Biological Resources

Setting

Terrestrial Vegetation Communities
Monterey, San Benito and Santa Cruz Counties contain a wide diversity of tree (hardwood and coniferous forests, oak woodlands, riparian woodlands), shrub (chaparrals, coastal scrubs) and herbaceous (grasslands, certain wetlands) habitat types. Some habitat types, such as coast live oak woodland, tend to have similar species composition and structure in most areas; however, other habitats, such as other forest types, grasslands and coastal scrubs, will exhibit differences in species composition and structure depending upon proximity to the coast, soil type, elevation and aspect. Thirty-seven habitats are mapped using the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships (CWHR) habitat classification system within Monterey, San Benito and Santa Cruz Counties (CDFW, 2008). Of those, 16 habitat types occur within three miles of construction projects outlined in the 2040 MTP/SCS (Figure 15, Figure 16 and Figure 17). A description of each of the habitats adapted from A Guide to Wildlife Habitats of California (Mayer and Laudenslayer, 1988) within three miles of projects outlined in the 2040 MTP/SCS is presented below. The vegetation classifications from A Manual of California Vegetation, Second Edition (Sawyer et al., 2009) that most closely resemble those classified by the CWHR are also presented in each description. It should be noted that these habitats are generalized and that site-specific variation is likely present. Also note that the CWHR classification system maps habitats from a broad perspective, and in many areas, it is expected that two or more habitats may blend with one another. As such, due to the large scale at which habitats are mapped using the CWHR classification system, vernal pools, wetlands and drainages are discussed separately in Section 4.4.1.b utilizing sources of information that better capture aquatic and wetland habitats that are of smaller scale in the landscape. Habitats which occur within populated areas can also show variation because of a greater exposure to anthropogenic influences, such as the introduction of exotic plant species.

Tree-Dominated Habitats
Monterey, San Benito and Santa Cruz Counties are home to a variety of hardwood, coniferous and mixed woodlands and forests (Figure 15, Figure 16 and Figure 17). These tree-dominated habitats can support diverse wildlife populations. Riparian habitats are generally the terrestrial areas adjacent to fresh water bodies forming a vegetated corridor from stream edge to floodplain edge. Riparian habitats occur in and along the major rivers (e.g. Salinas, Pajaro and San Benito Rivers), as well as along the many creeks, streams, arroyos and ravines found in these counties. Riparian areas are rich in wildlife species, providing foraging, migration, roosting and nesting/breeding habitat. The following are descriptions of types of tree-dominated habitats that occur within three miles of construction projects outlined in the 2040 MTP/SCS.

Closed-Cone Pine-Cypress Forest
Closed-cone pine-cypress forests are typically dominated by a single species, either closed-cone pines (*Pinus* spp.) or western cypresses (*Hesperocyparis* spp.). The height and canopy closure of this habitat type is variable depending upon site characteristics including soil type, the age of the stand and the floristic composition. Closed-cone pine-cypress forests are considered fire climax or fire-dependent vegetation types. This habitat type is typically found within rocky and infertile soils along...
Figure 15 Habitat Classifications in Monterey County
Figure 17 Habitat Classifications in Santa Cruz County
the extreme coast or on very shallow infertile soils contain stunted, wind-pruned individuals. Closed-cone pine-cypress forest types that occur in the Counties include but are not limited to the *Pinus radiata* Forest Alliance and the *Hesperocyparis macrocarpa* Woodland Special Stands as described by Sawyer et al. (2009).

**Redwood**

Redwood forests in the counties include some areas of old-growth forest, with larger areas of second growth. Second growth redwood habitats are characterized by an even-aged structure with an open park-like appearance. Coast redwood (*Sequoia sempervirens*) is the dominant tree species. Understory vegetation in old-growth redwood is usually very dense and composed of tall shrubs. Redwoods are very vigorous sprouters with sprouts eventually forming the dominant canopy. Redwood and associated conifers also reproduce well by seed. Redwood forest typically corresponds to the *Sequoia sempervirens* Forest Alliance as described by Sawyer et al. (2009).

**Blue Oak-foothill Pine**

This habitat is typically diverse in structure both vertically and horizontally and is composed primarily of a mix of hardwoods, conifers and shrubs. Shrub distributions tend to be clumped, with interspersed patches of annual grassland. Woodlands of this type generally tend to only have small accumulations of dead and downed woody material, compared with other tree habitats in California. Blue oak (*Quercus douglasii*) and foothill pine (*Pinus sabiniana*) typically comprise the overstory of this habitat, with blue oak usually most abundant. In the Coast Range, associated tree species include coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*) and California buckeye (*Aesculus californica*). In rocky areas, interior live oak sometimes dominates the overstory especially on north-facing slopes at higher elevations. At lower elevations, where blue oaks make up most of the canopy, the understory tends to be primarily annual grasses and forbs. At higher elevations where foothill pines and even interior live oaks sometimes comprise the canopy, the understory usually includes patches of shrubs in addition to the annual grasses and forbs. Shrub species that can be associated with this habitat type include various buckbrush (*Ceanothus* spp.) species and manzanita (*Arctostaphylos* spp.). Other species found in this habitat type can include California coffeeberry (*Frangula californica*), poison-ochre (*Toxicodendron diversilobum*) and silver lupine (*Lupinus albifrons*). This habitat is generally located in the foothills of the Central Valley, between 500 and 3,000 feet in elevation. Blue oak-foothill pine habitat typically corresponds to the *Quercus douglasii* Woodland Alliance or *Pinus sabiniana* Woodland Alliance as described by Sawyer et al. (2009).

**Montane Hardwood**

A typical montane hardwood habitat is composed of a pronounced hardwood tree layer, with an infrequent and poorly developed shrub stratum and a sparse herbaceous layer. In the Coast Range, canyon live oak (*Quercus chrysolepis*) often forms pure stands on steep canyon slopes and rocky ridge tops. It is replaced at higher elevations by scattered huckleberry oak (*Quercus vacciniifolia*) amongst an overstory of various conifers including ponderosa pine (*Pinus ponderosa*), Coulter pine (*Pinus coulteri*), California white fir (*Abies concolor*) and Jeffrey pine (*Pinus jeffreyi*). At mid-elevations, typical associates include Douglas-fir (*Pseudotsuga menziesii*), tanoak (*Notholithocarpus densiflorus*), Pacific madrone (*Arbutus menziesii*), California black oak (*Quercus kelloggii*) and bristlecone fir (*Abies bracteata*). At lower elevations, knobcone pine (*Pinus attenuata*), foothill pine, Oregon white oak (*Quercus garryana*) and coast live oak are abundant. Understory vegetation is
mostly scattered woody shrubs and a few forbs. Elevations range from 300 feet near the Pacific Ocean up to 9,000 feet. Montane hardwood typically corresponds to the *Quercus chrysolepis* Forest Alliance, as described by Sawyer et al. (2009).

**Valley Oak Woodland**

This habitat can range in structure from savanna-like to forest-like stands. The canopies tend to be partially closed and comprised mostly of winter-deciduous, broad-leaved species such as valley oak. Dense stands typically grow in valley soils along natural drainages and decrease with the transition from lowlands to uplands. Shrubs are also associated with this habitat in lowland areas, especially along drainages. Valley oak stands with little or no grazing tend to develop a partial shrub layer of bird disseminated species, such as poison oak, toyon (*Heteromeles arbutifolia*) and California coffeeberry. Ground cover consists of a well-developed carpet of annual grasses and forbs such as wild oat (*Avena* spp.), bromes (*Bromus* spp.) and ryegrass (*Festuca perennis*). Valley oak woodland typically corresponds to the *Quercus lobata* Woodland Alliance as described by Sawyer et al. (2009).

**Valley Foothill Riparian**

This habitat type is associated with drainages, particularly those with low velocity flows, flood plains and gentle topography. This habitat is generally comprised of a canopy tree layer dominated by cottonwoods (*Populus* spp.), sycamore (*Platanus racemosa*) and/or valley oak and an understory shrub layer typically consisting of willows (*Salix* spp.) and/or mulefat (*Baccharis salicifolia*). Valley foothill riparian can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Platanus racemosa* Woodland Alliance and the various *Populus* alliances depending upon dominant species present.

**Coastal Oak Woodland**

Coastal oak woodlands are common to mesic coastal foothills of California. The woodlands do not form a continuous belt, but occur in a mosaic closely associated with mixed chaparral, coastal scrub and annual grasslands. In Monterey, San Benito and Santa Cruz Counties these woodlands are commonly dominated by coast live oak. At drier sites, other species such as blue oak and foothill pine may also be interspersed. The understory of dense stands tends to be composed of shade tolerant shrubs and herbaceous plant species such as California blackberry (*Rubus ursinus*), poison oak, miner’s lettuce (*Claytonia perfoliata*) and toyon. In areas with more open canopies the understory may be more dominated by grassland species such as bromes and oats. Coastal oak woodland typically corresponds to the *Quercus agrifolia* alliance as described by Sawyer et al. (2009).

**Eucalyptus Forest**

This habitat type ranges from single-species thickets with little or no shrubby understory to scattered trees over a well-developed herbaceous and shrubby understory. In most cases, eucalyptus groves form a dense stand with a closed canopy. Blue gum eucalyptus (*Eucalyptus globulus*) and red gum eucalyptus (*Eucalyptus camaldulensis*) are the most common eucalyptus species found in these stands. The understory of these areas tends to have extensive patches of leaf litter with limited vegetation, but may include species such as poison oak and toyon.
Shrub Dominated Habitats

Shrub-dominated habitats, such as chaparral and coastal scrub, are comprised primarily of woody, evergreen shrubs and occur primarily along the coastal bluffs as well as areas associated with the Coast Range within Monterey, San Benito and Santa Cruz Counties (Figure 15, Figure 16 and Figure 17). The following are descriptions of shrub-dominated habitats that occur within three miles of construction projects outlined in the 2040 MTP/SCS.

Chamise-Redshank Chaparral

Regionally this chaparral habitat type is dominated by pure or nearly pure stands of chamise (*Adenostoma fasciculatum*). Mature chamise-redshank chaparral is single layered, generally lacking well-developed herbaceous ground cover and over story trees. Shrub canopies frequently overlap, producing a nearly impenetrable canopy of interwoven branches. Fire occurs regularly in chamise-redshank chaparral and influences habitat structure. Within the AMBAG region, chamise-redshank chaparral typically corresponds to the *Adenostoma fasciculatum* Shrubland Alliance as described by Sawyer et al. (2009).

