

CHAPTER 6. CONDITIONS ON COVERED ACTIVITIES

6.1 INTRODUCTION

As required by Endangered Species Act (ESA) (Section 10[a][2][A][ii]) and Fish and Game Code Sections 2820 (a)(6) and 2820(f), this Plan includes measures to avoid and minimize take of covered species. These measures to avoid and minimize impacts are described as *avoidance and minimization measures (AMMs)*, and are designed to meet the above referenced state and federal requirements.

Regional avoidance and minimization measures reduce the need for individual projects to avoid and minimize impacts at the project scale, allowing for streamlining of regulatory requirements. The Butte Regional Conservation Plan (BRCP) assumes that take will result from individual covered activities and that this take will be mitigated through the conservation strategy (Chapter 5, *Conservation Strategy*). The conditions on covered activities (AMMs) described in this chapter do not supersede requirements by other agencies and are not intended to provide a basis for non-compliance with other applicable design guidelines required by other federal, state, and local agencies.

The AMMs include such actions as avoidance of species occurrences and habitat through project design, timing of construction activities in the vicinity of occupied habitat to avoid times when a covered species is present, and avoiding habitat removal during breeding periods. These measures may also avoid or minimize the potential for take by reducing effects on covered and other native species by altering construction plans or activities (e.g., modifying construction footprints, covering open trenches, and using materials to reduce runoff from construction sites) or by modifying design elements of projects to reduce operational effects (e.g., noise, lighting, and urban runoff). The avoidance and minimization measures presented here are required BRCP elements and complement the protection of species occurrences and habitat, restoration of habitat, enhancement of habitat, management of conservation lands, and other beneficial actions described in the conservation measures in Sections 5.4.1 through 5.4.3. In addition to the conditions described in this chapter to avoid and minimize impacts, covered activities may also require payment of mitigation fees (see Chapter 10, *Implementation Cost and Funding*). For additional information on project-level implementation, see Section 8.7, *Process for BRCP Implementation* in Chapter 8, *Plan Implementation*.

6.2 CONDITIONS ON COVERED ACTIVITIES

Conditions on covered activities (AMMs) are presented below for permanent development projects, specific species, transportation projects, and recurring maintenance activities.

6.2.1 Permanent Development Projects Inside and Outside of Urban Permit Areas (UPAs)

This section describes the avoidance and minimization measures that will be implemented during the design and construction phases of covered permanent development projects described in Sections 2.2.1 through 2.4.1. These avoidance and minimization measures are presented in a roughly sequential order beginning with planning surveys to identify habitat conditions, followed by preconstruction surveys to identify presence or absence of covered species, the establishment of Activity Exclusion Zones to protect occupied sites during specified periods, and construction and design measures to minimize the effects of the covered activity on species and habitat.

6.2.1.1 Biological Surveys and Evaluations

Surveys and evaluation of existing information are required to identify the biological resources at permanent development project sites and surrounding areas to determine which avoidance and minimization measures will be implemented. Two types of surveys are required at different times in the planning of covered activities, planning surveys and preconstruction surveys. Planning surveys are conducted prior to design of projects to aid in the project design process and allow for development and implementation of an impact avoidance and minimization plan for each project. Preconstruction surveys are conducted immediately prior to construction activities, provide timely and full spatial information on the presence of resources, and support the implementation of avoidance and minimization measures.

AMM1: Conduct Planning Surveys. Planning surveys are reconnaissance-level and resource-specific surveys conducted for the purpose of identifying, documenting, and assessing habitat conditions and the presence or potential presence of covered species to support the design process for proposed projects. Planning survey requirements are presented in Table 6–1, *Planning Survey Requirements* (see separate file). Planning surveys will be conducted prior to the design phase for all permanent development covered activities described in Chapter 2, *Covered Activities* that could result in impacts on the biological resources listed in Table 6–1. Results of planning surveys will be reported and submitted as described in Section 8.2, *Compliance and Progress Reporting Requirements*.

Project proponents must conduct planning surveys for the covered species specified in Table 6–1 within and adjacent to project sites. Project proponents must delineate Clean Water Act (CWA) Section 404 jurisdictional wetlands and other waters of the United States within project sites. Project proponents are required to delineate Section 1602 Fish and Game Code jurisdictional riparian habitat within project sites. The BRCP Land Cover Geographic Information Systems (GIS) database and any subsequent revisions adopted by Butte County Association of Government (BCAG) as the Implementing Entity is the base resource for identifying land cover types at project sites. As indicated in Table 6–1, project proponents may use the BRCP Land Cover GIS database or conduct their own site surveys to identify land cover types for the purpose of mapping at a higher resolution and greater accuracy than the existing BRCP Land Cover GIS

database. Land cover type mapping categories will be used to determine acreages for calculation of the Base Fee and the Riparian Fee (see Chapter 10, *Implementation Costs and Funding Sources*, for fee structure). The Emergent Wetland Fee and Vernal Pool Fee for impacts on Section 404 jurisdictional wetlands will be based on acreage results of each project's Section 404 delineation.

