4.4 BIOLOGICAL RESOURCES

This section addresses biological resources issues related to the proposed MBSST Network project described in Section 2.0, *Project Description*. A variety of terrestrial and aquatic habitats are present along the three distinct trail reaches (northern, central and Watsonville reaches) of the proposed MBSST Network. The proposed MBSST Network ranges in elevation from sea level to approximately 30 to 40 feet above sea level throughout the corridor. Portions of the proposed project are located within the Coastal Zone of Santa Cruz County.

Rincon Consultants, Inc. biologists visited the site on December 3, 11, and 12, 2012 and conducted reconnaissance-level floral and wildlife surveys along the proposed MBSST Network. To support the field investigation, data on biological resources were collected from numerous sources, including relevant literature, maps of natural resources, and data on special-status species and sensitive habitat information obtained from the California Department of Fish and Wildlife (CDFW, formerly the California Department of Fish and Game), California Natural Diversity Data Base (CNDDB) (2003; queried August 2012), the California Native Plant Society online *Inventory of Rare, Threatened, and Endangered Plants of California* (2012), and the United States Fish and Wildlife Service (USFWS) Information, Planning and Conservation System (IPaC) (2012b). The USFWS Critical Habitat Mapper (2012a) and National Wetlands Inventory (NWI; 2012c) were also queried.

4.4.1 Setting

a. Habitats. The proposed MBSST Network contains 12 habitats mapped by the CDFW California Wildlife Habitat Relationships (CWHR) habitat classification system (Table 4.4-1). A general description of the habitat composition of each reach is provided, followed by a description of each of the habitats adapted from *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988). It should be noted that these habitat are generalized and that site-specific variation is present. Also note that the CWHR system maps habitats from a broad perspective and that in many areas it is expected that two or more habitats may blend with one another. Habitats which occur within populated areas such as those found in the central reach can also show variation because of a greater exposure to anthropogenic influences, including the introduction of exotic plant species.

Table 4.4-1
California Wildlife Habitat Relationship Habitat Classification Acreages Found in Each Reach of the MBSST Network Right-of-Way*

CWHR Classification	Northern Reach	Central Reach	Watsonville Reach
Tree Dominated Habitats			
Closed-cone pine-cypress	0.76	5.27	2.52
Coastal oak woodland	<0.01	6.15	27.84
Eucalyptus	0.39	1.93	8.64
Valley foothill riparian	1.20	2.48	5.38
Shrub Dominated Habitats			
Coastal scrub	45.37	1.27	12.82
Herbaceous Dominated Habitats			
Annual Grassland	4.86	0.23	2.58

Table 4.4-1
California Wildlife Habitat Relationship Habitat Classification Acreages Found in Each Reach of the MBSST Network Right-of-Way*

CWHR Classification	Northern Reach	Central Reach	Watsonville Reach
Aquatic Habitats			
Lacustrine	0.00	1.62	1.82
Developed/Non-vegetated Habitats			
Barren	6.09	4.92	1.16
Cropland	52.85	0.31	22.95
Urban	23.91	71.50	44.83

**Represents the maximum right-of-way widths for each individual segment, which varies from 25 to 148 feet.*

Tree Dominated Habitats.

Closed-Cone Pine-Cypress Forest. This habitat type is typically dominated by a single species of closed-cone pines (*Pinus* sp.) or cypress (*Cupressus* sp.) and is considered fire climax or fire-dependent vegetation types. Closed-cone pine-cypress habitats are typically found within rocky and infertile soils. These areas within the MBSST Network are primarily dominated by Monterey pine (*Pinus radiata*).

Coastal Oak Woodland. This habitat type can be extremely variable. The over story consists of deciduous and evergreen hardwoods (mostly oaks) mixed with scattered conifers. Within the proposed MBSST Network this habitat is dominated by coast live oak (*Quercus agrifolia*). Herbaceous species such as California blackberry (*Rubus ursinus*) and poison oak (*Toxicodendron diversilobum*) typically dominated the understory.

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 forms a dense stand with a closed canopy. Blue gum eucalyptus (*Eucalyptus globulus*) dominated stands are present within the proposed MBSST Network. The understory of most of these areas is comprised of mainly leaf litter and small patches of non-native annual grasses.

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 sub-canopy tree layer and an understory shrub layer. Within the proposed MBSST Network this habitat type is associated with the drainages. Arroyo willows (*Salix lasiolepis*) were the most commonly observed dominant tree, with white alder (*Alnus rhombifolia*) occasionally observed as a co-dominant. Arroyo willow dominated areas form impenetrable stands with little understory vegetation, while areas with white alders maybe have a more open understory. Common understory plant species present include poison oak and coffeeberry (*Frangula californica*). Where valley foothill riparian habitat is in close proximity to disturbed habitats, particularly urban habitats, a wide variety of non-native invasive species may be present such as blue gum, English ivy (*Hedera helix*), and various ornamental species.

Shrub Dominated Habitats.

Coastal Scrub. This habitat type is typically dominated by shrubs species with mesophytic leaves and shallow root systems. This habitat type differs in composition within the proposed

MBSST Network depending upon proximity to the coastline. In areas where the proposed MBSST Network occurs closer to the coast line, this habitat is more characteristic of coast bluff scrub and is dominated by shrub species such as coast buckwheat (*Eriogonum latifolium*), bush lupine (*Lupinus arboreus*) and coastal seaside golden yarrow (*Eriophyllum staechadifolium*), with understory species such as seafig (*Carprobrotus chilensis*) and common plantain (*Plantago major*) present. Coastal scrub habitat occurring further inland is dominated shrub species such as by California sagebrush (*Artemisia californica*), coyote bush (*Baccharis pilularis*) and bush lupine with understory species such as bromes (*Bromus* sp.) and field mustard (*Hirschfeldia* sp.) present in the understory.

Herbaceous Dominated Habitats.

Annual Grasslands. This habitat type is composed primarily of annual herbs and forbs and typically lack shrub or tree cover. Annual grassland areas within the proposed MBSST Network are typically grazed and are dominated by grass species such as rip-gut brome (*Bromus diandrus*), soft chess brome (*Bromus hordeaceus*), and red brome (*Bromus madritensis*). Non-native herbaceous species such as narrow-leafed plantain (*Plantago lanceolata*), and Italian thistle (*Carduus pycnocephalus*) are also common within this habitat.

Developed/Non-vegetated Habitats.

Cropland. This habitat type is characterized by areas in active agriculture and is an entirely artificially created habitat. The structure of vegetation can vary in size, shape, and growing pattern. Within the proposed MBSST Network, row crops are most common and include brussel sprouts, strawberries, and artichokes.

Urban. This habitat type is a completely man-made habitat comprising residential, commercial, and industrial developed areas. Plant species within urban habitats are typically comprised of ornamental and other non-native invasive plant species, with large developed areas lacking vegetation. Within the proposed MBSST Network, native species such as coast live oak and Monterey pine may be planted as ornamentals within urban areas.

Barren. This habitat type is defined by the absence of vegetation. Any habitat with less than 2 percent total vegetation cover and less than 10 percent cover by tree or shrub species is defined as barren. Structure and composition of the substrate is largely determined by the region of the state and surrounding environment. Within the proposed MBSST Network, these areas occur along beaches and steep cliff sides.

Lacustrine. This habitat type includes permanently flooded lakes and reservoirs, intermittent lakes and ponds (including vernal pools). Within the proposed MBSST Network, lacustrine habitats are associated with some of the drainages and sloughs found along the alignment. Emergent and surface vegetation often occur in association with lacustrine habitats.

b. Drainages and Wetlands.

Drainages. The proposed MBSST Network intersects nearly every major watershed within the County, including numerous intermittent and perennial drainages and swales (Table 4.4-2), all of which ultimately drain into the Pacific Ocean. Drainage crossings are more

numerous in the northern reach, with the number of drainage crossings decreasing as the trail continues southward. The drainages within these watersheds are of biological importance considering they are utilized by species such as steelhead – central California coast distinct population segment (DPS) and south-central California coast DPS (*Oncorhynchus mykiss*), coho Salmon – central California coast evolutionarily significant unit (ESU) (*Oncorhynchus kisutch*) and California red-legged frogs (*Rana draytonii*). The following is a regional summary of the watersheds that occur within the proposed MBSST Network. Drainages that are accessible to or within the distribution of salmonid species are also noted (Santa Cruz County, 2004).

Table 4.4-2
Number of Drainages
Along the Proposed MBSST Network

Reach	Intermittent	Perennial	Swale
Northern	7	10	10
Central	4	8	6
Watsonville	2	3	0

Waddell. The Waddell Creek watershed is located in the northern reach and drains an area of approximately 27 square miles and is comprised of Last Chance Creek, the two major tributaries of Waddell Creek, East Waddell and West Waddell, and numerous unnamed tributaries (Santa Cruz County, 2012). Waddell Creek is within the current distribution of both steelhead – central California coast DPS and coho salmon – central California coast ESU.

Swanton Bluffs. Swanton Bluffs is a small watershed in the northern reach that follows the coast line between the Scotts Creek and Waddell Creek watersheds. The watershed is approximately five square miles, and is comprised of two unnamed streams (Santa Cruz County, 2012).

Scott Creek. Scott Creek drains a 39-square mile watershed in the northern reach. Big Creek and Little Creek are the major tributaries to Scott Creek. Smaller tributaries include Queseria Creek, Berry Creek, Boyer Creek, Deadman Gulch, Winter Creek, Mill Creek, Archibald Creek, and numerous unnamed streams and creeks (Santa Cruz County, 2012). Scott Creek is accessible to both steelhead – central California coast DPS and coho salmon – central California coast ESU.

Davenport. Davenport watershed is located between Scott Creek and San Vicente Creek and drains an area of approximately eight square miles in the northern reach. Molino Creek, Davenport Landing/Ferrari Creek, and several unnamed creeks comprise this watershed. The town of Davenport is located within this watershed (Santa Cruz County, 2012). Davenport Landing/Ferrari Creek is inhabited by resident rainbow trout. Molino Creek is accessible to steelhead – central California coast DPS under adequate flow conditions.

San Vicente Creek. The San Vicente Creek watershed drains an area of approximately 14 square miles in the northern reach and is comprised of San Vicente Creek fed by Mill Creek and several unnamed tributaries (Santa Cruz County, 2012). San Vicente Creek is within the current distribution of both coho salmon and steelhead – central California coast DPS.

Liddell Creek. The Liddell Creek watershed drains an area of approximately eight square miles in the northern reach and is comprised of Liddell Creek, West Liddell Creek, East Liddell Creek, and Yellow Bank Creek (Santa Cruz County, 2012). Liddell Creek, West Liddell Creek and East Liddell Creek are considered accessible to steelhead under adequate flow conditions. Trout populations inhabiting Yellow Bank Creek are considered to be resident rainbow trout.

Laguna Creek. The Laguna Creek watershed drains an area of approximately eight square miles in the northern reach and is comprised of Laguna Creek, Reggiardo Creek, and several unnamed streams (Santa Cruz County, 2012). Laguna Creek is within the current distribution of steelhead – central California coast DPS.

Majors Creek. The Majors Creek watershed is located between the Laguna Creek and Baldwin Wilder watersheds in the northern reach. It drains an area of approximately five square miles and comprises Majors Creek and three unnamed tributaries (Santa Cruz County, 2012). Majors Creek is within the current distribution of steelhead – central California coast DPS.

Baldwin Wilder. The Baldwin Wilder watershed is located just south of and adjacent to Majors Creek watershed and the San Lorenzo River watershed in the northern reach. It drains an area of approximately 20 square miles and is comprised of Baldwin Creek, Lombardi Gulch, Sandy Flat Gulch, Old Dairy Gulch, Wilder Creek (Peasley Gulch, Adams Creek, and Cave Gulch), and Moore Creek (Santa Cruz County, 2012). Wilder Creek and Baldwin Creek are within the current distribution of steelhead – central California coast DPS.

San Lorenzo River. The San Lorenzo River drains a 138 square mile watershed located in the central reach. It is the largest watershed lying completely within Santa Cruz County. Originating in the Santa Cruz Mountains, the watershed consists of a 25-mile long main stem and nine principal tributaries that include the following: Branciforte, Carbonera, Zayante, Bean, Fall, Newell, Bear, Boulder, and Kings Creeks. Smaller creeks and waterways include Powder Mill Creek, Eagle Creek, Gold Gulch, Shingle Mill Creek, Bull Creek, Bennett Creek, Mason Creek, Love Creek, Hubbard Gulch, Alba Creek, Clear Creek, Malosky Creek, Spring Creek Gulch, Two Bar Creek, Spring Creek, and numerous unnamed streams and creeks. The watershed includes the cities and communities of Santa Cruz, Scotts Valley, Felton, Ben Lomond, and Boulder Creek (Santa Cruz County, 2012). The San Lorenzo River is within the current distribution of both steelhead – central California coast DPS and coho salmon – central California coast ESU.

Arana Gulch-Rodeo. The Arana Gulch-Rodeo watershed drains a 3.5 square-mile area at the outer (eastern) edges of the City of Santa Cruz, within the central reach. Major waterways and water bodies in this watershed include Arana Gulch, Leona Creek, Schwann Lake, Rodeo Creek Gulch, and several unnamed waterways. High sediment loads threaten the quality of habitat for the steelhead and other aquatic species in Arana Gulch (Santa Cruz County, 2012). Arana Gulch is within the current distribution of steelhead – central California coast DPS.

Soquel Creek. Located between the cities of Santa Cruz and Watsonville in the central reach, the Soquel Creek watershed drains an area of 42 square miles. Major tributaries include the West Branch (Burns, Laurel, Hester Creek, Amaya Creek, Fern Gulch, Ashbury Gulch,

Hinkley Creek, and numerous unnamed waterways) and the Main Branch (fed by Moore's Gulch, Grover Gulch, Love Creek and Bate's Creek). Smaller tributaries include Noble Gulch, Porter Gulch, Tannery Gulch and Borregas Creek (Santa Cruz County, 2012). Soquel Creek is within the current distribution of both steelhead – central California coast DPS and coho salmon – central California coast ESU.

Aptos Creek. The Aptos Creek watershed drains an area of approximately 25 square miles in southern Santa Cruz County, within the central reach. Aptos Creek and Valencia Creek are the principal tributaries in the watershed. Aptos Creek converges with Valencia Creek approximately one mile inland of Monterey Bay. Bridge Creek and Mangels Gulch empty into the Aptos Creek portion of the watershed and Trout Gulch empties into Valencia Creek (Santa Cruz County, 2012). Aptos creek is considered within the current distribution of steelhead trout. Valencia Creek is considered accessible to steelhead – central California coast DPS during adequate flows.

