

NOTE: SOME OF THE USFWS AND CDFW AMMS DIFFER FROM WHAT WAS IN THE FINAL ADOPTED SSHCP. THIS DOCUMENT HAS BEEN PREPARED TO PROVIDE GUIDANCE FOR COMPLIANCE WITH PERMIT AMMS BY PROVIDING ONE SET OF AMMS. MODIFICATIONS TO THE ORIGINALLY ADOPTED AMMS ARE REFLECTED IN TRACK CHANGES BELOW. THIS DOES NOT REFLECT ALL PERMIT CONDITIONS.

5.4.1 General Avoidance and Minimization Measures

General AMMs are designed to avoid or minimize effects of Covered Activities on SSHCP land cover types and Covered Species.

Condition 1. Avoid and Minimize Urban Development Impacts to Watershed Hydrology and Water Quality

LID-1 (Stormwater Quality): When the size of a Covered Activity project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).

LID-2 (Groundwater Recharge): When siting SSHCP Preserves containing Riparian, Open Water, or Freshwater Marsh SSHCP land cover types, the Implementing Entity will prioritize locations that are suitable for groundwater recharge.

LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.

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Condition 2. Avoid and Minimize Urban Development Direct and Indirect Impacts to Existing Preserves and SSHCP Preserves

AMMs associated with Condition 2 must be applied to all UDA Covered Activities that border an existing Preserve or planned SSHCP Preserve¹.

EDGE-1 (Compatible Land Uses): To the maximum extent practicable, development project Covered Activities will locate compatible land uses (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) in areas immediately adjacent to existing or planned Preserve boundaries. The compatible land use will provide additional buffering of Preserves from potential indirect effects of adjacent urban development. The soil surfaces in a compatible land use area may be re-contoured provided that the soil restrictive layer remains undamaged and most of the soil profile above the restrictive layer remains intact. The Land Use Authority will determine when it is not practicable to locate a compatible land use adjacent to existing or planned Preserve boundaries.

EDGE-2 (Single-Loaded Streets): To the maximum extent practicable, the design of Urban Development Covered Activities will locate single-loaded streets adjacent to existing or planned Preserve. The Land Use Authority will determine when single-loaded streets are not practicable.

EDGE-3 (Preserve Setbacks): Urban Development Covered Activities constructed adjacent to existing or planned Preserves must establish a minimum 50-foot-wide setback outward from the boundary of any existing Preserve or planned SSHCP Preserve. This minimum 50-foot-wide setback will function as a transition between Urban Development and the Preserve, and must be managed to maintain the natural community of vegetation present in the adjacent Preserve. As much of the setback as possible should remain in the same natural habitat as the Preserve.

However, as discussed in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA, where an existing or planned Preserve is adjacent to an existing roadway (e.g., collectors, arterials, thoroughfares), the 50-foot Preserve Setback will not be required, and any bicycle or pedestrian trail will be established in the road right-of-way. In addition, where a planned roadway crosses an existing or planned Preserve,

¹ Additional AMMs specific to the Cordova Hills Master Plan are described in the December 8, 2016 "on-ramp" Biological Opinion (Corps File Number SPK-2004-00116), as discussed in Section 5.2.1.2 and in Appendix K.

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no Preserve Setback will be required, and any bicycle or pedestrian trail will be established in the road right-of-way.

EDGE-3a (Setback Recreational Trails): Trails are best suited outside of the setback; however, certain types of recreational trails or facilities (e.g., benches, trash receptacles, shade structures, fencing) that can be constructed with minimum ground disturbance and in compliance with EDGE-7 may be allowed within a Preserve Setback, as specified in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA. Preserve Setback design must locate trails on the side nearest development, away from the Preserve boundary. Trails may be permeable or semi-permeable hiking trails or paved community trails. The maximum trail width will be 16 feet total, including 2-foot-wide shoulders. Post and cable fencing, split rail, or other open fencing will be installed adjacent to recreation trails to keep pedestrians on the trail.

EDGE-3b (Setback Firebreaks): If approved by the local authorities, the Preserve Setback trail may also be used as a firebreak. In instances where a trail cannot act as a firebreak, the firebreak will be located between the trail and the Preserve boundary (see Section 5.2.7). Firebreaks allowed inside the setbacks must be created by methods that will not disturb the soil's restrictive layer, such as mowing, minor scraping of surface vegetation, or shallow tilling, to comply with EDGE-7. Firebreak width within Preserve Setbacks is the minimum width needed to comply with applicable local codes.

EDGE-3c (Setback Shade Trees and Landscaping): To prevent potential impacts from irrigation water or from accumulation of leaf litter onto the grasslands or vernal pools of a Preserve, planting of shade trees or landscaping vegetation will be limited to the area of the Preserve Setback located between the recreation trail and the adjacent urban development (i.e., away from Preserves).

- Only drought-tolerant plant species will be planted. The planting pallet used for Preserve Setback landscaping will not include invasive plant species listed in the California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory Database or listed in the Cal-IPC California Invasive Plant Watch List (see <http://www.cal-ipc.org/paf/>). Any shade trees planted along Preserve Setback trails will be native species that are found in California grasslands and that can survive in the Vernal Pool–Grassland border without long-term irrigation or fertilization (e.g., valley oak, black oak, blue oak, oracle oak). In general, no more than 30% of any 1,000-foot-long segment of a Preserve Setback trail will have canopy cover from tree plantings (to be consistent with

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maximum tree densities naturally found within native California grasslands and savanna).

- Drip irrigation will be allowed for a maximum of 5 years to establish shade trees or landscape vegetation between the recreation trail and adjacent urban development. The Implementing Entity has the discretion to allow irrigation to continue past 5 years if extenuating circumstances necessitate it (e.g., during a drought) and the continuance of irrigation will not affect the Preserve. Any irrigation systems located within Preserve Setbacks will be inspected quarterly to determine if such systems are affecting soils or vegetation not part of the intended plantings. Irrigation system repairs will be completed immediately if it is determined that the irrigation system is affecting vegetation or soil moisture not part of the intended tree planting.
- If, during annual monitoring of the adjacent Preserve (see Chapter 8), adverse indirect effects (e.g., leaf litter accumulation, irrigation runoff, plant encroachment) of the Preserve Setback's planted vegetation are detected, then the SSHCP Implementing Entity, the Preserve Manager, and the entity responsible for the Preserve Setback will identify appropriate adaptive management of the Preserve Setback tree or landscape plantings in accordance with the Preserve Setback Easement (see Section 5.2.5 and Chapter 9).

EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks)² (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves).

EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-

² Detention basins are allowed in some Linkage Preserves consistent with the requirements of EDGE-6. At the time of SSHCP preparation, seven Linkage Preserves with drainages are planned SSHCP Preserves: L1, L2, L4, L7, L8, L9, and L10 (see Section 5.2.7 and Section 7.5). Also see project-specific measures in Section 5.5.1.

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3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.

EDGE-6 (Detention Basins in Linkage Preserves): Because planned SSHCP Linkage Preserves L1, L2, L4, L7, L8, L9, and L10 (see Section 7.5) surround natural creeks or streams that must receive stormwater from planned adjacent Urban Development Covered Activities, a limited number of stormwater detention basins will be allowed on those Linkage Preserves. Detention basins within Linkage Preserves (see Section 5.2.7) will be designed and constructed with fill material to build up the perimeter of the detention basin so as not to impact the soil restrictive layer (duripan or hardpan) and function of the soil perched aquifer. Detention basins within Linkage Preserves will capture stormwater flows and runoff, and will discharge water to the stream/creek or percolate collected water to the soil perched aquifer. Detention basin structures that collect stormwater entering the basin or convey stormwater leaving the basin must be designed to avoid and minimize effects to Covered Species habitat in the Linkage Preserve.

EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures³ or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.

EDGE-8 (Outdoor Lighting): All outdoor lighting in Urban Development Covered Activity projects will be designed to minimize light pollution into existing and planned Preserves, except where a Land Use Authority Permittee determines lighting is necessary for public safety or security. Minimization measures may include light fixture placement (e.g., as low to the ground as possible), lamp designs (e.g., shielding, low glare, or no lighting), directing light away from Preserves, or other means to avoid or minimize light pollution. The Third-Party Project Proponent will use the best information available

³ Punctures may include small holes that penetrate the soil hardpan or duripan such as might occur when digging or drilling holes for the installation of fence posts, sign posts, or trees.

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at the time of project design to minimize effects of light pollution on target SSHCP Covered Species (e.g., western spadefoot (*Spea hammondi*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*)).

EDGE-9 (Livestock Access to Preserves): Urban Development Covered Activity projects that include on-site Preserves will include in their design an adequate number of access points and facilities for delivery and pick up of grazing animals (livestock), such that these activities will not significantly alter the Preserve's habitat and are consistent with the protection of livestock and protection of adjacent public property, and include adequate public safety measures.

EDGE-10 (Prevent Invasive Species Spread): Completed Covered Activities (including roads) will be maintained in a manner that avoids the spread of invasive species into Preserve and Open Space areas. Such maintenance measures will include the following:

- To prevent the transport of non-native invasive species onto Preserves, before bringing any equipment onto an SSHCP Preserve or Preserve Setback, equipment must be cleaned of mud, dirt, and plant material. Cleaning will occur in the infested area or another appropriate location as approved by a Plan Permittee.
- Mowing rotation will start in un-infested areas and move to infested areas.
- Invasive plant prevention techniques will be incorporated into maintenance plans.
- The SSHCP Implementing Entity will survey road shoulders, ditches, and rights-of-way that border SSHCP Preserves for invasive weeds or other exotic plant species. Where roadside weed infestations have reached a critical control point, the Implementing Entity or Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment.

