

Table 4-2. Covered Activity Implementation Assumptions Used to Conduct the Assessment of Impacts on Natural Communities and Modeled Covered Species Habitat¹

Permanent Development Projects within UPAs
<i>Residential, Commercial, Public, and Industrial Facility Permanent Development Projects within UPAs</i>
<ul style="list-style-type: none"> • The planned future development as represented in the BRCP GIS database (Figures 4-1-4-4) capture the full extent of natural community and covered species habitat impacts for this category of activities. It is assumed that no development will occur on municipal airport properties within Zone A, as defined by the Butte County Airport Land Use Compatibility Plan (ALUC), unless development plans are provided by the Airport Operator. Approved land uses are those outlined by the ALUC Plan for Zone A. • All habitat removal associated with implementation of these activities is permanent.
<i>Recreation Facility Permanent Development Projects within UPAs (including associated in-water permanent development projects)</i>
<ul style="list-style-type: none"> • Construction of each of the four pedestrian bridges in the Bidwell Park Upper Park Trail Plan will permanently alter the habitat structure supported by 50 feet of each channel bank along Big Chico Creek for a total of 200 feet for the four bridges, but will not result in removal of covered species habitat. • Construction of the single pedestrian bridge across the Thermalito Power Canal will not affect habitat functions that are supported by the canal. • The two pedestrian Feather River bridge crossings in the Oroville UPA are assumed to have the same footprint as described for new bridge construction below. • The remaining recreational remaining planned future permanent development as represented in the BRCP GIS database (Figures 4-1-4-4) capture the full extent of natural community and covered species habitat impacts for this category of activities.
<i>Transportation Facility Permanent Development Projects within UPAs (including associated in-water permanent development projects)</i>
<ul style="list-style-type: none"> • With the exception of Caltrans road widening projects and bridge projects, the construction footprints of transportation facilities are encompassed within the planned future permanent development as represented in the BRCP GIS database (Figures 4-1 to 4-4). • The right-of-way (ROW) width of Caltrans road widening projects that are implemented outside of the planned future permanent development as represented in the BRCP GIS database (Figures 4-1 to 4-4) averages 150 feet per lane. All temporary habitat impacts occur within the ROW (e.g., placement of staging areas). All non-aquatic habitat within the ROW is assumed to be permanently removed, representing 18 acres of habitat removed per mile of lane constructed. Borrow for road widening projects is assumed to be obtained from existing borrow sites. • New bridge and bridge replacement projects that are located outside of the planned future permanent development as represented in the BRCP GIS database (Figures 4-1 to 4-4) are assumed to require, on average, a 2 acre construction footprint, including a one acre staging area that permanently removes all non-aquatic habitat within the footprint. Consequently, there are no temporary impacts on non-aquatic habitat. • Up to 10 new bridge and bridge replacement projects are assumed to be implemented in the UPAs over the term of the BRCP. In-channel operation of equipment permanently affects habitat structure in 0.26 acre of channel bed below the centerline of each bridge, but does not result in the removal of stream channel area. Temporary noise, visual, and turbidity disturbance impacts on covered fish species for bridge replacement over permanent stream channels are assumed to extend 100 feet downstream and 20 feet upstream from the centerline of each bridge.
<i>Pipeline Facility Permanent Development Projects within UPAs</i>
<ul style="list-style-type: none"> • The planned future development as represented in the BRCP GIS database (Figures 4-1-4-4) capture the full extent of natural community and covered species habitat impacts for this category of activities. All non-aquatic habitat within pipeline ROWs is assumed to be permanently removed. • Installation of new pipelines avoids impacts on riparian and stream channel habitats.
<i>Utility Services Facility Permanent Development Projects within UPAs</i>
<ul style="list-style-type: none"> • The planned future development as represented in the BRCP GIS database (Figures 4-1-4-4) capture the full extent of natural community and covered species habitat impacts for this category of activities. • All non-aquatic habitat within pipeline ROWs is assumed to be permanently removed.