Pajaro River. The Pajaro River watershed drains an area of approximately 1,300 square miles of land in Santa Cruz, San Benito, Santa Clara, and Monterey counties. Approximately fifteen percent, or 200 square miles, of the Pajaro River Basin lies within Santa Cruz County and the Watsonville reach. The Pajaro River watershed is comprised of the Watsonville Slough System (fed by Gallighan Slough, Harkins Slough, and Struve Slough), Corralitos Creek (fed by Rider Creek, Eureka Gulch, Diablo Gulch, Redwood Creek, Browns Creek, and Ramsey Creek), and Salsipuedes Creek (fed by College Creek, Green Valley Creek, Hughes Creek, Pinto Lake, Casserly Creek, and Gaffey Creek) (Santa Cruz County, 2012). The Pajaro River is within the current distribution of steelhead – south-central California coast DPS.

Watsonville Slough. Watsonville Slough drains 14 square miles from the hills of southern Santa Cruz County into the Pajaro River and Monterey Bay, within the Watsonville reach. The Watsonville Slough system is comprised of six individual sloughs including Watsonville Slough, Harkins Slough, Gallighan Slough, Hanson Slough, the main branch of the Struve Slough, and the western branch of Struve Slough (Santa Cruz County, 2012).

San Andreas. The San Andreas watershed is bordered on the north and east by the Pajaro River watershed and to the west by the Aptos Creek watershed within the Watsonville reach. San Andreas drains an area of approximately 15 square miles and is comprised of Bush Gulch and two unnamed streams (Santa Cruz County, 2012).

Wetlands. In addition to the drainages described above, several areas within the proposed MBSST Network contain wetlands mapped by the NWI (Table 4.4-3). A general description of each of the classifications is provided below.

Table 4.4-3
National Wetlands Inventory Classification Acreages
Found in Each Reach of the MBSST Network Right-of-Way*

Wetland Type	Northern Reach	Central Reach	Watsonville Reach
Estuarine and Marine Deep-water	0.00	0.37	0.00
Estuarine and Marine	1.39	<0.01	0.00
Freshwater emergent	0.22	<0.01	0.00
Freshwater forested/shrub	0.12	0.31	0.33

Table 4.4-3
National Wetlands Inventory Classification Acreages
Found in Each Reach of the MBSST Network Right-of-Way*

Wetland Type	Northern Reach	Central Reach	Watsonville Reach
Freshwater pond	0.10	0.36	0.00
Lake	0.12	0.21	0.00
Riverine	0.46	0.16	0.00

** Represents the maximum right-of-way widths for each individual segment, which varies from 25 to 148 feet.*

Estuarine and Marine Deep-Water. Estuarine and marine deep-water wetlands are an estuarine system composed of deep water 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. Continuously submerged wetlands and deep water areas of this classification contain substrates with at least 25 percent of particles smaller than stones. Vegetative cover is also generally less than 30 percent.

Estuarine and Marine. These wetlands are a marine system found in open ocean and high energy coast lines with salinities exceeding 30 parts per thousand (ppt) with little to no dilution. These areas are intertidal and have unconsolidated substrates with less than 75 percent cover of stones as well as boulders or bedrock. These areas also generally contain less than 30 percent vegetative cover. Beaches, bars and flats are also included in this class.

Freshwater Emergent. Freshwater emergent wetlands are a palustrine system which includes all non-tidal waters dominated by trees, shrubs, emergent plant species, mosses or lichens. Wetlands of this type are also low in salinity and any ocean derived salts are less than 0.5 ppt. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet and have salinities less than 0.5 ppt. The vegetation that occurs in freshwater emergent wetlands includes generally erect, rooted, perennial herbaceous hydrophytes.

Freshwater Forested/Shrub. These wetlands are a palustrine system which includes all non-tidal waters which are dominated by trees, shrubs, emergent, mosses or lichens. Wetlands of this type are also low in salinity and any ocean derived salts are less than 0.5 ppt. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet and have salinities less than 0.5 ppt. The vegetation found in freshwater forested/shrub wetlands are generally dominated by woody vegetation such as shrubs and trees that are less than 20 feet tall.

Freshwater Ponds. Freshwater ponds are a palustrine system which includes all non-tidal waters which are dominated by trees, shrubs, emergent, mosses or lichens. Wetlands of this type are also low in salinity and any ocean derived salts are less than 0.5 ppt. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet and have salinities less than 0.5 ppt. These wetlands and deep water habitats are dominated by plants that grow on or below the surface of the water.

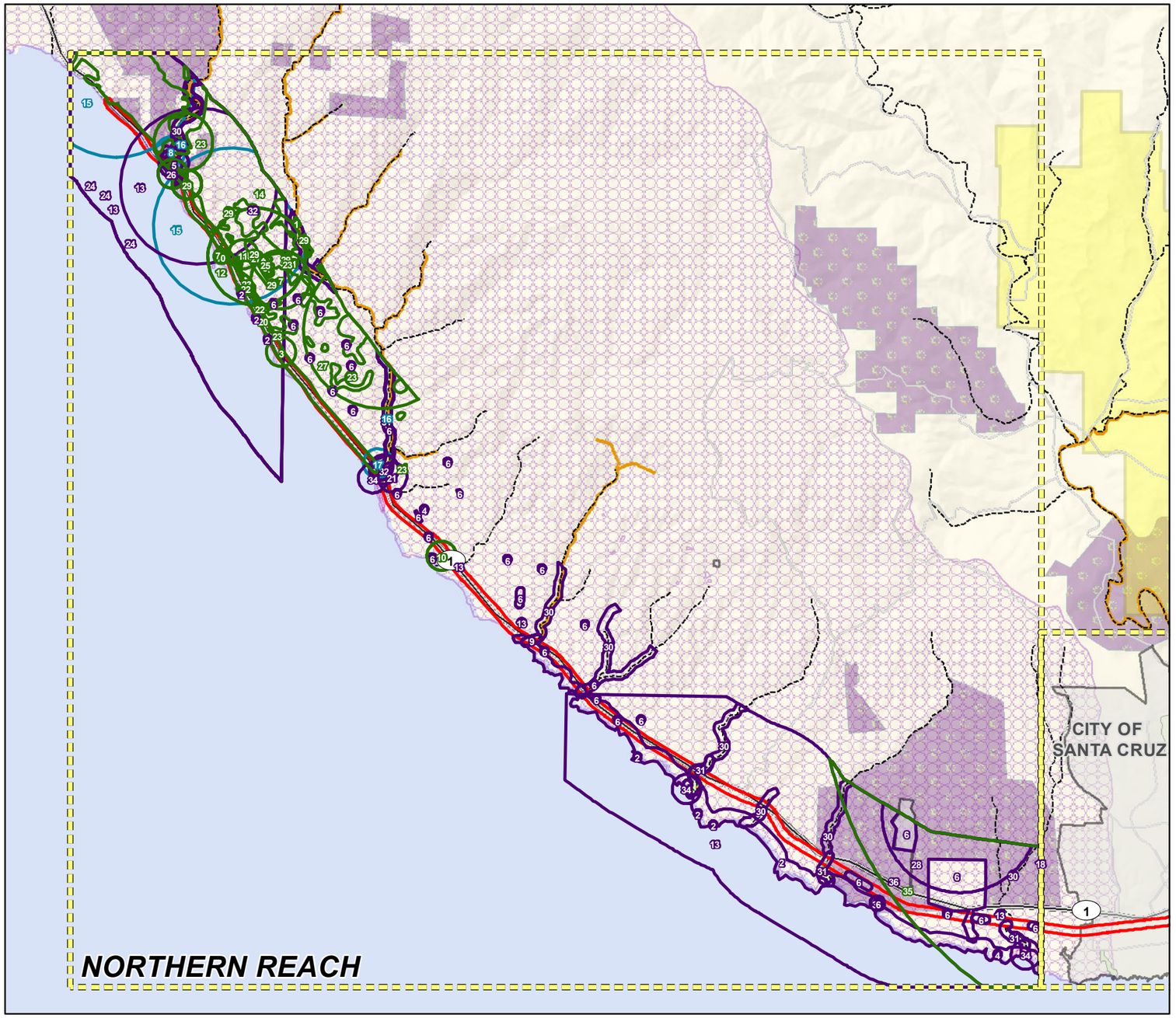
Lakes. Lakes are a lacustrine system which includes wetlands and deep water habitats that are located in a topographic depression or dammed river channel. These areas tend to be greater than 20 acres. Vegetation cover within this habitat is generally less than 30 percent and substrates are composed of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

Riverine. Riverine habitats are a riverine system which includes 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.

c. Special Status Species. 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 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; and plants with a California Rare Plant Rank (CRPR) of 1, 2, 3, and 4, which are defined as:

- *List 1A = Plants presumed extinct in California;*
- *List 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);*
- *List 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80 percent occurrences threatened);*
- *List 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20 percent of occurrences threatened or no current threats known);*
- *List 2 = Rare, threatened or endangered in California, but more common elsewhere;*
- *List 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);*
- *List 4.1 = Plants of limited distribution (watch list),seriously endangered in California;*
- *List 4.2 = Plants of limited distribution (watch list),fairly endangered in California (20-80 percent occurrences threatened); and*
- *List 4.3= Plants of limited distribution (watch list),not very endangered in California.*

Sensitive Communities and Critical Habitat. Seven communities considered sensitive by the CDFW as well as federally designated critical habitat for 10 special status plant and animal species are mapped within a one-mile search radius centered on the proposed MBSST Network right-of-way (Figures 4.4-1a through c). These sensitive communities and critical habitats are listed in Table 4.4-4.



Legend

1 - bent-flowered fiddleneck
2 - black swift
3 - Blasdale's bent grass
4 - burrowing owl
5 - California black rail
6 - California red-legged frog
7 - Choris' popcornflower
8 - Coastal Brackish Marsh
9 - coho salmon - central California coast ESU
10 - elongate copper moss
11 - Kellogg's horkelia
12 - marsh microseris
13 - monarch butterfly
14 - Monterey pine
15 - Monterey Pine Forest
16 - North Central Coast Short-Run Coho Stream
17 - Northern Coastal Salt Marsh
18 - Ohlone tiger beetle
19 - pine rose
20 - Point Reyes horkelia
21 - saltmarsh common yellowthroat
22 - San Francisco campion
23 - San Francisco collinsia
24 - San Francisco garter snake
25 - San Francisco popcornflower
26 - sandy beach tiger beetle
27 - Santa Cruz clover
28 - Santa Cruz kangaroo rat
29 - Santa Cruz microseris
30 - steelhead - central California coast DPS
31 - tidewater goby
32 - tricolored blackbird
33 - western pond turtle
34 - western snowy plover
35 - white-rayed pentachaeta
36 - Zayante band-winged grasshopper

Monterey Bay Sanctuary Scenic Trail Network Corridor*
Reaches

CNDDB
Animals
Plants
Natural Communities

Critical Habitats
Central California Coast Steelhead FCH
Central California Coast Coho ESU FCH
Zayante Band Winged Grasshopper FCH
Tidewater Goby revised PCH
CA Red-legged Frog FCH
Marbeled Murrelet FCH
Western Snowy Plover FCH
Robust Spineflower FCH

**NOTE - Monterey Bay Sanctuary Scenic Trail Network corridor width is exaggerated in order to better view underlying features.*
PCH - Proposed Critical Habitat
FCH - Final Critical Habitat

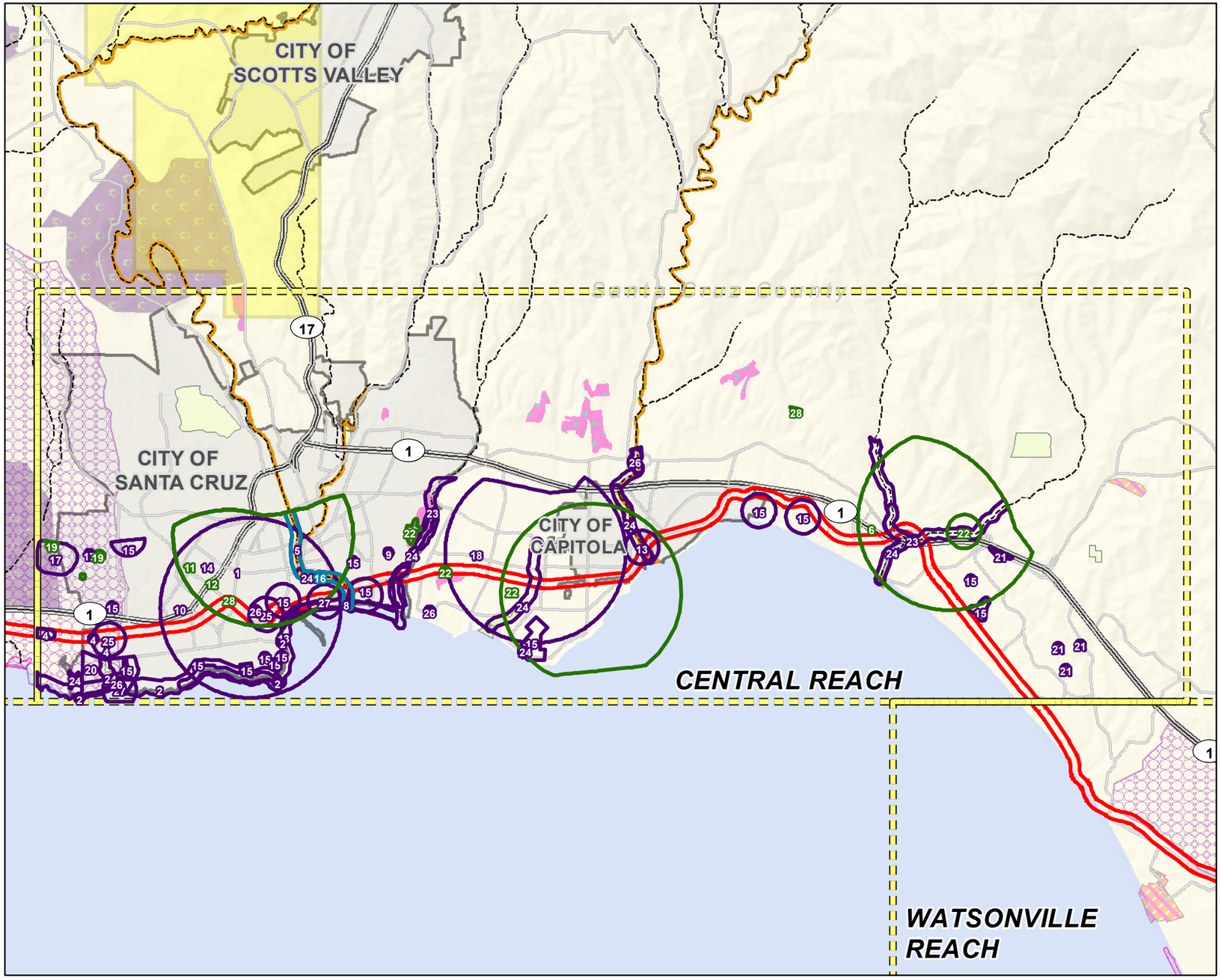
N

0 0.75 1.5 Miles

Sources: RRM Design Group, 2012, CalFish, 2012 California Natural Diversity Database, Dec, 2012, U.S. Fish and Wildlife Service, 2012. Additional suppressed records reported by the CNNDB known to occur or potentially occur within this search radius include: Monarch Butterfly and San Francisco Garter Snake

