p>In general, the following types of measures will be considered by the TAC, in the order they are presented below; however, the TAC may recommend any of these or other measures that are shown to be successful in reducing the impact.</p> | During operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>ADMM-1: Visual Modifications. The project proponent could paint a pattern on a proportion of the turbine blades. The proportion and the pattern of the blades to be painted will be determined by the City in consultation with the TAC. USFWS recommends testing measures to reduce <i>motion smear</i>—the blurring of turbine blades due to rapid rotation that renders them less visible and hence more perilous to birds in flight. Suggested techniques include painting blades with staggered stripes or painting one blade black. The project proponent will conduct fatality studies on a controlled number of painted and unpainted turbines. The project proponent will coordinate with the TAC to determine the location of the painted turbines, but the intent is to implement this measure in areas that appear to be contributing most to the high number of fatalities detected.</p> <p>ADMM-2: Anti-Perching Measures. The City will consult with the TAC regarding the use of anti-perching measures to discourage bird use of the area. The TAC will use the most recent research and information available to determine, on a case-by-case basis, if anti-perching measures will be an effective strategy to reduce impacts. If determined to be feasible, anti-perching devices will be installed on artificial structures, excluding utility poles, within 1 mile of project facilities (with landowner permission) to discourage bird use of the area.</p> <p>ADMM-3: Prey Reduction. The project proponent will implement a prey reduction program around the most hazardous turbines. Examples of prey reduction measures may include changes in grazing practices to make the area less desirable for prey species, active reduction through direct removal of prey species, or other measures provided they are consistent with management goals for threatened and endangered species.</p> <p>ADMM-4: Implementation of Experimental Technologies. Project proponents can deploy experimental technologies at their facilities to test their efficacy in reducing turbine-related fatalities. Examples may include, but are not limited to, visual deterrents, noise deterrents, and active radar systems.</p> <p>ADMM-5: Turbine Curtailment. If postconstruction monitoring indicates patterns of turbine-caused fatalities—such as seasonal spikes in fatalities, topographic or other environmental features associated with high numbers of fatalities, or other factors that can potentially be manipulated and that suggest that curtailment of a specific turbine’s operation would result in reducing future avian fatalities—the project operator can curtail operations of the offending turbine or turbines.</p> | | | | |

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| <p>Curtalement restrictions would be developed in coordination with the TAC and based on currently available fatality data, use data, and research.</p> <p>ADMM-6: Cut-in Speed Study. Changes in cut-in speed could be conducted to see if changing cut-in speeds from 3 meters per second to 5 meters per second (for example) would significantly reduce avian fatalities. The proponent will coordinate with the TAC in determining the feasibility of the measure for the particular species affected as well as the amount of the change in the cut-in speed.</p> <p>ADMM-7: Real-Time Turbine Curtalement. The project proponent can employ a real-time turbine curtalement program designed in consultation with the TAC. The intent would be to deploy a biologist to monitor onsite conditions and issue a curtalement order when raptors are near operating turbines. Alternatively, radar, video, or other monitoring measures could be deployed in place of a biological monitor if there is evidence to indicate that such a system would be as effective and more efficient than use of a human monitor.</p> | | | | |
| <p>Mitigation Measure BIO-12a: Conduct bat roost surveys</p> <p>Prior to development of any repowering project, a qualified bat biologist will conduct a roost habitat assessment to identify potential colonial roost sites of special-status and common bat species within 750 feet of the construction area. If suitable roost sites are to be removed or otherwise affected by the proposed project, the bat biologist will conduct targeted roost surveys of all identified sites that would be affected. Because bat activity is highly variable (both spatially and temporally) across the landscape and may move unpredictably among several roosts, several separate survey visits may be required. Surveys will be repeated at different times of year if deemed necessary by the bat biologist to determine the presence of seasonally active roosts (hibernacula, migratory stopovers, maternity roosts). Appropriate field methods will be employed to determine the species, type, and vulnerability of the roost to construction disturbance. Methods will follow best practices for roost surveys such that species are not disturbed and adequate temporal and spatial coverage is provided to increase likelihood of detection.</p> <p>Roost surveys may consist of both daylight surveys for signs of bat use and evening/night visit(s) to conduct emergence surveys or evaluate the status of night roosts. Survey timing should be adequate to account for individual bats or species that might not emerge until well after dark.</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Methods and approaches for determining roost occupancy status should include a combination of the following components as the biologist deems necessary for the particular roost site.</p> <ul style="list-style-type: none"> • Passive and/or active acoustic monitoring to assist with species identification. • Guano traps to determine activity status. • Night-vision equipment. • Passive infrared camera traps. <p>At the completion of the roost surveys, a report will be prepared documenting areas surveyed, methods, results, and mapping of high-quality habitat or confirmed roost locations.</p> | | | | |