Coastal Scrub

This habitat type is typically dominated by shrub species with mesophytic leaves and shallow root systems. This habitat type can differ in composition depending upon proximity to the coastline. California sagebrush (*Artemisia californica*) tends to be common in all coastal scrub habitats. From Mount Diablo south to Santa Barbara County, black sage (*Salvia mellifera*) and California buckwheat (*Eriogonum fasciculatum*) become more abundant in mesic areas. Coastal scrub can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Artemisia californica* Shrubland Alliance, *Baccharis pilularis* Shrubland Alliance and the *Salvia mellifera* Shrubland Alliance.

Mixed Chaparral

Mixed chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinizied evergreen leaves. Shrub height and crown cover vary with age since last burn, precipitation, aspect and soil type. At maturity, cismontane mixed chaparral typically is a dense, nearly impenetrable thicket. On poor sites, serpentine soils or transmontane slopes, shrub cover may be considerably reduced and shrubs may be shorter. Leaf litter and standing dead material may accumulate in stands that have not burned for several decades. Mixed chaparral can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Ceanothus cuneatus* Shrubland Alliance and the *Arctostaphylos* sp. Shrubland Alliances.

Herbaceous Habitats

These habitats are generally comprised of areas dominated by grasses and other non-woody species. The majority of this habitat in Monterey, San Benito and Santa Cruz Counties is comprised of non-native grasslands (Figure 15, Figure 16 and Figure 17). Native perennial grasslands, which are dominated by perennial bunch grasses, such as purple needlegrass (*Nassella pulchra* *Stipa pulchra*), were historically abundant within Monterey, San Benito and Santa Cruz Counties but are now currently patchy in distribution statewide. The following are descriptions of the grass and herb-dominated habitats that occur within three miles of construction projects outlined in the 2040 MTP/SCS.
Annual Grasslands

This habitat type is composed primarily of non-native annual herbs and forbs and typically lacks shrub or tree cover. The physiognomy and species composition of annual grasslands is highly variable and also varies considerably on a temporal scale. Grazing is a common land use within this habitat type. Common grass species include wild oats, soft chess brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*) and red brome (*Bromus madritensis*). Common forb species can include species of filaree (*Erodium* spp.) and bur clover (*Medicago polymorpha*). California poppy can also be quite common in this habitat type. Annual grassland can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Avena (barbata, fatua)* semi-natural stands and *Bromus (dianthus, hordeaceus)* – *Brachypodium distachyon* semi-natural stands.

Developed, Sparsely/Non-Vegetated and Cropland Habitats

Developed and sparsely to non-vegetated habitats and croplands are abundant in the AMBAG region (Figure 15, Figure 16 and Figure 17). Developed habitats are usually sparsely or non-vegetated and are associated with urban and agricultural areas and are highly disturbed. Species that occur in these areas are typically adapted to anthropogenic disturbance and/or comprised of ornamental species. Sparsely vegetated habitats also tend to be associated with rock outcrops and cliffs. The following are descriptions of developed and sparsely/non-vegetated habitats that occur within three miles of construction projects outlined in the 2040 MTP/SCS.

**Cropland**

This habitat type is characterized by areas in active agriculture used to grow annual or perennial herbaceous crops, and is an entirely man-made habitat. The structure of vegetation can vary in size, shape and growing pattern. The dominant cropland use is row crops and can also include hay and grain. Subcategories of cropland habitat classifications include, but are not limited to, dryland grain crop, irrigated hayfield crop and irrigated row and field crop. Orchards and vineyards are classified separately.

**Orchard/Vineyard**

This habitat type is characterized by typically open, single-species tree- or woody vine-dominated habitats. Depending on the tree or vine type and pruning methods, they are usually low, bushy plants with an open understory to facilitate harvest. Trees such as citrus, avocados and olives are evergreen and other common tree crops such as walnuts and stonefruits are deciduous. The understory is usually composed of low growing grasses and other herbaceous plants, but may be managed to prevent understory growth totally or partially, such as along tree rows. Vineyards, comprised of grape vines, also share similar characteristics. Subcategories of orchard/vineyard habitat classifications include, but are not limited to, deciduous orchard and evergreen orchard.

**Urban**

This habitat type is also a completely man-made habitat comprising residential, commercial and industrial developed areas. Plant species within urban habitats are typically comprised of ornamental plants and non-native invasive plant species, with large developed areas lacking vegetation.
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Barren

This habitat type is defined by the absence of vegetation. Any habitat with less than two percent total herbaceous vegetation cover and less than 10 percent relative cover by tree or shrub species is defined as barren (Mayer and Laudenslayer, 1988). Structure and composition of the substrate is largely determined by the region of the state as well as surrounding environment. Examples of barren habitats include areas of exposed parent rock or talus.

Drainages and Wetlands

Drainages

The Monterey Bay area contains two primary watersheds: the Salinas River Valley, which is the third-longest river in California and traverses the length of Monterey County; and the Pajaro River Valley, the primary tributary of which begins in San Benito County and runs through southeastern Santa Cruz County. The Salinas River originates at the Santa Margarita Reservoir in San Luis Obispo County and extends northward to the Monterey Bay. The headwaters of the Salinas River are generally undeveloped, while the remainder of the valley is predominantly agricultural with several urban areas, the largest being the City of Salinas. The majority of the Pajaro River watershed consists of undeveloped grassland and shrubland in San Benito County, although a large portion of the lower watershed from Hollister west to the Pacific Ocean is under agricultural cultivation.

Other major rivers and their associated watersheds within the AMBAG region include San Lorenzo River, Carmel River, Big Sur River, Little Sur River, Nacimiento River, San Antonio River and San Benito River. Several creeks and tributaries are associated with each of these watersheds (Figure 18, Figure 19 and Figure 20). The drainages within these watersheds are of biological importance as they provide valuable foraging habitat, breeding habitat and movement habitat for a wide variety of animal species, including sensitive species such as steelhead (Oncorhynchus mykiss), coho salmon (Oncorhynchus kisutch) and California red-legged frog (Rana draytonii). Many of these rivers and their tributaries are also federally designated critical habitat for salmonid species.

Wetlands and Aquatic Habitats

Wetlands are regarded as important biological resources both because of their rarity and because they provide a variety of ecosystem services. Several types of wetlands exist in the subject Counties, including freshwater marshes and vernal pools.

In addition to vernal pools, several areas within three miles of 2040 MTP/SCS construction projects contain wetlands mapped by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS, 2017c). A general description of each of the classifications used in the NWI is provided below. Of those wetland types mapped by the NWI, estuarine habitats are also mapped by the CWHR. It should be noted that estuarine and marine type wetlands do not occur in San Benito County.

Vernal Pools

These seasonal wetlands are small depressions that fill with water during the winter, gradually drying during the spring and becoming completely dry in the summer. These pools are found in only a few places in the world outside of California. Vernal pool vegetation is adapted to the cycle of brief inundation followed by seasonal drying. Vernal pools are characterized by herbaceous plants that may begin their growth as aquatic or semi-aquatic plants and transition to a dry land
Figure 18 National Wetlands Inventory: Monterey County

Legend:
- Monterey County
- Transportation Improvement Projects

Wetlands:
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Imagery provided by SFR and its licensors © 2017.
Additional data provided by AVBAG, 2017c; USFWS, 2017c.
Figure 19 National Wetlands Inventory: San Benito County
Figure 20 National Wetlands Inventory: Santa Cruz County
environment as the pool dries, while other species germinate in the mud as the pool begins to dry. Most vernal pool plants are annual herbs, many of which are endemic to vernal pools. Wildlife species supported by vernal pools include California tiger salamander (Ambystoma californiense) and vernal pool fairy shrimp (Branchinecta lynchi).

**Estuarine and Marine Deep-Water Wetlands**

These deep-water wetlands are composed of the deep water portion of estuarine or marine systems. Estuarine systems are composed of tidal habitats and adjacent tidal wetlands that are influenced by water runoff from and often semi-enclosed by, land. They are located along low-energy coastlines and have variable salinity. Marine systems of this type are generally open ocean and occur along high energy coastlines with salinities exceeding 30 parts per thousand (ppt) and little or no dilution except outside the mouths of estuaries.

**Estuarine and Marine Wetlands**

These wetlands are composed of estuarine and marine systems as described above; however, they are not deep-water. These areas can be subtidal or intertidal with a variety of vegetated and non-vegetated bottoms. Beaches, bars and flats are also included.

**Freshwater Emergent Wetlands**

Freshwater emergent wetlands include all non-tidal waters dominated by emergent herbaceous plant species, mosses and/or lichens. Wetlands of this type are also low in salinity. The NWI also includes in this category wetlands that lack vegetation if they are less than 20 acres in size, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet. Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots. All emergent wetlands are inundated or saturated frequently enough that the roots of the vegetation prosper in an anaerobic environment. The wetlands may vary in size from small clumps to vast areas covering several kilometers. The acreage of Freshwater Emergent Wetlands in California has decreased dramatically since the turn of the century due to drainage and conversion to other uses, primarily agriculture.

**Freshwater Forested/Shrub Wetlands**

These wetlands include non-tidal waters that are dominated by trees and shrubs, with emergent herbaceous plants, mosses and/or lichens. The NWI also includes within this category wetlands that lack vegetation can be included in this class if they also exhibit the same criteria as described for freshwater emergent wetlands. Freshwater forested/shrub wetlands are generally dominated by woody vegetation such as shrubs and trees. This wetland category also can include riparian habitats.

**Freshwater Ponds**

Freshwater ponds include non-tidal waters, typically less than 20 acres in size and typically with vegetative cover along its edges such as trees, shrubs, emergent herbaceous plants, mosses and/or lichens. Freshwater ponds can be man-made or natural and typically consist of an area of standing water with variable amounts of shoreline. These wetlands and deep water habitats are dominated by plants that grow on or below the surface of the water. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat which includes vernal pools; however, we have recognized vernal pools as unique features and thus provided a separate description that was previously presented.
Lakes

Lakes are a lacustrine system which includes wetlands and deep water habitats that are located in a topographic depression or dammed river channel. These areas tend to be greater than 20 acres. Vegetation cover within this habitat is generally less than 30 percent and often occurs in the form of emergent or surface vegetation. Substrates are composed of at least 25 percent cover of particles smaller than stones.