Table 4-2. Covered Activity Implementation Assumptions Used to Conduct the Assessment of Impacts on Natural Communities and Modeled Covered Species Habitat¹ (continued)

Waste and Wastewater Management Facility Permanent Development Projects within UPAs
<ul style="list-style-type: none"> • The planned future development as represented in the BRCP GIS database (Figures 4-1-4-4) capture the full extent of natural community and covered species habitat impacts for this category of activities. • All non-aquatic habitat within pipeline ROWs is assumed to be permanently removed.
Flood Control and Stormwater Management Facility Permanent Development Projects within UPAs
<ul style="list-style-type: none"> • The planned future development as represented in the BRCP GIS database (Figures 4-1-4-4) capture the full extent of natural community and covered species habitat impacts for this category of activities.
Recurring Maintenance Activities within UPAs
Recreation Facility Recurring Maintenance Activities within UPAs
<ul style="list-style-type: none"> • Vegetation management activities that could impact riparian habitat are assumed to result in permanent removal of habitat and are included in the assumptions for recreational permanent development facilities described above. • Noise and visual disturbances associated with maintenance activities have no effect on wildlife species in addition to ongoing noise and visual disturbances associated ongoing recreational uses in the same locations (e.g., picnic areas).
Transportation Facility Recurring Maintenance Activities within UPAs
<ul style="list-style-type: none"> • Recurring maintenance of existing roadways (e.g., mowing roadway shoulders, restriping road lanes) have no additional impact on covered species habitats because these activities maintain the existing habitat condition (e.g., vegetation type and structure). • Noise and visual disturbances associated with maintenance activities have no additive impacts to existing noise and visual disturbance impacts associated with existing vehicle traffic on roadways. • The ROWs of new roads includes habitat maintenance footprints. As indicated for this category of covered activity above for <i>Permanent Development Projects within UPAs</i>, all habitat within the ROWs of new roads is assumed to be permanently removed. Maintenance of new roads, therefore, has no additional impacts on habitat. • The extent of temporary impacts on habitat that could be associated with maintenance of existing and new bridge and drainage structures are minor, being limited to removal of individual shrubs and trees necessary to obtain access for maintenance, disturbance of ground surfaces, and minor disturbances to channel banks and beds (e.g., debris removal), but does not result in removal of habitat.
Pipeline, Utility Services, Waste and Wastewater Management, and Flood Control and Stormwater Management Facilities Recurring Maintenance Activities within UPAs
<ul style="list-style-type: none"> • As indicated for these categories of covered activity above for <i>Permanent Development Projects within UPAs</i>, all habitat within the project of new facility footprints is permanently removed. Maintenance of new facilities, therefore, has no additional impacts on habitat. • Recurring maintenance of existing facilities (e.g., maintaining herbaceous vegetation within the ROW) have no additional impact on covered species habitats because these activities maintain the existing habitat condition (e.g., vegetation type and structure) and any excavations to repair or inspect pipelines will occur in existing developed areas that do not support habitat.
Vegetation Management Recurring Maintenance Activities within UPAs
<ul style="list-style-type: none"> • Because all habitat within the permanent development footprints within which recurring vegetation management activities will occur is permanently removed, recurring vegetation management facilities maintenance activities have no additional impact on habitat. • Maintenance methods are of short duration and generally low impact and are assumed to not result in noise and visual disturbances, in addition to ongoing ambient disturbances within UPAs, to covered species. • Recurring vegetation management to maintain existing fire breaks have no additional impact on covered species habitats because these activities maintain the existing habitat condition (e.g., vegetation type and structure).