| <p>Mitigation Measure BIO-12b: Avoid removing or disturbing bat roosts</p> <ul style="list-style-type: none"> • Active bat roosts will not be disturbed, and will be provided a minimum buffer of 500 feet where preexisting disturbance is moderate or 750 feet where preexisting disturbance is minimal. Confirmation of buffer distances and determination of the need for a biological monitor for active maternity roosts or hibernacula will be obtained in consultation with CDFW. At a minimum, when an active maternity roost or hibernaculum is present within 750 feet of a construction site, a qualified biologist will conduct an initial assessment of the roost response to construction activities and will recommend buffer expansion if there are signs of disturbance from the roost. • Structures (natural or artificial) showing evidence of significant bat use within the past year will be left in place as habitat wherever feasible. Should such a structure need to be removed or disturbed, CDFW will be consulted to determine appropriate buffers, timing and methods, and compensatory mitigation for the loss of the roost. • All project proponents will provide environmental awareness training to construction personnel, establish buffers, and initiate consultation with CDFW if needed. • Artificial night lighting within 500 feet of any roost will be shielded and angled such that bats may enter and exit the roost without artificial illumination and the roost does not receive artificial exposure to visual predators. | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <ul style="list-style-type: none"> Tree and vegetation removal will be conducted outside the maternity season (April 1–September 15) to avoid disturbance of maternity groups of foliage-roosting bats. If a maternity roost or hibernaculum is present within 500 feet of the construction site where preexisting disturbance is moderate or within 750 feet where preexisting disturbance is minimal, a qualified biological monitor will be onsite during groundbreaking activities. | | | | |
| <p>Mitigation Measure BIO-14a: Site and select turbines to minimize potential mortality of bats</p> <p>All project proponents will use the best information available to site turbines and to select from turbine models in such a manner as to reduce bat collision risk. The siting and selection process will take into account bat use of the area and landscape features known to increase collision risk (trees, edge habitats, riparian areas, water bodies, and wetlands). Measures include but are not limited to siting turbines the greatest distance feasible up to 500 meters (1,640) feet from still or flowing bodies of water, riparian habitat, known roosts, and tree stands (California Bat Working Group 2006:6).</p> <p>To generate site-specific “best information” to inform turbine siting and operation decisions, a bat habitat assessment and roost survey will be conducted in the project area to identify and map habitat of potential significance to bats, such as potential roost sites (trees and shrubs, significant rock formations, artificial structures) and water sources. Turbine siting decisions will incorporate relevant bat use survey data and bat fatality records published by other projects in the APWRA. Roost surveys will be carried out according to the methods described in Mitigation Measure-BIO-12a.</p> | Prior to site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure BIO-14b: Implement postconstruction bat fatality monitoring program for all repowering projects</p> <p>A scientifically defensible, postconstruction bat fatality monitoring program will be implemented to estimate actual bat fatalities and determine if additional mitigation is required. Bat-specific modifications to the 3-year postconstruction monitoring program described in Mitigation Measure BIO-11g, developed in accordance with CEC 2007 and with appropriate recommendations from California Bat Working Group guidelines (2006), will be implemented.</p> | During operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

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| <p>In addition to the requirements outlined in Mitigation Measure BIO-11g, the following two bat-specific requirements will be added.</p> <ul style="list-style-type: none"> • Include on the TAC at least one biologist with significant expertise in bat research and wind energy impacts on bats. • Conduct bat acoustic surveys concurrently with fatality monitoring in the project area to estimate nightly, seasonal, or annual variations in relative activity and species use patterns, and to contribute to the body of knowledge on seasonal bat movements and relationships between bat activity, environmental variables, and turbine fatality. Should emerging research support the approach, these data may be used to generate site-specific predictive models to increase the precision and effectiveness of mitigation measures (e.g., the season-specific, multivariate models described by Weller and Baldwin 2011:11). Acoustic bat surveys will be designed and data analysis conducted by qualified biologists with significant experience in acoustic bat survey techniques. Methods will be informed by the latest available guidelines (California Energy Commission guidelines, 2007); California Bat Working Group guidelines, 2006), except where best available science supports technological or methodological updates. High-quality, sensitive acoustic equipment will be used to produce data of sufficient quality to generate species identifications. Survey design and methods will be scientifically defensible and will include, at a minimum, the following elements. <ul style="list-style-type: none"> ◦ Acoustic detectors will be installed at multiple stations to adequately sample range of habitats in the project area for both resident and migratory bats. The number and locations for acoustic monitoring will be developed in consultation with the TAC. The number of detector arrays installed per project site should incorporate emerging research on the density of detectors required to adequately meet sampling goals and inform mitigation approaches (Weller and Baldwin 2011:10). ◦ Acoustic detector arrays will sample multiple airspace heights including as close to the repowered rotor swept area as possible. Vertical structures used for mounting may be preexisting or may be installed for the project (e.g., temporary or permanent meteorological towers). ◦ Surveys will be conducted such that data are collected continuously for a minimum of 90 days between mid-August and mid-November to cover the activity transition from maternity to migration season and determine if there is elevated activity during migration. Survey season may be adjusted to more | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>accurately reflect the full extent of the local migration season and/or season(s) of greatest local bat fatality risk, if scientifically sound data support doing so.