Riverine

Riverine habitats are stream systems that include all wetlands and deep water habitats contained in natural or artificial channels that contain periodically or continuously flowing water. This system may also form a connecting link between two bodies of standing water. Substrates generally consist of rock, cobble, gravel or sand. Features mapped as riverine wetlands in the NWI include drainages as previously described.

Sensitive Natural Communities.

Several natural communities considered sensitive by the CDFW occur within the AMBAG region. The California Natural Diversity Database (CNDDB) lists twenty-one natural communities that occur with these counties (CDFW, 2017b). These sensitive communities are also listed in Table 17 below. The Sensitive Natural Communities List in the CNDDB is not currently maintained and no new information has been added in several years. As such, the CDFW maintains a List of Vegetation Alliances and Associations (CDFW, 2010). According to the CDFW’s Vegetation Program, Alliances with State ranks of S1-S3 are considered to be imperiled and thus, potentially of special concern.

Because this analysis is at the tri-county level and programmatic, vegetation mapping and analysis at the alliance and association level is not available, and would need to be conducted at the project level. That said, some sensitive vegetation alliances and associations are already known to occur within Monterey, San Benito and Santa Cruz Counties as a subset of the habitats described in Sections 4.4.1.a and 4.4.1b. For instance, some oak woodland alliances within these counties, notably Quercus lobata Woodland Alliance, which most resembles the valley oak woodland described in Section 4.4.1.a, are considered sensitive.
Table 17 Sensitive Communities Documented within Monterey, San Benito and Santa Cruz Counties

<table>
<thead>
<tr>
<th>Communities Considered Sensitive by the CDFW</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkali Seep</td>
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<tr>
<td>Central Dune Scrub</td>
<td>Monterey</td>
</tr>
<tr>
<td>Central Maritime Chaparral</td>
<td>Monterey, Santa Cruz</td>
</tr>
<tr>
<td>Coastal and Valley Freshwater Marsh</td>
<td>Monterey, Santa Cruz</td>
</tr>
<tr>
<td>Coastal Brackish Marsh</td>
<td>Monterey, Santa Cruz</td>
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<tr>
<td>Maritime Coast Range Ponderosa Pine Forest</td>
<td>Santa Cruz</td>
</tr>
<tr>
<td>Monterey Cypress Forest</td>
<td>Monterey</td>
</tr>
<tr>
<td>Monterey Pine Forest</td>
<td>Monterey, Santa Cruz</td>
</tr>
<tr>
<td>Monterey Pygmy Cypress Forest</td>
<td>Monterey</td>
</tr>
<tr>
<td>N. Central Coast Calif. Roach/Stickleback/Steelhead Stream</td>
<td>Santa Cruz</td>
</tr>
<tr>
<td>North Central Coast Drainage Sacramento Sucker/Roach River</td>
<td>Santa Benito</td>
</tr>
<tr>
<td>North Central Coast Fall-Run Steelhead Stream</td>
<td>Monterey</td>
</tr>
<tr>
<td>North Central Coast Short-Run Coho Stream</td>
<td>Santa Cruz</td>
</tr>
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<td>Northern Bishop Pine Forest</td>
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<td>Valley Needlegrass Grassland</td>
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<tr>
<td>Valley Oak Woodland</td>
<td>Monterey</td>
</tr>
<tr>
<td>Valley Sink Scrub</td>
<td>Monterey</td>
</tr>
</tbody>
</table>

Sources: CNDDB (CDFW, 2017b)

**Special Status Plants and Animals**

For the purpose of this EIR, special status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act; those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA); animals designated as “Species of Special Concern,” “Fully Protected,” or “Watch List” by the CDFW. The CNDDB also provides records of other special animals that CDFW is tracking, but are not currently designated a special status. Because of the programmatic nature of the analysis and the duration in which the 2040 MTP/SCS will be implemented, these species were also included as “special status” considering the CDFW is currently collecting data and tracking these species and therefore there is potential for their status to be elevated in the future. Additionally, special status plants with California Rare Plant Rank (CRPR) of 1 through 4 were included. CDFW standards state that plants with a CRPR 1A, 1B, 2A and 2B may meet definitions of rare or endangered under CEQA Sections 15380 (b) and (d) (CDFW 2017c). By CNPS standards, the plants of CRPR Ranks 1A, 1B, 2A and 2B meet the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code, and are eligible for state listing, thus should be considered under CEQA §15380. According to CDFW, “In general, CNPS Rank 3 plants (plants about which more information is needed) and Rank 4 plants
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(plants of limited distribution) may not warrant consideration under CEQA §15380. These plants may be included on special status plant lists such as those developed by counties where they would be addressed under CEQA §15380. Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a Rank 4 plant are significant even if individual project impacts are not.” Due to the programmatic nature of this analysis and the duration in which the 2040 MTP/SCS will be implemented, the evaluation of Rank 3 and 4 species in context of type localities, unique vegetation types and local designation of special status would need to be completed on a case by case basis and requires site-specific knowledge of the vegetation type in which the plant occurs on a given site. Thus, for this analysis, all plants with a CRPR rank are included.

Plants with a CRPR of 1, 2, 3 and 4, which are defined as:

- CRPR 1A = Plants presumed extinct in California;
- CRPR 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat);
- CRPR 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80 percent occurrences threatened);
- CRPR 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20 percent of occurrences threatened or no current threats known);
- CRPR 2 = Rare, threatened or endangered in California, but more common elsewhere;
- CRPR 3 = Plants needing more information (most are species that are taxonomically unresolved; some species on this list meet the definitions of rarity under CNPS and CESA);
- CRPR 4.1 = Plants of limited distribution (watch list), seriously endangered in California;
- CRPR 4.2 = Plants of limited distribution (watch list), fairly endangered in California (20-80 percent occurrences threatened); and
- CRPR 4.3 = Plants of limited distribution (watch list), not very endangered in California.

Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are considered sensitive as described under the CEQA Appendix G questions.

Queries of the USFWS Information, Planning and Conservation (IPaC) (USFWS, 2017b), CNDB (CDFW, 2017b) and California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS, 2017) were conducted to obtain comprehensive information regarding state and federally listed species considered to have potential to occur within Santa Cruz, San Benito and Monterey Counties.

Federally designated critical habitat for 17 species also occurs in the AMBAG region (Figure 21, Figure 22 and Figure 23). Note that final designated critical habitat for the Coho Salmon – Central California coast ESU (Oncorhynchus kisutch) (not graphically depicted) includes all river/stream reaches (listed in Table 5 of the Designated Critical Habitat: Central California Coast and southern Oregon/Northern California Coasts Coho Salmon; Final Rule [1999]) and their tributaries that are
Figure 21 Federally Designated Critical Habitat: Monterey County
Figure 22 Federally Designated Critical Habitat: San Benito County
Figure 23 Federally Designated Critical Habitat: Santa Cruz County
accessible to listed coho salmon from Punta Gorda in Northern California south to the San Lorenzo River in central California. 2040 MTP/SCS construction projects occur in federally designated critical habitats (USFWS, 2017a and USFWS 2017b) for seven species. These critical habitats are also listed in Table 18.

The AMBAG region is home to several species protected by federal and state agencies. Special status animal species can be found in a variety of habitats these counties host. The CNDDB (CDFW, 2017b), CNPS (2017) and USFWS IPaC (USFWS, 2017b) together list 383 special status plant (268 species [including CRPR 3 and 4]) and animal (115 species [inclusive of special animals]) species that occur within Monterey, San Benito and Santa Cruz Counties. The status and habitat requirements of those species are presented in Appendix D.

Table 18 Federal Designated Critical Habitat within Monterey, San Benito and Santa Cruz Counties

<table>
<thead>
<tr>
<th>Species</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>California tiger salamander (<em>Ambystoma californiense</em>)¹</td>
<td>Monterey, San Benito</td>
</tr>
<tr>
<td>Coho Salmon – Central California coast ESU (<em>Oncorhynchus kisutch</em>)</td>
<td>Santa Cruz</td>
</tr>
<tr>
<td>Marbled murrelet (<em>Brachyramphus marmoratus</em>)¹</td>
<td>Santa Cruz</td>
</tr>
<tr>
<td>Monterey spineflower (<em>Chorizanthe pungens var. pungens</em>)</td>
<td>Monterey, Santa Cruz</td>
</tr>
<tr>
<td>Purple amole (<em>Chlorogalum purpureum</em>)</td>
<td>Monterey</td>
</tr>
<tr>
<td>Robust Spineflower (<em>Chorizanthe robusta var. robusta</em>)</td>
<td>Santa Cruz</td>
</tr>
<tr>
<td>Santa Cruz tarplant (<em>Holocarpha macradenia</em>)¹</td>
<td>Monterey, Santa Cruz</td>
</tr>
<tr>
<td>Scott’s Valley polygonum (<em>Polygonum hickmani</em>)</td>
<td>Santa Cruz</td>
</tr>
<tr>
<td>Scotts Valley Spineflower (<em>Chorizanthe robusta var. hartwegii</em>)</td>
<td>Santa Cruz</td>
</tr>
<tr>
<td>Steelhead – Central California Coast DPS (<em>Oncorhynchus mykiss irideus</em>)¹</td>
<td>Santa Cruz</td>
</tr>
<tr>
<td>Steelhead – South-Central California Coast DPS (<em>Oncorhynchus mykiss irideus</em>)¹</td>
<td>Monterey, San Benito, Santa Cruz</td>
</tr>
<tr>
<td>Tidewater goby (<em>Eucyclogobius newberryi</em>)</td>
<td>Monterey, Santa Cruz</td>
</tr>
<tr>
<td>Vernal pool fairy shrimp (<em>Branchinecta lynchii</em>)</td>
<td>Monterey, San Benito</td>
</tr>
<tr>
<td>Western snowy plover (<em>Charadrius alexandrinus nivosus</em>)</td>
<td>Monterey, Santa Cruz</td>
</tr>
<tr>
<td>Yadon’s Piperia (<em>Piperia yadonii</em>)</td>
<td>Monterey</td>
</tr>
<tr>
<td>Zayante band-winged grasshopper (<em>Trimerotropis infantilis</em>)¹</td>
<td>Santa Cruz</td>
</tr>
</tbody>
</table>

¹Species with Critical Habitat where MTP/SCS transportation projects are located.