Condition 3. Implement Construction Best Management Practices

AMMs associated with Condition 3 must be applied to all UDA Covered Activities.

BMP-1 (Construction Fencing): Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas and access roads). Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will mark the outer boundary of any Preserve Setback or Stream Setback adjacent to or within the project site with orange construction

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fencing prior to ground disturbance. This fencing will remain in place until project completion, as identified by the Plan Permittee.

BMP-2 (Erosion Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will install temporary control measures for sediment, stormwater, and pollutant runoff as required by the Plan Permittee to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any Covered Activity that disturbs soils.

Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed. As discussed in Section 5.4.2, Covered Species Take Avoidance and Minimization Measures, erosion controls installed in or adjacent to Plan Area modeled habitat for giant gartersnake (*Thamnophis gigas*), western pond turtle (*Actinemys marmorata*), California tiger salamander (*California tiger salamander*), or western spadefoot (see Chapter 3) must be of appropriate design and materials that will not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.

BMP-3 (Equipment Storage and Fueling): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will ensure that equipment storage and staging will occur in the development footprint only (not sited in any existing on-site Preserve, planned on-site Preserve, Preserve Setback, Stream Setback, or aquatic land cover type). Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.

However, certain equipment storage and fueling activities can be allowed on Preserves within habitat re-establishment/establishment sites (refer to Section 5.2.7) if no location outside of the site is available. If a Covered Activity results in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway, Preserve, Preserve Setback, or Stream Setback.

BMP-4 (Erodible Materials): Plan Permittees and Third-Party Project Proponents implementing Covered Activities must not deposit erodible materials into waterways. Vegetation clippings, brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, Preserve, Preserve Setback, Stream Setback, or aquatic land cover type. If water and sludge must be pumped from a subdrain or

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other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway.

BMP-5 (Dust Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.

BMP-6 (Construction Lighting): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas.

BMP-7 (Biological Monitor): If a Covered Activity includes ground disturbance within Covered Species modeled habitat, an approved biologist will be on site during the period of ground disturbance, and may need to be on site during other construction activities depending on the Covered Species affected. After ground-disturbing project activities are complete, the approved biologist will train an individual to act as the on-site construction monitor for the remainder of construction, with the concurrence of the Permitting Agencies. The on-site monitor will attend the training described in BMP-8. The approved biologist and the on-site monitor will have oversight over implementation of Avoidance and Minimization Measures, and will have the authority to stop activities if any of the requirements associated with those measures are not met. If the monitor requests that work be stopped, the Wildlife Agencies will be notified within one working day by email. The approved biologist and/or on-site monitor will record all observations of listed species on California Natural Diversity Database field sheets and submit them to the California Department of Fish and Wildlife. The approved biologist or on-site monitor will be the contact source for any employee or contractor who might inadvertently kill or injure a Covered Species or who finds a dead, injured or entrapped individual. The approved biologist and on-site monitor's names and telephone numbers will be provided to the Wildlife Agencies prior to the initiation of ground-disturbing activities. Refer to species-specific measures for details on requirements for biological monitors.

BMP-8 (Training of Construction Staff): A mandatory Worker Environmental Awareness Program will be conducted by an approved biologist for all construction workers,

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including contractors, prior to the commencement of construction activities. The training will include how to identify Covered Species that might enter the construction site, relevant life history information and habitats, SSHCP and statutory requirements and the consequences of non-compliance, the boundaries of the construction area and permitted disturbance zones, litter control training (SPECIES-2), and appropriate protocols if a Covered Species is encountered. Supporting materials containing training information will be prepared and distributed by the approved biologist. When necessary, training and supporting materials will also be provided in Spanish. Upon completion of training, construction personnel will sign a form stating that they attended the training and understand all of the Avoidance and Minimization Measures. Written documentation of the training must be submitted to the Implementing Entity within 30 days of completion of the training, and the Implementing Entity will provide this information to the Wildlife Agencies.

BMP-9 (Soil Compaction): After construction is complete, all temporarily disturbed areas will be restored similar to pre-project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.

BMP-10 (Revegetation): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will revegetate any cut-and-fill slopes with native or existing non-invasive, non-native plants (e.g., non-native grasses) suitable for the altered soil conditions and in compliance with EDGE-2 and EDGE-8, if applicable.

BMP-11 (Speed Limit): Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.

Condition 4. Avoid and Minimize Impacts that May Result from Implementation of Covered Transportation Projects

Plan Permittees and Third-Party Project Proponents implementing Urban Development transportation or Rural Transportation Project Covered Activities must comply with the roadway siting, design, and construction AMMs described below.

ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project

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alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.

ROAD-2 (Wildlife Crossing Structures): Road projects that are Urban Development Covered Activities (see Section 5.2.1) (including the Capital Southeast Connector, see Section 5.2.1.1) or are Rural Transportation Covered Activities (see Section 5.2.3) will include an adequate number of wildlife crossing structures, as depicted in Figure 5-10. An adequate number of wildlife crossing structures within the Urban Development Area (UDA) and outside the UDA will provide for continued dispersal and movement of native wildlife throughout the SSHCP Plan Area, as required by the SSHCP Biological Goals and Objectives (see Chapter 7).

The Plan defines “wildlife crossing structure” as a physical structure specifically designed or retrofitted to facilitate undercrossing for target wildlife species. The Plan further classifies wildlife crossings as hydrologic crossings and dry crossings. Hydrologic crossings are built where there is an existing stream, creek, or intermittent drainage to maintain existing hydrologic connectivity within the Plan Area. As described below, hydrologic crossings require specialized features to be built into the crossing structure, such as elevated platforms to allow wildlife to pass under a crossing structure when it is inundated with water. Dry wildlife crossings are built where there is no hydrologic feature but where a crossing is needed to provide for overland connectivity. SSHCP wildlife crossing structures may include structures such as bridges, arches, or box and pipe culverts.

Plan Permittees expect that future wildlife movement and dispersal within the UDA will occur almost entirely within the boundaries of the future interconnected SSHCP Preserve System (see Section 7.5). Therefore, wildlife crossings are needed wherever a roadway crosses (bisects) the conceptual SSHCP Preserve System (see Figure 5-10). Wildlife crossing structures inside the UDA will be sized to accommodate movement of a highly mobile native indicator species (i.e., coyote (*Canis latrans*)). By designing UDA wildlife crossing structures to meet the movement and dispersal requirements of coyote, the Plan Permittees anticipate that the crossing structure will also accommodate most native wildlife species that currently occupy the UDA (see Chapter 3).

The Plan Permittees expect that most of the Plan Area outside of the UDA will remain as Open Space over the 50-year Permit Term (see Chapter 4). Therefore, the Plan Permittees expect that the Rural Transportation Project Covered Activities proposed outside the UDA will have a relatively small effect on the movement and dispersal of larger or more mobile native wildlife species, including coyote.

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Consequently, the Plan Permittees anticipate that the design of Rural Transportation Project Covered Activities outside the UDA will need to include wildlife crossing structures primarily where the Rural Transportation Project Covered Activities occur within California tiger salamander modeled habitat (see CTS-3 and also Chapter 3, Figure 3-16).

The design and location of wildlife crossing structures both inside the UDA and outside the UDA will be determined by collaboration between the Third-Party Project Proponent, the Land Use Authority, and the Implementing Entity. Crossing design will use the best available scientific and commercial information for the target species. The design of crossing structures will be based on demonstrated effectiveness of design for the target species when such information is available, or will be designed with a high level of certainty of success based on studies of similar taxa in similar environmental settings. The proposed wildlife crossing structures designs will be reviewed and approved by the Implementing Entity prior to final design.

The Implementing Entity will develop a Wildlife Crossing Maintenance Manual to be provided to the entity responsible for maintaining the wildlife crossing. The Wildlife Crossing Maintenance Manual will identify vegetation management, clearing of obstructions, and other techniques to maintain the desired movement and hydrologic connectivity, and to avoid effects to adjacent Preserves.

All SSHCP wildlife crossing structures in the UDA will include the following design elements:

- Open-bottom bridges or arches where the roadway crosses a river or stream. Where an open-bottom bridge or arch is used, the span of the crossing will be at least 1.2 times the bankfull width of the stream and span the banks to allow for dry wildlife passage along each side of the stream and to avoid or minimize piers or footings within the stream. (Bankfull width refers to the width of a stream channel at the point where over-bank flow begins during a flood event.)
- Any wildlife crossing structure that also maintains hydrologic connectivity will be designed to maintain pre-construction water capacity, depth, and velocity. The crossing structure will not restrict or impede normal flows or flood flows, unless a primary purpose of the structure is to manage such flow(s). Wildlife crossing structures must be designed to provide a dry passage (e.g., a platform ledge) higher than flows for a 10-year storm event to allow wildlife to pass through an inundated crossing structure.

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- Wildlife crossing structures in the UDA will be designed and sized to accommodate movement of at least medium-sized mammals (e.g., coyote). The opening must be at least 3 feet high and the crossing structure must have a minimum openness ratio of at least 0.4.
- Vegetation leading up to the entrance of a crossing structure and the substrate leading into and within the crossing structure will be natural and appropriate to provide for continuity of habitat, attract the target animal species for which the crossing is designed, and facilitate use of the crossing structure.
- A wildlife crossing under six-lane roads or larger will be designed to provide ambient light and temperature in the longer crossing structures (e.g., either by providing a larger opening or a grate at the top of the structure to improve the attractiveness of the crossing to certain Covered Species and wildlife that may hesitate to cross through dark, confined structures or one with a temperature gradient (Jackson and Griffin 2000)). If a road is less than six lanes in width, these designs will be optional.
- Lighting will not be placed at or near the entrance of a wildlife crossing structure to maintain natural ambient light conditions at night and to increase chances of wildlife use. However, a Land Use Authority Permittees may allow lighting if necessary for human health or safety.