</p> <ul style="list-style-type: none"> Anticipated adaptive management goals, such as determining justifiable timeframes to reduce required periods of cut-in speed adjustments, will be reviewed with the TAC and incorporated in designing the acoustic monitoring and data analysis program. <p>Modifications to the fatality search protocol will be implemented to obtain better information on the number and timing of bat fatalities (e.g., Johnston et al. 2013:85). Modifications will include decreases in the transect width and search interval for a period of time coinciding with high levels of bat mortality, i.e., the fall migration season (roughly August to early November, or as appropriate in the view of the TAC). The nature of bat-specific transect distance and search intervals will be determined in consultation with the TAC and will be guided by scientifically sound and pertinent data on rates of bat carcass detection at wind energy facilities (e.g., Johnston et al. 2013:54–55) and site-specific data from APWRA repowering project fatality monitoring programs as these data become available.</p> <p>Other methods to achieve the goals of the bat fatality monitoring program while avoiding prohibitive costs may be considered subject to approval by the TAC, if these methods have been peer reviewed and evidence indicates the methods are effective. For example, if project proponents wish to have the option of altering search methodology to a newly developed method, such as searching only roads and pads (Good et al. 2011:73), a statistically robust field study to index the results of the methodology against standard search methods will be conducted concurrently to ensure site-specific, long-term validity of the new methods.</p> <p>Finally, detection probability trials will utilize bat carcasses to develop bat-specific detection probabilities. Care should be taken to avoid introducing novel disease reservoirs; such avoidance will entail using onsite fatalities or using carcasses obtained from within a reasonably anticipated flight distance for that species.</p> | | | | |
| <p>Mitigation Measure BIO-14c: Prepare and publish annual monitoring reports on the findings of bat use of the project area and fatality monitoring results</p> <p>Annual reports of bat use results and fatality monitoring will be produced within 3 months of the end of the last day of fatality monitoring. Special-status bat species records will be reported to CNDDB.</p> | Within 3 months of the end of the last day of fatality monitoring | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Mitigation Measure BIO-14d: Develop and implement a bat adaptive management plan</p> <p>In concert with Mitigation Measure BIO-14b, all project proponents will develop adaptive management plans to ensure appropriate, feasible, and current incorporation of emerging information. The goals of the adaptive management plans are to ensure that the best available science and emerging technologies are used to assess impacts on bats, and that impacts are minimized to the greatest extent possible while maximizing energy production.</p> <p>The project-specific adaptive management plans will be used to adjust operation and mitigation to incorporate the results of project area monitoring and new technology and research results when sufficient evidence exists to support these new approaches. These plans will be reviewed by the TAC and approved by the City. All adaptive management measures will be implemented within a reasonable timeframe, sufficient to allow the measures to take effect in the first fall migration season following the year of monitoring in which the adaptive management threshold was crossed. ADMMs may be modified by the City in consultation with the TAC to take into account current research, site-specific data, and the most effective impact reduction strategies. ADMMs will include a scientifically defensible, controlled research component and minimum post-implementation monitoring time to evaluate the effectiveness and validity of the measures. The minimum monitoring time will consist of three sequential fall seasons of the bat-specific mortality monitoring program covering the 3–4 months of the year in which the highest bat mortality has been observed: likely August–November. The start and end dates of the 3–4 months of bat-specific mortality monitoring period will be based on existing fatality data and in consultation with the TAC.</p> <p>Determining a fatality threshold to trigger adaptive management is not straightforward, as insufficient information exists on the status and vitality of the populations of migratory bat species subject to mortality in the APWRA. The low estimate of anticipated bat fatality rates is from the Vasco Winds project in the APWRA. Applying this rate programmatically would result in an estimate of 21,000 bats killed over the 30-year life of the program. The high estimate is from the Montezuma Hills Wind Resource Area. Applying this rate programmatically would result in an estimate of 49,050 bats killed over the 30-year life of the program. Bats are slow to reproduce, and turbines may be more likely to kill adult bats than juveniles, suggesting that a conservative approach is warranted. Accordingly, an initial adaptive management threshold will be established using the low fatality</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>estimates, or 1.679 fatalities/MW/year, to ensure that the most conservative trigger for implementation of adaptive management measures is adopted.</p> <p>If postconstruction fatality monitoring results in a point estimate for the bat fatality rate that exceeds the 1.679 fatalities/MW/year threshold by a statistically significant amount, then, in consultation with the TAC, ADMM-7 and ADMM-8 (described below) for bats will be implemented.</p> <p>It is important to note that neither the high nor the low estimate speaks to the ability of bat populations to withstand the associated levels of take. The initial fatality rate threshold triggering adaptive management may be modified by the TAC if appropriate and if such adaptation is supported by the best available science.</p> <p>The TAC may direct implementation of adaptive management measures for other appropriate reasons, such as an unexpectedly and markedly high fatality rate observed for any bat species, or special-status species being killed in unexpectedly high numbers.