Table 4-2. Covered Activity Implementation Assumptions Used to Conduct the Assessment of Impacts on Natural Communities and Modeled Covered Species Habitat¹ (continued)

Permanent Development Projects outside of UPAs
<i>Wastewater Management Facility Permanent Development Activities outside UPAs</i>
<ul style="list-style-type: none"> • The Chico Waste Water Treatment Plant (WWTP) new trunk sewer line construction footprint is 5 miles long and 100 feet wide, within which all non-aquatic habitat is permanently removed. • The Gridley WWTP new sewer line construction footprint is 3 miles long and 100 feet wide, within which all non-aquatic habitat is permanently removed.
<i>Transportation Facility Permanent Development Activities outside UPAs</i>
<i>BCAG and Caltrans Transportation Facility Projects</i>
<ul style="list-style-type: none"> • The ROW width of road widening averages 150 feet per lane. All temporary habitat impacts occur within the ROW (e.g., placement of staging areas). All non-aquatic habitat within the ROW is permanently removed, representing 18 acres of habitat removed per mile of new lane constructed. • The La Porte Road Reconstruction, La Porte Road Reconstruction Phase 2, Los Verjeles Road Reconstruction, and Oro-Bangor Highway Phase 3 Reconstruction, and Neal Road Reconstruction Phase 3 projects include improvements to straighten road curves. These projects permanently remove 12 acres of non-aquatic habitat per mile, within which all temporary impacts on habitat are incurred. • The SR99/Neal Road intersection interchange upgrade project has a 45 acre construction footprint, including staging areas that permanently remove non-aquatic habitat. Consequently, there are no temporary impacts on habitat associated with the new interchange. • Roadway intersection improvement projects have a 3 acre construction footprint, including a staging area that permanently remove non-aquatic habitat. Consequently, there are no temporary impacts on non-aquatic habitat. • Caltrans roadway construction projects require four 20 acre borrow sites that are located, 2 of which are located in the Cascade Foothills CAZ outside of UPAs and 2 in the Sierra Foothills CAZ outside of UPAs. Caltrans borrow sites are assumed to be located in annual grassland in locations that avoid impacts on covered plant species and CWA Section 404 jurisdictional wetlands and other waters of the US. • Each new bridge and bridge replacement project requires a 2 acre construction footprint, including staging areas, that permanently removes non-aquatic habitat. Consequently, there are no temporary impacts on non-aquatic habitat. In-channel operation of equipment permanently affects habitat structure in 0.26 acre of channel bed below the centerline of each replacement bridge and the new Eaton Road extension bridge across Mud Creek, but does not result in the removal of stream channel area. New bridges are assumed to remove 100 feet of channel bank habitat along each side of the channel associated with placement of a 20-foot wide band of bridge revetment material. • Temporary noise, visual, and turbidity disturbance impacts on covered fish species for replacement bridges over permanent stream channels and the new bridge over Mud Creek extend 100 feet downstream and 20 feet upstream from the centerline of each bridge. Construction of new bridges across the Ord Ferry Road dips will be constructed during dry periods and thus will avoid temporary effects on in-channel habitat.
<i>Agricultural Services Permanent Development Activities outside of UPAs</i>
<ul style="list-style-type: none"> • All non-aquatic habitat within the development footprint of agricultural services permanent development projects is permanently removed. All staging areas and other construction-related activities are assumed to occur within the development footprints. Consequently, there are no temporary impacts on habitat.

Table 4-2. Covered Activity Implementation Assumptions Used to Conduct the Assessment of Impacts on Natural Communities and Modeled Covered Species Habitat¹ (continued)