Sensitive Elements Reported by the California Natural Diversity Database Within 1 Mile and Federally Designated Critical Habitat: Northern Reach

Figure 4.4-1a



Legend

1 - bank swallow
2 - black swift
3 - California linderiella
4 - California red-legged frog
5 - coho salmon - central California coast ESU
6 - Dudley's lousewort
7 - foothill yellow-legged frog
8 - globose dune beetle
9 - great blue heron
10 - hoary bat
11 - Loma Prieta hoita
12 - maple-leaved checkerbloom
13 - mimic tryonia (California brackishwater snail)
14 - moestan blister beetle
15 - monarch butterfly
16 - North Central Coast Drainage Sacramento Sucker/Roach River
17 - Ohlone tiger beetle
18 - pallid bat
19 - San Francisco popcornflower
20 - sandy beach tiger beetle
21 - Santa Cruz long-toed salamander
22 - Santa Cruz tarplant
23 - steelhead - central California coast DPS
24 - tidewater goby
25 - tricolored blackbird
26 - western pond turtle
27 - western snowy plover
28 - woodland woollythreads

Monterey Bay Sancturary Scenic Trail Network Corridor*
Reaches

CNDDB
Animals
Plants
Natural Communities

Critical Habitats
Central California Coast Steelhead FCH
Central California Coast Coho ESU FCH
Zayante Band Winged Grasshopper FCH
Tidewater Goby revised PCH
CA Red-legged Frog FCH
Marbeled Murrelet FCH
Western Snowy Plover FCH
Monterey Spineflower FCH
Robust Spineflower FCH
Santa Cruz Tarplant FCH

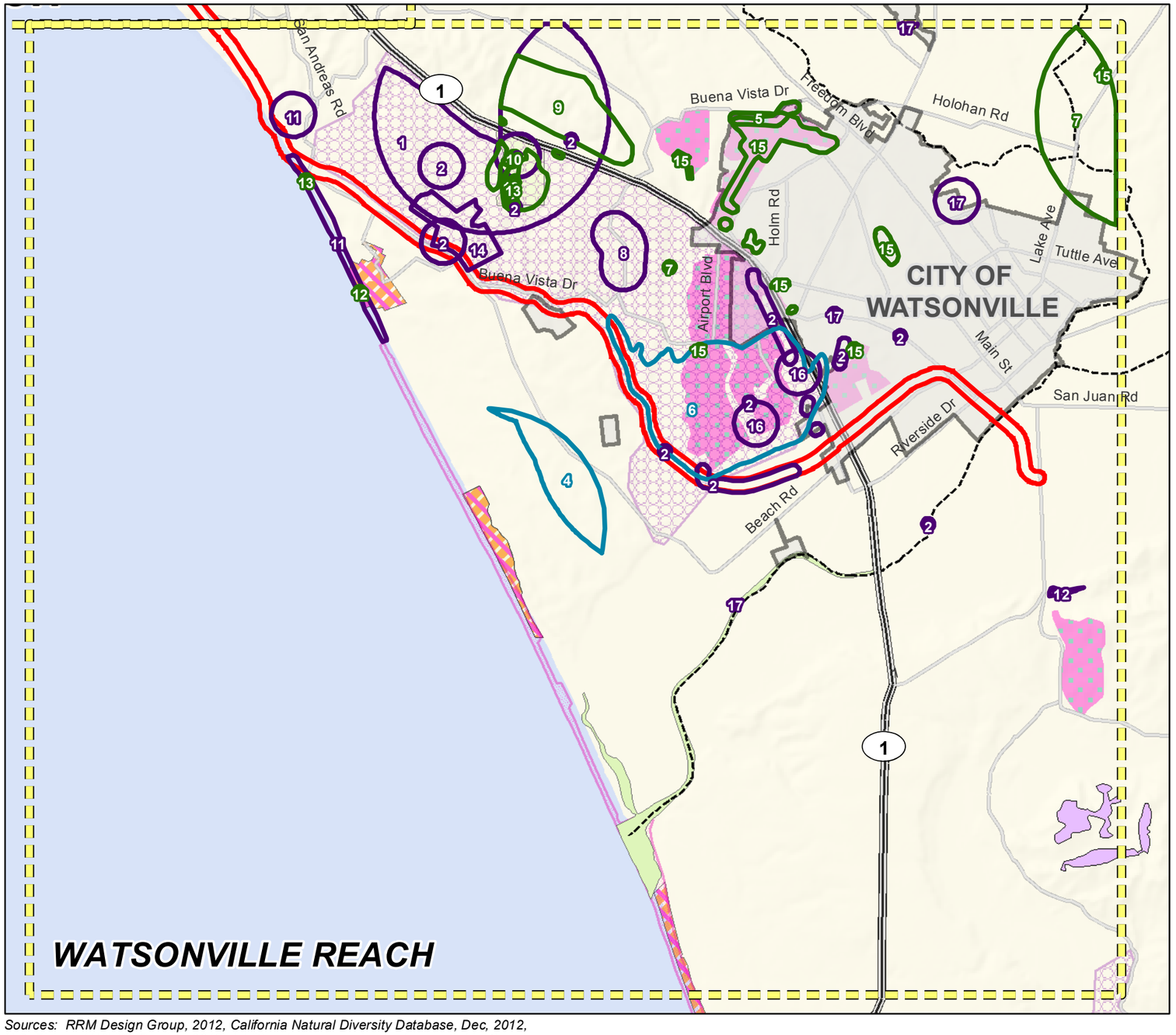
**NOTE - Monterey Bay Sanctuary Scenic Trail Network corridor width is exaggerated in order to better view underlying features.*
PCH - Proposed Critical Habitat
FCH - Final Critical Habitat

N
0 0.625 1.25 Miles

Sources: RRM Design Group, 2012, CalFish, 2012 California Natural Diversity Database, Dec, 2012, U.S. Fish and Wildlife Service, 2012.
Additional suppressed records reported by the CNNDB known to occur or potentially occur within this search radius include:
Monarch Butterfly, Zayante Band-Winged Grasshopper, White-Rayed Pentachaeta, and Black Legless Lizard

Sensitive Elements Reported by the California Natural Diversity Database Within 1 Mile and Federally Designated Critical Habitat: Central Reach

Figure 4.4-1b



Legend

1 - American badger
2 - California red-legged frog
3 - California tiger salamander
4 - Central Dune Scrub
5 - Choris' popcornflower
6 - Coastal and Valley Freshwater Marsh
7 - Congdon's tarplant
8 - foothill yellow-legged frog
9 - Hooker's manzanita
10 - Kellogg's horkelia
11 - monarch butterfly
12 - Monterey spineflower
13 - robust spineflower
14 - Santa Cruz long-toed salamander
15 - Santa Cruz tarplant
16 - tricolored blackbird
17 - western pond turtle

Monterey Bay Sancturary Scenic Trail Network Corridor*
Reaches

CNDDB
Animals
Plants
Natural Communities

Critical Habitats
South-central California Coast Steelhead FCH
Tidewater Goby revised PCH
CA Red-legged Frog FCH
Western Snowy Plover FCH
Monterey Spineflower FCH
Robust Spineflower FCH
Santa Cruz Tarplant FCH
Yadon's Piperia PCH

**NOTE - Monterey Bay Sanctuary Scenic Trail Network corridor width is exaggerated in order to better view underlying features.*
PCH - Proposed Critical Habitat
FCH - Final Critical Habitat

N
0 0.5 1 Miles

Sensitive Elements Reported by the California Natural Diversity Database Within 1 Mile and Federally Designated Critical Habitat: Watsonville Reach

Sources: RRM Design Group, 2012, California Natural Diversity Database, Dec, 2012, U.S. Fish and Wildlife Service, 2012. Additional suppressed records reported by the CNNDB known to occur or potentially occur within this search radius include: Monarch Butterfly and Black Legless Lizard

Figure 4.4-1c

Table 4.4-4
Sensitive Communities and Critical Habitat Within One Mile of the MBSST Network Right-of-Way*

Sensitive Community	Northern Reach	Central Reach	Watsonville Reach
Central Dune Scrub			X
Coastal and Valley Freshwater Marsh			X
North Central Coast Short-Run Coho Stream	X		
Coastal Brackish Marsh	X		
Monterey Pine Forest	X		
North Central Coast Drainage Sacramento Sucker/ Roach River		X	
Northern Coastal Salt Marsh	X		X
Critical Habitat			
California red-legged frog (*Rana draytonii*)	X	X	X
Marbeled murrelet (*Brachyramphus marmoratus*)	X	X	
Monterey spineflower (*Chorizanthe pungens* var. *pungens*)			X
robust spineflower (*Chorizanthe robusta* var. *robusta*)		X	X
Santa Cruz tarplant (*Holocarpha macradenia*)		X	X
Steelhead (*Oncorhynchus mykiss irideus*)	X	X	X
Tidewater goby (*Eucyclogobius newberryi*)	X	X	X
Western snowy plover (*Charadrius alexandrinus nivosus*)	X		
Yardon's piperia (*Piperia yadonii*)			X
Zayante band winged grasshopper (*Trimerotropis infantillis*)	X	X	

**Sources: California Natural Diversity Database; USFWS Information, Planning, and Conservation System.*

Special Status Plants and Animals. Twenty eight special status plant species and 43 special status animal species have been observed or have the potential to occur within one mile of the proposed MBSST Network (Figures 4.4-1a through c). Table 4.4-5 provides the status, habitat requirements, and the reach with potential for occurrence for each species. Comments regarding observations are also provided.

Table 4.4-5
Special Status Species Known or with Potential to Occur within One Mile of the MBSST Network

Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Plants				
Agrostis blasdalei Blasdale's bent grass	--/--/1B.2	Blooms May – July; occurs in coastal bluff scrub, coastal dunes and coastal prairie; sandy or gravelly soil close to rocks; often in nutrient poor soil with sparse vegetation. Elevations: 16-492 feet.	N, W	Most likely to occur in coastal scrub present in northern portion of northern reach. Possible in limited areas of Watsonville reach where coastal scrub habitat occurs close to the ocean.
Amsinkia lunaris bent-flowered fiddelneck	--/--/1B.2	Blooms March – June; occurs in coastal bluff scrub, cismontane woodland and valley and foothill grassland. Elevation: 9-1640 feet.	N, W	Most likely to occur in the northern reach. Possible in limited areas of Watsonville reach where suitable habitat is present.
Arctostaphylos ohloneana Ohlone manzanita	--/--/1B.1	Blooms February – March; occurs in siliceous shale within closed-cone conifer forest and coastal scrub; on Monterey Shale. Elevations: 1476-1738 feet.	N	No manzanitas were observed in accessible areas. Low potential to occur in the northern reach.
Arenaria paludicola marsh microseris	FE/SE/1B.1	Blooms May – August; occurs on sandy substrates within openings in freshwater or brackish marshes and swamps; growing up through dense mats of *Typha, Juncus, Scirpus*, etc. Elevations: 9-557 feet.	N, W	Wetland habitats present in northern reach and in Watsonville reach (primarily associated with the sloughs).
Chorizanthe pungens var. *pungens* Monterey spineflower	FT/--/1B.2	Blooms April – August; occurs in maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland; sandy soils in coastal dunes or more inland within chaparral or other habitats. Elevations: 9-1476 feet.	N, W	Potential to occur within the northern reach and Watsonville reach.
Chorizanthe robusta var. *robusta* robust spineflower	FE/--/1B.1	Blooms April – September; occurs on sandy or gravelly substrates within maritime chaparral, openings within cismontane woodland, coastal dunes, and coastal scrub; sandy terraces and bluffs or in loose sand. Elevations: 9-984 meters.	N, W	Known to occur in the Laguna Creek watershed north of Wilder Ranch State Park (ENTRIX, 2005). Potential to occur also in Watsonville reach where the project occurs in suitable habitat close to the ocean.
Collinsia multicolor San Francisco collinsia	--/--/1B.2	Blooms March – May; occurs in closed-cone conifer forest and coastal scrub, occasionally found on serpentine substrates; on decomposed shale (mudstone) mixed with humus. Elevations: 98-820 feet.	N	Potential to occur in the northern reach.

Table 4.4-5
Special Status Species Known or with Potential to Occur within One Mile of the MBSST Network

Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Corethrogyne leucophylla branching beach aster	--/--/3.2	Blooms May – December; occurs in closed-cone conifer forest and coastal dunes. Elevations: 9-196 feet.	N	Potential to occur in the northern reach where the project occurs close to the ocean.
Erysimum ammophilum coast wall flower	--/--/1B.2	Blooms February – June; occurs on sandy substrates and in openings within maritime chaparral, coastal dunes, and coastal scrub. Elevations: 0-196 feet.	N	Usually closer to ocean and, therefore, potential to occur in northern reach.
Gilia tenuiflora ssp. *arenaria* sand gilia	FE/ST/1B.2	Blooms April – June; occurs on sandy substrates and in openings within maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub; bare, wind-sheltered areas often near dune summit or in the hind dunes. Elevations: 0-148 feet.	N	Potential to occur in northern reach, particularly in the northern extent where the project is closer to the ocean.
Hoita strobilina Loma Prieta psoralea	--/--/1B.1	Blooms May – October; usually occurs in serpentine, mesic soils within chaparral, cismontane woodland and riparian woodland. Elevations: 98-2821 feet.	C	Found at Nisene Marks State Park, but project does not occur near this park, and habitat within project area likely not suitable.
Holocarpha macradenia Santa Cruz tarplant	FT/SE/1B.1	Blooms June – October; often occurs on clay or sandy substrates within coastal prairie, coastal scrub, and valley and foothill grassland; often with nonnatives. Elevations: 32-722 feet.	N, C, W	Occurs in Arana Gulch near the yacht harbor and in other drainages in central reach (ENTRIX, 2005) and associated with other drainages. Documented in Watsonville reach primarily around the sloughs and other drainages. Possible in grazed areas in the northern reach.
Horkelia cuneata var. *sericea* Kellogg's horkelia	--/--/1B.1	Blooms April – September; occurs in closed-cone conifer forest, maritime chaparral, and coastal scrub on sandy or gravelly soils, often in open areas; old dunes, coastal dunes. Elevations: 33-656 feet	N, W	Potential to occur in northern reach where suitable habitat is present and less disturbed. Possible in Watsonville reach in limited areas where suitable habitat is present.
Horkelia marinensis Point Reyes horkelia	--/--/1B.2	Blooms May – September; occurs in sandy soils within coastal dunes, coastal prairie, and coastal scrub; sandy flats and dunes near coast. Elevations: 16-1148 feet.	N	Most likely in northern portion of northern reach where project occurs close to coast.