</p> <p>ADMMs for bats may be implemented using a stepped approach until necessary fatality reductions are reached, and monitoring methods must be revised as needed to ensure accurate measurement of the effectiveness of the ADMMs. Additional ADMMs for bats should be developed as new technologies or science supports doing so.</p> <p>ADMM-7: Seasonal Turbine Cut-in Speed Increase. Cut-in speed increases offer the most promising and immediately available approach to reducing bat fatalities at fourth-generation wind turbines. Reductions in fatalities (53–87%) were observed when increasing modern turbine cut-in speed to 5.0–6.5 m/s (Arnett et al. 2009:3; Good et al. 2012:iii). While implementing this measure immediately upon a project's commencement would likely reduce bat fatalities, that assumption is not yet supported by conclusive data. Moreover, without establishing baseline fatality at repowered projects, there would be no way to determine the effectiveness of the approach or whether the costs of increased cut-in speeds (and consequent power generation reductions) were providing fatality reductions.</p> <p>Cut-in speed increases will be implemented as outlined below, with effectiveness assessed annually.</p> <ul style="list-style-type: none"> • The project proponent will increase cut-in speed to 5.0 m/s from sunset to sunrise during peak migration season (generally August–October). If this is ineffective, the project proponent will increase turbine cut-in speed by annual increments of 0.5 m/s until target fatality reductions are achieved. | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <ul style="list-style-type: none"> • The project proponent may refine site-specific migration start dates on the basis of pre- and postconstruction acoustic surveys and ongoing review of dates of fatality occurrences for migratory bats in the APWRA. • The project proponent may request a shorter season of required cut-in speed increases with substantial evidence that similar levels of mortality reduction could be achieved. Should resource agencies and the TAC find there is sufficient support for a shorter period (as low as 8 weeks), evidence in support of this shorter period will be documented for the public record and the shorter period may be implemented. • The project proponent may request shorter nightly periods of cut-in speed increases with substantial evidence from defensible onsite, long-term postconstruction acoustic surveys indicating predictable nightly timeframes when target species appear not to be active. Target species are here defined as migratory bats or any other species appearing repeatedly in the fatality records. • The project proponent may request exceptions to cut-in speed increases for particular weather events or wind patterns if substantial evidence is available from onsite acoustic or other monitoring to support such exceptions (i.e., all available literature and onsite surveys indicate that bat activity ceases during specific weather events or other predictable conditions). • In the absence of defensible site-specific data, mandatory cut-in speed increases will commence on August 1 and continue through October 31, and will be in effect from sunset to sunrise. <p>ADMM-8: Emerging Technology as Mitigation. The project proponent may request, with consultation and approval from agencies, replacement or augmentation of cut-in speed increases with developing technology or another mitigation approach that has been proven to achieve similar bat fatality reductions.</p> <p>The project proponent may also request the second tier of adaptive management to be the adoption of a promising but not fully proven technology or mitigation method. These requests are subject to review and approval by the TAC and must include a controlled research component designed by a qualified principal investigator so that the effectiveness of the method may be accurately assessed.</p> <p>Some examples of such emerging technologies and research areas that could be incorporated in adaptive management plans are listed below.</p> <ul style="list-style-type: none"> • The use of acoustic deterrents (Arnett et al. 2013:1). | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <ul style="list-style-type: none"> The use of altitude-specific radar, night vision and/or other technology allowing bat use monitoring and assessment of at-risk bat behavior (Johnston et al. 2013: 90-91) if research in these areas advances sufficiently to allow effective application of these technologies. Application of emerging peer-reviewed studies on bat biology (such as studies documenting migratory corridors or bat behavior in relation to turbines) that support specific mitigation methods. | | | | |
| Mitigation Measure BIO-14e: Compensate for expenses incurred by rehabilitating injured bats The cost of reasonable, licensed rehabilitation efforts for any injured bats taken to wildlife care facilities from the program area will be assumed in full by project proponents. | During operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| Mitigation Measure BIO-15: Compensate for the loss of alkali meadow habitat If alkali meadow habitat is filled or disturbed as part of a repowering project, the project proponent will compensate for the loss of this habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with state and federal agencies (CDFW, USFWS, USACE). Unless specified otherwise by a resource agency, the compensation will be at a minimum 1:1 ratio (1 acre restored or created for every 1 acre filled) and may be a combination of onsite restoration/creation, offsite restoration, and mitigation credits. A restoration and monitoring plan will be developed and implemented. The plan will describe how alkali meadow habitat will be created and monitored. | Prior to disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| Cultural Resources | | | | |