Outside the UDA, wildlife crossing structures may be required for California tiger salamander (refer to CTS-1), and could also be required for other native species. For example, for all rural transportation Covered Activity projects located in giant gartersnake modeled aquatic habitat, certain design features must be implemented to improve opportunities for giant gartersnake passage and dispersal. In addition, rural transportation Covered Activity projects in PPU-6 that are not within giant gartersnake modeled aquatic habitat, but are located between areas of mapped giant gartersnake modeled habitat (e.g. some Bruceville Road improvements) will also be required to implement such project design features. Appropriate project design features shall be incorporated when the rural transportation project includes the replacement or the modification of an existing drainage feature, and/or the project crosses a stream, creek, ditch, or other drainage. The South Sacramento Conservation Agency and the appropriate Land Use Authority Permittee shall collaborate with the proponents of each rural transportation Covered Activity to determine the need for, the design, and appropriate locations of snake passage structures. Acceptable giant gartersnake passage structures and design features for rural transportation Covered Activities shall be determined by the South Sacramento Conservation Agency in collaboration with the USFWS, CDFW, and TAC species experts, using the best available scientific and commercial information. The SSHCP Wildlife Crossing Maintenance Manual shall identify techniques for the maintenance

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and the management of structures and aquatic habitat that provide passage opportunities for the giant gartersnake.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

ROAD-3 (Roadside Pesticide Use⁴): If pesticide use is necessary along roadsides, the appropriate SSHCP Permittee will ensure that the pesticide application strictly complies with the pesticide label and all other applicable federal, state, and local authorities pertaining to the use, safety, storage, disposal, and reporting of the pesticide. Where roadside weed infestations have reached a critical control point, the Implementing Entity or a Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment. In addition, the Implementing Entity or appropriate Land Use Authority Permittee will post signs along road shoulders adjacent to sensitive areas that are within the SSHCP Preserve System (e.g., California tiger salamander breeding ponds, endemic plant populations, vertebrates that rely on insects for part of their diet). The signs will identify pesticide use restrictions or other roadside maintenance restrictions.

Condition 5. Avoid and Minimize Impacts that Result from Public Use of Low-Impact Nature Trails in Preserves

NATURE TRAIL-1 (Nature Trail Plan): A nature trail plan must be prepared for each Preserve where a trail is allowed by the Preserve Management Plan. Nature trails will be unpaved trails that vary in width depending on terrain and existing constraints, but will never exceed 4 feet in width. Where a trail crosses a swale, wooden walkways elevated to a height no greater than 2 feet will be installed. Trail improvements may include mowing vegetation to create or maintain a trail, minor grading to remove trip hazards, and signs providing directional and educational information. Public access to land acquired for preservation will be prohibited until a trail plan can be prepared by the Implementing Entity and approved by the Permitting Agencies. A trail plan will include the following:

- Maps identifying areas that contain sensitive habitats or species occurrences.
- Maps that show the location and footprint of proposed trails.

⁴ Use of pesticides (including rodenticides and herbicides) is not an SSHCP Covered Activity. However, pesticide use specified in Section 5.3 is an allowed land management tool, provided the pesticide application is otherwise legal and conforms to all conditions in Section 5.4.

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- Methods used to control public access.
- Trail and use monitoring methods, schedules, and responsibilities.
- Trail operation and maintenance guidelines and responsibilities.
- Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of Covered Species or sensitive species).

NATURE TRAIL-2 (Nature Trail Protection of Duripan): Nature trails will be sited and constructed so as not to interfere with existing soil duripan and the perched aquifer that support the existing hydrologic regime of the Vernal Pool–Grassland, and will not interfere with existing pool hydrology. Trails within Preserves will not be paved.

NATURE TRAIL-3 (Nature Trail Location): Nature trails will be located away from sensitive natural resources (e.g., vernal pools, riparian habitat, woodland habitat, Covered Species occurrences, raptor nesting sites, tricolored blackbird (*Agelaius tricolor*) colony sites). The Wildlife Agencies will determine the distance necessary to avoid impacts to sensitive natural resources.

NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design): Biological studies will be conducted within the area being considered for nature trail construction prior to project design. The studies will include land cover type mapping and focused species surveys and/or wetland delineations. The biological studies will include assessments of potential effects of trail construction on Preserve System resources, and recommendations for avoidance and minimization that may be incorporated into project siting, design, construction, and operation.

NATURE TRAIL-5 (Monitoring of Nature Trail Impacts): Impacts that could result from use of a nature trail within a Preserve will be monitored according to the Preserve Management Plan (Chapter 8) to ensure that uses do not conflict with the individual Preserve Management Plan. If use of a trail is found to conflict with the individual Preserve Management Plan, use of that trail will be discontinued until adjustments in the use can be made to reduce or eliminate conflicts. The Implementing Entity will make decisions about discontinuing or modifying use of a trail in consultation with the Preserve Manager or other applicable Preserve management agency or organization.

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Condition 6. Avoid and Minimize Impacts When Re-Establishing or Establishing Wetlands

RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool): Re-establish or establish Vernal Pool Wetland according to the following guidelines:

- Re-establishment will always take priority over establishment of vernal pools. Establishment will be permitted only after it has been determined that sites with the potential to re-establish vernal pools no longer exist in the Plan Area or cannot be acquired through a willing seller/buyer agreement.
- When possible, re-established or established sites will be located adjacent to an existing Preserve(s) to maximize connectivity and Preserve area.
- Re-establishment or establishment will not result in direct or indirect adverse impacts to the hydrologic regime of existing vernal pools. Vernal pool re-establishment or establishment actions will not remove more than 10% of any existing vernal pool watershed, as defined by the SSHCP LIDAR analysis (see Section 3.3 and Conservation Action VPI1.2 in Table 7.1).
- Vernal pool re-establishment will attempt to restore the historical density and range of vernal pool sizes to the maximum extent feasible using historical aerial photography of the site, if available. Where aerial photography of the site's historical conditions is not available, vernal pool re-establishment will include a range of pool sizes (area and depth) to accommodate the different habitat needs and life history characteristics of the vernal pool invertebrate Covered Species.
- Established vernal pools must be located on sites with vernal pool soils, defined as any Plan Area soil type where vernal pools currently exist.
- Established vernal pool sites will include a range of pool sizes to accommodate the different habitat needs and life history characteristics of the three vernal pool invertebrate Covered Species.
- The total density of vernal pools will not exceed 10% of the suitable soil areas in any vernal pool re-establishment and/or establishment site, unless it can be shown that the suitable areas of that site historically supported greater densities.
- Re-establishment or establishment may include inoculation when it is likely that no seed or cyst bank of vernal pool species remains at a site. Vernal Pool inocula will come from nearby vernal pools that are on the same geologic formation and soil type.

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- Each SSHCP vernal pool re-establishment/establishment project is required to achieve the SSHCP Performance Standards for Vernal Pool Re-Establishment or Establishment, (which will be developed by the South Sacramento Conservation Agency within 18 months of Permit issuance).

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

RE-ESTABLISHMENT/ESTABLISHMENT-2 (Vernal Pool Inocula Bank): Vernal pool re-establishment or establishment may include “soil inoculation” when it is likely that no seed or cyst bank of vernal pool species remains at a re-establishment or establishment site.

- During conversion of Urban Development Area vernal pools to a developed land cover type, project proponents will excavate and retain soil from vernal pools following protocols developed by the SSHCP Technical Advisory Committee (Chapter 9).
- All SSHCP re-established/established vernal pools will be inoculated with soils from impacted vernal pools that are within 1 mile of the re-established/established vernal pool.
- Inocula applied in re-established or established vernal pools must be harvested from a vernal pool that is on the same geologic formation and soil type shown on the County General Soil Map as the re-establishment/establishment site. Geologic formations and soil types will follow U.S. Department of Agriculture Soil Conservation Service’s 1993 Soil Survey of Sacramento County, California. Proposed off-site inocula sources must be approved by the Wildlife Agencies.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

RE-ESTABLISHMENT/ESTABLISHMENT-3 (Re-Establishment/Establishment of Freshwater Marsh or Open Water Near Airports): During review of proposed re-establishment/establishment projects for freshwater marsh or open water on SSHCP Preserves, the Implementing Entity shall consider the potential for the location of the re-establishment/establishment projects to increase the risk of wildlife strikes or generation of ground fog at airports. If a re-establishment/ establishment project would result in (1) a net increase in open water or freshwater marsh acreage over

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baseline conditions⁵ within 5 miles of Mather Field, Sacramento Executive Airport, or Franklin Field; or (2) replacement of open water/freshwater marsh habitat that is located 2 or more miles from Mather Field or Sacramento Executive Airport with open water/freshwater marsh habitat that is located less than 2 miles from those airports, a qualified biologist shall prepare a concise letter report. The letter report shall summarize the biologist's findings regarding (1) the species likely to use the re-established/established habitat, (2) a rough order of magnitude estimate on the peak number of birds that might use the re-established/established habitat, and (3) potential movement patterns for birds using the re-established/established habitat and whether they might cross through the airport safety zones (e.g., to reach foraging habitat or another wildlife attractant). The letter report will also provide recommendations to the Implementing Entity on how they could reduce any of the identified wildlife hazards if there are any feasible means to do so that would not conflict with the biological goals and measurable objectives of the Conservation Plan.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

Condition 7. Avoid and Minimize Impacts to Streams and Creeks

AMMs associated with Condition 7 must be applied to all Covered Activities where a stream or creek is located within a project footprint.