Based on results of Land Cover GIS database or site survey reviews, project proponents will determine if suitable covered species habitats are present and if there is a need to conduct more focused planning surveys for the covered species as indicated in Table 6-1.¹ The likelihood for the presence of covered species habitat will be informed by the land cover types identified within and adjacent to project sites described above. Surveys will be required for a covered species if the conditions described in the "Project Site Conditions Requiring Surveys" column of Table 6-1 are identified in the site surveys or review of the BRCP Land Cover GIS database.

All covered species planning surveys will be conducted during the specified time period indicated in Table 6-1. All planning surveys will be conducted by qualified and permitted (as necessary) biologists using the methods indicated in Table 6-1 or alternative methods approved by BCAG, U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW).

Following completion of planning surveys and based on the results of those surveys, project proponents must prepare an impact avoidance and minimization plan that adopts the applicable BRCP AMMs into the project design and construction (see AMM3-AMM26).

AMM2: Conduct Preconstruction Surveys. Preconstruction surveys are species-specific surveys of project sites and surrounding areas used, in addition to the planning surveys, to determine the impact avoidance and minimization measures that must be implemented to address the species found (see AMM3-AMM26). Preconstruction surveys are conducted after project design is complete and prior to project construction; the purpose of which is to provide timely information such that disturbance related effects of construction (e.g., the harassment of nesting birds) can be avoided or minimized. Preconstruction surveys will be conducted in and adjacent to permanent development covered activity project footprints if, based on results of planning surveys (conducted under AMM1, *Conduct Planning Surveys*), review of aerial imagery, and field reconnaissance surveys, the land cover types and other site conditions indicated for the species listed in Table 6-2, *Survey Area and Timing of Preconstruction Surveys for Permanent Development Projects* (see separate file) are present or species occurrences have been directly observed. Preconstruction surveys are not required for some covered species listed in Table 6-2 because 1) either planning surveys have been conducted for those species and appropriate avoidance and minimization actions are taken during project planning/design or 2) the species are assumed to be present (i.e., habitat is occupied) and are assumed to be impacted by project

¹ Suitable habitat for the covered species is described for each species in Appendix A, *Covered Species Accounts*.

implementation (i.e., take is permitted). Results of preconstruction surveys will be reported and submitted as described in Section 8.2.

Surveys will be conducted for the covered species indicated in Table 6–2, with the exception described below, for projects which contain the appropriate habitat and outside of the project site within the distance of the project site boundary specified in Table 6–2. This distance determines the survey area as measured from the edge of project site boundaries for each potentially occurring covered species. Survey methods for lands outside the project site may differ from the methods used at the project site. Land outside of the project site that is not accessible by the project proponent will be surveyed using the most suitable methods (e.g., searching for occupied bald eagle nest sites from public road access). The survey area outside the project site may be reduced based on a qualified biologist’s professional opinion with concurrence from USFWS and CDFW using such parameters as line-of-sight, topography, and land use to determine the potential for the proposed project to result in adverse effects on specific species (e.g., harassment from construction noise and lighting). No surveys are required for habitat that occurs beyond the distance specified in Table 6–2 for each of the covered wildlife species. All surveys will be conducted during the specified time period indicated in Table 6–2. All preconstruction surveys will be conducted by qualified and permitted (as necessary) biologists using the methods indicated in Table 6–2 or alternative methods approved by BCAG, USFWS, and CDFW.

If take and impacts on covered species are avoided, then preconstruction surveys will not be required for covered species that would otherwise require surveys if the project proponent assumes the species is present, establishes set-backs from patches of the species assumed occupied habitat as described under AMM3, *Avoid and Minimize Impacts on Covered Species*, and implements all other avoidance and minimization measures applicable to the species described in Sections 6.2.1 through 6.2.4 (e.g., assuming that all trees on and adjacent to a project site support nesting Swainson’s hawks during the nesting season and thus implementing all applicable Swainson’s hawk avoidance and minimization measures to the entire area of nesting habitat).

6.2.1.2 Project Design

Project design measures are used to adjust project footprints or to incorporate habitat elements into project design that further avoid or reduce effects on covered and other native species.