| Mitigation Measure CUL-2a: Conduct a preconstruction cultural field survey and cultural resources inventory and evaluation The City will require applicants to retain qualified personnel to conduct an archaeological field survey of the project area to determine whether significant resources existing within the project area. The inventory and evaluation will include the documentation and result of these efforts, the evaluation of any cultural resources identified during the survey, and cultural resources monitoring, if the survey identifies that it is necessary. | Prior to disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Mitigation Measure CUL-2b: Develop a treatment plan for any identified significant cultural resources</p> <p>If any significant resources are identified through the preconstruction survey, a treatment plan that could include site avoidance, capping, or data recovery will be developed and implemented.</p> | Prior and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure CUL-2c: Conduct worker awareness training for archaeological resources prior to construction</p> <p>Prior to the initiation of any site preparation and/or the start of construction, the project applicant will ensure that all construction workers receive training overseen by a qualified professional archaeologist who is experienced in teaching nonspecialists, to ensure that forepersons and field supervisors can recognize archaeological resources (e.g., areas of shellfish remains, chipped stone or groundstone, historic debris, building foundations, human bone) in the event that any are discovered during construction.</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure CUL-2d: Stop work if cultural resources are encountered during ground-disturbing activities</p> <p>The project applicant will ensure that construction specifications include a stop-work order if prehistoric or historic-era cultural resources are unearthed during ground-disturbing activities. If such resources are encountered, the project applicant will immediately halt all activity within 100 feet of the find until a qualified archaeologist can assess the significance of the find. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or tool-making debris; culturally darkened soil (“midden”) containing heat-affected rocks and artifacts; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered-stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If the find is determined to be potentially significant, the archaeologist, in consultation with the Native American representative (if appropriate), will develop a treatment plan that could include site avoidance, capping, or data recovery.</p> | During construction and other site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Mitigation Measure CUL-3: Stop work if human remains are encountered during ground-disturbing activities</p> <p>The project applicant will ensure the construction specifications include a stop-work order if human remains are discovered during construction or demolition. There will be no further excavation or disturbance of the site within a 100-foot radius of the location of such discovery, or any nearby area reasonably suspected to overlie adjacent remains. The Alameda County Coroner will be notified and will make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, he will notify the Native American Heritage Commission, who will attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this state law, then the landowner will re-inter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance. A final report will be submitted to Alameda County. This report will contain a description of the mitigation program and its results, including a description of the monitoring and testing resources analysis methodology and conclusions and a description of the disposition/curation of the resources.</p> | During site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| Geology, Soils, Mineral Resources, and Paleontological Resources | | | | |
| <p>Mitigation Measure GEO-1: Conduct site-specific geotechnical investigation and implement design recommendations in subsequent geotechnical report</p> <p>Prior to construction activities at any site, the project proponent will retain a geotechnical firm with local expertise in geotechnical investigation and design to prepare a site-specific geotechnical report. This report will be prepared by a licensed geotechnical engineer or engineering geologist and will be submitted to the County building department as part of the approval process. This report will be based on data collected from subsurface exploration, laboratory testing of samples, and surface mapping and will address the following issues.</p> <ul style="list-style-type: none"> • Potential for surface fault rupture and turbine site location: The geotechnical report will investigate the Greenville, Corral Hollow-Carnegie, and the Midway faults (as appropriate to the location) and determine whether they pose a risk of surface rupture. Turbine foundations and power collection systems will be sited according to recommendations in this report. | Prior to site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <ul style="list-style-type: none"> • Strong ground shaking: The geotechnical report will analyze the potential for strong ground shaking in project area and provide turbine foundation design recommendations, as well as recommendations for power collection systems. • Slope failure: The geotechnical report will investigate the potential for slope failure (both seismically and nonseismically induced) and develop site-specific turbine foundation and power collection system plans engineered for the terrain, rock and soil types, and other conditions present at the program area in order to provide long-term stability. • Expansive soils: The geotechnical report will assess the soil types in the program area and determine the best engineering designs to accommodate the soil conditions. • Unstable cut or fill slopes: The geotechnical report will address geologic hazards related to the potential for grading to create unstable cut or fill slopes and make site-specific recommendations related to design and engineering. | | | | |