STREAM-1 (Laguna Creek Wildlife Corridor): A 150-foot setback measured from the top of the bank on both sides of the stream will be applied to Laguna Creek within the Urban Development Area (minimum 300-foot corridor width). If trails are located within the Laguna Creek Wildlife Corridor, the nearest edge of the trail will be located at least 80 feet from the top of the bank.

STREAM-2 (UDA Stream Setbacks): A 100-foot setback measured from the top of the bank on both sides of the stream channel will be applied to all streams listed in Table 5-2 (see also Figure 2-4). If a stream reach supports woody riparian vegetation, the setback will be equal to the riparian edge plus 25 feet or will be the setback defined above, whichever is greater. If trails are located within the Stream Setback, the nearest edge of the trail will be located at least 50 feet from the top of the bank.

⁵ For purposes of establishing SSHCP land cover baseline conditions (including the baseline conditions of the Freshwater Marsh and Open Water land covers), baseline acreages will be calculated using the final SSHCP Land Cover Baseline Map (see discussions in Sections 3.3.1 and Section 10.4.2.3)..

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Stream Setback Minimum Requirements in the Urban Development Area

Stream	Minimum Setback (from the Top of Bank Measured in Aerial Perspective) on Both Sides of the Stream
Elder Creek	100 feet
Frye Creek	100 feet or as depicted as part of the NewBridge development project hardline Preserve (see Appendix K)
Gerber Creek	100 feet
Morrison Creek	100 feet
Central Paseo	100 feet or as depicted as part of the Cordova Hills development project hardline Preserve (Appendix K)
Sun Creek	100 feet or as depicted as part of the Sun Creek development project hardline Preserve (see Appendix K)

STREAM-3 (Minor Tributaries to UDA Streams): A 25-foot setback measured from the top of the bank on both sides of the stream channel will be applied to all avoided first and second order tributaries to the streams listed in Table 5-2 and Laguna Creek. Refer to Objective W6 in Chapter 7 (Table 7-1) regarding avoided first and second order tributaries. Trails are not permitted within headwater ephemeral Stream Setbacks.

STREAM-4 (Minimize Effects from Temporary Channel Re-Routing): When an Urban Development Covered Activity temporarily re-routes a stream, creek, or drainage, the re-routing will be completed in a manner that minimizes impacts to beneficial uses and habitat. The following measures will be employed to minimize disturbances that will adversely impact water quality:

- No equipment will be operated in areas of flowing or standing water.
- Construction materials and heavy equipment must be stored outside of the active flow of any waters.
- When work within waters is necessary, the entire stream flow will be diverted around the work area.
- In the event of rain, the disturbed in-water work area will be temporarily stabilized before water body flow exceeds the capacity of the diversion structure. The disturbed water body will be stabilized so that the disturbed areas will not come in contact with the flow.
- Once construction is complete, all project-introduced material (e.g., pipes, gravel, cofferdam, sandbags) must be removed, leaving the water as it was before construction. Excess materials will be disposed of at an appropriate disposal site.

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- All work areas will be effectively isolated from stream flows using suitable control measures before commencement of any in-water work. The diverted stream flow will not be contaminated by construction activities. Structures for isolating the in-water work area and/or diverting the stream flow (e.g., cofferdam, geo-textile silt curtain) will not be removed until all disturbed areas are cleaned and stabilized.
- Any flow diversion used during construction will be designed in a manner to prevent pollution and minimize siltation, and will provide flows to downstream reaches. Flows will be maintained to support existing aquatic life, riparian wetlands, and habitat that may be located upstream and downstream from any temporary diversion.
- All surface waters, including ponded waters, will be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity that may result in a discharge to waters.
- All temporary dewatering methods will be designed to have the minimum necessary impacts to waters to isolate the immediate work area. All dewatering methods will be installed such that natural flow is maintained upstream and downstream of the diversion area. Any temporary dams and diversions will be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the diversion area. All dewatering methods will be removed immediately upon completion of diversion activities.
- A method of containment must be used below any bridge, boardwalk, and/or temporary crossing to prevent debris from falling into the waters through the entire duration of a project.
- If temporary surface water diversions and/or dewatering are anticipated, the Third-Party Project Proponent will develop and maintain on site a surface water diversion and/or dewatering plan. The plan(s) must be developed prior to initiation of any water diversions and will include the proposed method and duration of diversion activities. The plan(s) must be made available to Central Valley Water Board staff upon request.
- When work in a flowing stream is unavoidable and any dam or other artificial obstruction is being constructed, maintained, or placed in operation, sufficient water will be allowed at all times to pass downstream to maintain beneficial uses of waters below the dam. Construction, dewatering, and removal of temporary cofferdams will not violate the turbidity, settle-able matter, pH, temperature, or dissolved oxygen requirements of any Water Quality Control Plan.

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- Any temporary dam or other artificial obstruction will only be built from clean materials such as sandbags, gravel bags, water dams, or clean/washed gravel that will cause little or no siltation. Stream flow will be temporarily diverted using gravity flow through temporary culverts or pipes, or pumped around the work site with the use of hoses.

STREAM-5 (Design for Stream Channel Re-Routing, Widening, or Deepening): When an Urban Development Covered Activity alters a stream, creek, or drainage by re-routing, widening, or deepening a channel, the project design will include the following:

- The main channel of a re-routed channel will be free to migrate laterally over its active and terrace floodplain.
- Channel geometry (plan, profile, and cross-section) of the site will be appropriate for the watershed location and physical/hydrologic condition.
- Local, native materials will be used as fill material to the extent practicable.
- Bioengineering techniques will be used for construction and maintenance of bank stabilization. Bioengineered bank stabilization structures will use vegetation in combination with bank reshaping; biodegradable geotextile materials; and, in some cases, a minimal amount of rock or wood to the extent practicable to dissipate erosive energy. Third-Party Project Proponents will consult a professional engineer when considering using bioengineering techniques.
- All re-routed, widened, or deepened streams are required to establish Stream Setbacks with minimum widths required under STREAM-1, STREAM-2, or STREAM-3. All re-routed, widened, or deepened streams must re-establish/establish and maintain native Woody Riparian land cover and/or native Grassland Riparian land cover in the entire Stream Setback.

Condition 8. Avoid and Minimize Impacts to Covered Species from Utility and Utility Maintenance Covered Activities

AMMs associated with Condition 8 must be applied to all Covered Activities associated with construction and maintenance of infrastructure projects.

UTILITY-1 (Avian Collision Avoidance): Installation of new, or relocation of existing, utility poles, lines, and cell towers located within the Preserve System or within 1,000 feet of a Preserve boundary will be coordinated with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. The applicant or relevant utility/service provider will install utility poles, lines, and cell towers in

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conformance with Avian Powerline Interaction Committee (APLIC) standards for collision-reducing techniques, as outlined in Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2012), or any superseding document issued by the APLIC.

UTILITY-2 (Utility Maintenance on Preserves): Utility maintenance inside SSHCP Preserves and SSHCP Preserve Setbacks containing vernal pools will occur only when vernal pools have been dry for 30 days, except in emergency situations related to human health and safety.

UTILITY-3 (Trenchless Construction Methods): Where a pipeline or conduit crosses an existing or planned Preserve or will be located between adjacent Preserves (e.g., under a roadway that has a Preserve on both sides), trenchless construction methods will be used to minimize impacts to the existing soil profile (including impacts to a hardpan or duripan) to maintain the perched aquifer in Vernal Pool Grassland land cover type.

UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.

Condition 9. Avoid and Minimize Impacts That Might Result From Removing or Breaching Levees to Establish or Re-establish Riparian Habitat

LEVEE-1 (Preparation of Hydrologic Analysis): Prior to approving a draft Preserve Management Plan that includes (1) modifying or breaching an existing levee, or (2) would place a potential impedance to high-water event flood-flows on the water side of an existing levee (including new riparian vegetation plantings or other new Preserve facilities), a hydrologic analysis will be conducted. The Preserve activity will only be implemented if the hydrologic analysis concludes that the activity will not result in a substantial increase in flood stage elevations or flood risk on lands outside the Preserve.

Condition 10. Avoid and Minimize Impacts That Might Result From Potential Residual Contamination of Preserves and Related Exposure of People to Such Hazardous Materials

HAZARDOUS MATERIALS-1 (Preparation of Phase I Environmental Site Assessment): Prior to the acquisition of a preserve site or implementation of a stream or riparian restoration project, a Phase I Environmental Site Assessment shall be conducted in general accordance with the American Society for Testing and Materials Standard Practice E1527-05. The purpose of this Environmental Site Assessment is to identify, to the extent feasible pursuant to the American Society for Testing and Materials

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Standard, recognized environmental conditions in connection with the potential site. The term “recognized environmental condition” means the presence or likely presence of hazardous substances or petroleum products on the property under conditions that may indicate an existing release, a past release, or a material threat of release of these substances to the property. If the Phase 1 Environmental Site Assessment indicates the presence of a recognized environmental condition, the Implementing Entity shall consider the following options.

- Determine that the acquisition/project can proceed on the basis that the Habitat Plan goals and objectives can be met on the site even with the presence of a recognized environmental condition.
- Conduct a Phase II Environmental Site Assessment, including soil and groundwater testing, to further study the potential for contamination to limit the Implementing Entity’s management activities.
- If the results of the Phase I (or Phase II) Environmental Site Assessment indicate that the Habitat Plan goals and objectives cannot be met on the site, the Implementing Entity should not acquire the site.

HAZARDOUS MATERIALS-2 (Contingency Plan): As part of each Preserve Management Plan or site restoration plan, a Contingency Plan shall be prepared to address the actions that would be taken during construction in the event that unexpected contaminated soil or groundwater is discovered. The Contingency Plan shall include health and safety considerations, handling and disposal of wastes, reporting requirements, and emergency procedures. The Contingency Plan shall include a requirement that if evidence of contaminated materials is encountered during construction, construction would cease immediately and applicable requirements of the Comprehensive Environmental Release Compensation and Liability Act and the California Code of Regulations Title 22 regarding the disposal of waste would be implemented.