Sources: USFWS IPaC (2017b)

Wildlife Movement Corridors

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.
The habitats within the link do not necessarily need to be the same as the habitats that are being linked. Rather, the link merely needs to contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species. Typically, habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending upon the species using a corridor, specific physical resources (such as rock outcroppings, vernal pools, or oak trees) may need to be located within the habitat link at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a short period of time. Wildlife movement corridors can be both large and small scale.

The mountainous regions of Monterey, San Benito and Santa Cruz Counties may support wildlife movement on a regional scale while riparian corridors and waterways, may provide more local scale opportunities for wildlife movement throughout each County. The CDFW BIOS (CDFW, 2017a) mapped three essential connectivity areas within Monterey, San Benito and Santa Cruz Counties. One is located throughout the inland mountainous region of Santa Cruz county. Another is located along the coastal mountainous region of Monterey County with a portion extending across the Salinas Valley and into the Diablo Range along the Monterey - San Benito County line. The last is located in the southeast portion of San Benito County and crossing into Fresno County. Fourteen important movement corridors are also identified from the report, Missing Linkages: Restoring Connectivity to the California Landscape (Penrod et al., 2001). These movement corridors are generally associated with rivers and watercourses including the Pajaro Salinas Rivers and areas within the Santa Lucia Range, Santa Cruz Mountains and Diablo Range. These areas are identified as important movement corridors for species such as San Joaquin kit fox, steelhead, riparian birds and other small carnivores.

Regulatory Setting

Federal, state and local authorities, under a variety of statutes and guidelines, share regulatory authority over biological resources. The primary authority for general biological resources lies within the land use control and planning authority of local jurisdictions, which in this instance are the counties of Monterey, San Benito and Santa Cruz, as well as other local jurisdictions including cities within these counties. The CDFW is a trustee agency for biological resources throughout the State as defined in CEQA and also has direct jurisdiction under the California Fish and Game Code (CFGC), which includes, but is not limited to, resources protected by the State of California under the California Endangered Species Act (CESA). In addition, the Regional Water Quality Control Board is responsible agency for waters of the state.

Federal

Endangered Species Act

Under FESA, authorization is required to “take” a listed species. Take is defined under FESA Section 3 as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Under federal regulation (50 CFR Sections 17.3, 222.102); “harm” is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Critical habitat is a specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but
that will be needed for its recovery. FESA Section 7 outlines procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat.

Section 7(a)(2) of FESA and its implementing regulations require federal agencies to consult with USFWS or NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat. For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain an incidental take permit under FESA Section 10(a). Section 10(a) allows USFWS to permit the incidental take of listed species if such take is accompanied by an HCP that includes components to minimize and mitigate impacts associated with the take.

The USFWS and National Marine Fisheries Service (NMFS) share responsibility and regulatory authority for implementing the Federal Endangered Species Act (FESA) (7 USC Section 136, 16 USC Section 1531 et seq.).

**Migratory Bird Treaty Act**

The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it is unlawful, except as permitted by regulations, “to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, […] any migratory bird, or any part, nest, or egg of any such bird” (16 USC Section 703(a)). The Bald and Golden Eagle Protection Act (BGEPA) is the primary law protecting eagles, including individuals and their nests and eggs. The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). Under the Act’s Eagle Permit Rule (50 CFR 22.26), USFWS may issue permits to authorize limited, non-purposeful take of bald eagles and golden eagles.

**Marine Mammal Protection Act**

Under the Marine Mammal Protection Act, established in 1972, all marine mammals are protected under federal law. This act prohibits hunting, harassment, capture or killing of all marine mammals. This law protects cetaceans (whales, dolphins and porpoises), pinnipeds (seals and sea lions), sirenians (manatees and dugongs), sea otters and polar bears within the waters of the United States.

**Marine Protection, Research and Sanctuaries Act**

The Marine Protection, Research and Sanctuaries Act (16 USC § 1431 et seq. and 33 USC §1401 et seq. [1988]) which is also known as the “Ocean Dumping Act” prohibits (1) transportation of material from the United States for the purpose of ocean dumping; (2) transportation of material from anywhere for the purpose of ocean dumping by U.S. agencies or U.S.-flagged vessels; (3) dumping of material transported from outside the United States into the U.S. territorial sea. A permit issued by the Environmental Protection Agency (EPA) is required to deviate from these prohibitions and issuance is dependent upon whether the dumping will "unreasonably degrade or endanger" human health, welfare, or the marine environment.

**Magnusen-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) regulates marine fisheries in U.S. federal waters. The act was first passed in 1976 and revised in
1996 and 2007. The purpose of the act is to provide long-term biological and economic sustainability of U.S. marine fisheries.

The NMFS has regulatory authority for implementing the Magnuson-Stevens Act. The NMFS requires regional fishery management councils develop Fisheries Management Plans (FMP) specific to their regions, fisheries and fish stocks. For waters off the U.S. West Coast, the Pacific Fishery Management Council has developed four FMPs, which are implemented through our fisheries regulations for coastal pelagic species, groundfish species, highly migratory species and salmon species. These FMPs also identify Essential Fish Habitat (EFH) which is broadly defined as those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.

*Section 10 of the River and Harbors Act*

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the Secretary of the Army, acting through the U.S. Army Corps of Engineers, for the construction of any structure in or over any navigable water of the United States. Regulated activities include dredging or disposal of dredged materials, excavation, filling, rechannelization and construction of any structure or any other modification of a navigable water of the United States.

*Clean Water Act*

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE), with EPA oversight, has authority to regulate activities that result in discharge of dredged or fill material into wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any discharge of dredged or fill material into jurisdictional wetlands or other jurisdictional “waters of the United States” would require a Section 404 permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetlands is met by compensatory mitigation; in general, the type and location options for compensatory mitigation should comply with the hierarchy established by the USACE Corp/EPA 2008 Mitigation Rule (in descending order): (1) mitigation banks; (2) in-lieu fee programs; and (3) permittee-responsible compensatory mitigation. Also, in accordance with Section 401 of the Clean Water Act, applicants for a Section 404 permit must obtain water quality certification from the appropriate RWQCB.

*State*

*Endangered Species Act*

CESA (Fish and Game Code Section 2050 et. seq.) prohibits take of State-listed threatened and endangered species without a CDFW incidental take permit. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification.

Protection of fully protected species is described in Fish and Game Code Sections 3511, 4700, 5050 and 5515. These statutes prohibit take or possession of fully protected species. Incidental take of fully protected species may be authorized under an approved NCCP.
California Fish and Game Code sections 3503, 3503.5 and 3511

California Fish and Game Code sections 3503, 3503.5 and 3511 describe unlawful take, possession, or destruction of birds, nests and eggs. Fully protected birds (CFGC Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs.

Native Plant Protection Act

The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (CFGC Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Section 1600 et seq. of the California Fish and Game Code

Section 1600 et seq. of the CFGC prohibits, without prior notification to CDFW, the substantial diversion or obstruction of the natural flow of, or substantial change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. In order for these activities to occur, the CDFW must receive written notification regarding the activity in the manner prescribed by the department, and may require a lake or streambed alteration agreement. Lakes, ponds, perennial and intermittent streams and associated riparian vegetation, when present, are subject to this regulation.

Natural Community Conservation Planning Act

The Natural Communities Conservation Planning (NCCP) Act was established by the California Legislature, is directed by the CDFW, and is implemented by the state, as well as public and private partnerships as a means to protect habitat in California. The NCCP Act takes a regional approach to preserving habitat. An NCCP identifies and provides for the regional protection of plants, animals and their habitats, while allowing compatible and appropriate economic activity. Once an NCCP has been approved, CDFW may provide take authorization for all covered species, including fully protected species, Section 2835 of the CFGC.

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board (SWRCB) and each of nine local Regional Water Quality Control Boards (RWQCB) has jurisdiction over “waters of the State” pursuant to the Porter-Cologne Water Quality Control Act which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction). The local RWQCB (the Central Coast RWQCB for the AMBAG region) implements this general order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the CWA for waters subject to federal jurisdiction.
California Coastal Act

The mission of the California Coastal Commission (CCC) is to “protect, conserve, restore and enhance environmental and human-based resources of the California coast and ocean for environmentally sustainable and prudent use by current and future generations.” CCC policies, as codified under the California Coastal Act of 1976, are implemented through Coastal Development Permits issued under Local Coastal Programs administered by counties and cities that lie within the coastal zone. The California Coastal Act of 1976 contains specific policies aimed at preserving biological resources, such as wetlands, riparian habitat and marine habitat.

California Department of Transportation - California Streets and Highways Code Section 156.3

Assessments and remediation of potential barriers to fish passage for transportation projects using State or federal transportation funds are required. Such assessments must be conducted for any projects that involve stream crossings or other alterations and must be submitted to the CDFW. New projects must be constructed so that they do not present a barrier to fish passage.

Local

General Plans typically contain elements which address protection of biological resources. Typically, these elements consist of goals, policies and actions that protect natural resources, such as environmentally sensitive habitats, special status species, native trees, creeks, wetland and riparian habitats. Local jurisdictions approve development as long as it is consistent with those elements of the General Plan.

Some resources are afforded protection via local ordinances such as those that protect trees, riparian corridors and environmentally sensitive habitats. Each county and many cities in the AMBAG region have municipal codes which protect natural resources and addresses compliance with environmental regulations. For example, local ordinances and policies may be in place that protect native and nonnative trees in urban landscapes, as well as in unincorporated county lands. These ordinances and policies vary in their definitions of protected trees (e.g., certain species, minimum diameter at breast height [dbh], trees that form riparian corridors or a combination thereof) and in the requirements for ordinance or policy compliance. In addition, counties and cities may have local ordinances or policies that are intended to protect other biological resources such as wetlands and drainages, riparian habitat and other sensitive habitat areas.

Monterey County

The Conservation/Open Space Element of the Monterey County General Plan (Monterey County, 2010a) includes goals to protect the biological resources found within the county. The goals and policies of the Monterey County General Plan are aimed at protecting and conserving listed species and their habitat, critical habitat, as well as coastal, marine and river environments. In addition, the Monterey County General Plan includes a policy requiring all discretionary project as well as roadway and public infrastructure projects provide movement opportunities for wildlife.