| <p>Mitigation Measure GEO-7a: Retain a qualified professional paleontologist to monitor significant ground-disturbing activities</p> <p>The applicant will retain a qualified professional paleontologist as defined by the SVP's <i>Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources</i> (2010) to monitor activities with the potential to disturb sensitive paleontological resources. Data gathered during detailed project design will be used to determine the activities that will require the presence of a monitor. In general, these activities include any ground-disturbing activities involving excavation deeper than 3 feet in areas with high potential to contain sensitive paleontological resources. Recovered fossils will be prepared so that they can be properly documented. Recovered fossils will then be curated at a facility that will properly house and label them, maintain the association between the fossils and field data about the fossils' provenance, and make the information available to the scientific community.</p> | During site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure GEO-7b: Educate construction personnel in recognizing fossil material</p> <p>The applicant will ensure that all construction personnel receive training provided by a qualified professional paleontologist experienced in teaching non-specialists to ensure that they can recognize fossil materials in the event any are discovered during construction.</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>Mitigation Measure GEO-7c: Stop work if substantial fossil remains are encountered during construction</p> <p>If substantial fossil remains (particularly vertebrate remains) are discovered during earth disturbing activities, activities within 100 feet of the find will stop immediately until a state-registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. The applicant will be responsible for ensuring that recommendations regarding treatment and reporting are implemented.</p> | During construction | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| Greenhouse Gas Emissions | | | | |
| <p>Mitigation Measure GHG-2a: Implement best available control technology for heavy-duty vehicles</p> <p>The applicant will require existing trucks/trailers to be retrofitted with the best available technology and/or ARB-approved technology consistent with the ARB Truck and Bus Regulation (California Air Resources Board 2011). The ARB Truck and Bus Regulation applies to all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds.</p> <p>Starting January 1, 2015, the applicant must replace lighter trucks (GVWR of 14,001 to 26,000 pounds) with engines that are 20 years or older with newer trucks. The Applicant has the option to install a PM filter retrofit on a lighter truck by 2014 to make the truck exempt from replacement until January 1, 2020, and any lighter truck equipped with a PM filter retrofit prior to July 2011 would receive credit toward the compliance requirements for a heavier truck or bus in the same fleet.</p> | During construction and during operation if applicable | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| Starting January 1, 2012, the applicant is required to meet the engine model year schedule shown below for heavier trucks (GVWR greater than 26,000 pounds). To comply with the schedule, the applicant will install the best available PM filter on 1996 model year and newer engines and would replace the vehicle 8 years later. The Applicant will replace trucks with 1995 model year and older engines starting in 2015. Replacements with 2010 model year or newer engines meets the final requirements, but the applicant could also replace trucks with used trucks that would have a future compliance date on the schedule. For example, a replacement with a 2007 model year engine complies until 2023. By 2023 all trucks and buses must have 2010 model year engines with few exceptions. In addition, the applicant could comply with a phase-in option that would allow the applicant to decide which vehicles to retrofit or replace, regardless of engine model year. The applicant must report information about all heavier trucks starting January 31, 2012, to use this option. | | | | |
| | Engine Model Year Schedule for Heavier Trucks | | | |
| | Engine Year | Requirement from January 1 | | |
| | Pre-1994 | No requirements until 2015, then 2010 engine | | |
| | 1994–1995 | No requirements until 2016, then 2010 engine | | |
| | 1996–1999 | PM filter from 2012 to 2020, then 2010 engine | | |
| | 2000–2004 | PM filter from 2013 to 2021, then 2010 engine | | |
| | 2005–2006 | PM filter from 2014 to 2022, then 2010 engine | | |
| | 2007–2009 | No requirements until 2023, then 2010 engine | | |
| | 2010 | Meets final requirements | | |
| Phase-In Option for Heavier Trucks | | | | |
| Compliance Date | Vehicles with PM Filters | | | |
| 1-Jan-12 | 30% | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>The Applicant could comply by demonstrating that trucks have met the percentage requirement each year as shown in the table below. For example, by 2012 the applicant's fleet would need to have PM filters on 30% of the heavier trucks in the fleet. This option counts 2007 model year and newer engines originally equipped with PM filters toward compliance and would reduce the overall number of retrofit PM filters needed. Any engine with a PM filter regardless of model year would be compliant until at least 2020. Beginning January 1, 2020, all heavier trucks would need to meet the requirements specified in the Compliance Schedule for Heavier Trucks.</p> | <p>1-Jan-13 60%</p> <p>1-Jan-14 90%</p> <p>1-Jan-15 90%</p> <p>1-Jan-16 100%</p> | | | |
| <p>Mitigation Measure GHG-2b: Install low SF₆ leak rate circuit breakers and monitoring</p> <p>The applicant will ensure that any new circuit breaker installed at a substation has a guaranteed SF₆ leak rate of 0.5% by volume or less. The applicant will provide the City with documentation of compliance, such as specification sheets, prior to installation of the circuit breaker. In addition, the applicant will monitor the SF₆-containing circuit breakers at the substation consistent with Scoping Plan Measure H-6 for the detection and repair of leaks.</p> | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure GHG-2c: Require new construction to use building materials containing recycled content</p> <p>The applicant will require the construction of all new substation and other permanent buildings to incorporate materials for which the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10% of the total value of the materials in the project.</p> | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| <p>Mitigation Measure GHG-2d: Comply with construction and demolition debris management ordinance</p> <p>The applicant will comply with the County's revised Green Building Ordinance regarding construction and demolition debris as follows: (1) 100% of inert waste and 50% wood/vegetative/scrap metal not including Alternative Daily Cover (ADC) and unsalvageable material will be put to other beneficial uses at landfills, and (2)</p> | During construction and operation | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| 100% of inert materials (concrete and asphalt) will be recycled or put to beneficial reuse. | | | | |
| Hazards and Hazardous Materials | | | | |