Table 4.4-5
Special Status Species Known or with Potential to Occur within One Mile of the MBSST Network

Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Microseris paludosa marsh scorzonella	--/--/1B.2	Blooms April – July; occurs in closed-cone conifer forest, cismontane woodland, coastal scrub, and valley and foothill grassland. Elevations: 16-984 feet.	N, W	Potential primarily in northern reach; possible in Watsonville reach where suitable habitat is relatively intact.
Mielichhoferia elongata elongate copper moss	--/--/2.2	N/A (moss): occurs within cismontane woodland on very acidic, metamorphic rock or substrate; usually in higher portions of fens. Elevations: 1640-4265 feet.	N, C, W	Potential to occur in well-vegetated drainages that often carry slow-moving water.
Monolopia gracilens woodland wollythreads	--/--/1B.2	Blooms February – July; occurs in broad-leafed upland forest, north coast conifer forest, and chaparral, and within cismontane woodland, and valley and foothill grassland; grassy sites, in openings; sandy to rocky soils; often seen on serpentine after burns, but affinity maybe weak. Elevations: 328-3937 feet.	C	Several historic records (1950s or earlier) in the central reach which are likely no longer present.
Pedicularis dudleyi Dudley's lousewort	--/SR/1B.2	Blooms April – June; occurs in chaparral (maritime), cismontane woodland, north coast conifer forest, and valley and foothill grassland; deep shady woods of older coast redwood forests. Elevations: 196-2952 feet.	C	One historic CNNDB record from 1884 in central reach. Likely extirpated.
Pentachaeta bellidiflora white-rayed pentachaeta	FE/SE/1B.1	Blooms March – May; occurs in cismontane woodland and valley and foothill grassland often in serpentine soils; open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock. Elevations: 114-2034 feet.	N	Two historic records in the northern reach, in the Wilder Ranch State Park area on beach cliffs.
Pinus radiata Monterey pine	--/--/1B.1	N/A (perennial evergreen tree); occurs on sandy substrates within coastal bluff scrub, closed-cone conifer forest, and maritime chaparral. Elevations: 32-1673 feet.	N, C, W	Naturally occurring stands at the northern extent of the northern reach. Planted specimens may be present elsewhere but only naturally occurring stands are considered sensitive.
Piperia yadonii Yadon’s piperia	FE/--/1B.1	Blooms February – August; closed-cone conifer forest, chaparral, coastal bluff scrub; on sandstone and sandy soil, but poorly drained and often dry. Elevations: 32 to 1360 feet.	W	No CNDDB records in the search radius, but critical habitat in the Watsonville reach near the southern end of the project. Not expected to occur north of the Watsonville reach.

Table 4.4-5
Special Status Species Known or with Potential to Occur within One Mile of the MBSST Network

Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Plagiobothrys chorisianus var. *chorisianus* Choris' popcorn-flower	--/--/1B.2	Blooms March – June; occurs in chaparral, coastal prairie and coastal scrub; mesic sites. Elevations: 49-524 feet.	N, C, W	Documented in northern and Watsonville reach search radius. Not documented in central reach search radius, but could co-occur with San Francisco popcorn flower.
Plagiobothrys diffusus San Francisco popcorn flower	--/SE/1B.1	Blooms March – June; occurs in coastal prairie and valley and foothill grassland; historically from grassy slopes with marine influence. Elevations: 196-1181 feet.	N, C, W	Documented occurrences in northern and central reaches search radius. Not documented in Watsonville reach, but could co-occur with Chori's popcorn flower.
Rosa pinetorum pine rose	--/--/1B.2	Blooms May – July; occurs in closed-cone conifer forest. Elevations: 6-984 feet.	N, W	Documented in the northern reach search radius. Possible suitable habitat in the Watsonville reach as well.
Sidalcea malachroides maple-leaved checkerbloom	--/--/4.2	Blooms March – August; occurs in broad-leafed upland forest, coastal prairie, coastal scrub, north coast conifer forest, and riparian woodland; woodlands and clearings near coast; often in disturbed areas. Elevations: 0-2395 feet.	N, C, W	Riparian woodlands in several drainages in each reach.
Silene verecunda ssp. *verecunda* San Francisco campion	--/--/1B.2	Blooms March – August; occurs in coastal bluff scrub, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland; often on mudstone or shale; one site on serpentine. Elevations: 98-2116 feet.	N, W	Most likely to occur in the northern extent of the northern reach. Possible limited areas of suitable habitat in the Watsonville reach.
Stebbinsoseris decipiens Santa Cruz microseris	--/--/1B.2	Blooms April – May; occurs in broadleaf upland forest, closed-cone conifer forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland; open areas in loose or disturbed soil; usually derived from sandstone, shale or serpentine; on seaward slopes. Elevations: 32-1640 feet.	N, W	Most likely to occur in the northern extent of the northern reach. May be suitable habitat in the Watsonville reach.
Trifolium buckwestiorum Santa Cruz clover	--/--/1B.1	Blooms April – October; occurs on gravelly substrates and margins within broadleaf upland forest, cismontane woodland, and coastal prairie; mesic, alkaline sites. Elevations: 344-2001 feet.	None	Most likely to occur in the northern extent of the northern reach. May be suitable habitat in the Watsonville reach.
Birds				

Table 4.4-5
Special Status Species Known or with Potential to Occur within One Mile of the MBSST Network

Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Agelaius tricolor tricolored blackbird	--/SSC/--	Requires open water, protected nesting substrate, and foraging area with insect prey within a few miles of the colony.	N, W	Breeding and foraging habitat is present in the vicinity of the right-of-way in sloughs, marshes at creek mouths and lagoons. The CNDDB has a record indicating breeding habitat in the marsh at the mouth of Scott Creek.
Aquila chrysaetos golden eagle	--/WL, FP/--	Uncommon resident of mountainous and valley-foothill areas; nests on cliff ledges and overhangs or in large trees; forages in open terrain where small rodent prey is seen while soaring high above ground.	N	May forage over the project area, but not expected to breed.
Ardea herodias Great blue heron	--/--/--	Colonial nester in tall trees, cliffsides, and sequestered spots in marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tidal flats, rivers and streams, wet meadows.	C, W	Rookery documented in a tributary to the Arana gulch close to the proposed MBSST Network in the central reach. Suitable rookery sites in the sloughs in the Watsonville reach.
Athene cunicularia burrowing owl	--/SSC/--	Burrow sites in open dry annual or perennial grasslands, deserts and scrublands characterized by low growing vegetation. Also inhabits anthropogenic habitats such as campuses, golf courses, cemeteries, airports, and grazed pastures.	N, W	Suitable habitat, especially grazed grasslands and open scrublands in northern reach. Few open habitats in central reach and most of Watsonville reach is unsuitable due to agriculture. Can live along railroad corridors if burrows are present. Have been observed at Wilder Ranch (ENTRIX, 2005)
Brachyramphus marmoratus marbled murrelet	FT/SE/--	Occurs in marine subtidal and pelagic habitats throughout northern California south to Santa Barbara County. Breeding populations are known from Del Norte and Humboldt counties and San Mateo and Santa Cruz counties. Requires coastal coniferous forests with dense stands of redwoods and Douglas firs. Forages close to the shore in shallow waters and nearby inland habitats.	None	This species breeds in old growth coniferous forests, and spends the non-breeding season off-shore. Not expected to occur within any of the reaches.
Charadrius alexandrinus nivosus western snowy plover	FT/SSC/--	Sandy beaches, salt pond levees or shores of large alkali lakes. Sandy, gravelly or friable soils required for nesting.	N, C	Documented occurrences in the northern and central reaches; however, CNDDB records indicate that these areas have become unsuitable due to anthropogenic disturbance.

Table 4.4-5
Special Status Species Known or with Potential to Occur within One Mile of the MBSST Network

Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Circus cyaneus northern harrier	--/SSC/--	Occurs in open areas, particularly in grasslands, wet meadows and marshes; requires larges areas over which to forage.	N, W	Suitable habitat is present in the northern and Watsonville reaches. central reach unsuitable due to development. Observed in the northern reach during the site visit.
Cypseloides niger black swift	--/SSC/--	Summer resident throughout most of California. Breeds only in a few isolated regions including Siskiyou, Shasta, and Trinity counties, intermittently along the east side of the Sierras, coastal sites within San Mateo and Santa Cruz counties, and southeastern San Bernardino and Riverside counties and eastern Los Angeles County.; Nests behind or beside waterfalls, in sea caves, and on perpendicular cliffs near water.	N	Adults have been observed in Wilder Ranch State Park, though nesting has not been confirmed (ENTRIX, 2005). Perpendicular cliffs near water are present within the vicinity of the northern reach. The CNDDB also has records for this species near Yellow Bank Creek Marsh, near Davenport, Younger lagoon, and in the vicinities of the mouths of Major and Laguna Creeks.
Elanus leucurus white-tailed kite	--/FP/--	Occurs throughout most of California's coastal and valley regions excluding the Cascade, Sierra Nevada, Mojave Desert, and Peninsular Ranges. Grasslands, dry farmed agricultural fields, savannahs and relatively open oak woodlands, and other relatively open lowland scrublands.	N, C, W	Habitat is present in all three reaches. Numerous observations of foraging kites in the northern reach. Suitable nesting habitat in many locations.
Empidonax trallii extimus southwestern willow flycatcher	FE/SE/--	Requires dense riparian habitats associated with rivers, swamps, and lakes. Wintering habitat is not well known, but is considered to be brushy savannah edges, second growth, shrubby clearings and pastures, and woodlands near water.	None	USFWS includes Santa Cruz County in this species distribution; however, this species is not known to breed along the coast north of Santa Barbara County.
Falco peregrinus anatum American peregrine falcon	D/D, FP/--	Near wetlands, lakes, rivers, or other waters; on cliffs, banks, dunes, mounds, also human-made structures. Nest consists of scrape or depression or ledge in an open site.	N	Known to breed in the region and has been documented in Majors Creek watershed (ENTRIX, 2005).
Geothlypis trichas sinuosa saltmarsh common yellowthroat	--/SSC/--	Resident of the San Francisco bay region, in fresh and salt water marshes. Requires thick, continuous cover down to the water surface for foraging. Requires tall grasses, tule patches and willows for nesting.	N	The range of this subspecies extends south to the northern most edge of coastal Santa Cruz County. Suitable habitat present in the northern extent of the northern reach.

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Special Status Species Known or with Potential to Occur within One Mile of the MBSST Network

Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Gymnogyps californianus California condor	FE/SE,FP/--	Forages in open foothill grasslands and oak savannahs. Roosts in large trees, dead snags, and on large cliffs. Breeds in remote mountainous areas of pine forest or chaparral with cliffs and large rock outcrops and caves.	None	Marginal foraging habitat in the northern reach, but no suitable nesting habitat.
Laterallus jamaicensis coturniculus California black rail	--/ST,FP/--	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about one inch that does not fluctuate during the year and dense vegetation for nesting habitat.	N, W	Suitable habitat is present within the vicinity of the northern and Watsonville reaches. The CNDDB also has a record for California black rail located at Waddell Creek lagoon in the northern reach.
Riparia riparia bank swallow	--/ST/--	Colonial nester. Nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	N, C	Documented in the central reach. Several suitable vertical banks/cliffs in the northern reach as well, particularly associated with drainages.
Sterna antillarum browni California Least tern	FE/SE, FP/--	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates including sand beaches, alkali flats, landfills, or paved areas.	N, C	Suitable nesting habitat in same areas where snowy plover can nest; historically nested in the mouth of the Pajaro River; current nesting status in the region unclear.
Vireo bellii pusillus least Bell's vireo	FE/SE/--	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms below 2000 feet. Nests are built along margins of bushes or on twigs projecting into pathways.	None	USFWS includes Santa Cruz County in this species distribution; however, this species is not known to breed north of Santa Barbara County.
Amphibians				
Ambystoma californiense California tiger salamander – Central California DPS	FT/ST/--	Vernal and seasonal pools and associated grasslands, oak savanna, woodland, and coastal scrub. Needs underground refuges (i.e., small mammal burrows, pipes) in upland areas such as grassland and scrub habitats.	W	Grassland habitat occurs in the vicinity of the right-of-way. One CNDDB record for California tiger salamander occurs within the Santa Cruz long-toed salamander ecological reserve at Ellicott Pond.
Ambystoma macrodactylum croceum Santa Cruz long-toed salamander	FE/SE,FP/--	Wet meadows near sea level in a few restricted locales in Santa Cruz and Monterey counties. Aquatic larvae prefer shallow water, using clumps of vegetation or debris for cover. Adults utilize mammal burrows.	C, W	Suitable habitat is present in the vicinity of the right-of-way. One CNDDB record indicates a large population being supported by Ellicott Pond in the Santa Cruz long-toed salamander ecological reserve.

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Special Status Species Known or with Potential to Occur within One Mile of the MBSST Network

Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Rana boylii foothill yellow-legged frog	--/ST/--	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	N, C, W	Documented in Watsonville reach search area. Would be associated with drainages and other wet areas.
Rana draytonii California red-legged frog	FT/SSC/--	Semi-permanent or permanent water at least 2 feet deep, bordered by emergent or riparian vegetation, and upland grassland, forest or scrub habitats for estivation and dispersal.	N, C, W	Known to occur in the project region; suitable habitat is present associated with drainages within all reaches; observed in the northern reach within Wilder Ranch State Park in a wetted area along the existing railroad tracks.
Reptiles				
Emys marmorata western pond turtle	--/SSC/--	Rivers, ponds, freshwater marshes; nests in upland areas (sandy banks or grassy open fields) up to 1,640 feet from water.	N, C, W	Suitable habitat in all three reaches in drainages, sloughs and lagoons.
Anniella pulchra nigra black legless lizard	--/SSC/--	Occurs in dune scrub, coastal scrub, chaparral, pine-oak woodland, oak woodland, and riparian woodland. Requires loose soil for burrowing, moisture, warmth, and plant cover. Burrows in washes, dune sand, loose soil near bases of slopes, and near permanent or temporary streams.	N, C, W	Suitable habitat is present in the vicinity of all three reaches. The CNDDB has records of this species within 1 mile of right-of-way.
Phrynosoma blainvillii coast horned lizard	--/SSC/--	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial and abundant supply of ants and other insects.	W	CDFW range map indicates potential for occurrence in the central and Watsonville reaches; range map shows this species further inland and away from the project in the northern reach. Not expected to occur in the central reach due to development.
Thamnophis sirtalis tetrataenia San Francisco garter snake	FE/SE,FP/--	Found in the vicinity of freshwater marshes, ponds, and slow moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Also utilizes upland areas near water.	N	Suitable habitat is present in the northern portion of the northern reach associated with the drainages and marshes as well as upland areas in the vicinity of the right-of-way.