San Benito County

The Natural and Cultural Resources Element of the San Benito County 2035 General Plan (San Benito County, 2015a) includes goals to protect the biological resources found within the county. The goals
and policies are aimed at protecting and preserving wildlife habitat as well as other important habitat areas such as wetlands, as well as includes a goal to protect water quantity and quality in natural water bodies within the county. In addition, the San Benito County 2035 General Plan includes policies aimed at protecting and promoting regeneration of oak woodlands and requires applicants to prepare a mitigation plan where oak impacts cannot be avoided, as well as a policy that indicates that the County shall protect and enhance wildlife migration and movement corridors and requires road and development sites to be designed to maintain habitat connectivity.

Santa Cruz County

The Conservation and Open Space Element of the Santa Cruz County General Plan and Local Coastal Program (Santa Cruz County, 1994) includes objectives to protect the biological resources found within the county. The objectives and policies are aimed at maintaining biological diversity, preserving, protecting and restoring riparian corridors and wetlands, as well as other aquatic and marine habitats. The Santa Cruz General Plan and Local Coastal Program also includes policies aimed at protecting Environmentally Sensitive Habitat Areas.

Fort Ord Habitat Management Plan

The existing Fort Ord Habitat Management Plan which, in 1997, was created after the closure of the former Fort Ord to conserve nearly two-thirds of the former army base as open space is anticipated to eventually become a Habitat Conservation Plan (HCP) (Fort Ord Reuse Authority [FORA], 2017). When adopted, the HCP will provide incidental take coverage of federally listed species for a period of 50 years to allow restoration of sensitive habitats and a regional framework for habitat protection and base reuse. The HCP would also provide additional habitat management resources through collection of FORA Development Fees or Community Facilities District Special Tax payments from reuse of the former Fort Ord. If adopted, projects within the HCP Area would be legally required to be consistent with the HCP, and therefore project design, approval and permitting would be required to comply with HCP requirements.

Impact Analysis

Methodology and Significance Thresholds.

Data used for this analysis include aerial photographs, topographic maps and data on special status species and sensitive habitat information obtained from the CDFW BIOS (2017a) the CNNDDB (CDFW, 2017b), the CNPS Online Inventory of Rare and Endangered Plants (CNPS, 2017), the USFWS IPaC (2017a) and accepted scientific texts to identify species. The USFWS Critical Habitat Mapper (2017b) and USFWS National Wetlands Inventory (NWI; 2017c) were also queried. Potential areas of disturbance associated with the 2040 MTP/SCS were compared to the identified biological resource occurrences to determine whether an impact may occur.

Evaluation Criteria

Appendix G of the State CEQA Guideline identifies the following criteria for determining whether a project’s impacts would have a significant impact on biological resources:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;

3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

**Project Impacts and Mitigation Measures**

The following section presents a programmatic-level discussion of impacts to sensitive biological resources from implementation of the 2040 MTP/SCS. Impacts and associated mitigation measures would apply in Monterey, San Benito and Santa Cruz Counties. Section 4.4.2.c summarizes the impacts associated with capital improvement projects proposed in the MTP/SCS. Due to the programmatic nature of the 2040 MTP/SCS, a precise, project-level analysis of the specific impacts associated with individual transportation and land use projects is not possible. In general, however, implementation of proposed transportation improvements and future projects under the land use scenario envisioned by the 2040 MTP/SCS could result in the impacts as described in the following section.

**Threshold 1:** Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service

**Impact B-1** Implementation of Transportation Improvements and the Land Use Scenario Envisioned by the 2040 MTP/SCS May Have Substantial Adverse Impacts on Special Status Plant and Animal Species, Either Directly or Through Habitat Modifications. Impacts Would Be Significant and Unavoidable.

For the purposes of this analysis, special status plant and animal species include those designations described under Section 4.4.1.d above. Most of the transportation improvements proposed under the 2040 MTP/SCS consist of expansions of existing facilities. However, these projects could impact areas occupied by special status plant and animal species. As mentioned above, there are 383 special status species known to occur or with potential to occur within the AMBAG region. Sixty of these species are given high levels of protection by the federal government through listing under FESA or by the State government through listing under CESA or designation of Fully Protected status (animals only). The remaining species shown in Appendix D are protected through CEQA and/or through local ordinances. Most special-status species have very limited ranges within the subject counties and have specific habitat requirements. Many special status species may also tend to be associated with sensitive habitats, such as riparian habitats and drainages.
Because of the programmatic nature of the 2040 MTP/SCS, a precise, project-level analysis of the specific impacts of individual transportation projects on special-status species is not possible. As noted in Section 2.5.2, as future transportation system improvement projects and land use projects envisioned in the 2040 MTP/SCS are planned and designed, site-specific environmental review will be conducted by the agencies responsible for implementing such projects. Nevertheless, some special-status species would experience substantial adverse effects affected at the locations where projects under the 2040 MTP/SCS would occur, significant impacts would therefore occur.

For example, projects such as those that occur over or in the vicinity of rivers and creeks are within suitable habitat for species such as California red-legged frog (Federally Threatened and State Species of Special Concern), steelhead – South-Central California Coast DPS (Distinct Population Segment), steelhead – Central California Coast DPS (both DPS are federally threatened and state SSC) and Coho Salmon – Central California Coast ESU (Evolutionary Significant Unit) (federally endangered and state endangered). Many of the creeks and rivers found within coastal watersheds, such as those in Monterey and Santa Cruz Counties, are considered accessible by steelhead and currently support or have historically supported steelhead and Coho salmon populations (Santa Cruz County 2015b).

In addition to the rivers and creeks that may be impacted, future transportation projects under the 2040 MTP/SCS could impact upland habitats and the sensitive species that may occupy them. For example, coast horned lizards (*Phrynosoma blainvillii*), a State SSC, may be present in scrub, grassland and some woodland habitats near roads where projects could occur. The federally threatened and state threatened California tiger salamander can also occupy annual grassland habitats containing small mammal burrows if such habitat is within 1.24 miles (the dispersal distance of the species) of known or potentially suitable breeding habitat. Several special status bat species may be affected by proposed projects where they occur under bridges or similar structures, or in native habitat adjacent to construction areas. Furthermore, the wide variety of habitats within the 2040 MTS/SCS area can support many species of nesting birds, including sensitive species such as the state Fully Protected white-tailed kite (*Elanus leucurus*) and the state SSC burrowing owl (*Athene cunicularia*). Disturbance of special-status plants could result in reductions in local population size, habitat fragmentation, or lower reproductive success.

Direct impacts to special status species include injury or mortality occurring during implementation and/or operation of projects under the 2040 MTP/SCS. Direct impacts also include habitat modification and loss such that it results in mortality or otherwise alters foraging and breeding behaviors substantially enough to cause injury. Indirect impacts could be caused by the spread of invasive non-native species that out-compete native species and/or alter habitat towards a state that is unsuitable for special status species. For example, the spread of certain weed species can reduce the biodiversity of native habitats, potentially eliminating special status plant species and reducing the availability of suitable forage and breeding sites for special status animal species. Indirect impacts could also result from increased access by humans and domestic animals, particularly in areas where trails may be planned. Increased human and domestic animal (especially dog and cat) presence disrupt the normal behaviors of native animal species and foster the spread of non-native invasive plant species.

In addition to direct and indirect impacts that may result from transportation improvement projects, the 2040 MTP/SCS also contains a future land use scenario that emphasizes infill development and transit oriented development (TOD). This land use scenario focuses future development concentrated in existing urbanized areas. As a result, encroachment into undisturbed habitat would be reduced when compared to a land use scenario that does not focus future development within
existing urbanized areas. This would limit impacts to sensitive plant and animal species as well as their habitat. However, it is possible that sensitive plant and animal species could be located on future infill and TOD sites, as well as more undeveloped project sites. As a result, future development projects could impact plant and animal species that may be present on or in proximity to undeveloped areas. Many special status animal species are associated with creeks even in the most densely developed urban areas. Both native and non-native trees and shrubs throughout urban areas may support nesting birds and other sensitive species, such as monarch butterflies (*Danaus plexippus*). Impacts of land use projects would be significant because substantial adverse effects on special status species could occur.

**Mitigation Measures**

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation measures for applicable transportation projects identified in Appendix B. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2040 MTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

*B-1(a) Biological Resources Screening and Assessment*

On a project-by-project basis, a preliminary biological resource screening shall be performed as part of the environmental review process to determine whether the project has any potential to impact biological resources. If it is determined that the project has no potential to impact biological resources, no further action is required. If the project would have the potential to impact biological resources, prior to construction, a qualified biologist shall conduct a biological resources assessment to document the existing biological resources within the project footprint plus a buffer and to determine the potential impacts to those resources. The biological resources assessment shall evaluate the potential for impacts to all biological resources including, but not limited to: special status species, nesting birds, wildlife movement, sensitive plant communities, critical habitat, Essential Fish Habitat, and other resources judged to be sensitive by local, state and/or federal agencies. Depending on the results of the biological resources assessment, design alterations, further technical studies (i.e. protocol surveys) and/or consultations with the USFWS, CDFW and/or other local, state and federal agencies may be required. The following mitigation measures [B-1(b) through B-1(j)] shall be incorporated only as applicable into the biological resources assessment for projects where specific resources are present or may be present and impacted by the project. Note that specific surveys described in the mitigation measures below may be completed as part of the biological resources assessment where suitable habitat is present. The results of the biological resources screening and assessment shall be provided to the implementing agency for review and approval.

**Implementing Agencies**

Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

*B-1(b) Special Status Plant Species Surveys*  

If completion of the project-specific biological resources assessment determines that special status plant species have potential to occur on-site, surveys for special status plants shall be completed prior to any vegetation removal, grubbing, or other construction activity of each project (including...
staging and mobilization). The surveys shall be floristic in nature and shall be seasonally-timed to coincide with the target species identified in the project-specific biological resources assessment. All plant surveys shall be conducted by a qualified biologist approved by the implementing agency no more than one year prior to project implementation (annual grassland habitats may require yearly surveys). All special status plant species identified on-site shall be mapped onto a site-specific aerial photograph or topographic map. Surveys shall be conducted in accordance with the most current protocols established by the CDFW, USFWS and the local jurisdictions if said protocols exist. A report of the survey results shall be submitted to the implementing agency for review. If special status plant species are identified, mitigation measure B-1(c) shall apply.