AMM3: Avoid and Minimize Impacts on Covered Species. Permanent development projects will be designed to limit take of the covered species and impacts (i.e., removal) on their habitat listed in Table 6–3, *Take Limits for Covered Species and Avoidance and Minimization Criteria for Covered Species* (see separate file) in accordance with the indicated take limits. Criteria for determining avoidance of take and direct impacts on habitat for these species are also described in Table 6–3. Distances for avoidance and minimization criteria identified in Table 6–3 may be shorter (i.e., development under covered activities may be conducted closer to the species occurrence) if requested by the project proponent and approved by the BCAG with the

concurrency of USFWS and CDFW. Various site-specific factors may indicate appropriate reasons for shorter distances of separation between construction and occurrences including: existing development and roads at a shorter distance from species occurrences than provided in Table 6–3, indicating that the species may be habituated to and unaffected by construction and other activities; barriers, such topographic relief and tree cover between the development site and the species occurrence that may remove or greatly attenuate any effects of the development on the species occurrence; and existing hydrologic barriers or run-off and erosion control measures that eliminate any adverse watershed effects on covered plant and fairy shrimp occurrences.

Covered activities must avoid impacts on patches of cottonwood-willow forest habitat of 50 acres or larger that would result in reducing the total patch size to less than 50 acres.

AMM4: Avoid and Minimize Impacts on Sensitive Wetland and Riparian Habitats. To the extent consistent with the project purpose, projects will be designed to achieve the criteria to avoid and minimize direct and indirect impacts on wetland and riparian land cover types presented in Table 6–4, *Design Criteria for Avoiding Permanent Direct Impacts of Permanent Development Projects on Sensitive Wetland and Riparian Land Cover Types* (see separate file). For projects that are designed such that the criteria in Table 6–4 are achieved, permanent direct impacts on the wetland and riparian land cover types addressed in Table 6–4 are assumed to be avoided.

AMM5: Avoid Siting of Construction Staging Areas and Temporary Work Areas in Occupied Covered Species Habitat. Permanent development projects will be designed to site construction staging and other temporary work areas in habitat areas that will ultimately be permanently removed by the permanent development activities. If construction staging and other temporary work areas must be located outside of project footprints, they will be located either in areas that do not support habitat for covered species or that are easily restored to prior ecological functions (e.g., grassland). Construction staging and other temporary work areas that must be located outside of project footprints will be sited in areas that avoid impacts on:

- Cottonwood-willow riparian forest, valley oak riparian forest, willow scrub, and dredger tailings with riparian land cover types
- Emergent wetland,
- Vernal pools and other seasonal wetlands,
- Habitat occupied by covered plant, invertebrate, amphibian, and reptile species,
- Occupied western burrowing owl burrows, and
- Covered bird species nest sites during the breeding season.

Establishment of temporary work areas outside of the project footprint will require surveys to be conducted to determine if any of the biological resources listed above are present.

Following completion of project construction, temporary work and staging areas will be restored to a condition of equal or greater habitat function than the affected habitat. Restoration of

vegetation in temporary work and staging areas will use clean seed mixes approved by BCAG that are free of noxious plant species seeds and reestablishment of vegetation will be monitored to ensure baseline habitat conditions are restored.

AMM6: Establish Permanent Habitat Buffers along Stream and Riparian Corridors.

Project proponents will establish permanent habitat buffer zones to protect biological resources associated with perennial and intermittent streams as identified in the BRCP GIS Land Cover database. Impact avoidance and minimization requirements for each of these perennial and intermittent streams are described below. Also described for this AMM are authorization for narrower buffer zones and allowable activities within buffer zones.

Most streams and riparian habitat within the 2013 city limits of the Cities of Biggs, Chico, Gridley and Oroville are closely hemmed in by existing development. Human activities adjacent to this habitat are an existing condition that has resulted in disturbance of wildlife and new development is not expected to substantially change these existing effects. Within the city limits of these cities, buffer zone widths for perennial and intermittent streams and associated riparian habitat for new in-fill development will be determined by existing city ordinances and policies. The City of Chico General Plan Action OS 2.5.1 states: “Consistent with the City’s Municipal Code, require a minimum 25-foot setback from the top of creek banks to development and associated above ground infrastructure as part of project review, and seek to acquire an additional 75 feet. In addition, require a larger setback where necessary to mitigate environmental impacts.” The Cities’ project approval processes will be used with involvement of BCAG. The BRCP standards for buffers will remain in effect should applicable policies of the Cities or city limit boundaries change in future years.