Recurring Maintenance Activities outside UPAs
<i>Waste and Wastewater Management Facility Recurring Maintenance Activities outside UPAs</i>
<ul style="list-style-type: none"> As described above for <i>Permanent Development Projects outside of UPAs</i>, all habitat within new wastewater trunk sewer line footprints as represented in the BRCP GIS database is permanently removed. Consequently, there are no additional impacts on habitat associated with recurring maintenance of these new lines. Maintenance of the 2 existing sewer lines include 100 foot-wide ROWs totaling 11 miles. Recurring maintenance of these existing sewer lines results in permanent removal of all habitat within the ROWs. Consequently, there are no additional impacts on habitat associated with recurring maintenance of these existing lines. Maintenance of the existing line associated with the Chico WWTP will be maintained to its outfall and impacts to riverine and riparian habitat would be avoided with implementation of the avoidance and minimization measures described in Chapter 5, <i>Conservation Strategy</i>.
<i>Transportation Facility Recurring Maintenance Activities outside UPAs</i>
<ul style="list-style-type: none"> Recurring maintenance of existing roadways (e.g., mowing roadway shoulders, restriping road lanes) have no additional impact on covered species habitats because these activities maintain the existing habitat condition (e.g., vegetation type and structure). Noise and visual disturbances associated with maintenance activities are assumed to have no additive impacts to existing noise and visual disturbance impacts associated with existing vehicle traffic on roadways. The ROWs of new road extensions and reconstructed roads and the footprint of improved road intersections includes habitat maintenance footprints. As described above for <i>Permanent Development Projects outside of UPAs</i>, all habitat within the ROWs footprints of these projects are assumed to be permanently removed. Recurring maintenance of these projects, therefore, have no additional impacts on habitat. Bike path maintenance activities may remove individual shrubs and trees, but will not remove covered species habitat. Maintenance activities implemented in habitat are assumed to use non-intrusive methods such that covered species are not impacted by associated noise and visual disturbances. Temporary impacts on habitat that could be associated with maintenance of existing bridge and drainage structures are minor, being limited to removal of individual shrubs and trees necessary to obtain access for maintenance, disturbance of ground surfaces, and minor disturbances to channel banks and beds (e.g., debris removal), but does not result in removal of habitat. Temporary noise and visual disturbances associated with maintenance activities have no additive effects on wildlife because of the existing noise and visual disturbance impacts associated with existing vehicle traffic on bridges.
<i>Flood Control and Stormwater Management Recurring Maintenance Activities outside UPAs</i>
<ul style="list-style-type: none"> Flood control and stormwater recurring maintenance activities are only performed on the Sycamore-Mud Creek levee system. Maintenance activities are limited to the top and outer side of levees and maintain existing habitat conditions (e.g., vegetation type and structure). Recurring maintenance of the Sycamore-Mud Creek levee system have no additional impact on covered species habitats because these activities maintain the existing habitat condition (e.g., vegetation type and structure). Maintenance methods low impact and do not result in noise and visual disturbances to covered species with implementation of the avoidance and minimization measures described in Chapter 5, <i>Conservation Strategy</i>.
<i>Vegetation Management Recurring Maintenance Activities outside UPAs</i>
<ul style="list-style-type: none"> Recurring vegetation management of existing structures, facilities and fuel breaks are have no additional impact on covered species habitats because these activities maintain the existing habitat condition (e.g., vegetation type and structure). Maintenance methods are of short duration and generally low impact and do not result in noise and visual disturbances to covered species with implementation of the avoidance and minimization measures described in Chapter 5, <i>Conservation Strategy</i>.

Table 4-2. Covered Activity Implementation Assumptions Used to Conduct the Assessment of Impacts on Natural Communities and Modeled Covered Species Habitat¹ (continued)