**Implementing Agencies**
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

**B-1(c) Special Status Plant Species Avoidance, Minimization and Mitigation**

If state- or federally listed and/or CRPR 1 and 2 species are found during special status plant surveys [pursuant to mitigation measure B-1(b)], then the project shall be re-designed to avoid impacting these plant species to the maximum extent feasible. If CRPR 3 and 4 species are found, the biologist shall evaluate to determine if they meet criteria to be considered special status, and if so, the same process as identified for CRPR 1 and 2 species shall apply.

If special status plants species cannot be avoided and would be impacted by a project implemented under the 2040 MTP/SCS, all impacts shall be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist for each species as a component of habitat restoration. A restoration plan shall be prepared and submitted to implementing agency overseeing the project for approval.

**Implementing Agencies**
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

**B-1(d) Endangered/Threatened Animal Species Habitat Assessment and Protocol Surveys**

Specific habitat assessment and survey protocol surveys are established for several federally and/or state endangered or threatened animal species. If the results of the biological resources assessment determine that suitable habitat may be present for any such species, protocol habitat assessments/surveys shall be completed in accordance with CDFW and/or USFWS/NMFS protocols prior to issuance of any construction permits/project approvals.

Alternatively, in lieu of conducting protocol surveys, the implementing agency may choose to assume presence within the project footprint and proceed with development of appropriate avoidance measures, consultation and permitting, as applicable.

If the target species is detected during protocol surveys, or protocol surveys are not conducted and presence assumed based on suitable habitat, mitigation measure B-1(e) shall apply.

**Implementing Agencies**
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.
B-1(e) Endangered/Threatened Animal Species Avoidance and Compensatory Mitigation

If habitat is occupied or presumed occupied by federal and/or state listed species and would be impacted by the project, the implementing agency shall re-design the project in coordination with a qualified biologist to avoid impacting occupied/presumed occupied habitat to the maximum extent feasible. If occupied or presumed occupied habitat cannot be avoided, the implementing agency shall provide the total acres for habitat that would be impacted prior to the issuance of construction permits/approvals. The implementing agency shall purchase credits at a USFWS, NMFS and/or CDFW approved conservation bank if available for the affected species and/or establish conservation easements or funds for acquisition of conservation easements as compensatory mitigation to offset impacts to federal and/or state listed species habitat.

Compensatory mitigation shall be provided at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist for permanent impacts. Compensatory mitigation may be combined/nested with special status plant species and sensitive community restoration where applicable. Temporary impact areas shall be restored to pre-project conditions.

If on and/or off site mitigation sites are identified the implementing agency shall retain a qualified biologist to prepare a Habitat Mitigation and Monitoring Plan (HMMP) to ensure the success of compensatory mitigation sites that are to be conserved for compensation of permanent impacts to federal and/or state listed species. The HMMP shall identify long term site management needs, routine monitoring techniques, techniques and success criteria, and shall determine if the conservation site has restoration needs to function as a suitable mitigation site. The HMMP shall be submitted to the agency overseeing the project for approval.

Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

B-1(f) Endangered/Threatened Species Avoidance and Minimization During Construction

The following measures shall be applied to aquatic and terrestrial species, where appropriate. Implementing agencies shall select from these measures as appropriate depending on site conditions, the species with potential for occurrence and the results of the biological resources screening and assessment (measure B-1[a]).

- Pre-construction surveys for federal and/or state listed species with potential to occur shall be conducted where suitable habitat is present by a qualified biologist not more than 48 hours prior to the start of construction activities. The survey area shall include the proposed disturbance area and all proposed ingress/egress routes, plus a 100-foot buffer. If any life stage of federal and/or state listed species is found within the survey area, the appropriate measures in the BO or Habitat Conservation Plan (HCP)/Incidental Take Permit (ITP) issued by the USFWS/NMFS (relevant to federal listed species) and/or the ITP issued by the CDFW (relevant to state listed species) shall be implemented; or if such guidance is not in place for the activity, the qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW. The results of the pre-construction surveys shall be submitted to the implementing agency for review and approval prior to start of construction.

- Ground disturbance shall be limited to the minimum necessary to complete the project. The project limits of disturbance shall be flagged. Areas of special biological concern within or
adjacent to the limits of disturbance shall have highly visible orange construction Environmental Sensitive Area fencing installed between said area and the limits of disturbance.

• All projects occurring within/adjacent to aquatic habitats (including riparian habitats and wetlands) shall be completed during the dry season, typically between April 1 and October 31, to avoid impacts to sensitive aquatic species.

• All projects occurring within or adjacent to sensitive habitats that may support federally and/or state endangered/threatened species shall have a qualified biologist present during all initial ground disturbing/vegetation clearing activities. Once initial ground disturbing/vegetation clearing activities have been completed, said biologist shall conduct daily pre-activity clearance surveys for endangered/threatened species. Alternatively, and upon approval of the CDFW and/or USFWS/NMFS or as outlined in project permits, said biologist may conduct site inspections at a minimum of once per week to ensure all prescribed avoidance and minimization measures are begin fully implemented.

• No endangered/threatened species shall be captured and relocated without authorization from the CDFW and/or USFWS/NMFS.

• If pumps are used for dewatering activities, all intakes shall be completely screened with wire mesh not larger than five millimeters to prevent animals from entering the pumpsystem.

• If at any time during construction of the project an endangered/threatened species enters the construction site or otherwise may be impacted by the project, all project activities shall cease. At that point, a qualified biologist shall recommend an appropriate course of action, which may include consultation with USFWS, NMFS and/or CDFW. Alternatively, the appropriate measures shall be implemented in accordance with the BO or HCP/ITP issued by the USFWS (relevant to federal listed species) and/or the ITP issued by the CDFW (relevant to state listed species) and work can then continue as guided by those documents and the agencies as appropriate.

• All vehicle maintenance/fueling/staging shall occur not less than 100 feet from any riparian habitat or water body. Suitable containment procedures shall be implemented to prevent spills. A minimum of one spill kit shall be available at each work location near riparian habitat or water bodies.

• No equipment shall be permitted to enter wetted portions of any affected drainage channel other than equipment necessary to conduct approved dewatering activities required for project construction.

• All equipment operating within streambeds (restricted to conditions in which water is not present) shall be in good conditions and free of leaks. Spill containment shall be installed under all equipment staged within stream areas and extra spill containment and clean up materials shall be located in close proximity for easy access.

• At the end of each work day, excavations shall be secured with cover or a ramp shall be provided to prevent wildlife entrapment.

• All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.

Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.
B-1(g) Non-Listed Special Status Animal Species Avoidance and Minimization

Depending on the species identified in the BRA, the following measures shall be selected from among the following to reduce the potential for impacts to non-listed special status animal species:

• Pre-construction clearance surveys shall be conducted within 14 days prior to the start of construction (including staging and mobilization). The surveys shall cover the entire disturbance footprint plus a minimum 100-foot buffer and shall identify all special status animal species that may occur on-site. All non-listed special status species shall be relocated from the site either through direct capture or through passive exclusion. A report of the pre-construction survey shall be submitted to the implementing agency for their review and approval prior to the start of construction. •
• A qualified biologist shall be present during all initial ground disturbing activities, including vegetation removal, to recover special status animal species unearthed by construction activities. •
• Upon completion of the project, a qualified biologist shall prepare a final compliance report documenting all compliance activities implemented for the project, including the pre-construction survey results. The report shall be submitted within 30 days of completion of the project. •
• If special status bat species may be present and impacted by the project, within 30 days of the start of construction a qualified biologist shall conduct presence/absence surveys for special status bats, in consultation with the CDFW, where suitable roosting habitat is present. Surveys shall be conducted using acoustic detectors and by searching tree cavities, crevices and other areas where bats may roost. If active bat roosts or colonies are present, the biologist shall evaluate the type of roost to determine the next step. •

If a maternity colony is present, all construction activities shall be postponed within a 250-foot buffer around the maternity colony until it is determined by a qualified biologist that the young have dispersed or as recommended by CDFW through consultation. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately.

If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), alternative roosts, such as bat boxes if appropriate for the species, shall be designed and installed near the project site. The number and size of alternative roosts installed will depend on the size of the hibernaculum and shall be determined through consultations with the CDFW.

If other active roosts are located, exclusion devices such as valves, sheeting or flap-style one-way devices that allow bats to exit but not re-enter roosts discourage bats from occupying the site.

Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

B-1(h) Preconstruction Surveys for Nesting Birds

For construction activities occurring during the nesting season (generally February 1 to September 15), surveys for nesting birds covered by the CFGC, the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act shall be conducted by a qualified biologist no more than 30 days prior to vegetation removal activities.

Final Environmental Impact Report
A qualified biologist shall conduct preconstruction surveys for raptors. The survey for the presence of bald and golden eagles, shall cover all areas within of the disturbance footprint plus a one-mile buffer where access can be secured. The survey area for all other nesting bird and raptor species shall include the disturbance footprint plus a 300-foot and 500-foot buffer, respectively.

If active nests (nests with eggs or chicks) are located, the qualified biologist shall establish an appropriate avoidance buffer ranging from 50 to 300 feet based on the species biology and the current and anticipated disturbance levels occurring in vicinity of the nest. The objective of the buffer shall be to reduce disturbance of nesting birds. All buffers shall be marked using high-visibility flagging or fencing, and, unless approved by the qualified biologist, no construction activities shall be allowed within the buffers until the young have fledged from the nest or the nest fails.

For bald or golden eagle nests identified during the preconstruction surveys, an avoidance buffer of up to one mile shall be established on a case-by-case basis in consultation with the USFWS and CDFW. The size of the buffer may be influenced by the existing conditions and disturbance regime, relevant landscape characteristics, and the nature, timing and duration of the expected disturbance. The buffer shall be established between February 1 and August 31; however, buffers may be relaxed earlier than August 31 if a qualified ornithologist determines that a given nest has failed or that all surviving chicks have fledged and the nest is no longer in use.

A report of these preconstruction nesting bird surveys and nest monitoring (if applicable) shall be submitted to the implementing agency for review and approval prior to the start of construction.