Perennial Streams and Major Conveyance Channels. New residential, commercial, public, and industrial facility projects outside of the 2013 city limits of the Cities of Biggs, Chico, Gridley and Oroville will be designed to include a minimum 100-foot permanent habitat buffer zone (set-back easement) from the top of bank along both sides of all natural perennial stream corridors as defined in the BRCP GIS database and a minimum 25-foot permanent habitat buffer zone from the edge of remaining or restored riparian forest and scrub if riparian forest/scrub is wider than 75 feet from the top of the stream bank. For major water conveyance channels that support woody riparian vegetation a minimum 25-foot permanent habitat buffer zone will be established from the edge of the existing or restored riparian forest and scrub. Permanent habitat buffers apply to stream and riparian habitat areas that remain following construction of permanent development projects (note the allowable level of impacts on riparian habitats by UPA and Conservation Acquisition Zones (CAZ) in Table 4-4, *Maximum Extent of Natural Communities and Land Cover Types Removed (Permanent Direct Effects) with Implementation of the Covered Activities in CAZs and UPAs*). The habitat buffer will be measured from the top of the stream/channel bank or from the edge of woody riparian vegetation (i.e., canopy drip line), and extend perpendicular to the bank/riparian vegetation. Where existing development is already within 100-feet of a stream, the habitat buffer will be established within the entire intervening

space between the development and the stream unless a narrower buffer is authorized (see below).

Intermittent Streams. New residential, commercial, public, and industrial facility projects outside of the 2013 city limits of the Cities of Biggs, Chico, Gridley and Oroville will be designed to include a minimum 50-foot permanent habitat buffer zone (set-back easement) from the top of bank along both sides of all natural intermittent stream corridors as defined in the BRCP GIS Land Cover database and a minimum 25-foot permanent habitat buffer zone from the edge of existing or restored riparian forest and scrub if riparian forest/scrub vegetation is wider than 25 feet from the top of the stream bank. Permanent habitat buffers apply to stream and riparian habitat areas that remain following construction of permanent development projects (note the allowable level of impacts on riparian habitats by UPA and CAZ in Table 4–4). The habitat buffer will be measured from the top of the stream/channel bank or from the edge of woody riparian vegetation, and extend perpendicular to the bank/riparian vegetation. Where existing development is already within 50-feet of an intermittent stream, the habitat buffer will be established within the entire intervening space between the development and the stream unless a narrower buffer is authorized (see below).

Authorization for Narrower Buffer Zones. Project proponents may request narrower buffer zones than described in this AMM and such zones may be allowed if approved by BCAG with the concurrence of USFWS and CDFW. Within the 2013 city limits of the Cities of Biggs, Chico, Gridley and Oroville, buffer zone widths are determined by the process described above in this AMM.

Allowable Activities/Facilities in Buffer Zones. No above ground project construction-related activities or placement of above ground structures will be allowed within the buffer zone. Below ground facilities are allowable in the buffer zone such as pipelines, electrical lines, and other utilities. Public and private roads at stream crossings and maintenance access roads are allowed within the buffer zones. Flood control and other municipal maintenance activities are allowed in the buffer zones. Buffer zones adjacent to residential permanent development projects will be designed to control access by humans and pets (see AMM7, *Design Developments to Minimize Impacts at Urban-Habitat Interfaces*).

AMM7: Design Developments to Minimize Impacts on Habitat at Urban-Habitat Interfaces. Where residential, commercial, public, industrial, and agricultural services facility projects are implemented adjacent to protected natural communities or natural communities that are expected to be protected under the BRCP in the future, urban-habitat interface elements will be incorporated into project design to minimize the impacts of the development on adjacent protected habitat areas, including habitat areas expected to be protected in the future. Where agricultural lands are protected under the BRCP that support habitat for covered species that are not tolerant of human disturbances, urban-habitat interface elements will also be incorporated into project design to minimize the impacts of development on these agricultural habitat lands. Impacts on adjacent habitat at urban-habitat interfaces result from:

- Human activities such as noise and visual disturbances that diminish the ability of covered and other native wildlife to use the habitat.
- Increased numbers of stray dogs and cats in adjacent habitats that harass and kill covered and other native wildlife species.
- Increased levels of direct habitat disturbances associated with increased human access to habitats (e.g., destruction of vegetation and injury or mortality of wildlife associated with use of off-road vehicles in habitat).
- Increased incidence of invasive plants and animals due to proximity of human sources (e.g., garden varieties and exotic pets).

BCAG must approve the design of all urban-habitat interface elements for covered activities. The following are examples of urban-habitat interface design elements and activities that could be incorporated, as applicable, into residential, commercial, public, and industrial, and agricultural services facility development projects.

- Place lot frontage and roads at the urban-habitat interface rather than abutting the backs of lots against the conservation land boundary to create the conservation lands as the “communities’ front yard” promoting community policing and civic pride in the resource.
- Design roads, bike paths, and trails such that they minimize the likelihood for human disturbance of habitat areas and also promote community policing of the habitat areas.
- Establish access points to control entry of people and pets into habitat areas.
- Prevent the dumping of trash and lawn clippings into adjacent habitat areas.
- Shield adjacent habitat areas from visual disturbances that may interfere with normal wildlife behavioral patterns.
- Design development drainage systems and implement appropriate best management practices (BMPs) to avoid discharges of urban runoff into sensitive habitat areas.
- Design development lighting to avoid projecting light into adjacent habitat areas or use low-glare lighting to minimize lighting impacts on habitat.