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Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Fish				
Eucyclogobius newberryi tidewater goby	FE/SSC/--	Brackish water habitats along the California coast from San Diego county to Del Norte county.	N, C, W	Suitable habitat is present within the vicinity of the right-of-way. The CNDDB has records for tidewater goby at the mouths of these drainages: Scott Creek, Waddell Creek, Laguna Creek, Baldwin Creek, Moore Creek, Woods Lagoon, Rodeo Gulch, Aptos Creek, Pajaro River, Wilder Creek Lagoon, and Soquel Creek, Lombardi, Younger Lagoon and the San Lorenzo River.
Oncorhynchus kisutch coho salmon - central California coast ESU	FE/SE/--	Comprised of populations between Punta Gorda and south to the San Lorenzo River (federal listing). Populations south of Punta Gorda comprise the state listing. Requires beds of loose, silt free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	N, C	Suitable habitat is present in the vicinity of the right-of-way in the northern and central reach. Drainages accessible to coho salmon include Waddell Creek, Scott Creek, San Vicente Creek, the San Lorenzo River, Soquel Creek, and Aptos Creek (Santa Cruz County 2004).
Oncorhynchus mykiss irideus steelhead - central California coast DPS	FT/--/--	Fresh water, fast flowing, highly oxygenated, clear, cool stream where riffles tend to predominate pools; small streams with high elevation headwaters close to the ocean that have no impassible barriers; spawning: high elevation headwaters.	N, C	Suitable habitat is present in the vicinity of the right-of-way in the northern and central reach. Many of the drainages that cross the right-of way are accessible to steelhead (Santa Cruz County, 2004).
Oncorhynchus mykiss irideus steelhead – south-central California coast DPS	FT/--/--	Fresh water, fast flowing, highly oxygenated, clear, cool stream where riffles tend to predominate pools; small streams with high elevation headwaters close to the ocean that have no impassible barriers; spawning: high elevation headwaters.	W	Suitable habitat is present in the Pajaro River, which has connectivity to the ocean.
Mammals				
Antrozous pallidus pallid bat	--/SSC/--	Deserts, grasslands, shrublands, woodlands, and forest. Most common in open, dry, habitats with rocky area for roosting. Roost must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	N, C, W	Suitable foraging habitat is present for this species. The larger railroad bridges may also provide suitable roosting sites.

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Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Dipodomys venustus venustus Santa Cruz kangaroo rat	--/--/--	Silverleaf manzanita mixed chaparral in the Zayante Sand Hills ecosystem of the Santa Cruz Mountains. Needs soft, well-drained soils.	N	Documented in the Wilder Ranch State Park area east of Highway 1.
Lasiurus cinereus hoary bat	--/--/--	Roosts in dense foliage of large trees. Requires water. Prefers open habitats or habitat mosaics with access to trees for cover and open areas of habitat edge for feeding.	N, C, W	Suitable foraging habitat and roosting sites are present for this species in the vicinity of the right-of-way.
Neotoma macrotis luciana Monterey dusky-footed woodrat	--/SSC/--	Common to abundant in forest habitats of moderate canopy and moderate to dense understory; can be abundant in chaparral habitats.	N, C, W	Suitable habitat is present in all three reaches especially in forested and riparian areas. This species was observed during the site visit within valley foothill riparian habitat within Wilder Ranch State Park.
Taxidea taxus American badger	--/SSC/--	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Needs sufficient food, friable soils, and open uncultivated ground. Cannot live in frequently plowed fields. Preys on burrowing rodents.	N, C	The annual grasslands in the northern reach contains suitable habitat for this species. Documented in central reach.
Invertebrates				
Branchinecta lynchi vernal pool fairy shrimp	FT/--/--	Endemic to the grasslands of the Central Valley, central Coast Mountains, and South Coast Mountains. Inhabits, small clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	N	The annual grasslands in the northern reach contain suitable habitat for this species.
Cicindela hirticollis gravida sandy beach tiger beetle	--/--/--	Inhabits area adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Occurs in areas with clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	N, C	Suitable habitat occurs in the form of sandy beaches. The CNDDB has records for this species at the mouth of Waddell Creek and Natural Bridges State Beach.
Cincendela ohlone Ohlone tiger beetle	FE/--/--	Remnant native grasslands with California oat grass and purple needle grass in Santa Cruz County. Found on substrates including poorly-drained or sandy clay soil over bedrock of Santa Cruz mudstone. Typically occurs on level or nearly level slopes along trails adjacent to grassland habitat.	N	Have been observed at Wilder Ranch State Park and may occur in Majors Creek (ENTRIX, 2005).

Table 4.4-5
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Scientific Name Common Name	Status # Fed/State/ CRPR	Habitat Requirements	Reach* with Potential for Occurrence	Comments
Coelus globosus globose dune beetle	--/--/--	Inhabitant of Coastal sand dune habitat specifically fore-dunes and sand hammocks. It burrows beneath the sand surface and is most common beneath dune vegetation.	None	This species is known to occur within the vicinity of the right-of-way; however, suitable habitat was not observed.
Danaus plexippus monarch butterfly	--/--/--	Roosts in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby. Species is known to occur in several locations in Santa Cruz County.	N, C, W	Suitable habitat and roosting sites are present in the vicinity of the right-of-way. The CNDDB indicates roosting sites in the vicinity of the right-of-way.
Lytta moesta moestan blister beetle	--/--/--	Central California. No habitat information available. Associated with flowers but specifics are unknown.	C	Documented in the central reach, but there is no information in the CNDDB about this location. Probably wide-spread.
Linderiella occidentalis California linderiella	--/--/--	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and TDS.	N, C	Documented in central reach. May be suitable habitat in grassland areas in the northern reach.
Tryonia imitator mimic tryonia (California brackishwater snail)	--/--/--	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types. Able to withstand a wide range of salinities.	N, C	Documented in central reach. Could occur where drainages meet the ocean.
Trimerotropis infantilis Zayante band-winged grasshopper	FE/--/--	Isolated sandstone deposits in the Santa Cruz Mountains (Zayante sandhills ecosystem). Occurs mostly on sand parkland habitat, but also in areas with well-developed ground cover and in sparse chaparral with grass.	None	Not expected to occur. No Zayante sandhills habitat occurs within the MBSST network.

**N – northern reach, C – central reach, W – Watsonville reach.*
#Status Definitions:
FE = Federally Endangered FT = Federally Threatened D - Delisted
SE = State Endangered ST = State Threatened SR = State Rare
FP = Fully Protected SSC = Species of Special Concern
CRPR (CNPS California Rare Plant Rank):
1A=Presumed Extinct in California
1B=Rare, Threatened, or Endangered in California and elsewhere
2=Rare, Threatened, or Endangered in California, but more common elsewhere
3=Need more information (a Review List)
4=Plants of Limited Distribution (a Watch List)
CRPR Threat Code Extension:
.1=Seriously endangered in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)
.2=Fairly endangered in California (20-80 percent occurrences threatened)
.3=Not very endangered in California (<20 percent of occurrences threatened)

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.

The CDFW BIOS website and the *California Essential Habitat Connectivity Project: A strategy for conserving a connected California* (Spencer et al., 2010) were reviewed for wildlife movement information. The CDFW BIOS website and the CNDDB were review for documented nursery sites

The proposed MBSST Network project generally follows the Santa Cruz Branch Rail Line railroad right-of-way corridor, an approximately 32-mile corridor that passes through a wide variety of natural, urban, and agricultural habitats. Larger expanses of undeveloped natural habitat are present in the northern reach, while urban and agricultural habitats are more abundant in the central reach and Watsonville reach. As such, wildlife movement within the proposed MBSST Network is more likely to occur in the northern reach. In addition, several riparian corridors which may also facilitate wildlife movement cross the proposed MBSST Network. However, no major wildlife movement corridors are identified along the proposed MBSST Network, and wildlife movement is likely to be negatively influenced by Highway 1, which also occurs generally parallel to the proposed MBSST Network throughout its length.

d. Regulatory Framework.

United States Fish and Wildlife Service. 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). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 *et seq.)*. The USFWS generally implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in "take" of any federally listed threatened or endangered species are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The

permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

National Marine Fisheries Service. The NMFS is a component of the National Oceanic and Atmospheric Administration (NOAA) and has jurisdiction over projects in which federally-listed marine or anadromous fish may be affected, including coho salmon, steelhead, and tidewater goby.

United States Army Corps of Engineers. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) 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. The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetlands. 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 into wetlands or other "waters of the United States" that are hydrologically connected and/or demonstrate a significant nexus to jurisdictional waters would require a 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 through compensatory mitigation involving creation or enhancement of similar habitats.

California Department of Fish and Wildlife (formerly the California Department of Fish and Game). The CDFW derives its authority from the Fish and Game Code of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 *et. seq.)* prohibits take of state listed threatened, endangered or fully protected species. Take under CESA ~~is restricted to direct mortality of a listed species and~~ is defined according to Fish and Game Code Section 86 as to hunt, pursue, catch, capture, or kill, or to attempt any of these activities, but it does not prohibit indirect harm by way of habitat modification. The CDFW also prohibits take for species designated as Fully Protected under the Code.

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 (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. Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be 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 as noted above. 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. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code 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).

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

Regional Water Quality Control Board. The State Water Resources Control Board (SWRCB) and each of nine local Regional Water Quality Control Boards (RWQCB) have 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 enforces actions under 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 Commission. 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 and preserving biological resources, such as wetlands, riparian habitat, and marine habitat.

County of Santa Cruz**.** The Conservation and Open Space Element of the Santa Cruz County General Plan includes objectives and policies to protect biological resources which includes biological diversity, riparian corridors and wetlands, and aquatic and marine habitats. The objectives and policies applicable to the MBSST Network project are discussed below.

Objective 5.1 *To maintain the biological diversity of the county through an integrated program of open space acquisition and protection, identification and protection of plant habitat and wildlife corridors and habitats, low-intensity and resource compatible land uses in sensitive habitats and mitigations on projects and resource extraction to reduce impacts on plant and animal life.*

Policy 5.1.2 *Definition of Sensitive Habitat. An area is defined as a sensitive habitat if it meets one or more of the following criteria:*

a) Areas of special biological significance as identified by the State Water Resources Control Board.

b) Areas which provide habitat for locally unique biotic species/communities. Including coastal scrub, maritime chaparral, native rhododendrons and associated Elkgrass, mapped grasslands in the coastal zone and sand parkland; and Special Forests including San Andreas Live Oak woodlands, Valley Oak, Santa Cruz Cypress, indigenous Ponderosa Pine, indigenous Monterey Pine, and ancient forests.

c) Areas adjacent to essential habitat of rare, endangered or threatened species as defined in (e) and (f) below.

d) Areas which provide habitat for Species of Special Concern as listed by the California Department of Fish and Game in the Special Animals list, Natural Diversity Database.

e) Areas which provide for rare or endangered species which meet the definition of Section 15380 if the California Environmental Quality Act guidelines.

f) Areas which provide habitat for rare, endangered or threatened species as designated by the State Fish and Game Commission, United States Fish and Wildlife Service or California Native Plant Society.

g) Nearshore reefs, rocky intertidal areas, seacaves, islets, offshore rocks, kelp beds, marine mammal hauling grounds, sandy beaches, shorebird roosting, resting and nesting area, cliff nesting areas and marine, wildlife or educational/research reserves.

h) Dune plant habitats

i) All lakes, wetlands, wetlands, estuaries, lagoons, streams and rivers.

j) Riparian corridors.

(Appendix B of the General Plan contains a list of the specific habitats and/or species)

Policy 5.1.4 *Sensitive Habitat Protection Ordinance. Implement the protection of sensitive habitats by maintaining the existing Sensitive Habitats Protection ordinance. The ordinance identifies sensitive habitats, determines the uses which are allowed in and adjacent to sensitive habitats, and specifies required performance standards for land in or adjacent to these areas. Any amendments to this ordinance shall require a finding that sensitive habitats shall be afforded equal or greater protection by the amended language.*

Policy 5.1.6 *Development within Sensitive Habitats. Sensitive habitats shall be protected against any significant disruption of habitat values; and any proposed development within or adjacent to these areas must maintain or enhance the functional capacity of the habitat. Reduce in scale, redesign, or, if no other alternative exists, deny any project which cannot sufficiently mitigate significant adverse impacts on sensitive habitats unless approval of a project is legally necessary to allow a reasonable us of the land.*

Policy 5.1.7 *Site Design and Use Regulations. Protect sensitive habitats against any significant disruption or degradation of habitat values in accordance with the Sensitive Habitat Protection ordinance. Utilize the following site design and use*

regulations on parcels containing these resources, excluding existing agricultural operations:

a) Structures shall be placed as far from the habitat as feasible.
b) Delineate development envelopes to specify location of development in minor land divisions and subdivisions.
c) Require easements, deed restrictions, or equivalent measures to protect that portion of a sensitive habitat on a project parcel which is undisturbed by a proposed development activity or to protect sensitive habitats on adjacent parcels.
d) Prohibit domestic animals where they threaten sensitive habitats.
e) Limit removal of native vegetation to the minimum amount necessary for structures, landscaping, driveways, septic systems and gardens;
f) Prohibit landscaping with invasive or exotic species and encourage the use of characteristic native species.

Policy 5.1.8 *Chemicals within Sensitive Habitats. Prohibit the use of insecticides, herbicides, or any toxic chemical substance in sensitive habitats, except when an emergency has been declared, when the habitat itself is threatened, when substantial risk to public health and safety exists, including maintenance for flood control by Public Works, or when such use is authorized pursuant to a permit issued by the Agricultural Commissioner.*

Policy 5.1.9 *Biotic Assessments. Within the following areas, require a biotic assessment as part of normal project review to determine whether a full biotic report should be prepared by a qualified biologist:*

a) Areas of biotic concern, mapped;
b) Sensitive habitats, mapped & unmapped.

Policy 5.1.12 *Habitat Restoration with Development Approval. Require as a condition of development approval, restoration of any area of the subject property which is an identified degraded sensitive habitat, with the magnitude of restoration to be commensurate with the scope of the project. Such conditions may include erosion control measures, removal of non-native or invasive species, planting with characteristic native species, diversion of polluting run-off, water impoundment, and other appropriate means. The object of habitat restoration activities shall be to enhance the functional capacity and biological productivity of the habitat(s) and whenever feasible, to restore them to a condition which can be sustained by natural occurrences, such as tidal flushing of lagoons.*

Policy 5.1.13 *Habitats Damaged From Code Violations. In all cases where a sensitive habitat has been damaged as a result of a code violation, require that restoration of damaged areas be undertaken in compliance with all necessary permits and that the size of the restored area be in compliance with Department of Fish and Game requirements. Such restoration shall include monitoring over time to ensure the success of the restoration effort.*

Objective 5.2 *To preserve, protect and restore all riparian corridors and wetlands for the protection of wildlife and aquatic habitat, water quality, erosion control, open space, aesthetics and recreational values and the conveyance and storage of flood waters.*

Policy 5.2.1 *Designation of Riparian Corridors and Wetlands. Designate and define the following areas as Riparian Corridors:*

a) 50' from the top of a distinct channel or physical evidence of high water mark of a perennial stream;
b) 30' from the top of a distinct channel or physical evidence of highwater mark of an intermittent stream as designated on the General Plan maps and through field inspection of undesignated intermittent and ephemeral streams;
c) 100' of the high water mark of a lake, wetland, estuary, lagoon, or natural body of standing water;
d) The landward limit of a riparian woodland plant community;
e) Wooded arroyos within urban areas.