5.4.2 Covered Species Take Avoidance and Minimization Measures

The following section describes measures to avoid or minimize effects of Covered Activities on specific SSHCP Covered Species. Species-specific AMMs include species surveys, pre-construction surveys, and construction monitoring. Most species-specific AMMs require that species surveys be conducted if Covered Species modeled habitat is within the proposed Covered Activity footprint or within a specified distance of the proposed Covered Activity. Section 3.4 provides maps and descriptions of modeled habitat for each Covered Species. The AMMs described below apply to Covered Activities when Covered Species modeled habitat or a Covered

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Species occurrence are at a project site. The Implementing Entity and Wildlife Agencies may update specific SSHCP AMMs over the Permit Term to provide the best and most appropriate protective measures for a Covered Species.

General Covered Species Take Avoidance and Minimization Measures

The following AMMs will apply to all Covered Activities that are required to implement Covered Species take AMMs.

SPECIES-1 (Litter Removal Program): A litter control program will be instituted for the entire project site. All workers will ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage will be removed from the project site at the end of each work day, and construction personnel will not feed or otherwise attract wildlife to the area where construction activities are taking place.

SPECIES-2 (No Pets in Construction Areas): To avoid harm and harassment of native species, workers and visitors will not bring pets onto a project site.

SPECIES-3 (Take Report): If accidental injury or death of any Covered Species occurs, workers will immediately inform the approved biologist or on-site monitor and site supervisor. The approved biologist or on-site monitor will phone the appropriate contact person at the Implementing Entity. The Implementing Entity will immediately contact the Wildlife Agencies by telephone. A memorandum will be provided to the Implementing Entity and Wildlife Agencies within 1 working day of the incident. The report will provide the date and location of the incident, number of individuals taken, the circumstances resulting in the take, and any corrective measures taken to prevent additional take.

SPECIES-4 (Post-Construction Compliance Report): A post-construction compliance report will be submitted to the SSHCP Implementing Entity within 30 calendar days of completion of construction activities or within 30 calendar days of any break in construction activity that lasts more than 30 days. The report will detail the construction start and completion dates, any information about meeting or failing to meet species take Avoidance and Minimization Measures (AMM), effectiveness of each AMM that was applied at the project site, and any known project effects to Covered Species.

Rare Plants

PLANT-1 (Rare Plant Surveys): If a Covered Activity project site contains modeled habitat for Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), Legenere (*Legenere limosa*), pincushion

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navarretia (*Navarretia myersii*), or Sanford's arrowhead (*Sagittaria sanfordii*), the Covered Activity project site will be surveyed for the rare plant by an approved biologist and following the California Department of Fish and Wildlife (CDFW) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* dated March 20, 2018 or the most recent CDFW rare plant survey protocols. An approved biologist will conduct the field surveys and will identify and map plant species occurrences according to the protocols. See Chapter 10 for the process to submit survey information to the Plan Permittee and the Permitting Agencies. The appropriate timing of surveys and use of reference populations is applicable to all covered rare plant species, as described in the 2018 CDFW survey protocol referenced above. For Bogg's Lake hedge-hyssop which is an annual plant with seed banks that may not germinate every year, the project proponent may be required to survey a project site for more than one year to substantiate negative findings if the previous year was either extremely dry or extremely wet (which may be found in the Department of Water Resources Water Supply Index Bulletin (<http://cdec.water.ca.gov/reportapp/javareports?name=WSI>)). However, if local reference populations of the species are detectable at the time of survey and none of the species are observed on a project site, a negative finding will be made.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

PLANT-2 (Rare Plant Protection): If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs at the project site.

Sacramento and Slender Orcutt Grass

Sacramento Orcutt grass (*Orcuttia viscida*) is a federally and state endangered species and is ranked by the California Native Plant Society as a California Rare Plant Rank 1B.1 species. Slender Orcutt grass (*Orcuttia tenuis*) is a federally threatened and state endangered species and is ranked by the California Native Plant Society as a California Rare Plant Rank 1B.1 species. Both Orcutt grasses are very rare, and the likelihood of finding new occurrences within the Plan Area is low. Due to their rarity, take of either of these species is not permitted under the SSHCP, with the exception of take related to Preserve management and monitoring (see Section 5.2.7, SSHCP Preserve System Covered Activities).

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ORCUTT-1 (Orcutt Grass Surveys): If a Covered Activity project site is located within or adjacent to (within 1 mile of) the Mather Core Recovery Area and contains the Vernal Pool land cover type, the project site will be surveyed for Sacramento and slender Orcutt grass by an approved biologist following California Department of Fish and Wildlife (CDFW) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* dated March 20, 2018 or most recent CDFW guidelines to determine if Sacramento and/or slender Orcutt grass is present. An approved biologist will conduct the field investigation to identify and map occurrences. See Chapter 10 for the process to conduct and submit survey information.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

ORCUTT-2 (Orcutt Grass Protection): Where known or new Sacramento or slender Orcutt grass occurrences are found, they will be protected within an SSHCP Preserve that is at least 50 acres. The occurrence will be located interior to the Preserve at a distance of no less than 300 feet from the edge of the Preserve boundary. If a Third-Party Project Proponent encounters a previously undiscovered occurrence of Sacramento or slender Orcutt grass on a Covered Activity project site, the Third-Party Project Proponent will contact the Implementing Entity or Land Use Authority Permittee with authority over the project, who will coordinate with the Wildlife Agencies for written concurrence of avoidance to ensure that the project does not cause take of the species.

Valley Elderberry Longhorn Beetle

To avoid direct and indirect effects of Covered Activities on valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the following AMMs will be implemented.

VELB-1 (Valley Elderberry Longhorn Beetle Avoidance): If a Covered Activity is planned within modeled habitat for valley elderberry longhorn beetle, project proponents will conduct a survey for presence of elderberry shrubs within 100 feet of the project area. If elderberry shrubs are found, protocol level surveys will be conducted. Direct impacts (within 20 feet of construction, shall be avoided as much as possible. Indirect impacts (shrubs between 20-100 feet of construction) shall also be avoided as much as possible. Any direct loss of elderberry shrubs shall be compensated for according to USFWS *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999b).

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

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California Tiger Salamander

To avoid direct and indirect effects of Covered Activities on California tiger salamander (*Ambystoma californiense*), the following AMMs will be implemented.

CTS-1 (California Tiger Salamander Daily Construction Schedule): Ground-disturbing Covered Activities within California tiger salamander modeled habitat (Figure 3-16) will occur outside the breeding and dispersal season (occur after July 31 and before October 15), to the maximum extent practicable. If Covered Activities must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), construction activities will not start until 30 minutes after sunrise and must be complete 30 minutes prior to sunset.

CTS-2 (California Tiger Salamander Exclusion Fencing): If a Covered Activity must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), exclusion fencing will be installed around the project footprint before October 15. Temporary high-visibility construction fencing will be installed along the edge of work areas, and exclusion fencing will be installed immediately outside of the temporary high-visibility construction fencing to exclude California tiger salamanders from entering the construction area or becoming entangled in the construction fencing. Exclusion fencing will be at least 1 foot tall and be buried at least 6 inches below the ground to prevent salamanders from going under the fencing. Fencing will remain in place until all construction activities within the construction area are complete. No project activities will occur outside the delineated project footprint. An approved biologist must inspect the exclusion fencing and project site every morning before 7:00 a.m. for integrity and for any entrapped California tiger salamanders. If a California tiger salamander is encountered, refer to CTS-5, below. (However, the Implementing Entity may, with approval of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), determine that it is appropriate for a Covered Activity project to not implement CTS-2 for certain long and linear roadway Covered Activity projects if it appears that the exclusion fencing will likely trap individuals or cause more take of California tiger salamander than it would prevent.)

CTS-3 (California Tiger Salamander Monitoring): If Covered Activities must be implemented in modeled habitat (Figure 3-16), an approved biologist experienced with California tiger salamander identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site for

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California tiger salamander every morning before 7:00 a.m., or prior to construction activities. As required by BMP-8 (Training of Construction Staff), the approved biologist will also train construction personnel on the required California tiger salamander avoidance procedures, exclusion fencing, and correct protocols in the event that a California tiger salamander enters an active construction zone. If a California tiger salamander is encountered, refer to CTS-5, below.

CTS-4 (Avoid California Tiger Salamander Entrapment): If Covered Activities must be implemented in modeled habitat, all excavated steep-walled holes or trenches more than 6 inches deep will be provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within California tiger salamander modeled habitat will be inspected for California tiger salamanders by the approved biologist prior to being moved. If a California tiger salamander is encountered, refer to CTS-5, below.

CTS-5 (California Tiger Salamander Encounter Protocol): If a California tiger salamander is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately (California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS)). Construction activities will be suspended in a 100-foot radius of the animal until the animal is relocated (as described in the Relocation Plan, AMM CTS-8) by an approved biologist with appropriate handling permits from the Wildlife Agencies. Prior to relocation, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the salamander, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to USFWS and CDFW immediately. Any worker who inadvertently injures or kills a California tiger salamander or who finds dead, injured, or entrapped California tiger salamander(s) must immediately report the incident to the approved biologist.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

CTS-6 (Erosion Control Materials in California Tiger Salamander Habitat): If erosion control (BMP-2) is implemented within California tiger salamander modeled habitat

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(Figure 3-16), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that salamanders are not trapped (no monofilament). Coconut coir matting and fiber rolls with burlap are examples of acceptable erosion control materials. This limitation will be communicated to the contractor through use of special provisions included in the bid solicitation package.