AMM8: Implement Standard Urban Stormwater Management Plans. Project proponents for permanent development facility projects within UPAs must prepare and implement stormwater management plans consistent with the approved National Pollutant Discharge Elimination System (NPDES) permit for the jurisdiction within which the activity is implemented. The stormwater management plan must incorporate, at a minimum, either a volumetric or flow-based treatment control design standard, or both, as specified in the NPDES permit, to mitigate (infiltrate, filter, or treat) stormwater runoff. Treatment control BMPs set forth in the proposed project plans, shall meet the design standards set forth in the stormwater management plan.

6.2.1.3 Construction

Construction measures are on-site activities implemented during the construction phase of covered activities to avoid or minimize construction-related effects on covered species.

AMM9: Establish Activity Exclusion Zones for Nesting/Breeding Birds. Where preconstruction surveys indicate that nesting/breeding covered bird species listed in Table 6–5, *Activity Exclusion Zones* (see separate file) are present and are using habitat in or adjacent to the project site as indicated in Table 6–5 (or where presence and use is assumed based on results of planning surveys), direct impacts of construction-related activities on the occupied sites will be avoided through the establishment of activity exclusion zones. The establishment of activity exclusion zones is not required if no construction-related disturbances will occur within the activity exclusion periods indicated in Table 6–5.

An exclusion zone will be established around occupied habitat according to the distances indicated for each species in Table 6–5, the boundaries of which will be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. The activity exclusion zones can be reduced through consultation with a qualified biologist and with concurrence from USFWS and CDFW based on line-of-sight, topography, land uses, type of disturbance, ambient noise and disturbance levels, and other appropriate factors. No project activities (e.g., vehicle use, storage of materials and equipment) will be permitted within activity exclusion zones during the time periods specified in Table 6–5 or until a qualified biologist determines that the risk of impact on individuals of the covered species is sufficiently avoided or minimized (e.g., young birds have fledged and are capable of independent survival and nests sites are no longer active).

AMM10: Establish Activity Exclusion Zones for Covered Plant Species. Where preconstruction surveys indicate that a covered plant species listed in Table 6–5 is present in or adjacent to the project site as indicated in Table 6–5 and for which take is not permitted under the conditions specified in Table 6–3), direct and indirect impacts of the project on the species will be avoided through the establishment of activity exclusion zones. Activity exclusion zones for covered plant species will be established around each occupied habitat site, the boundaries of which will be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. Establishment of activity exclusion zones is not required if no construction-related disturbances will occur within the activity exclusion distances indicated in Table 6–4. The size of activity exclusion zones can be reduced through consultation with a qualified biologist and with concurrence from USFWS and CDFW based on project site-specific conditions.

AMM11: Minimize Impacts on Covered Fish Species. One or more of the covered species may be present in Plan Area streams and rivers at any time of year and thus impacts on fisheries resulting from in-channel construction and recurring maintenance activities cannot be avoided. To minimize impacts of operating equipment used to implement permanent development projects in channels during the greatest periods of risk and life cycle importance to covered fish

species, operation of equipment and placement of structures in stream channels is prohibited from January 1-May 31 in the following channels:

- Pine Creek,
- Singer Creek
- Rock Creek,
- Mud Creek,
- Lindo Channel,
- Big Chico Creek,
- Little Chico Creek,
- Butte Creek,
- Little Dry Creek, and
- Feather River.

See Figure 3–9, *Hydrologic Features in the Plan Area* for locations of these streams. An exception to this AMM is the maintenance of Sycamore Pool along Big Chico Creek in Bidwell Park, which is permitted to continue as has been the ongoing practice.

The prohibition on in-channel impacts during these periods may be adjusted with concurrence of NMFS, USFWS, and CDFW.

AMM12: Confine and Delineate Work Area. Where natural communities and covered species habitat are present, confine land clearing to the minimal area necessary to facilitate construction activities. Clearly identify the boundaries of work areas using temporary fencing or its equivalent. Movement of heavy equipment to and from the project site shall be restricted to established roadways to minimize habitat disturbance.

AMM13: Cover Trenches and Holes during Construction. To prevent injury and mortality of covered and other native wildlife, all open trenches and holes associated with implementation of covered activities will be covered or provided with escape ramps during non-working hours. All open trenches and holes will be inspected immediately prior to filling and any trapped wildlife removed and released by a qualified biologist.

AMM14: Control Fugitive Dust. Water will be spread on work sites consistent with the Butte County Air Quality Management District's requirements and as needed to minimize spread of dust to habitat on adjacent lands.