Designate and define the following areas as Wetlands:

Transitional areas between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water periodically or permanently. Examples of wetlands are saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.

The US Army Corps of Engineers, and other federal agencies utilize a "unified methodology" which defines wetlands as "those areas meeting certain criteria for hydrology, vegetation, and soils."

Policy 5.2.2 *Riparian Corridor and Wetland Protection Ordinance. Implement the protection of riparian corridors and wetlands through the Riparian Corridor and Wetland Protection ordinance to ensure no net loss of riparian corridors and riparian wetlands, the ordinance identifies and defines riparian corridors and wetlands, determines the uses which are allowed in and adjacent to these habitats, and specifies required buffer setbacks and performance standards for land in and adjacent to these areas. Any amendments to the ordinance shall require a finding that riparian corridors and wetlands shall be afforded equal or greater protection by the amended language.*

Policy 5.2.3 *Activities within Riparian Corridors and Wetlands. Development activities, land alteration and vegetation disturbance within riparian corridors and wetlands and required buffers shall be prohibited unless exception is granted per the Riparian Corridor and Wetlands Protection ordinance. As a condition of riparian exception, require evidence of approval for development from the US Army Corps of Engineers, California Department of Fish and Game, and other federal or state agencies that may have regulatory authority within riparian corridors and wetlands.*

Policy 5.2.4 *Riparian Corridor Buffer Setback: Require a buffer setback from riparian corridors in addition to the specified distances found in the definition of riparian corridors. This setback shall be identified in the Riparian Corridor and Wetland Protection ordinance and established based on stream characteristics, vegetation and slope. Allow reductions to the buffer setback only upon approval of a riparian exception. Require a 10 foot separation from the edge of the riparian corridor buffer to any structure.*

Policy 5.2.5 *Setbacks from Wetlands. Prohibit development within the 100 foot riparian corridor of all wetlands. Allow exceptions to this setback only where consistent with the Riparian Corridor and Wetlands Protection ordinance, and in all cases, maximize distance between proposed structures and wetlands. Require measures to prevent water quality degradation from adjacent land uses, as outlined in the Water Resources section.*

Policy 5.2.9 *Management Plans for Wetland Protection. Require development in or adjacent to wetlands to incorporate the recommendations of a management plan which evaluates: migratory waterfowl use December 1 to April 30; compatibility of agricultural use and biotic and water quality protection; maintenance of biologic productivity; and the permanent protection of adjoining uplands.*

Policy 5.2.10 *Development in Wetland Drainage Basins. Require development projects in wetland drainage basins to include drainage facilities or Best Management Practices (BMPs) which will maintain surface runoff patterns and water quality, unless a wetland management plan specifies otherwise, and minimize erosion, sedimentation, and introduction of pollutants.*

Objective 5.3 *Aquatic and Marine Habitats. To identify, preserve and restore aquatic and marine habitats; to maximize scientific research and education which emphasizes comprehensive and coordinated management consistent with the mission of the Monterey Bay National Marine Sanctuary; and to facilitate multiple use and recreation opportunities compatible with resource protection.*

Policy 5.3.2 *Protecting Shorebird Nesting Sites. Discourage all activities within 100 feet of shorebird nesting sites during nesting season (March-July). Prohibit dogs form beaches having nesting sites.*

In addition, the County Municipal Code contains several regulations aimed at protecting sensitive resources, as described below.

Coastal Zone (County Code Chapter 13.20). Chapter 13.20 of *Title 13: Planning and Zoning Regulations* establishes the Coastal Zone approval for the purpose of implementing the California Coastal Act of 1976, Division 20 of the California Public Resources Code, as interpreted by and in accordance with the Local Coastal Program (LCP) of Santa Cruz County. The Coastal Zone approval is the primary mechanism for ensuring that all development in the Coastal Zone of Santa Cruz County is consistent with LCP policies and provisions. This chapter establishes the Coastal Zone approval process: where and for what types of development a Coastal Zone approval is required; the application, hearing, notice and appeal procedures; the

required findings; and development standards. The chapter applies to all development projects located within the Coastal Zone of the unincorporated portion of Santa Cruz County as identified by the Coastal Zone Combining District, established pursuant to the County zoning regulations, *Chapter 13.10* of the County Code, and shown on maps on file at the County Planning Department. This chapter of the County Code also describes the exemptions, and exclusion criteria in regards to significant trees, land clearing and grading (*Sections 13.20.050, 13.20.066, 13.20.070 and 13.20.074, 13.20.075, 13.20.077, 13.20.100*). This chapter also describes specific design criteria required for projects located within the Coastal Zone (*Sections 13.20.130-13.20.147*).

Riparian Corridor and Wetland Protection (County Code Chapter 16.30). Chapter 16.30 of *Title 16: Environmental Resource and Protection* is meant to minimize and to eliminate any development activities in the riparian corridor, preserve, protect, and restore riparian corridors. Protection is specifically aimed towards: wildlife habitat, water quality, aquatic habitat, open space, cultural, historical, archaeological and paleontological, aesthetic values, transportation and storage of floodwaters, prevention of erosion, and implementing the policies of the General Plan and the LCP Land Use Plan. This chapter of the County Code also describes the required setbacks from riparian vegetation, exemptions, exceptions as well as inspection and compliance in regards to this chapter (*Sections 16.30.040, 16.30.050, 16.30.060 and 16.30.070*).

*Santa Cruz County Sensitive Habitats Protection (County Code Chapter 16.32)***.** *Chapter 16.30* of *Title 16: Environmental Resource and Protection* is designed to minimize the disturbance of biotic communities which are rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activity; to protect and preserve these biotic resources for their genetic, scientific, and educational values; and to implement policies of the General Plan and the LCP Land Use Plan. This chapter defines sensitive habitats within the County, describes rules and regulations for evaluating the impacts of development activities on sensitive habitats, establishes the administrative procedures for determining whether and what type of limitations to development activities are necessary to protect sensitive habitats, and establishes a procedure for dealing with violations of this chapter. This chapter applies to both private and public activities including those of the County and other such government agencies where not exempted therefrom by State or Federal law. (*Sections 16.32.040 - 16.32.140)*

Significant Tree Protection (County Code Chapter – 16.34.). Chapter 16.34 of *Title 16: Environmental Resource and Protection* protects trees and forest communities located within the County's Coastal Zone because they are a valuable resource. Removal of significant trees could reduce scenic beauty and the attractiveness of the area to residents and visitors. This chapter regulates the removal of trees in the Coastal Zone when not included in the provisions of a discretionary permit. This chapter establishes the type of trees to be protected, the circumstances under which they may be removed, and the procedures for obtaining a permit for their removal. This chapter also establishes standards applicable to tree cutting activities of public agencies required to obtain a Coastal Zone permit pursuant to Chapter 13.20 of the County Code (*Sections 16.34.030 - 16.34.140).*

City of Santa Cruz. The Natural Resources and Conservation Element of the City of Santa Cruz General Plan 2030 includes several goals, policies and actions to protect the biological

resources found within the city. The goals, policies and actions applicable to the MBSST Network project are discussed below.

Goal NRC1	*Protected, enhanced, and sustainably managed creek systems, riparian environments, and wetlands.*
NRC1.1	*Protect the city's river and wetland areas while increasing and enhancing public access where appropriate.*
NRC1.1.1	*Require setbacks and implementation of standards and guidelines for development and improvement within the city and adjacent to creeks and wetlands as set forth in the Citywide Creeks and Wetlands Management Plan.*
Goal NRC2	*Protected, enhanced, and sustainable native and natural plant and animal communities and habitats.*
NRC2.1	*Protect, enhance, or restore habitat for special-status plant and animal species. Cf. CD4.3.3, CC3.3.6 and NRC2.2, 2.4, and 6.3.*
NRC2.2	*Protect sensitive habitat areas and important vegetation communities and wildlife habitat, to include riparian, wetland (salt marsh and freshwater wetland), coastal prairie, coastal bird habitat, and habitat that support special status species, as well as, sensitive and edge habitats ("ecotones"). Cf. CD4.3.3, CC3.3.6, and NRC2.1, 2.4, and 6.3.*
NRC2.2.1	*As part of the CEQA review process for development projects, evaluate and mitigate potential impacts to sensitive habitat (including special-status species) for sites located within or adjacent to these areas.*
NRC2.2.4	*Minimize the impact of grading and filling on sensitive habitat areas.*
NRC2.3	*Protect, enhance, and maintain significant dispersal corridors and buffers.*
NRC2.3.1	*Restrict the use of barriers that can hamper wildlife movement through the corridors and buffers.*
Goal NRC5	*An enhanced and sustainable urban forest.*
NRC5.1	*Protect and manage tree resources in the urban environment with emphasis on significant and heritage trees.*
NRC5.1.2	*Maintain and add to the City's urban tree canopy and increase tree diversity within urbanized areas using native and non-invasive tree species.*

In addition, the City of Santa Cruz Municipal Code contains several regulations aimed at protecting sensitive biological resources including, which are described below.

City of Santa Cruz Water Course Development Permit (City Code Chapter 24.08). The City-ide Creeks and Wetlands Management Plan identifies and categorizes all watercourses in the city and establishes a riparian corridor, development setback area, and management area for each

watercourse. A watercourse development permit is required as specified by Section 24.08.2150, except as provided for in Section 24.08.2140, Exemptions. All projects must comply with the watercourse development standards as described in Section 24.08.2180, except for projects that are listed as exempt in Section 24.08.2140, unless approval of a watercourse variance is obtained in accordance with Section 24.08.2210.

Land Use Permits and Findings (City Code Chapter 24.08). Part 3 of this chapter describes the requirements of coastal permits. The purpose of the coastal permit is to ensure that development projects in the Coastal Zone Overlay District are consistent with the Local Coastal Land Use Plan and the Local Coastal Implementation Program. This part of the zoning title is also part of the Local Coastal Implementation Plan. Any permitted, administrative or special uses in the underlying zoning district within the Coastal Zone Overlay District are subject to coastal permit regulations and findings, and may be authorized only by approval of a coastal permit. Exemptions and exclusions are outlined in Sections 24.08.230, 24.08.230.1 and 24.08.230.2. Chapter 24.14 describes the provisions which apply to Wildlife Habitat Areas and Plant Communities identified in Maps EQ-8 and EQ-9 of the Environmental Quality Element of the General Plan and Coastal Land Use Plan or as designated as part of an environmental review process. Except for areas defined by the City-wide Creeks and Wetlands Management Plan, the precise boundaries of areas identified are determined on a case-by-case basis by a biologist with relevant academic training and experience in instances of uncertainty. This chapter also describes the general provisions associated with construction, grading or vegetation removal within these areas.

Preservation of Heritage Trees and Heritage Shrubs (City Code Chapter 09.56). This chapter of *Title 09: Peace, Safety and Morals* is designed to protect trees and shrubs on both public and private properties designated as heritage trees. Under this, no person shall prune, trim, cut off, or perform any work, on a single occasion or cumulatively, over a three-year period, affecting twenty-five percent or more of the crown of any heritage tree or heritage shrub without first obtaining a permit pursuant to this section. No person shall root prune, relocate or remove any heritage tree or heritage shrub without first obtaining a permit pursuant to this section.

City of Capitola. The Capitola General Plan is currently being updated, and a Public Review Draft General Plan is anticipated for June 2013. The current General Plan was adopted in 1989. The 1989 General Plan contains the following goal and policies related to biological resources.

Goal	*Protect and preserve the natural resources within the Capitola area.*
Policy 8	*It shall be the policy of the City to require the planting of trees in new development and to protect existing trees by allowing removal only in accordance with the City's Tree Ordinance. The City should encourage new development to be designed to preserve significant vegetation*
Impl. 8	*Enforce adopted Capitola Tree Ordinance.*
Policy 10	*It shall be the policy of the City to protect, maintain and, where possible, enhance the environmentally sensitive and locally unique habitats within its coastal zone, including dedication and /or acquisition of scenic conservation easements for protection of the natural environment. All developments approved by the City*

within or adjacent to these areas must be found to be protective of the long-term maintenances of these habitats.

Impl. 10 — *Prepare specific guidelines and regulation for the development along Soquel Creek, Noble Gulch, Escalona Gulch and other environmentally sensitive habitats with specific emphasis on Monarch Butterfly habitats.*

Policy 15 — *The City should coordinate with Santa Cruz County and AMBAG to investigate and implement sound watershed management methods for the lands within Capitola to:*

a) Maintain adequate stream flow for fish, wildlife and riparian vegetation,
b) Control contaminated urban run-off, and
c) Encourage water conservation.

Impl. 15 — *C) Prepare specific guidelines and regulation for development along Soquel Creek, Noble Gulch and Escalona Gulch.*

Policy 17 — *The City shall maintain the habitat values of Noble Gulch where existing riparian corridors exist.*

Impl. 17 — *C) Prepare specific guidelines an regulations for developing along Soquel Creek, Noble Gulch, Escalona Gulch and other environmentally sensitive habitats with specific emphasis on Monarch Butterfly habitats.*

Policy 18 — *It shall be the policy of the City to protect the winter resting sites of the Monarch Butterfly in the eucalyptus groves of Escalona Gulch and Soquel Creek as designated on Map VI-2 by requiring detailed analysis of the impacts of development on the habitat.*

In addition, the City of Capitola Municipal Code contains several regulations related to sensitive biological resources, which are described below.

Coastal Zone Combining District (City Code Chapter 17.46). Chapter 17.46 of *Title 17: Zoning* requires permit procedures for the implementation of Capitola's local coastal program, and to ensure that all private and public development projects within the city's coastal zone are consistent with the city's adopted and certified local coastal land use plan and implementation program. All development undertaken after November 8, 1972, within the coastal zone as defined in the Coastal Initiative of 1972, or after January 1, 1977, within the coastal zone as defined by the Coastal Act of 1976, shall have a valid coastal development permit issued by the California Coastal Commission or by the city pursuant to its LCP. Such requirement pertains to both public and private development, except for the exemptions set forth in Section 17.46.050.

Environmentally Sensitive Habitats (City Code Chapter 17.95). Chapter 17.95 of *Title 17: Zoning* describes the regulations which apply to the environmentally sensitive habitat (ESH) district as shown on the habitat maps included in the City's General Plan and in all other areas identified by qualified professionals as sensitive habitat. Regulated areas where development set backs are described include Soquel Creek and lagoon (*Section 17.95.020)*, Soquel Creek

riparian corridors (*Section 17.95.030*), Noble Gulch (*Section 17.95.040*), and Tannery Gulch (*Section17.95.050*). This municipal code also includes regulations pertaining to development within and adjacent to monarch butterfly habitat located at Soquel-Escolana Gulch (*Sections 17.95.060 and 17.95.061*).