CTS-7 (Rodent Control): CTS-7 only applies to projects that are within California tiger salamander modeled habitat (Figure 3-16) and on Covered Activities. Rodent control will be allowed only in developed portions of a Covered Activity project site. Where rodent control is allowed, the method of rodent control will comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

The following California tiger salamander AMMs are conditions of the CDFW Incidental Take Permit and are in addition to the previous AMMs. For example, relocation may not occur without notification and discussion with USFWS, as described in CTS-5 above.

CTS-8 (California Tiger Salamander Relocation Plan): Project proponents shall prepare a California tiger salamander Relocation Plan (Relocation Plan) for Covered Activities occurring in California tiger salamander modeled habitat. The Relocation Plan shall include the name(s) of the approved biologist(s) who will relocate California tiger salamander; pre-construction habitat assessment methodology; measures to minimize temporary impacts to California tiger salamander habitat outside the permanent impact area; capture, handling, and relocation methods; a map and description of the relocation area(s) for captured California tiger salamander, including relative location, quality of habitat, non-native species or the potential for California tiger salamander-barred tiger salamander hybrids to be present, identified upland burrows determined to be suitable for California tiger salamander placement, distance to aquatic habitat, and potential barriers for movement; written permission from the landowner to use their land as a relocation site; and identification of a wildlife rehabilitation center or veterinary facility that routinely evaluates or treats amphibians. Project proponents shall submit the Relocation Plan to the Land Use Authority Permittee or Implementing Entity, who will send it CDFW for written approval at least 15 days prior to the beginning of any Covered Activities, including

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preconstruction surveys. If California tiger salamander is found within a construction site or 200 feet beyond the construction site (200-foot boundary), Project personnel shall notify the approved biologist(s) immediately. If California tiger salamander is encountered within a construction site, is directly threatened by Covered Activities, and is unable to move to a safe area on its own, the approved biologist(s) shall relocate California tiger salamander to a safe area in accordance with the Relocation Plan. Otherwise, California tiger salamander may only be captured and handled by the Approved Biologist(s). The Permittees or Authorized Party shall notify CDFW within 24 hours of each time California tiger salamander is relocated. Notification to CDFW shall be via telephone or email, followed by a written incident report. Notification shall include the date, time, location, and circumstances of the incident.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

CTS-9. (California Tiger Salamander Pre-Construction Surveys). The approved biologist(s) shall complete a visual survey in each of the construction sites located within suitable upland habitat and within a 200-foot boundary, including access roads. The approved biologist(s) shall pay particular attention to suitable California tiger salamander habitat features and search beneath woody debris. If California tiger salamander is found within the construction site, access roads, or the 200-foot boundary, the approved biologist(s) shall delay installation of the exclusion barrier until the approved biologist(s) relocate(s) the California tiger salamander out of the Project Area and 200-foot boundary in accordance with AMM CTS-8. The approved biologist(s) shall visually inspect all potential burrow within suitable upland habitat in the construction site, access roads, and 200-foot boundary, prior to installing exclusionary fencing.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

Western Spadefoot

To avoid direct and indirect effects of Covered Activities on western spadefoot (*Spea hammondi*), the following AMMs will be implemented.

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WS-1 (Western Spadefoot Work Window): Ground-disturbing Covered Activities within western spadefoot modeled habitat (Figure 3-17) will occur outside the breeding and dispersal season (after May 15 and before October 15), to the maximum extent practicable.

WS-2 (Western Spadefoot Exclusion Fencing): If Covered Activities must be implemented in modeled habitat (Figure 3-17) after October 15 and before May 15, exclusion fencing will be installed around the project footprint before October 15, and the project site must be monitored by an approved biologist following rain events. Temporary high-visibility construction fencing will be installed along the edge of work areas, and silt fencing will be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot from entering the construction area. Fencing will remain in place until all construction activities within the construction area are completed. No project activities will occur outside the delineated project footprint. If a western spadefoot is encountered, refer to WS-6, below.

WS-3 (Western Spadefoot Monitoring): If Covered Activities must be implemented in modeled habitat (Figure 3-17) in the breeding and dispersal season (after October 15 and before May 15), an approved biologist experienced with western spadefoot identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site daily for western spadefoot prior to construction activities. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western spadefoot enters an active construction zone (i.e., outside the buffer zone). If a western spadefoot is encountered, refer to WS-6, below.

WS-4 (Avoid Western Spadefoot Entrapment): If a Covered Activity occurs in western spadefoot modeled habitat (Figure 3-17), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat will be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-6, below.

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WS-5 (Erosion Control Materials in Western Spadefoot Habitat): If erosion control (BMP-2) is implemented within western spadefoot modeled habitat (Figure 3-17), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WS-6 (Western Spadefoot Encounter Protocol): If Covered Activities must be implemented in modeled habitat (Figure 3-17) during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.

Giant Gartersnake

To avoid direct and indirect effects of Covered Activities on giant gartersnake (*Thamnophis gigas*), the following AMMs will be implemented.

GG-1 (Giant Gartersnake Surveys): If the SSHCP giant gartersnake modeled habitat maps (Figure 3-18) show that modeled habitat for giant gartersnake is present within a Covered Activity's project footprint or within 300 feet of a project footprint, then an approved biologist will conduct a field investigation to delineate giant gartersnake aquatic habitat within the project footprint and adjacent areas within 300 feet of the project footprint. In addition to the SSHCP land cover types shown in Figure 3-18, giant gartersnake aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, agricultural ditches, and rice fields. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential sites and provide these maps to the Land Use Authority Permittees and the Implementing Entity. Locations of delineated giant gartersnake habitat must also be noted on plans that are submitted to a Land Use Authority Permittee. The applicant will use this information

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to finalize project design. Covered Activities may occur throughout the year as long as giant gartersnake habitat is identified and fully avoided. Otherwise, Covered Activities must comply with GGS-2 through GGS-8, below. See Chapter 10 for the process to conduct and submit survey information.

GG-2 (Giant Gartersnake Work Window): Covered Activities that do not fully avoid giant gartersnake modeled habitat (Figure 3-18) will be conducted during the snake's active season. Construction and ground-disturbing activities will be initiated after May 1 and will end prior to September 15. If it appears that these activities may go beyond September 15, the Third-Party Project Proponent or Plan Permittee will contact the Land Use Authority Permittee and the Implementing Entity as soon as possible, but not later than September 1. The Land Use Authority Permittee and the Implementing Entity will discuss with the Wildlife Agencies additional measures necessary to minimize take. The additional measures would vary depending on where the work is occurring. For example, if the work outside the giant gartersnake active season is a continuation of work within a dewatered channel or within a disturbed area where no more than two days have passed without ground-disturbing activities, burrows are no longer expected to be occupied by giant gartersnake, therefore no additional measures may be necessary. However, if ground disturbing work will occur outside the giant gartersnake active season in an area that was not previously disturbed in the active season, or there has been no ground disturbance for more than two days, an approved biologist may be necessary on-site during earth moving activities, to monitor for giant gartersnake presence.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

GG-3 (Giant Gartersnake Monitoring): If a Covered Activity is occurring in giant gartersnake modeled habitat (Figure 3-18), an approved biologist experienced with giant gartersnake identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for giant gartersnake prior to these activities. If a giant gartersnake is encountered, refer to GGS-7. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a giant gartersnake enters an active construction zone (i.e., outside the buffer zone).

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GGGS-4 (Giant Gartersnake Habitat Dewatering and Exclusion): If construction activities will occur in giant gartersnake aquatic habitat, aquatic habitat will be dewatered and then remain dry and absent of aquatic prey (e.g., fish and tadpoles) for 15 days prior to initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to giant gartersnake. After aquatic habitat has been dewatered 15 days prior to construction activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent snakes from attempting to move under the fence into the construction area. In addition, high-visibility fencing will be erected to identify the construction limits and to protect adjacent habitat from encroachment of personnel and equipment. Giant gartersnake habitat outside construction fencing will be avoided by all construction personnel. The fencing and the work area will be inspected by the approved biologist to ensure that the fencing is intact and that no snakes have entered the work area before the start of each work day. The fencing will be maintained by the contractor until completion of the project. If giant gartersnake is encountered, refer to GGS-7, below.

GGGS-5 (Avoid Giant Gartersnake Entrapment): If a Covered Activity occurs in giant gartersnake modeled habitat (Figure 3-18), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps at an angle of no more than 30 degrees constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within giant gartersnake modeled habitat will be inspected for giant gartersnake by the approved biologist prior to being moved. If a giant gartersnake is encountered, refer to GGS-7.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

GGGS-6 (Erosion Control Materials in Giant Gartersnake Habitat): If erosion control (BMP-2) is implemented within giant gartersnake modeled habitat (Figure 3-18), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be

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used to ensure snakes are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

GGG-7 (Giant Gartersnake Encounter Protocol): If a giant gartersnake is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the giant gartersnake within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service and CDFW immediately. Any worker who inadvertently injures or kills a giant gartersnake or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist. Any giant gartersnake observed during Covered Activities will be allowed to move away from danger on its own or be moved by the approved biologist with CDFW and USFWS approval to handle the snake and in accordance with the CDFW-approved Giant Gartersnake Relocation Plan detailed in AMM GGS-9.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

GGG-8 (Giant Gartersnake Post-Construction Restoration): After completion of ground-disturbing Covered Activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with an appropriate native seed mix. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation. Refer to the U.S. Fish and Wildlife Service's (USFWS) Guidelines for the Restoration and/or Replacement of Giant Gartersnake Habitat (USFWS 1997), or the most current USFWS guidelines at the time of the activity. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

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The following giant gartersnake AMMs are conditions of the CDFW Incidental Take Permit. These AMMs are in addition to the previous AMMs. For example, relocation may not occur without notification and discussion with USFWS, as described in GGS-7 above.