**Implementing Agencies**
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

**B-1(i) Worker Environmental Awareness Program (WEAP)**

Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend WEAP training, conducted by a qualified biologist, to aid workers in recognizing special status resources that may occur in the project area. The specifics of this program shall include identification of the sensitive species and habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared for distribution to all contractors, their employers and other personnel involved with construction of the project. All employees shall sign a form documenting that they have attended the WEAP and understand the information presented to them.

**Implementing Agencies**
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

**Significance After Mitigation**

Compliance with the above mitigation measures would reduce impacts to special status species and their habitat to less than significant levels because the mitigation measures require pre-project surveys and biological monitoring, focused biological surveys, avoidance or minimization of project-related disturbance or loss of special-status species, compensation for disturbed or loss of special status species habitat and coordination with permitting agencies, as required prior to project implementation. In addition, federal and state listed species, state rare plants and fully protected...
species have federal and/or state statutes that prohibit the take of these protected species. Therefore, it is expected that compliance with these statutes would be sufficient to prevent significant impacts to these resources. However, there are no state or federal statutes that provide protection to other sensitive plant and wildlife species such as candidate species, plant species determined to be rare by the CNPS or wildlife species classified as California Species of Special Concern. No additional feasible mitigation measures are available to reduce impacts on other sensitive species. Therefore, it cannot be guaranteed that all future project-level impacts to special status species can be mitigated to a less than significant level for all species and impacts would remain significant.

<table>
<thead>
<tr>
<th>Threshold 2:</th>
<th>Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service</th>
</tr>
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<tbody>
<tr>
<td>Threshold 3:</td>
<td>Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means</td>
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**Impact B-2**

**IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2040 MTP/SCS MAY RESULT IN SUBSTANTIAL ADVERSE IMPACTS ON SENSITIVE HABITATS, INCLUDING FEDERALLY PROTECTED WETLANDS. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.**

Transportation improvement projects and land use development that may be implemented under the 2040 MTP/SCS have the potential to impact sensitive habitats, including riparian areas and wetlands, as mapped on Figure 18, Figure 19 and Figure 20. Due to the programmatic nature of this analysis, the extent and severity of the impacts is currently unknown. Some examples of potential impacts include, but are not limited to: construction and reconstruction/widening of bridges over rivers and creeks, including the Salinas River, San Benito River, Branciforte Creek and Soquel Creek. These types of projects would have potential to impact riparian areas, as well as water bodies. In addition, projects such as multiuse trails and bike paths may also involve development along riparian corridors or construction of bridges across rivers and creeks. Riparian areas provide wildlife habitat and movement corridors, enabling both terrestrial and aquatic organisms to move along river systems between areas of suitable habitat. Construction of the proposed facilities could have both direct impacts associated with the disturbance of riparian flora and fauna and indirect impacts caused by increased erosion and sedimentation, which can adversely affect downstream water quality.

In addition, other sensitive habitats, including oak woodlands, could occur at locations of transportation improvement projects and land use development sites. As noted in Section 4.4.1.c, vegetation Alliances with State ranks of S1-S3 are considered to be imperiled and thus, potentially of special concern and sensitive (CDFW, 2010). Impacts to these sensitive communities, including oak woodlands, could be significant.

Direct impacts to sensitive habitats include loss of habitat during construction of individual projects. Indirect impacts include habitat degradation caused by the introduction of invasive plant species incidentally from construction equipment and through selection of invasive landscape plants, as well as erosion of disturbed areas.
The future land use scenario envisioned by the 2040 MTP/SCS would emphasize development within existing urbanized areas, although some development would occur in more undisturbed areas. As a result, future infill and TOD projects are likely to result in only limited impacts riparian habitat or sensitive habitat, though areas that have been relatively free of ground disturbance may contain sensitive native habitats such as Central Dune Scrub, oak woodlands, or Northern Maritime Chaparral or other vegetation alliances and associations that are deemed sensitive by the CDFW. Furthermore, some areas mapped by CWHR as somewhat disturbed habitats, such as annual grasslands, may at the local scale include sensitive native vegetation with unique assemblages of native plants, such as areas dominated by native wildflowers, vernal pools and native grasslands. Impacts would be significant.

In conclusion, implementation of the 2040 MTP/SCS would have substantial adverse impacts on sensitive habitats, including federally-protected wetlands and this impact is therefore significant.

Mitigation Measures

For transportation projects under their jurisdiction, TAMC, SBtCOG and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation measures for applicable transportation projects identified in Appendix B. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2040 MTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

**B-2(a) Jurisdictional Delineation and Impact Avoidance**

If the results of measure B-1(a) indicates projects implemented under the 2040 MTP/SCS occur within or adjacent to wetland, drainages, riparian habitats, or other areas that may fall under the jurisdiction of the CDFW, USACE, RWQCB and/or CCC, a qualified biologist shall complete a jurisdictional delineation. The jurisdictional delineation shall determine the extent of the jurisdiction for each of these agencies and shall be conducted in accordance with the requirement set forth by each agency. The result shall be a jurisdictional delineation report that shall be submitted to the implementing agency, USACE, RWQCB, CDFW and/or CCC, as appropriate, for review and approval, and the project shall be designed to minimize impacts to jurisdictional areas to the maximum extent feasible. The delineation shall serve as the basis to identify jurisdictional areas to be protected during construction, through implementation of the avoidance and minimization identified in measure B-2(f).

**Implementing Agencies**

Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

**B-2(b) Wetlands, Drainages and Riparian Habitat Restoration**

Impacts to jurisdictional drainages, wetlands and riparian habitat shall be mitigated at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist, and shall occur on-site or as close to the impacted habitat as possible. A mitigation and monitoring plan shall be developed by a qualified biologist and submittal to the agency overseeing the project for approval. Alternatively, mitigation shall be accomplished through purchase of credits from an approved wetlands mitigation bank.
Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

B-2(c) Landscaping Plan
If landscaping is proposed for a specific project, a qualified biologist/landscape architect shall prepare a landscape plan for that project. This plan shall indicate the locations and species of plants to be installed. Drought tolerant, locally native plant species shall be used. Noxious, invasive and/or non-native plant species that are recognized on the Federal Noxious Weed List, California Noxious Weeds List and/or California Invasive Plant Council Inventory shall not be permitted. Species selected for planting shall be regionally appropriate native species that are known to occur in the adjacent native habitat types.

Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

B-2(d) Sensitive Vegetation Community Avoidance and Mitigation
If the results of measure B-1(a) indicates projects implemented under the 2040 MTP/SCS would impact sensitive vegetation communities, impacts to sensitive communities shall be avoided through final project design modifications.

If the implementing agency determines that sensitive communities cannot be avoided, impacts shall be mitigated on-site or off-site at an appropriate ratio to fully offset project impacts, as determined by a qualified biologist. Temporarily impacted areas shall be restored to pre-project conditions. A Restoration Plan shall be developed by a qualified biologist and submitted to the agency overseeing the project for approval.

Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

B-2(e) Invasive Weed Prevention and Management Program
Prior to start of construction for each project that occurs within or adjacent to native habitats, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist to prevent invasion of native habitat by non-native plant species. The plan shall be submitted to the implementing agency for review and approval. A list of target species shall be included, along with measures for early detection and eradication.

The plan, which shall be implemented by the implementing agency, shall also include, but not be limited to, the following measures to prevent the introduction of invasive weed species:

- During construction, the project shall make all reasonable efforts to limit the use of imported soils for fill. Soils currently existing on-site should be used for fill material. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species.

- To minimize colonization of disturbed areas and the spread of invasive species, the contractor shall: stockpile topsoil and redeposit the stockpiled soil after construction, or transport the topsoil to a permitted landfill for disposal.
• The erosion control/ restoration plans for the project must emphasize the use of sensitive species that are expected to occur in the area and that are considered suitable for use at the project site.
• All erosion control materials, including straw bales, straw wattles, or mulch used on-site must be free of invasive species seed.
• Exotic and invasive plant species shall be excluded from any erosion control seed mixes and/or landscaping plant palettes associated with the proposed project.
• All disturbed areas shall be hydrosowed with a mix of locally native species upon completion of work in those areas. In areas where construction is ongoing, hydrosowing shall occur where no construction activities have occurred within six (6) weeks since ground disturbing activities ceased. If exotic species invade these areas prior to hydrosowing, weed removal shall occur in consultation with a qualified biologist and in accordance with the restoration plan.

Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

B-2(f) Wetlands, Drainages and Riparian Habitat Best Management Practices During Construction
The following best management practices shall be required for development within or adjacent to wetlands, drainages, or riparian habitat:
• Access routes, staging and construction areas shall be limited to the minimum area necessary to achieve the project goal and minimize impacts to other waters including locating access routes and ancillary construction areas outside of jurisdictional areas.
• To control sedimentation during and after project implementation, appropriate erosion control materials shall be deployed to minimize adverse effects on jurisdictional areas in the vicinity of the project.
• Project activities within the jurisdictional areas should occur during the dry season (typically between June 1 and November 1) in any given year, or as otherwise directed by the regulatory agencies.
• During construction, no litter or construction debris shall be placed within jurisdictional areas. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site.
• All project-generated debris, building materials and rubbish shall be removed from jurisdictional areas and from areas where such materials could be washed into them.
• Raw cement, concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic species resulting from project-related activities, shall be prevented from contaminating the soil and/or entering wetlands, drainages or riparian habitat.
• All refueling, maintenance and staging of equipment and vehicles shall occur at least 100 feet from bodies of water and in a location where a potential spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water source). Prior to the onset of work activities, a plan must be in place for prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should an accidental spill occur.
Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

Significance After Mitigation
Compliance with the above mitigation measures would reduce impacts to sensitive communities and wetlands to less than significant levels because the mitigation measures require focused biological surveys, best management practices to avoidance or minimization impacts, compensation for disturbed or loss of sensitive communities and wetlands and coordination with permitting agencies, as required prior to project implementation. In addition, Section 1600 of the CFGC requires that a Streambed Alteration Agreement (SAA) be obtained prior to the alteration of any State Jurisdictional areas. An SAA requires that “no net loss” of habitat values or acreage occur. Section 404 of the Federal Clean Water Act requires that authorization pursuant to a Nationwide or Individual permit be obtained prior to any alteration of Waters of the United States. Conditions of Section 404 of the Clean Water Act also require that “no net loss” of federal wetlands and waterways take place as a condition of permit issuance. However, there are no state or federal statutes that provide protection to other sensitive plant communities (CDFW, 2010) outside of state jurisdiction. No additional feasible mitigation measures are available to reduce impacts on other sensitive habitats. Therefore, it cannot be guaranteed that all future project-level impacts can be mitigated to a less than significant level for all sensitive habitats and impacts would remain significant.