Community Tree and Forest Management (City Code Chapter 12.12). Chapter 12.12 of *Title 12: Streets, Sidewalks and Public Places* describes the regulations relating to the protection, planting, maintenance, removal, and replacement of trees, and to set forth the process for development of a comprehensive plan for the planting and maintenance of a sustained community forest within the city. The Community Tree and Forest Management Chapter and associated ordinances describe the requirements and permit approval process for activities listed above (*Sections 12.12.010, 12.12.020, 12.12.030 and 12.12.040*).

City of Watsonville. An updated City of Watsonville General Plan was adopted by the City Council in January 2013, but was subsequently challenged in court and is on hold until resolution on the legal issues can be reached. Therefore, at this time, the 2005 General Plan remains in effect. The existing 2005 General Plan, adopted in 1994, identifies important biological resources found within Watsonville including marshes, creeks, rivers, lakes, and sloughs. Preservation of these areas was identified as important as they are habitat for endangered or threatened as well as a variety of unlisted species. The network of sloughs and marshes in the area, which makes up the South County Slough System, is designated an Area of Significant Biological Importance by the CDFW. The goals, policies, and implementation measures applicable to this project are discussed below.

Goal 9.3	*Natural resources. Identify and protect the natural resources of the Watsonville Planning Area.*
Goal 9.8	*Preserve and protect the remaining areas of wildlife habitat for their scenic and scientific value.*
Policy9.B	*The City shall designate land necessary for the preservation of natural resources and to avoid conflicts with urban land uses.*
Measure 9.B.1	*Resource Zoning – The city shall designate and zone environmentally sensitive areas as EM-OS (Environmental Management – Open Space) to prohibit development and to preserve natural resources.*
Measure 9.B.2	*Natural Resources Mitigations – The City shall require implementation of environmental mitigations on projects that may destroy or impair the future use or existence of natural resources.*
Measure 9.B.3	*Environmental Constraints – The City shall encourage development on land which has the fewest natural resource impacts and discourage or prohibit development on land having multiple natural resource impacts. An environmental constraint matrix shall be developed for use by the City.*

Measure 9.B.5 *Coastal Zone – the City shall abide by the provisions of the Watsonville Local Coastal Plan and Watsonville Local Coastal Plan Implementation Ordinance in the review of proposed development on Coastal Zone lands.*

Measure 9.B.6 *Environmental Review – The City shall conduct an appropriate environmental review process and require that proposed projects adjacent to surrounding, or containing, wetlands be subject to a site-specific analysis which will determine the appropriate size and configuration of areas to buffer wetlands from urban development.*

Policy 9.F *Wildlife Habitat Protection. The City shall designate for open space and environmental management those areas rich in wildlife species and fragile in ecological make-up. These habitat zones shall be made part of the greenbelt where appropriate.*

Measure 9.F.1 *Habitat Protection – Impacts to important wildlife habitat areas shall be identified as part of the City's development review and environmental review processes, and appropriate mitigations shall be considered. Mitigation measures to be considered include: designation of sensitive areas as open space, restriction of new development on lands that provide important wildlife habitat, setback requirements, habitat conservation plans, and habitat mitigation banking. Lands within the urban limit line that provide important wildlife habitat include, but are not limited to the following:*

a) Riparian corridors
b) Freshwater marshes and sloughs
c) Woodlands and steep slopes.

In addition, the City of Watsonville Municipal Code contains one regulation related to sensitive biological resources, which is described below.

Coastal Zone Implementation Plan (City Code Chapter 5). Chapter 5 of *Title 9: Planning and Zoning* of the City of Watsonville Municipal Code, discusses land use and development within the Coastal Zone. The purpose of this chapter is to protect and foster agriculture; assure that new development occurs near developed areas capable of accommodating it and thereby minimizing energy consumption and vehicle miles traveled; assure that agricultural lands shall not be converted to nonagricultural use until continued or renewed agricultural use is not feasible; protect the coastal visual resources, environmentally sensitive habitat areas, and water resources; and enhance public access to the shoreline and to public recreation facilities. *Article 3* of this Chapter describes the requirements of, general provisions for, and exemptions of Coastal Permits which are required for development within the Coastal Zone.

Monterey County. Segment 20 of the proposed MBSST Network project, which is 0.74 miles long, would be located in Monterey County. The purpose of this segment is to provide a regional connection to the Monterey County section of the Monterey Bay Sanctuary Scenic Trail. Implementation of this section would require cooperation and coordination with the Transportation Agency for Monterey County (TAMC) and the County of Monterey. Monterey County General Plan goals and policies, as well as Monterey County Municipal Code regulations, would apply to this segment.

4.4.2 Impact Analysis

a. Methodology and Significance Thresholds. Data used for this analysis included aerial photographs, topographic maps, the CNDDB database, the CNPS online inventory of rare and endangered plants, accepted scientific texts to identify species, and reconnaissance site surveys conducted on December 3, 11, and 12, 2012 to generally characterize the existing conditions of the candidate sites.

Evaluation Criteria. The following thresholds are based on Appendix G of the *State CEQA Guidelines*. Impacts would be significant if the proposed MBSST Network would result in any of the following:

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.*

The following section presents a broad discussion of the potential for impacts to sensitive resources along the MBSST Network. The discussion under each impact statement is organized by reach; however, the mitigation measures are applicable to all reaches where sensitive resources are or may be present.

b. Project Impacts and Mitigation Measures.

Impact B-1 Implementation of the proposed MBSST Network project could result in impacts to special status plant and animal species. This impact is Class II, *significant but mitigable*.

Numerous special status plant and animal species may occur within and adjacent to the proposed MBSST Network, primarily in those areas where the trail crosses drainages and sloughs.

Northern Reach. The northern reach has the largest number of special status plant and animal species within the MBSST Network (refer to Table 4.4-6). Most of these species are

associated with either coastal scrub habitat or drainages, though habitat that may support special status species is present at many other locations along the railroad corridor. For most species the potential for impact is low to none likely. The potential for impact will depend on the final design of the proposed MBSST Network and the extent of disturbance of habitat adjacent to Highway 1 and the railroad corridor. Species with a moderate or high potential for impact are discussed below.

White-Tailed Kite (Elanus leucurus). White tailed kites are Fully Protected under the CFGC. Several white-tailed kites were observed foraging throughout the northern reach. Numerous nesting opportunities are available near the proposed MBSST Network. If white-tailed kites are nesting near the railroad corridor, construction of the MBSST Network may be disruptive and cause nest failure due to noise and above-normal human presence. The impact could be substantial if a breeding site were located near the proposed MBSST Network. These impacts would only occur during the nesting season; however, removal of a nest site outside of the nesting season could be significant as white-tailed kites tend to return to the same nest sites during subsequent years. However, it is not anticipated that large numbers of trees in any given area would need to be removed as the majority of the trail would be constructed on an existing railroad corridor or on surface streets. Furthermore, the removal of one nest tree outside of the nest season should be no different than if that tree had been felled by natural means (e.g., rot). White-tailed kites do have the ability to build new nests and the loss of a single nest tree would be less than significant. Impacts to foraging habitat would be less than significant due to the relatively small disturbance area of the proposed MBSST Network project area.

Black Legless Lizard (Anniella pulchra nigra). The black legless lizard is a state Species of Special Concern. Black legless lizards may be found in numerous locations along the proposed MBSST Network in the northern reach, but are likely to be associated with drainages or in the coastal scrub habitat where sandy soils are present in the northern portion of this reach. In several areas, habitat adjacent to the railroad corridor will be disturbed for placement of the MBSST Network trail. Additionally, construction of the drainage crossings will impact the banks and upland habitat where the crossings are placed. Black legless lizards may be impacted during ground disturbance activities associated with construction of the project. However, the number of legless lizards likely to be impacted should be low given the amount of cropland adjacent to the railroad corridor.

California Red-Legged Frog. The California red-legged frog (CRLF) is federally Threatened and a state Species of Special Concern. Critical habitat for the CRLF is mapped throughout the northern reach and it is known to occur in multiple locations. Multiple areas of standing water and well-established wetland vegetation were observed along the railroad corridor, and a CRLF was observed in one of these wetland areas near Wilder Ranch State Park. This species is likely to be present in multiple locations along the proposed MBSST Network.

Tidewater Goby (Eucyclogobius newberryi). The tidewater goby is federally Endangered and a state Species of Special Concern. Within the northern reach, tidewater goby has been documented in Scott Creek, Waddell Creek, Wilder Creek, Moore Creek, Laguna Creek, and Baldwin Creek, and may occur in other creeks that contain brackish water habitats. Conditions at Majors Creek lagoon suggest this may also be suitable for tidewater goby (ENTRIX, 2005). The proposed MBSST Network crosses several areas of suitable habitat. The extent of impacts

will depend on the final design of the drainage crossings. The use of span bridges may result in no impacts. If bridge support structures are necessary then impacts may result during bridge installation. Indirect impacts may also result due to erosion and sedimentation from ground disturbance near suitable habitat.

Coho Salmon. The central California coast ESU of coho salmon is federally and state Endangered. Within the northern reach, Waddell Creek, Scott Creek, and San Vicente Creek are mapped as federal critical habitat. Similar to tidewater goby, the extent of impacts will depend on the final design of the drainage crossings. The use of span bridges may result in no impacts. If bridge support structures are necessary then impacts may result during bridge installation. Indirect impacts may also result due to erosion and sedimentation from ground disturbance near suitable habitat.

Steelhead. The central California coast DPS of steelhead is federally Threatened. There are eight drainages mapped as federal critical habitat in the northern reach. Extensive surveys and habitat assessments for steelhead have been conducted for several creeks in the northern reach. These surveys are summarized below.

- *Liddell Watershed*. Based on multiple surveys, the Liddell Watershed has been determined to contain suitable, albeit limited, rearing habitat for steelhead (ENTRIX, 2005). The Liddell Watershed is subject to severe sedimentation and there are numerous partial and complete barriers which prevent steelhead from the upper reach of the branches and limit the availability of spawning habitat.
- *Laguna Creek Watershed*. Surveys of this watershed identified complete barriers to steelhead within Laguna Creek upstream of a lagoon (ENTRIX, 2005). The anadromous reach provides fair quality spawning habitat. The lagoon and the anadromous reach of Laguna Creek were determined to provide good quality rearing habitat during summer and fall streamflows, and the lagoon-marsh complex appears to provide good quality rearing habitat in normal and above average water years.
- *Majors Watershed*. Recent surveys have indicated that there are no substantial barriers to adult steelhead migration in Majors Creek except for one located approximately 0.71 miles upstream of the mouth (ENTRIX, 2005). Very little spawning habitat was identified in the approximately 0.71 mile anadromous reach, largely due to the lack of spawning gravels. However, the anadromous reach was determined to provide good quality rearing habitat.
- *Baldwin Creek*. Surveys determined that Baldwin Creek does have connectivity with the ocean, but the flows observed were low and a barrier beach may prevent access to the creek (ENTRIX, 2005). Furthermore, passage between the creek and adjacent lagoon may be constrained by impoundments and a culvert. If steelhead can access the upstream portions of the reach, it may provide favorable spawning and rearing habitat.
- *Wilder Creek*. This creek transitions from a beach lagoon to a low-gradient stream and then to a high-gradient, forested stream (ENTRIX, 2005). Steelhead have access to approximately two miles of stream habitat, though fish passage may be difficult in some areas.

Other drainages within the northern reach may be accessible to steelhead, such as Willow Gulch and Waddell Creek. Similar to tidewater goby and coho salmon, the extent of impacts will

depend on the final design of the drainage crossings. The use of span bridges may result in no impacts. If bridge support structures are necessary then impacts may result during bridge installation. Indirect impacts may also result due to erosion and sedimentation from ground disturbance near suitable habitat.

Pallid Bat (Antrozous pallidus). The palled bat is a state Species of Special Concern and commonly roosts under bridges. Several railroad bridge structures could support roosting pallid bats, and these bats could be disturbed during construction of drainage crossings. This impact would be substantially greater if any of these bridges are used as a maternity roost.

Monterey Dusky-Footed Woodrat (Neotoma macrotis luciana). The Monterey dusky-footed woodrat is a state Species of Special Concern that occurs in scrub and woodland habitats, particularly riparian woodland. A woodrat nest was observed in riparian woodland (mostly willows) habitat near Wilder Ranch State Park. This species may be present in any of the drainages on-site as well as in woodland habitat that occurs adjacent to the railroad corridor such as was observed near Wilder Ranch State Park. This species could be impacted during construction of drainage crossings and during ground disturbance of habitat adjacent to the railroad corridor.

Monarch Butterfly (Danaus plexippus). Monarch butterflies do not carry a special status, but the CDFW is tracking their presence through the CNDDB. Monarch butterflies have a unique habit of roosting in wind-protected groves of eucalyptus, Monterey pines, and/or Monterey cypress along the Central Coast during the winter months. Roosts are located near the coast where fog occurs frequently and moisture levels remain moderate to high. Monarch butterflies roost in large colonies and are known to roost in coastal Santa Cruz County. Within the northern reach, monarch butterflies have been documented in the northern portion and near Wilder Ranch State Park. Monarch butterflies could be impacted by the project if construction occurs during the winter when roost sites are occupied as the noise and other construction disturbance may be disruptive to monarchs. Monarchs may also be impacted if trees are removed and/or trimmed resulting in changes to the suitability of the roost area.

Table 4.4-6
Potential for MBSST Network Impacts to Special Status Plant and Animal Species in the Northern Reach

Common Name	Potential for Impact	Common Name	Potential for Impact
Plant Species			
Blasdale's bent grass	**Low to None**. Impacts would only occur if this species occurs adjacent to Highway 1 and if roadside improvements are necessary for the trail. Not expected to be impacted elsewhere.	marsh scorzonella	**Low to None**. Suitable habitat along the railroad corridor is marginal, and in many locations the trail will not require modification of adjacent habitat.
bent-flowered fiddelneck	**Low**. Impacts may occur if species is present adjacent to Highway 1 and roadside improvements are necessary for the trail. Not expected to be present along large sections of the railroad as most of the adjacent habitat is cropland.	elongate copper moss	**Low to None**. Impacts would likely only occur during construction of bridges over drainages.