GGS-9 (Giant Gartersnake Relocation Plan): Project proponents shall prepare a Giant Gartersnake Relocation Plan (Relocation Plan) for Covered Activities occurring in giant gartersnake modeled habitat. Project proponents shall submit the Relocation Plan to the Land Use Authority Permittee or Implementing Entity, who will send it CDFW for written approval at least 30 days prior to the beginning of any Covered Activities. The Relocation Plan shall include, at a minimum, the proposed giant gartersnake capture and handling technique; a quantification of the amount, relative location, and quality of suitable habitat (aquatic and upland) within proposed relocation site(s) including invasive and non-native species present, available upland burrows for aestivation and high-water refugia, suitable prey items, and potential barriers for movement; written permission from the landowner to use their land as a relocation site; and identification of a wildlife rehabilitation center or veterinary facility that routinely evaluates or treats snakes and is permitted to handle giant gartersnake.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

GGS-10 (Giant Gartersnake Pre-construction Surveys): If Covered Activities will occur within 200 feet of modeled giant gartersnake aquatic habitat, the approved biologist(s) shall conduct one pre-construction survey within 24 hours prior to beginning ground disturbing activities. The approved biologist(s) shall investigate all small mammal burrows within suitable upland habitat. The Project Area will be resurveyed whenever there is a lapse in construction activity of two weeks or more.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

Western Pond Turtle

To avoid direct and indirect effects of Covered Activities on western pond turtle (*Actinemys marmorata*), the following AMMs will be implemented.

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WPT-1 (Western Pond Turtle Surveys): If the SSHCP western pond turtle modeled habitat maps (Figure 3-19) show that modeled habitat for western pond turtle is present within a Covered Activity's project footprint or within 300 feet of a project footprint, then an approved biologist will conduct a field investigation to delineate western pond turtle aquatic and upland habitat within the project footprint and within 300 feet of the project footprint. In addition to the SSHCP land cover types shown in Figure 3-19, western pond turtle aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, and rice fields. The approved biologist will search and monitor upland habitat for active nests, hatchlings, juveniles, and adults. Active upland nests may contain eggs for 96 to 104 days (from May through August), and may contain hatchlings that remain in the nest for many months, typically until the following March or April. Adults and juveniles also move to upland habitat when their aquatic habitat dries in late summer, and adult and juvenile western pond turtles commonly overwinter in uplands (from November to March). Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential sites and provide those maps to the Land Use Authority Permittees and the Implementing Entity. Locations of delineated western pond turtle habitat must also be noted on plans that are submitted to a Land Use Authority Permittee. The applicant will use this information to finalize project design. Covered Activities may occur throughout the year as long as western pond turtle habitat is identified and fully avoided. Otherwise, Covered Activities must comply with WPT-2 through WPT-9. See Chapter 10 for the process to conduct and submit survey information.

WPT-2 (Western Pond Turtle Work Window): Maintenance and improvements to existing structures may occur throughout the year as long as western pond turtle habitat is identified and avoided, and movement of equipment is confined to existing roads. Otherwise, construction and ground-disturbing Covered Activities must be conducted outside of western pond turtle's active season. Covered Activities will be initiated after May 1 and will commence prior to September 15. If it appears that these activities may go beyond September 15, the appropriate Plan Permittee will contact the Land Use Authority Permittee and the Implementing Entity as soon as possible, but not later than September 1, to determine if additional measures are necessary to minimize take.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

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WPT-3 (Western Pond Turtle Monitoring): If a Covered Activity is occurring in western pond turtle modeled habitat (Figure 3-19), an approved biologist experienced with western pond turtle identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while Covered Activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for western pond turtle prior to these activities. The approved biologist will also train construction or maintenance personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western pond turtle enters an active construction or maintenance zone (i.e., outside the buffer zone).

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

WPT-4 (Western Pond Turtle Habitat Dewatering and Exclusion): If Covered Activities will occur in western pond turtle aquatic habitat, aquatic habitat for the turtle will be dewatered and then remain dry and absent of aquatic prey (e.g., crustaceans and other aquatic invertebrates) for 15 days prior to the initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to western pond turtle. After aquatic habitat has been dewatered 15 days prior to Covered Activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent turtles from attempting to burrow or move under the fence into the work area. In addition, high-visibility fencing will be erected to identify work area limits and to protect adjacent habitat from encroachment of personnel and equipment. Western pond turtle habitat outside exclusionary fencing will be avoided by all construction or maintenance personnel. The fencing and work area will be inspected by the approved biologist to ensure that the fencing is intact and that no turtles have entered the work area before the start of each work day. Fencing will be maintained by the contractor or maintenance entity until completion of the project. If, after exclusion fencing and dewatering, western pond turtles are found within the project footprint or within 300 feet of the project footprint, the Third-Party Project Proponent will discuss the next best steps with the Implementing Entity and Wildlife Agencies.

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This AMM has been revised to reflect USFWS and/or CDFW permit conditions

WPT-5 (Avoid Western Pond Turtle Entrapment): If a Covered Activity occurs within western pond turtle modeled habitat (Figure 3-19), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western pond turtle modeled habitat will be inspected for western pond turtle by the approved biologist prior to being moved.

WPT-6 (Erosion Control Materials in Western Pond Turtle Habitat): If erosion control (BMP-2) is implemented within western pond turtle modeled habitat (Figure 3-19), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that turtles are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WPT-7 (Western Pond Turtle Modeled Habitat Speed Limit): Covered Activity construction and maintenance vehicles will observe a 20-mile-per-hour speed limit within western pond turtle modeled upland habitat (Figure 3-19).

WPT-8 (Western Pond Turtle Encounter Protocol): If a western pond turtle is encountered during Covered Activities, the approved biologist will notify the Wildlife Agencies immediately. Covered Activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the turtle, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service immediately. Any worker who inadvertently injures or kills a western pond turtle or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist.

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This AMM has been revised to reflect USFWS and/or CDFW permit conditions

WPT-9 (Western Pond Turtle Post-Construction Restoration): After completion of Covered Activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation and placing appropriate artificial or natural basking areas in waterways and wetlands. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

Tricolored Blackbird

To avoid direct and indirect effects of Covered Activities on tricolored blackbird (*Agelaius tricolor*), the following AMMs will be implemented.

TCB-1 (Tricolored Blackbird Surveys): If modeled habitat for tricolored blackbird (Figure 3-26) is present within a Covered Activity's project footprint or within 500 feet of a project footprint, or if Covered Activity impacts include the Mixed Riparian Scrub land cover type, regardless of whether it is included in the modeled habitat map, then an approved biologist will conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the project footprint and adjacent areas within 500 feet of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent will map all existing or potential nesting or foraging sites and provide these maps to the Land Use Authority Permittees and

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Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Land Use Authority Permittee. See Chapter 10 for the process to conduct and submit survey information.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

TCB-2 (Tricolored Blackbird Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 500 feet of a project footprint if existing or potential nest sites were found during design surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and again within 3 days of ground-disturbing activities, and within the proposed project footprint and 500 feet of the proposed project footprint to determine the presence of nesting tricolored blackbird. The surveys should be separated by at least three weeks. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and the Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies. .

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

TCB-3 (Tricolored Blackbird Nest Buffer): If active nests are found within the project footprint or within 500 feet of any project-related Covered Activity, the Third-Party Project Proponent will establish a 500-foot temporary buffer around the active nest until the young have fledged.

TCB-4 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the project footprint or within 500 feet of any project-related Covered Activity, then an approved biologist experienced with tricolored blackbird behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place near the

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disturbance buffer. Work within the nest disturbance buffer will not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction will cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).

TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves): On SSHCP Agricultural Preserves, pesticides (including herbicides) will not be applied from January 1 through July 15..

Swainson's Hawk

To avoid direct and indirect effects of Covered Activities on Swainson's hawk (*Buteo swainsoni*), the following AMMs will be implemented.

SWHA-1 (Swainson's Hawk Surveys): If modeled habitat for Swainson's hawk (Figure 3-25) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a survey to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (*Populus fremontii*), oaks (*Quercus* spp.), willows (*Salix* spp.), walnuts (*Juglans* spp.), eucalyptus (*Eucalyptus* spp.), pines (*Pinus* spp.), and Deodar cedar (*Cedrus deodara*). The Third-Party Project Proponent will map all existing and potential nesting sites and provide these maps to the Land Use Authority Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Land Use Authority Permittee. See Chapter 10 for the process to conduct and submit survey information.

SWHA-2 (Swainson's Hawk Pre-Construction Surveys): If existing or potential nest sites were found during surveys (SWHA-1), and construction activities will occur during the breeding season (March 1 through September 15), pre-construction surveys will be required to determine if active nests are present within a project footprint or within 0.25

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mile of a project footprint. An approved biologist will conduct pre-construction surveys within 30 days and again within 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies.

SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the project footprint or within 0.25 mile of any project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).

SWHA-5 (Swainson's Hawk Nest Tree Avoidance): Project proponents shall avoid removal of Swainson's hawk nest trees active within the last 5 years, to the maximum extent practicable. Removal of occupied nest trees shall be timed outside of the Swainson's hawk nesting season, which would limit removal to October 1 through February 1, and shall not remove any occupied nest trees until the last young have fledged, as verified by

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the approved biologist. The Implementing Entity shall provide the number of Swainsons' hawk nest trees removed each year, along with nest locations, in each Annual Report submitted to CDFW.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

Greater Sandhill Crane

To avoid direct and indirect effects of Covered Activities on greater sandhill crane (*Grus canadensis*), the following AMMs will be implemented.