AMM15: Conduct Worker Training. All permanent development facility project construction personnel will participate in a worker environmental training program that will educate workers regarding the covered species and their habitats, the need to avoid impacts, state and federal

protection, and the legal implications of violating environmental laws and regulations. At a minimum, this training may be accomplished through “tailgate” presentations at the project site and the distribution of informational brochures, with descriptions of sensitive biological resources and regulatory protections, to construction personnel prior to initiation of construction work.

AMM16: Install Erosion Control Barriers. Where ground disturbing activities associated with implementation of permanent development projects will potentially result in runoff of sediment or other materials into emergent wetland, riparian, vernal pool, or other wetland or aquatic habitats (e.g., stream channels), erosion control barriers will be installed as needed to prevent sedimentation or contamination of these habitats. Erosion control materials shall be free of plant seeds and other propagules to prevent introductions of nonnative plant species. Erosion control materials may include coir (coconut husks), jute (fibers from the plant genus *Chorchorus*), straw or excelsior (fine wood fibers, usually aspen), or other combinations of these types of products. Note that jute may not be used in areas with giant garter snake because of the risk of entanglement (see AMM25, *Minimize Take and Impacts on Habitat of Giant Garter Snake*).

AMM17: Night-Time Lighting of Project Construction Sites. With the exception of permanent development project sites surrounded by existing developed areas and sites that require lighting to maintain public safety, all lights for night-time lighting of project construction sites will be directed into the project construction area and will minimize the lighting of natural habitat areas adjacent to the project construction area.

AMM18: Implement Spill Prevention, Control, and Counter Measure Plan to Eliminate or Minimize Sources of Contaminants. Each entity implementing a permanent development facility project will prepare and implement a Spill Prevention, Control, and Counter Measure Plan (SPCC). The SPCC will to identify all sources of contaminants (e.g., leaking fuel tanks or chemical tanks) at construction sites and eliminate or minimize the potential for such substances to enter ground and surface waters.

AMM19: Implement Wet Weather Erosion Control Plan. Each entity implementing a permanent development facility project that will leave soil disturbed during the rainy season (i.e., October 1 through April 15) will prepare and implement an approved Wet Weather Erosion Control Plan (WWECP) consistent with the local jurisdiction’s NDPES requirements. The WWECP must be available 30 days before construction commences. Information to be provided in WWECPs will include, but not be limited to the following information:

- The name, location, period of construction, and a brief description of the project;
- Contact information for the owner and contractor;
- A site map (construction plans may be used) showing the location of erodible land sediment control BMPs that will be implemented for the rainy season; and

- A certification statement that all required and selected BMPs will be effectively implemented.

AMM20: Implement Stormwater Pollution Prevention Plan. Each entity implementing permanent development facility project will prepare and implement an approved Stormwater Pollution Prevention Plan (SWPPP) that identifies BMPs per the requirements of the jurisdiction within which each activity is implemented. Typical BMPs are listed below.

- Placement of trash receptacles situated at convenient locations on construction sites and maintained such that trash and litter do not accumulate on the site or migrate off-site.
- Placement of structural controls such as sediment barriers, filters, and berms.
- Removal of any construction-related debris that falls into streams, or other bodies of water.
- Prohibiting the washing of construction or other vehicles adjacent to a construction site.
- Controlling erosion from slopes and channels through the effective combination of BMPs.

AMM21: Implement Additional Avoidance and Minimization Measures and Best Management Practices. Each entity implementing a permanent development facility project will implement applicable avoidance and minimization measures and BMPs identified in current Central Valley Regional Water Quality Control Board guidelines that are in addition to those required under AMMs 17–21.

6.2.2 Species-Specific Avoidance and Minimization Measures

Additional measures to minimize impacts may be required if direct impacts on covered species cannot be fully avoided. Some of these measures are based on state or federal guidance (e.g., western burrowing owl and giant garter snake); others are standard practices that involve relocating animals out of impact areas in order to avoid mortality. The following are species-specific AMMs.

AMM22: Exclusion of Wintering Western Burrowing Owls. Where preconstruction surveys for permanent development projects indicate occupied western burrowing owl burrows cannot be avoided, the project proponent will prepare and implement an exclusion plan in accordance with guidance for exclusion provided in *Staff Report on Burrowing Owl Mitigation* (DFG 2012; see Appendix E, *Survey Protocols*) such that burrowing owl fatalities are avoided.