Threshold 4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

Impact B-3 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2040 MTP/SCS MAY SUBSTANTIALLY INTERFERE WITH WILDLIFE MOVEMENT, INCLUDING FISH MIGRATION AND/OR IMPede THE USE OF A NATIVE WILDLIFE NURSERY. THIS IMPACT WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Transportation infrastructure projects in the 2040 MTP/SCS primarily involve expansion of existing facilities in urbanized or already developed areas, rather than the construction of new or extension of existing infrastructure into undeveloped portions of each county. However, expansion of existing roadways can decrease connectivity as widening of roads creates a larger barrier and make movement more difficult, especially if roadways prior to widening and expansion were narrow enough and traffic volumes low enough that movement was still possible. Construction of new roadways and crossings (across rivers and drainages) would introduce new potential barriers to movement. In addition to the roadways themselves, transportation improvement projects could include new segments of fencing or walls that that could hinder wildlife movement. Temporary disruption of wildlife movement could also occur during construction if temporary water diversions are required for projects located within creeks and rivers. In addition, construction activity and noise could also temporarily alter the behavior wildlife in the area and therefore temporarily disrupt wildlife movement patterns.

New roadways, bike paths and trails would also increase human activity in areas where sensitive biological resources could occur and have the potential to indirectly disrupt behavior of animals which could in turn disrupt wildlife movement patterns. In particular, proposed bridge, trail and
bikeway and new road construction projects could increase human activity (and domestic animals) in the vicinity of riparian areas, wildlife nurseries or corridors and potentially sensitive habitats. Increased noise and human presence during construction, as well as increased trash which may attract predators to the project site and discourage wildlife use of surrounding natural habitat.

The future land use scenario envisioned by the 2040 MTP/SCS would encourage infill and TOD within existing urbanized areas. The majority of the future infill and TOD projects would likely be in areas that provide limited or no wildlife movement, although some development would occur in more undisturbed areas. However, even the elimination of limited wildlife movement opportunities could further isolate areas of native habitat occupied by both sensitive and common native wildlife species.

As noted in Section 4.4.1.f, the County of Monterey and County of San Benito general plans include policies that require projects within the region to be designed to maintain wildlife movement and habitat connectivity. Nevertheless, based on the above analysis, impacts related to transportation projects and impacts related to the future land use scenario envisioned by the 2040 MTP/SCS would be significant.

**Mitigation Measures**

For transportation projects under their jurisdiction, TMC, SBtCOG and SCCRTC shall, and transportation project sponsor agencies can and should, implement the following mitigation measures for applicable transportation projects identified in Appendix B. Cities and counties in the AMBAG region can and should implement these measures, where relevant to land use projects implementing the 2040 MTP/SCS. Project-specific environmental documents may adjust these mitigation measures as necessary to respond to site-specific conditions.

*B-3(a) Project Design for Wildlife Connectivity*

All projects including long segments of fencing and lighting shall be designed to minimize impacts to wildlife. Fencing or other project components shall not block wildlife movement through riparian or other natural habitat. Where fencing or other project components that may disrupt wildlife movement is required for public safety concerns, they shall be designed to permit wildlife movement by incorporating design features such as:

- A minimum 16 inches between the ground and the bottom of the fence to provide clearance for small animals;
- A minimum 12 inches between the top two wires, or top the fence with a wooden rail, mesh, or chain link instead of wire to prevent animals from becoming entangled; and
- If privacy fencing is required near open space areas, openings at the bottom of the fence measure at least 16 inches in diameter shall be installed at reasonable intervals to allow wildlife movement, or the fence may be installed with the bottom at least 16 inches above the ground level.
- If fencing or other project components must be designed in such a manner that wildlife passage would not be permitted, wildlife crossing structures shall be incorporated into the project design as appropriate.
- Lighting installed as part of any project shall be designed to be minimally disruptive to wildlife (see mitigation measure AES-3(a) Roadway Lighting for lighting requirements).
Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

B-3(b) Maintain Connectivity in Drainages
No permanent structures shall be placed within any drainage or river that would impede wildlife movement (i.e., no hardened caps or other structures in the stream channel perpendicular to stream flow be left exposed or at depth with moderate to high risk for exposure as a result of natural bed scour during high flow events and thereby potentially create impediments to passage).

In addition, upon completion of construction within any drainage, areas of stream channel and banks that are temporarily impacted shall be returned to pre-construction contours and in a condition that allows for unimpeded passage through the area once the work has been complete.

If water is to be diverted around work sites, a diversion plan shall be submitted to AMBAG, RTPA and/or local jurisdiction for review and approval prior to issuance of project construction permits/approvals. The diversion shall be designed in a way as to not impede movement while the diversion is in place.

Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

B-3 (c) Construction Best Management Practices to Minimize Disruption to Wildlife
The following construction Best Management Practices (BMPs) shall be incorporated into all grading and construction plans in order to minimize temporary disruption of wildlife, which could hinder wildlife movement:

• Designation of a 20 mile per hour speed limit in all construction areas.
• Whenever feasible, Daily construction work schedules shall be limited to daylight hours only.
• Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.
• All trash shall be placed in sealed containers and shall be removed from the project site a minimum of once per week.
• No pets are permitted on project site during construction.

Implementing Agencies
Implementing agencies for transportation projects include RTPAs and transportation project sponsor agencies. Implementing agencies for land use projects include cities and counties.

Significance After Mitigation
Compliance with the above mitigation measures would reduce impacts to wildlife movement by requiring projects to be designed in a way that maintains connectivity. In addition, projects located within habitat for fish species (including federal and state listed fish species) would be required to design and ensure projects do not impede passage by these species as part of conditions of issuance of a SAA or take authorization. However, it cannot be guaranteed that movement of terrestrial species will not be impeded at the regional scale due to the large scale of the 2040 MTP/SCS. No additional feasible mitigation measures are available to reduce impacts on wildlife movement. Therefore, impacts would remain significant.
Threshold 5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

Impact B-4 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2040 MTP/SCS WOULD NOT CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PRESERVATION POLICY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Protected trees and other biological resources which are protected by city and/or county ordinances and/or policies would be encountered at the locations where projects administered under the 2040 MTP/SCS would occur and therefore there is potential for conflict with local ordinances and/or policies. Most of the transportation projects in the 2040 MTP/SCS are expansions or maintenance of existing roads. Because ground disturbances would be fairly limited as a result, the removal of native trees and disturbances to other biological resources protected by local policies or ordinances would likely be minimal for most projects.

In addition to potential conflicts with local policies and/or ordinances that may result from transportation improvement projects, the 2040 MTP/SCS also contains a future land use scenario that emphasizes infill development and TOD. This land use scenario focuses future development concentrated in existing urbanized areas, although some development would occur in more undisturbed areas. This would reduce impacts to biological resources that are protected by city or county ordinances; however, there still remains the potential for conflict with local policies and ordinances from development associated with the future land use scenario.

All future development projects as part of the future land use scenario as well as the transportation projects proposed for implementation under the 2040 MTP/SCS would be required to follow city and county development requirements, including compliance with local policies, ordinances and applicable permitting procedures related to protection biological resources. Project-level analysis would identify significant conflicts with local policies and ordinances as well as minimize, mitigate or avoid those impacts through the design, siting and permitting process; and provide mitigation for any significant impacts as a condition of project approval and permitting. Therefore, the potential for development projects under the future land use scenario as well as proposed transportation projects to conflict with local policies or ordinances protecting biological resources is considered less than significant.

Mitigation Measures

Mitigation measures are not required.

Threshold 6: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

Impact B-5 IMPLEMENTATION OF TRANSPORTATION IMPROVEMENTS AND THE LAND USE SCENARIO ENVISIONED BY THE 2040 MTP/SCS WOULD NOT CONFLICT WITH THE PROVISIONS OF AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN. THERE WOULD BE NO IMPACT.

No adopted regional Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan occurs within Monterey, San Benito and
Santa Cruz Counties at the time of Draft EIR preparation and therefore no conflict with the 2040 MTP/SCS would occur. Therefore, no conflicts would occur as they relate to conflicts with existing local, regional, or state conservation plans.

**Mitigation Measures**

No mitigation measures are required as no conflict would occur.

**Specific MTP/SCS Projects That May Result in Impacts**

All 2040 MTP/SCS projects are listed in Appendix B and have potential to create significant biological impacts. All 2040 MTP/SCS transportation projects that require new construction or landscaping as well as any project that have project components or disturbance limits that are not entirely located within existing paved surfaces may result in impacts as discussed in impacts B-1 through B-3. Land use projects envisioned in the 2040 MTP/SCS may also result in such impacts. Additional site-specific analysis will need to be conducted as the individual projects are implemented in order to determine the project-specific magnitude of the impact. Mitigation measures discussed above would apply to these specific projects.

**Cumulative Analysis**

Biological resources impacts as described above are related to: direct and indirect impacts to sensitive/special status species or their habitat; significant impacts to riparian, wetland, or other sensitive natural communities; or interference with wildlife movement. Implementation of the transportation projects and land use development patterns under the 2040 MTP/SCS could result in regional impacts on special-status species, riparian, wetland, or other sensitive natural communities, as well as wildlife movement. Similarly, development pursuant to other local and regional planning efforts within the greater cumulative impact area (adjoining counties) would also have impacts on these resources, and as a result, cumulative impacts would be considered significant. Due to the potential direct and indirect impacts that may occur as a result of the 2040 MTP/SCS, the proposed 2040 MTP/SCS would contribute considerably to this impact, and cumulatively is significant.

The mitigation measures presented in Section 4.4.2.b set requirements for surveys and actions to be taken if biological resources have potential to be impacted by 2040 MTP/SCS transportation and land use projects. However, as discussed above, impacts to special status species and their habitat; sensitive habitats; and wildlife movement would be significant and unavoidable. The contribution of the proposed 2040 MTP/SCS to cumulative impacts would therefore remain cumulatively considerable post-mitigation.
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