GSC-1 (Greater Sandhill Crane Surveys): If modeled habitat for greater sandhill crane (Figure 3-22) is present within a Covered Activity's project footprint or within 0.5 mile of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential roosting sites are present within the project footprint and adjacent areas within 0.5 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Roosting sites within the Plan Area are often associated with flooded fields, seasonal wetlands, and freshwater marsh. The Third-Party Project Proponent will map all existing or potential roosting sites and provide these maps to the Land Use Authority Permittees and Implementing Entity. Roosting sites must also be noted on plans that are submitted to a Land Use Authority Permittee. See Chapter 10 for the process to conduct and submit survey information.

GSC-2 (Greater Sandhill Crane Pre-Construction Surveys): Pre-construction surveys will be required to determine if active roosting sites are present within a project footprint or within 0.5 mile of a project footprint if existing or potential roosting sites were found during initial surveys and construction activities will occur when wintering flocks are present within the Plan Area (September 1 through March 15). An approved biologist will conduct pre-construction surveys within 15 days of ground-disturbing activities, and within 0.5 mile of a project footprint, to determine presence of roosting greater sandhill cranes. Pre-construction surveys will be conducted September 1 through March 15, when wintering flocks are present within the Plan Area. If birds are present, then GSC-3, GSC-4, and GSC-5 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

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GSC-3 (Greater Sandhill Crane Roosting Buffer): If active roosting sites are found within the project footprint or within 0.5 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.5 mile temporary roosting disturbance buffer around each roosting site until the cranes have left.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

GSC-4 (Greater Sandhill Crane Visual Barrier): Greater sandhill cranes have low tolerance for human disturbance, and such disturbance has caused cranes to abandon foraging and roosting sites. Repeat disturbance affects their ability to feed and store energy needed for survival. If project-related activities occur within 0.5 mile of a known roosting site as identified by surveys conducted during implementation of GSC-1 or GSC-2, a visual barrier will be constructed.

GSC-5 (Greater Sandhill Crane Roosting Buffer Monitoring): If roosting sites are found within the project footprint or within 0.50 mile of any project-related Covered Activity, an approved biologist experienced with greater sandhill crane behavior will be retained by the Third-Party Project Proponent to monitor the roosting site throughout the roosting season and to determine when the birds have left. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary disturbance buffer can only occur with the written permission of the Implementing Entity and Wildlife Agencies. If greater sandhill cranes are abandoning their roosting and/or forage sites, the approved biologist will have the authority to shut down construction activities. If roost abandonment occurs, the approved biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid harm and harassment of individuals. The approved biologist will also train construction personnel on the avoidance procedures, buffer zones, and protocols in the event that greater sandhill cranes move into an active construction zone (i.e., outside the buffer zone).

Western Burrowing Owl

To avoid direct and indirect effects of Covered Activities on western burrowing owl (*Athene cunicularia*), the following AMMs will be implemented.

WBO-1 (Western Burrowing Owl Surveys): Surveys within modeled habitat are required for both the breeding and non-breeding season. If the project site falls within modeled habitat, an approved biologist will survey the project site and map all burrows, noting

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any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping will be conducted by the approved biologist while walking transects throughout the entire project site plus all accessible areas within a 250-foot radius from the project site. The centerline of these transects will be no more than 50 feet apart and will vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects will be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the project does not fully avoid the habitat, pre-construction surveys will be required. Burrowing owl habitat is fully avoided if project-related activities do not impinge on a 250-foot buffer established by the approved biologist around suitable burrows. See Chapter 10 for the process to conduct and submit survey information.

WBO-2 (Western Burrowing Owl Pre-Construction Surveys): Prior to any Covered Activity ground disturbance, an approved biologist will conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey will last a minimum of 3 hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.

WBO-3 (Western Burrowing Owl Avoidance): If western burrowing owl or evidence of western burrowing owl is observed on the project site or within 250 feet of the project site during pre-construction surveys, then the following will occur:

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During Breeding Season: If the approved biologist finds evidence of western burrowing owls within a project site during the breeding season (February 1 through August 31), all project-related activities will avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other project-related activities may occur outside of the 250-foot buffer zone. Construction and other project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity and Wildlife Agencies prior to project construction based on the following criteria:

- The Implementing Entity and Wildlife Agencies approve of the avoidance and minimization plan provided by the project applicant.
- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.

If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.

If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist will excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.

The Implementing Entity and Wildlife Agencies will respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.

During Non-Breeding Season: During the non-breeding season (September 1 through January 31), the approved biologist will establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer

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will be allowed. Construction activities within the non-disturbance buffer will be allowed if the following criteria are met to prevent owls from abandoning over-wintering sites:

- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer.
- If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity and Wildlife Agencies that an approved biologist excavate usable burrows and install one-way exclusionary devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue.

Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

WBO-4 (Western Burrowing Owl Construction Monitoring): During construction of Covered Activities, 250-foot construction buffer zones will be established and maintained around any occupied burrow. An approved biologist will monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist will also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.

WBO-5 (Western Burrowing Owl Passive Relocation): Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation will only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure that owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated

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using hand tools only. During excavation, an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term.

WBO-6 (Western Burrowing Owl Timing of Maintenance Activities): All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas will be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.

WBO-7 (Rodent Control): Rodent control will be allowed only in developed portions of a Covered Activity project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control will comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

Covered Raptor Species

To avoid direct and indirect effects of Covered Activities on covered raptor species, the following AMMs will be implemented. This measure applies to Cooper's hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*). The following AMMs do not apply to ferruginous hawk (*Buteo regalis*), as they do not nest in the Plan Area. The following AMMs also do not apply to Swainson's hawk or burrowing owl, as specific AMMs have been developed for these covered raptor species.

RAPTOR-1 (Raptor Surveys): If modeled habitat for a covered raptor species (Figures 3-20, 3-23, 3-24, or 3-28) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential nesting sites and provide these maps to the Land Use Authority Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Land Use Authority Permittee. See Chapter 10 for the process to conduct and submit survey information.

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RAPTOR-2 (Raptor Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present with a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites are found during initial surveys and construction activities will occur during the raptor breeding season. An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities within the proposed project footprint and within 0.25 mile of the proposed project footprint to determine presence of nesting covered raptor species. Pre-construction surveys will be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

RAPTOR-3 (Raptor Nest/Roost Buffer): If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.25 mile temporary nest disturbance buffer around the active nest until the young have fledged.

RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring): If project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).

Western Red Bat

To avoid direct and indirect effects of Covered Activities on western red bat (*Lasiurus blossevillii*), the following AMMs will be implemented.

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BAT-1 (Maternity Roost Surveys): If modeled habitat (Figure 3-30) for western red bat is present within 300 feet of a Covered Activity's project footprint, and a Covered Activity is proposed between May 1 and August 31 (when pre-flight/nursing young may be present), then an approved biologist will conduct a field investigation of the project footprint and adjacent areas within 300 feet of the project footprint to determine if a potential maternity roost is present, and to identify and map potential maternity roost sites. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential maternity roost sites are found, the Third-Party Project Proponent will note their locations on project designs and will design the project to avoid all areas within a 300-foot buffer around the potential maternity roost sites. As discussed in AMM BAT-3, maternity roost habitat is fully avoided if project-related activities do not impinge on a 300-foot buffer established by the approved biologist around an existing or potential maternity roost site. See Chapter 10 for the process for Covered Activity projects to conduct and submit project survey information.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

BAT-2 (Maternity Roost Pre-Construction Surveys): If the Third-Party Project Proponent elects not to avoid potential maternity roost sites within the project footprint plus a 300-foot buffer during May through August, additional western red bat surveys are required. Prior to any ground disturbance related to Covered Activities or staging of equipment in the project footprint, an approved biologist will conduct a pre-construction survey within 3 days of ground-disturbing activities (within the project footprint and 300 feet of the project footprint) to determine the presence of maternity roost sites. Pre-construction surveys will be conducted during the roosting season when pre-flight/nursing young may be present (May 1 through August 31). If a maternity roost is present, then AMM BAT-3 shall be implemented. The approved biologist will inform the Land Use Authority Permittee and SSHCP Implementing Entity (the South Sacramento Conservation Agency) of all roost sites and species locations, and they in turn will notify the Wildlife Agencies (USFWS and CDFW), and provide all survey information to the Wildlife Agencies.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

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BAT-3 (Maternity Roost Buffer): If active maternity roost sites are found within the project footprint or within 300 feet of the project footprint between May 1 and August 31, the Third-Party Project Proponent will establish a 300-foot temporary disturbance buffer around the active maternity roost site until bats have vacated the roost and the Wildlife Agencies concur that the roost is vacant.

Very few western red bats are expected to be present in the Action Area in the winter months (November 1 through March 31). However, if active winter hibernaculum sites are found within the project footprint or within 300 feet of the project footprint between November 1 and March 31, the Third-Party Project Proponent will establish the same 300-foot temporary disturbance buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Wildlife Agencies concur that the hibernaculum is vacant..

This AMM has been revised to reflect USFWS and/or CDFW permit conditions

BAT-4 (Bat Eviction Methods for Non-Maternity and Non-Hibernaculum Roosts): An approved biologist will determine if non-maternity and non-hibernaculum day and night roosts are present on the project site. If direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided, the Third-Party Project Proponent will prepare a bat eviction plan, and inform the Land Use Authority Permittee and the SSHCP Implementing Entity (the South Sacramento Conservation Agency). They in turn shall inform the Wildlife Agencies, and provide the bat eviction plan for review. If necessary, the approved biologist may be allowed to remove the bats using safe-eviction methods acceptable to the Wildlife Agencies.

This AMM has been revised to reflect USFWS and/or CDFW permit conditions