AMM23: Install Wire Markers on New or Modified Power Transmission Lines within Greater Sandhill Crane Habitat. Sandhill cranes are known to fly into overhead transmission lines, particularly during periods of low visibility (e.g., foggy conditions), resulting in the injury or mortality of individuals. If preconstruction surveys indicate that new distribution or transmission lines that link solar energy generation facilities or agricultural services facilities to the electrical grid are constructed or modified in height and wire dimensions in habitat traditionally used, or likely to be used, by wintering greater sandhill cranes, transmission wire markers approved by

BCAG will be installed to increase the visibility of these lines to migrating cranes and reduce mortality associated with collision of cranes with power lines. Markers will be installed on suspended wires at regular intervals according to manufacturer's recommendations and as approved by BCAG. Maintenance of power line markers shall be conducted at regular intervals and missing or broken markers will be replaced before September 15 of each year prior to the arrival of migrating cranes in the Plan Area.

AMM24: Prevent Raptor Electrocutions. To reduce the likelihood of electrocution of Swainson's hawk, white-tailed kite, bald eagle and other native raptors in the Plan Area, all new transmission lines associated with solar energy facility and other permanent development projects will be required to comply with raptor-safe power pole design standards for the construction of new power lines as recommended by the Avian Power Line Interaction Committee (APLIC 2006). Wire spacing, installation of electrocution prevention devices, and other design standards will be implemented according to the current Avian Power Line Interaction Committee standards and manufacturer's recommendations. Maintenance of raptor exclusion devices shall be conducted at regular intervals and missing or broken devices will be replaced prior to the arrival of migrating raptors in the Plan Area.

AMM25: Minimize Take and Impacts on Habitat of Giant Garter Snake. Where preconstruction surveys for permanent development projects indicate the presence of suitable habitat for giant garter snake, impacts will be avoided, if practicable, and minimized in all cases. To avoid impacts on giant garter snake aquatic habitat during construction activities there must be no in-water/in-channel activity and a 200-foot no-disturbance buffer from the outer edge of potentially occupied aquatic habitat must be maintained. If impacts of construction activities cannot be avoided, the following measures will be implemented to minimize impacts.

- Restrict all construction activity involving the disturbance to giant garter snake habitat to the snake's active season, May 1 through October 1.
- In areas where construction is to occur, dewater all irrigation ditches, canals, or other aquatic habitat between April 15 and September 30 to remove giant garter snake habitat. Dewatered habitat must remain dry, with no water puddles remaining for at least 15 consecutive days prior to excavating or filling of the habitat. If a site cannot be completely dewatered, netting and salvage of prey items may be necessary to discourage use by snakes.
- Conduct preconstruction clearance surveys using USFWS approved methods within 24 hours prior to construction activities within identified giant garter snake aquatic and adjacent upland habitat. If construction activities stop for a period of two weeks or more, conduct another preconstruction clearance survey within 24 hours of resuming construction activity.
- Confine clearing to the minimum area necessary to facilitate construction activities. Flag and designate as "Environmentally Sensitive Areas" giant garter snake habitat to be

avoided within or adjacent to the project. The marked environmentally sensitive areas shall be avoided by all construction vehicles, other equipment, and personnel.

- If a live giant garter snake is encountered during construction activities, immediately notify the project's biological monitor and USFWS. The monitor shall stop construction in the vicinity of the snake and monitor the snake and allow it to leave on its own. The monitor shall remain in the area for the remainder of the work day to ensure the snake is not harmed or, if it leaves the site, does not return. If the snake does not leave the project site, BCAG will work with USFWS to relocate the snake away from the construction site within three days of reporting the snake's presence at the construction site to USFWS.
- Employ best management practices to minimize disturbances to habitat, including the following:
 - Install temporary fencing to identify and protect adjacent marshes, wetlands, and ditches from encroachment from construction equipment and personnel;
 - Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted practices. No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes will be permitted on the project site within 200 feet of snake aquatic or rice habitat.

6.2.3 Transportation Facility Permanent Development Projects

In addition to implementation of other AMMs applicable to transportation facility projects, the following avoidance and minimization measure will be implemented for all roadway construction and maintenance actions.

AMM26: Implement Caltrans Construction Site Best Management Practices (BMPs) to Maintain Water Quality. Entities implementing covered activities involving the construction and maintenance of transportation facilities will implement applicable California Department of Transportation (Caltrans) BMPs (Caltrans 2003). BMPs include, but are not limited to, the following:

- **Preservation of existing vegetation:** Preservation of existing vegetation is the identification and protection of desirable vegetation that provides erosion and sediment control benefits.
- **Stream bank stabilization:** Best management practices will be conducted to stabilize stream banks and reduce the discharge of sediment and other pollutants to minimize the impact of construction activities on streams. Streams included on the Clean Water Act section 303(d) list of impaired waters by the State Water Resources Control Board

(SWRCB) may require specific monitoring to ensure that construction-related increases in sedimentation, siltation and/or turbidity are prevented.²

- **Wind erosion control:** Wind erosion control consists of applying water and/or other dust palliatives as necessary to prevent or alleviate erosion by the forces of wind. Dust control shall be applied in accordance with Caltrans standard practices. Covering of small stockpiles or areas is an alternative to applying water or other dust palliatives.
- **Water conservation practices:** Water conservation practices are activities that use water during the construction of a project in a manner that avoids causing erosion and/or the transport of pollutants off site.
- **Sanitary/septic waste management:** Procedures and practices will be used to minimize or eliminate the discharge of construction site sanitary/septic waste materials to the storm drain system or to watercourses.