| <p>Mitigation Measure HAZ-4: Perform a Phase I Environmental Site Assessment prior to construction activities and remediate if necessary</p> <p>Prior to construction, the project proponent will conduct a Phase I environmental site assessment in conformance with the American Society for Testing and Materials Standard Practice E1527-05. All environmental investigation, sampling, and remediation activities associated with properties in the project area will be conducted under a work plan approved by the regulatory oversight agency and will be conducted by the appropriate environmental professional consistent with Phase I site assessment requirements as detailed below. The results of any investigation and/or remediation activities conducted in the project area will be included in the project-level EIR.</p> <p>A Phase I environmental site assessment should, at a minimum, include the components listed below.</p> <ul style="list-style-type: none"> • An onsite visit to identify current conditions (e.g., vegetative dieback, chemical spill residue, presence of above- or underground storage tanks). • An evaluation of possible risks posed by neighboring properties. • Interviews with persons knowledgeable about the site's history (e.g., current or previous property owners, property managers). • An examination of local planning files to check prior land uses and any permits granted. • File searches with appropriate agencies (e.g., State Water Resources Control Board, fire department, County health department) having oversight authority relative to water quality and groundwater and soil contamination. • Examination of historical aerial photography of the site and adjacent properties. • A review of current and historic topographic maps of the site to determine drainage patterns. • An examination of chain-of-title for environmental liens and/or activity and land use limitations. | Prior to site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>If the Phase I environmental site assessment indicates likely site contamination, a Phase II environmental site assessment will be performed (also by an environmental professional).</p> <p>A Phase II environmental site assessment would comprise the following.</p> <ul style="list-style-type: none"> • Collection of original surface and/or subsurface samples of soil, groundwater, and building materials to analyze for quantities of various contaminants. • An analysis to determine the vertical and horizontal extent of contamination (if the evidence from sampling shows contamination). <p>If contamination is uncovered as part of Phase I or II environmental site assessments, remediation will be required. If materials such as asbestos-containing materials, lead-based paint, or PCB-containing equipment are identified, these materials will be properly managed and disposed of prior to or during the demolition process.</p> <p>Any contaminated soil identified on a project site must be properly disposed of in accordance with DTSC regulations in effect at the time.</p> <p>Hazardous wastes generated by the proposed project will be managed in accordance with the California Hazardous Waste Control Law (HSC, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulation (Title 22, CCR, Division 4.5).</p> <p>If, during construction/demolition of structures, soil or groundwater contamination is suspected, the construction/demolition activities will cease and appropriate health and safety procedures will be implemented, including the use of appropriate personal protective equipment (e.g., respiratory protection, protective clothing, helmets, goggles).</p> | | | | |
| Hydrology and Water Quality | | | | |
| <p>Mitigation Measure WQ-1: Comply with NPDES requirements</p> <p>Project contractors will obtain coverage under the General Construction Permit before the onset of any construction activities, because all projects will entail disturbance of 1 acre or more. A SWPPP will be developed by a qualified engineer or erosion control specialist in accordance with the appropriate Board's requirements for NPDES compliance and implemented prior to the issuance of any grading permit before construction. The SWPPP will be kept onsite during</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <p>construction activity and will be made available upon request to representatives of the Regional Water Boards.</p> <p>Compliance and coverage with the <i>Storm Water Management Program</i> and General Construction Permit will require controls of pollutant discharges that utilize BMPs and technology to reduce erosion and sediments to meet water quality standards. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater and other nonpoint-source runoff. Measures range from source control, such as reduced surface disturbance, to the treatment of polluted runoff, such as detention basins.</p> <p>BMPs to be implemented as part of the <i>Storm Water Management Program</i> and General Construction Permit (and SWPPP) may include the following practices.</p> <ul style="list-style-type: none"> • Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) will be employed to control erosion from disturbed areas. • Use a dry detention basin (which is typically dry except after a major rainstorm, when it will temporarily fill with stormwater), designed to decrease runoff during storm events, prevent flooding, and allow for off-peak discharge. Basin features will include maintenance schedules for the periodic removal of sediments, excessive vegetation, and debris that may clog basin inlets and outlets. • Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways. • Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways. • Ensure that no earth or organic material will be deposited or placed where it may be directly carried into a stream, marsh, slough, lagoon, or body of standing water. • Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete, solvents and adhesives, thinners, paints, fuels, sawdust, dirt, gasoline, asphalt and concrete saw slurry, and heavily chlorinated water. | | | | |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| <ul style="list-style-type: none"> • Ensure that grass or other vegetative cover will be established on the construction site as soon as possible after disturbance. <p>The contractor will select a combination of BMPs (consistent with Section A of the Construction General Permit) that is expected to minimize runoff and remove contaminants from stormwater discharges. The final selection of BMPs will be subject to approval by the San Francisco Bay Regional Water Board and the Central Valley Water Board.</p> <p>The contractor will verify that an NOI has been filed with the State Water Board and that a SWPPP has been developed before allowing construction to begin. The contractor will perform inspections of the construction area, to verify that the BMPs specified in the SWPPP are properly implemented and maintained. The contractor will notify the appropriate Regional Water Board immediately if there is a noncompliance issue and will require compliance. If necessary, the contractor or their agent will require that additional BMPs be designed and implemented if those originally constructed do not achieve the identified performance standard.</p> | | | | |