Covered Activities within Water and Irrigation Districts
<i>Permanent Development: Rerouting of Canals (Western Canal Water District, Biggs West Gridley Water District, Butte Water District, and Richvale Irrigation District)</i>
<ul style="list-style-type: none"> • This category includes the rerouting of existing canals that may occur during the permit term. It is assumed that there may be up to one project per district (four in total) with each project covering an approximate 20 acre area. Up to 40 acres of rice land and 20 acres of irrigated pasture/irrigated cropland supporting modeled covered species habitat, and 20 acres of orchard/vineyard that does not support modeled covered species habitat will be removed as a result of rerouting existing canals. The rerouting of canals does not affect the availability of irrigation water such that existing cropping patterns are affected. • The old canals may be reclaimed to a natural state, restored to better functioning habitat, converted to agricultural uses, planted with trees such as cottonwoods, continued to be used as a canal, or used to store rip-rap. The assessment assumes that the old canals will no longer be used to convey agricultural water.
<i>Recurring Maintenance Activities</i>
<ul style="list-style-type: none"> • Approximately 15 miles of canal and ditches is expected to be annually maintained among the four water districts. The entire length of each canal and ditch will be maintained at least once over the term of the BRCP with multiple maintenance events along some portions. Except when canal and ditch maintenance activities must be implemented during service periods, all maintenance is conducted when the canals and ditches are not in service (January-April). • A total of 45 acres of existing disturbed areas within the footprint of the network of canals and ditches will be affected by activities to replace existing infrastructure features (e.g., repair/replacement of pipe and weirs). Replacement of existing infrastructure occurs within the footprint of the existing infrastructure and does not result in removal of covered species habitat. These repair/replacement projects are conducted from September-November or late-January-April. Projects conducted in fall may require dewatering of the canal or ditch.
Conservation Measures²
<i>CM4: Develop and Implement Site Specific Wetland and Riparian Restoration Plans</i>
<ul style="list-style-type: none"> • Approximately 50 percent of riparian habitat will be restored on non-rice cultivated land, 30 percent on dredger tailings with herbaceous vegetation, and 20 percent on grassland. • Vernal pool complex will be restored in historical vernal pool landscapes that support low ecological vernal pool functions. As such, the restoration actions increase the ecological functions of the existing vernal pool terrain and does not result in the removal of existing habitat. • Emergent wetland is assumed to be restored on agricultural lands that historically supported emergent wetlands (e.g., rice fields). As such, the restoration actions are increase the ecological functions of the existing agricultural crop types as wetlands and does not result in the removal of habitat.
<i>CM5: Enhance Protected Natural Communities for Covered Species CM12: Conserve Butte County Meadowfoam</i>
<ul style="list-style-type: none"> • Implementation of habitat enhancement and management actions do not remove covered species habitat, but will incur temporary impacts associated with ground disturbance (e.g., removal of ground cover).
<i>CM7: Create and Maintain Greater Sandhill Crane Winter Roost Sites</i>
<ul style="list-style-type: none"> • Creation and management of greater sandhill crane winter roosts sites are assumed to continue to be farmed in crop types that maintain the existing ecological functions of the agricultural lands on which the roost sites are created.
<i>CM9: Replenish Spawning Gravels for Salmonids</i>
<i>CM10: Remove, Modify, or Screen Unscreened Diversions</i>
<i>CM11: Remove Impediments to Upstream and Downstream Fish Passage</i>

Table 4-2. Covered Activity Implementation Assumptions Used to Conduct the Assessment of Impacts on Natural Communities and Modeled Covered Species Habitat¹ (continued)

<ul style="list-style-type: none"> • Placement of spawning gravels results in temporary reduction in water quality for covered fish species (e.g., increased turbidity) up to 150 feet downstream of gravel placement locations. • Removal of woody debris and other material/structures from channels removes small local patches of in-channel structure supporting habitat for native riverine aquatic organisms, but does not adversely impact habitat conditions for covered fish species. • Actions to screen/modify diversions will remove individual shrubs and trees necessary to access diversion structures, but does not result in the removal of habitat. • Actions to screen/modify diversions will cause temporary local changes in water quality but not at sufficient levels to affect native aquatic organisms
<p><i>CM14: Translocate Conservancy Fairy Shrimp, Hoover's Spurge Ahart's Dwarf Rush, Butte County Meadowfoam, Hairy Orcutt Grass, Slender Orcutt Grass, and Greene's Tuctoria</i></p>
<ul style="list-style-type: none"> • Actions to reintroduce vernal pool plant species results in temporary ground disturbance in vernal pools but does not result in adverse impacts on vernal pool habitat or species

¹Assumptions are provided for and based on the covered activities as described in Chapter 2, *Covered Activities*. Additional assumptions that are related to impacts on specific natural communities and covered species are described in the assessment of impacts on these resources in Sections 4.3 and 4.4.

²Only conservation measures that include actions that could adversely impact natural communities or covered species are included in this table.