AMM27: Avoid and Minimize Noise and Other Disturbances from Bridge Construction Activities. Entities implementing bridge construction and replacement activities across flowing stream courses will implement Caltrans noise reduction measures and BMPs (Caltrans 2009). These measures include, but are not limited to the following:

- **Project timing:** In-water work windows should be scheduled to avoid potential impacts on covered fish species based on species movement/migration timing (i.e., avoid in-water work when salmonids are present).
- **Pile placement:** Eliminate or minimize the number of piles placed in the water body or that require in-water work.
- **Pile type:** Minimize the use of steel piles placed in the water body.
- **Pile driving equipment:** Use pile driving techniques that minimize impacts when practicable.
- **Pile size:** Minimize the size of piles as engineering constraints allow.
- **Noise minimization tools:** If in-water work that will create noise levels harmful to fish and wildlife species is deemed unavoidable, use one or a combination of structures and techniques to reduce noise levels to the maximum extent practicable. These structures and techniques include air bubble curtains, cofferdams, isolation casings, and cushion blocks.

² Under section 303(d) of the Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. These impaired waters do not meet water quality standards that states, territories, and authorized tribes have set for them, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop total maximum daily loads (TMDLs) for these waters.

AMM28: Avoid and Minimize Impacts on Bats Roosting on Bridges. Surveys of bridges to be replaced or undergo structural repairs/maintenance will be conducted by qualified biologists using standard visual and acoustic survey methods approved by BCAG. Surveys will be conducted prior to commencement of bridge replacement/repair activities to determine if occupied bat roosts are present. If occupied roosts of special-status bat species are present³, bridge replacement/repair activities may only be conducted from September 16 to April 14 to minimize impacts on reproductively active females and dependent young. Work may commence prior to April 14 if subsequent surveys have indicated the bats have vacated the roost site.

6.2.4 Recurring Maintenance Activities

This section describes survey and mitigation requirements for recurring maintenance activities associated with permanent development projects and water and irrigation district facilities. In addition to the AMMs below, AMM11, *Minimize Impacts on Covered Activities* also applies to recurring maintenance activities.

AMM29: Cover Trenches and Holes Excavated for Maintenance. Open trenches and holes excavated to perform maintenance on underground pipes and utilities will be covered or designed with escape ramps during non-working hours to prevent injury and mortality of covered and other native wildlife. All open trenches and holes will be inspected immediately prior to filling and any trapped wildlife removed and released by a qualified biologist.

AMM30: Swainson's Hawk and White-Tailed Kite Nest Surveys. Surveys will be conducted before implementing operations and maintenance actions that will result in the pruning or removal of trees that support Swainson's hawk and white-tailed kite nesting habitat to determine if occupied nest sites of these species are present. Surveys are only required for these activities that will be conducted from March 15-August 15. Surveys will use the survey protocol indicated in Table 6-2. If occupied nest sites are present and pruning or removal of the nest tree(s) cannot be avoided, tree pruning and removal will be deferred until the nest is abandoned by adults and young, at which time the tree(s) may be pruned or removed.

AMM31: Minimize Impacts of Water Conveyance Channel Maintenance on Giant Garter Snake. Recurring maintenance activities by local water and irrigation districts covered under the BRCP require removal of vegetation, debris, and sediment from canals and ditches that serve agricultural water users. Conveyance facility maintenance typically occurs from mid-January through April when conveyance canals and ditches are not in service; this timing is during the giant garter snakes inactive period when they may be using underground borrows. To minimize the take of giant garter snake, maintenance of conveyance structures will be limited to clearing one side along at least 80 percent of the linear distance of canals and ditches during each maintenance year (e.g., the left bank of a canal is maintained in the first year and the right bank

³ Special-status bat species with the potential to occur in the Plan Area include pallid bat, Pacific Townsend's big-eared bat, and greater western mastiff bat (see Appendix B, *Evaluation of Species Considered for Coverage*).

in the second year). To avoid collapses when re-sloping canal and ditch banks that are comprised of heavy clay soils, clearing along both sides of canal and ditch banks is permissible along no more than 20 percent of the linear distance of canals and ditches during each maintenance year. Project specific modifications to this AMM may be made with the approval of USFWS and CDFW.