| Noise | | | | |
| <p>Mitigation Measure NOI-1: Perform project-specific noise studies and implement measures to comply with County noise standards</p> <p>The applicant for any proposed repowering project will retain a qualified acoustic consultant to prepare a report that evaluates noise impacts associated with operation of the proposed wind turbines. This evaluation will include a noise monitoring survey to quantify existing noise conditions at noise sensitive receptors located within 2,000 feet of any proposed turbine location. This survey will include measurement of the daily A-weighted L_{dn} values over a 1-week period and concurrent logging of wind speeds at the nearest meteorological station. The study will include a site-specific evaluation of predicted operational noise levels at nearby noise sensitive uses. If operation of the project is predicted to result in noise in excess of 55 dBA (L_{dn}) where noise is currently less than 55 dBA (L_{dn}) or result in a 5 dB increase where noise is currently greater than 55 dBA (L_{dn}), the applicant will modify the project, including selecting new specific installation sites within the program area, to ensure that these performance standards will not be exceeded.</p> <p>Methods that can be used to ensure compliance with these performance standards include but not limited to increasing the distance between proposed turbines and noise sensitive uses and the use of alternative turbine operational modes to reduce noise. Upon completion of the evaluation, the project applicant will submit a report</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
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| to the City demonstrating how the project will comply with these performance standards. After review and approval of the report by County staff, the applicant will incorporate measures as necessary into the project to ensure compliance with these performance standards. | | | | |
| <p>Mitigation Measure NOI-2: Employ noise-reducing practices during decommissioning and new turbine construction</p> <p>Project applicants will employ noise-reducing construction practices so that construction noise does not exceed Alameda County noise ordinance standards. Measures to limit noise may include the following:</p> <ul style="list-style-type: none"> • Prohibit noise-generating activities before 7 a.m. and after 7 p.m. on any day except Saturday or Sunday, and before 8 a.m. and after 5 p.m. on Saturday or Sunday. • Locate equipment as far as practical from noise sensitive uses. • Require that all construction equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation. • Use noise-reducing enclosures around noise-generating equipment where practicable. • Implement other measures with demonstrated practicability in reducing equipment noise upon prior approval by the City. <p>In no case will the applicant be allowed to use gasoline or diesel engines without muffled exhausts.</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |
| Transportation/Traffic | | | | |
| <p>Mitigation Measure TRA-1: Develop and implement a construction traffic control plan</p> <p>Prior to starting construction-related activities, the Applicant shall prepare and implement a Traffic Control Plan (TCP) that will reduce or eliminate impacts associated with the proposed program. The TCP shall adhere to Alameda County and Caltrans requirements, and must be submitted for review and approval of the County Public Works Department prior to implementation. The TCP shall include the following elements. The County and Caltrans may require additional elements to be identified during their review and approval of the TCP.</p> | Prior to and during all site disturbance | City—adopt a Condition of Approval; Operator—implement | City | Monitor compliance with Conditions of Approval |

| Mitigation Measure | Timing | Implementing Party | Monitoring Party | Monitoring Actions |
|--|--------|--------------------|------------------|--------------------|
| <ul style="list-style-type: none"> • Schedule construction hours to minimize concentrations of construction workers commuting to/from the project site during typical peak commute hours (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.). • Limit truck access to the project site during typical peak commute hours (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.). • Require that written notification be provided to contractors regarding appropriate haul routes to and from the program area, as well as the weight and speed limits on local county roads used to access the program area. • Provide access for emergency vehicles to and through the program area at all times. • When lane/road closures occur during delivery of oversized loads, provide advance notice to local fire, police, and emergency service providers to ensure that alternative evacuation and emergency routes are designated to maintain service response times. • Provide adequate onsite parking for construction trucks and worker vehicles. • Require suitable public safety measures in the program area and at the entrance roads, including fences, barriers, lights, flagging, guards, and signs, to give adequate warning to the public of the construction and of any dangerous conditions that could encountered as a result thereof. • Complete road repairs on local public roads as needed during construction to prevent excessive deterioration. This work may include construction of temporary roadway shoulders to support any necessary detour lanes. • Repair or restore the road right-of-way to its original condition or better upon completion of the work. • Coordinate program-related construction activities, including schedule, truck traffic, haul routes, and the delivery of oversized or overweight materials, with Alameda County, Caltrans, and affected cities to identify and minimize overlap with other area construction projects. | | | | |