Table 4.4-6
Potential for MBSST Network Impacts to Special Status Plant and Animal Species in the Northern Reach

Common Name	Potential for Impact	Common Name	Potential for Impact
Ohlone manzanita	**Low to None**. No manzanitas were observed in easily accessible areas. If manzanitas are present adjacent to the railroad they could be impacted during trail construction.	white-rayed pentachaeta	**None**. The MBSST Network is sufficiently distant from suitable coastal habitat.
marsh microseris	**Low to none**. Wetlands adjacent to the railroad tracks are marginally suitable. If this species is present in these wetlands it may be impacted by trail construction. Otherwise, this species should not be impacted.	Point Reyes horkelia	**Low to None**. Impacts would only occur if this species occurs adjacent to Highway 1 and roadside improvements are necessary for the trail. Not expected to be impacted elsewhere.
Monterey spineflower	**Low to None**. Impacts would only occur if this species occurs adjacent to Highway 1 and roadside improvements are necessary for the trail. Not expected to be impacted elsewhere.	Monterey pine	**Low to None**. Monterey pines are only protected where they occur as natural stands. Construction can likely avoid them.
robust spineflower	**Low to None**. Impacts would only occur if this species occurs adjacent to Highway 1 and roadside improvements are necessary for the trail. Not expected to be impacted elsewhere.	Choris' popcorn-flower	**Low to None**. Suitable habitat along the railroad corridor is marginal, and in many locations the trail will not require modification of adjacent habitat.
San Francisco collinsia	**Low to None**. Impacts would only occur if this species occurs adjacent to Highway 1 and roadside improvements are necessary for the trail. Not expected to be impacted elsewhere.	San Francisco popcorn flower	**Low to None**. Suitable habitat along the railroad corridor is marginal, and in many locations the trail will not require modification of adjacent habitat.
branching beach aster	**Low to None**. Impacts would only occur if this species occurs adjacent to Highway 1 and roadside improvements are necessary for the trail. Not expected to be impacted elsewhere.	pine rose	**Low to None**. Suitable habitat present at the northern extent of the northern reach, but roadside improvements for the trail are expected to be minimal.
coast wall flower	**Low to None**. Impacts would only occur if this species occurs adjacent to Highway 1 and roadside improvements are necessary for the trail. Not expected to be impacted elsewhere.	maple-leaved checkerbloom	**Low**. Impacts may occur if adjacent suitable habitat is affected by trail improvements and during construction of bridges over drainages.
sand gilia	**Low to None**. Impacts would only occur if this species occurs adjacent to Highway 1 and roadside improvements are necessary for the trail. Not expected to be impacted elsewhere.	San Francisco campion	**Low to None**. Suitable habitat at the northern extent of the northern reach, but roadside improvements for the trail are expected to be minimal.

Table 4.4-6
Potential for MBSST Network Impacts to Special Status Plant and Animal Species in the Northern Reach

Common Name	Potential for Impact	Common Name	Potential for Impact
Santa Cruz tarplant	**Low to None**. Suitable habitat along the railroad corridor is marginal, and in many locations the trail will not require modification of adjacent habitat.	Santa Cruz microseris	**Low to None**. Suitable habitat at the northern extent of the northern reach, but roadside improvements for the trail are expected to be minimal.
Kellogg's horkelia	**Low to None**. Suitable habitat along the railroad corridor is marginal, and in many locations the trail will not require modification of adjacent habitat.		
Animals			
tricolored blackbird	**Low to None**. Impacts may occur if trail construction activities are disruptive to nearby nesting colonies.	golden eagle	**None.** No suitable nesting habitat. May forage in the area, primarily in the grasslands.
burrowing owl	**Low**. Burrows and ground squirrels were not readily apparent within the northern reach. If burrows are present or become established along the railroad corridor they may be used by this species.	western snowy plover	**None**. Suitable breeding habitat is located sufficiently far away from the proposed MBSST Network such that trail construction would not impact nesting plovers.
northern harrier	**Low**. Trail construction may be disruptive to nesting northern harriers; not expected to negatively affect foraging behavior due to the size of potential foraging habitat.	black swift	**Low**. Impacts may occur during trail construction if black swifts are nesting in cliffs of drainages.
white-tailed kite	**Low to Moderate**. Trail construction is not likely to disrupt foraging, but may be disruptive to nesting kites.	saltmarsh common yellowthroat	**None**. Would only occur in the northern extent of the northern reach, and MBSST Network occurs on the road shoulder in this area.
California black rail	**Low to None**. Would likely be associated with drainages. Trail construction may be disruptive if found near railroad corridor.	California Least tern	**None**. Suitable breeding habitat is located sufficiently far away from the proposed MBSST Network such that trail construction would not impact nesting plovers.
bank swallow	**Low**. Construction of drainage crossings may be disruptive to nesting swallows.	black legless lizard	**Low to Moderate**. Suitable habitat present along much of the route, particularly with the drainages and the coastal scrub habitat in the north. May be affected by ground disturbing activities during trail construction.
foothill yellow-legged frog	**Low**. Could be impacted during construction of drainage crossings. Has stricter habitat requirements than California red-legged frog.	California red-legged frog	**Moderate to High**. This species was observed in small wetlands adjacent to the railroad tracks, which are likely to be impacted by construction of the project. There are several other known occurrences and potential breeding areas within the vicinity of the MBSST Network.

Table 4.4-6
Potential for MBSST Network Impacts to Special Status Plant and Animal Species in the Northern Reach

Common Name	Potential for Impact	Common Name	Potential for Impact
western pond turtle	**Low**. May be found in drainages that cross the MBSST Network and could be affected by construction of crossings.	San Francisco garter snake	**Low**. May be affected by construction of crossings over drainages and ground disturbance of upland areas near drainages.
tidewater goby	**Low to Moderate**. Most drainage crossings are sufficiently far away from the coast that brackish water needed by tidewater goby is not present near the railroad.	coho salmon - central California coast ESU	**Low to Moderate**. May be affected by construction of drainage crossings. Impacts can be avoided if drainages are spanned.
steelhead - central California coast DPS	**Low to Moderate**. May be affected by construction of drainage crossings. Impacts can be avoided if drainages are spanned.	pallid bat	**Low to Moderate**. May use bridges or riparian trees as roost sites, which may be impacted by construction of drainage crossings.
hoary bat	**Low**. May be impacted by construction of drainage crossings if they result in tree removal/trimming.	Monterey dusky-footed woodrat	**Low to Moderate**. May be affected if adjacent suitable habitat is disturbed during ground disturbance and construction of drainage crossings.
American badger	**Low to None**. Suitable grassland habitat is most common in the northern extent of the northern reach, where the trail occurs mostly along Highway 1.	Santa Cruz kangaroo rat	**None**. Found in chaparral habitats in the mountains, but the proposed MBSST Network is largely located on coastal terraces.
sandy beach tiger beetle	**None**. Sand beaches would not be impacted or other suitable habitat.	vernal pool fairy shrimp	**Low to None**. Annual grasslands aren't likely to be disturbed as they are mostly adjacent to the section of the trail that occurs on the shoulder of Highway 1. Very low probably of occurring in roadside ditches.
California linderiella	**Low to None**. Annual grasslands aren't likely to be disturbed as they are mostly adjacent to the section of the trail that occurs on the shoulder of Highway 1.	monarch butterfly	**Low to Moderate**. May be impacted if potential roost sites require tree trimming/removal. Construction activities occurring during the winter roost season adjacent to roost sites may be disruptive.
mimic tryonia (California brackishwater snail)	**None.** Proposed MBSST Network is sufficiently far away from the coast that suitable habitat should not be impacted.	Ohlone tiger beetle	**Low to None.** Documented in Wilder Ranch State Park, but likely not along railroad corridor as it borders agricultural habitats considered unsuitable for this species.

Central Reach. The central reach is the least likely of the three reaches to be occupied by special status plant and animal species due to the presence of extensive urban development. In this reach, natural habitat is largely limited to drainages that course through the cities of Santa Cruz and Capitola and the community of Aptos. Twenty-six special status plant and animal species were determined to have the potential to occur within this reach, but only twelve special status animal species have a moderate potential to be impacted by the project (refer to Table 4.4-7). These species are described below.

White-Tailed Kite. Like the northern reach, several nesting opportunities are available for white-tailed kites in the central reach, particularly in the southern portion of the reach where the proposed MBSST Network transitions from urban developed areas to agriculturally developed areas that provide ample foraging opportunities. Impacts to white-tailed kites might occur during construction if kites are nesting near construction areas and/or trees need to be removed or trimmed. The impact could be substantial if a rookery is located near the proposed MBSST Network. These impacts would only occur during the nesting season; however, removal of a nest site outside of the nesting season could be significant as white-tailed kites tend to return to the same nest sites during subsequent years. However, it is not anticipated that large numbers of trees in any given area would need to be removed as the majority of the trail would be constructed on an existing railroad corridor or on surface streets. Furthermore, the removal of one nest tree outside of the nest season should be no different than if that tree had been felled by natural means (e.g., rot). White-tailed kites do have the ability to build new nests and the loss of a single nest tree would be less than significant. Impacts to foraging habitat would be less than significant due to the relatively small disturbance area of the proposed MBSST Network project area.

Great Blue Heron (Ardea herodias). Great blue herons do not carry any special status; however, the CDFW is tracking the presence of rookery sites in the CNDDB. Great blue herons are also protected under CFGC 3503 which protects all native nesting birds in California. A rookery site has been documented in a tributary to the Arana Gulch near the railroad corridor, and there are other riparian corridors that could support nesting great blue herons. Impacts to nesting great blue herons could result if construction activities occur during the nesting season and in close proximity to a rookery site.

California Red-Legged Frog. Similar to the northern reach, CRLF could occur in any of the drainages that cross the proposed MBSST Network within the central reach. CRLF could be impacted during construction of drainage crossings and with construction in the vicinity of natural habitat at Twin Lakes State Beach and New Brighton State Beach.

Foothill Yellow-Legged Frog (Rana boylii). The foothill yellow-legged frog is state Threatened and occurs in shallow streams that are partially shaded and include riffles. This species occurs in many of the same locations as the CRLF, but has an added habitat requirement of needing cobble-sized substrate for egg-laying. While not all of the drainage may contain the necessary egg-laying substrate, the foothill yellow-legged frog may still travel through the drainages within the central reach. Impacts to the foothill yellow-legged frog may result during construction of drainage crossings.

Western Pond Turtle (Emys marmorata). The western pond turtle is a state Species of Special Concern that prefers pools and slow-moving deep water with vegetation and debris that can serve as basking sites. Those drainages with openings in the canopy and pools of water may be suitable for this species. This species could be impacted during construction of drainage crossings.

Black Legless Lizard. Similar to the northern reach, the black legless lizard is expected to be associated with drainages. Given the developed nature of most of the central reach, most drainages have limited upland areas that could be utilized by this species, but they could occur

in upland areas associated with Twin Lakes State Beach and New Brighton State Beach. Black legless lizards could be impacted during construction of drainage crossings.

Tidewater Goby. Tidewater goby could occur in several drainages in the central reach such as the Moore Creek, Woods Lagoon, Rodeo Gulch, Aptos Creek, Soquel Creek, and the San Lorenzo River. The extent of impacts will depend on the final design of the drainage crossings. The use of span bridges may result in no impacts. If bridge support structures are necessary then impacts may result during bridge installation. Indirect impacts may also result due to erosion and sedimentation from ground disturbance near suitable habitat.

Coho Salmon. Within the central reach, Soquel Creek and the San Lorenzo River are mapped as federal critical habitat. Coho salmon have also been document in Aptos Creek. Occurrences within the San Lorenzo River have historically been influenced by stocking from the 1950s through the mid-1970s (ENTRIX, 2005). Similar to tidewater goby, the extent of impacts will depend on the final design of the drainage crossings. The use of span bridges may result in no impacts. If bridge support structures are necessary then impacts may result during bridge installation. Indirect impacts may also result due to erosion and sedimentation from ground disturbance near suitable habitat.

Steelhead. Four major drainages in the central reach are mapped as federal critical habitat for steelhead. The San Lorenzo River, Soquel Creek, and Aptos Creek are considered accessible to steelhead. Similar to tidewater goby and coho salmon, the extent of impacts will depend on the final design of the drainage crossings. The use of span bridges may result in no impacts. If bridge support structures are necessary then impacts may result during bridge installation. Indirect impacts may also result due to erosion and sedimentation from ground disturbance near suitable habitat.

Pallid Bat. As mentioned in the discussion above, pallid bats commonly roost under bridges. There are numerous railroad bridges in the central reach that could provide suitable roosting habitat for pallid bats. Impacts could occur during construction of drainage crossings, and could be substantial if any of the existing bridges are used as maternity roosts.

Monterey Dusky-Footed Woodrat . Woodrats may be found in the riparian habitat associated with the drainages, Twin Lakes State Beach, and New Brighton State Beach. Woodrats are expected to present in these areas and could be impacted where construction activities affect habitat adjacent to the railroad corridor.

Monarch Butterfly . Monarch butterflies have been documented in approximately 12 different locations within the central reach, including locations close to the proposed MBSST Network at Neary Lagoon, east of the San Lorenzo River, New Brighton State Beach, and the Seascape Golf Club. As discussed above, impacts to monarchs could result if construction activities occur during the winter roost period when monarchs are present. Impacts could also occur if roost site trees are removed and/or trimmed and, thus, the suitability of the roost is reduced.

Table 4.4-7
Potential for MBSST Network Impacts to Special Status Plant and Animal Species in the Central Reach

Common Name	Potential for Impact	Common Name	Potential for Impact
Plants			
Loma Prieta psoralea	**Low**. May occur in drainages and be affected by construction of crossings/bridges.	Monterey pine	**None**. Monterey pines in the central reach would be associated with landscaping. Only naturally occurring stands are considered sensitive.
elongate copper moss	**Low**. May occur in drainages and be affected by construction of crossings/bridges.	Choris' popcorn-flower	**None**. Suitable habitat is sufficiently far away from proposed MBSST Network that this species would not be impacted.
woodland wollythreads	**Low to None**. Would be limited to woodland areas associated with drainages and natural areas, but likely no longer present in the area.	San Francisco popcorn flower	**None**. Suitable habitat is sufficiently far away from proposed MBSST Network that this species would not be impacted.
Santa Cruz tarplant	**Low.** Found in drainages in the central reach. Impacts could occur during construction of drainage crossings, but otherwise would be avoided.	maple-leaved checkerbloom	**Low**. May occur in drainages and be affected by construction of crossings/bridges.
Dudley's lousewort	**Low to None**. Would be limited to woodland areas associated with drainages and natural areas, but likely no longer present in the area.		
Animals			
western snowy plover	**Low to None**. Suitable nesting habitat may be present in the San Lorenzo River near the railroad crossing, but human trespass likely discourages nesting here. No other nesting areas near the proposed MBSST Network.	white-tailed kite	**Low to Moderate**. Several potential nest trees along proposed MBSST Network, mostly associated with riparian areas. Most likely to occur in the southern portion of the central reach where agricultural lands are nearby for foraging.
bank swallow	**Low.** Construction of drainage crossings may be disruptive to nesting swallows.	California Least tern	**Low to None**. Suitable nesting habitat may be present in the San Lorenzo River near the railroad crossing, but human trespass likely discourages nesting here. No other nesting areas near the proposed MBSST Network.
Great blue heron	**Low to Moderate**. Documented in a tributary to the Arana Gulch near the railroad. Construction of the project could be disruptive to nesting herons.	Santa Cruz long-toed salamander	**Low**. May be found in drainages associated with the long-toed salamander ecological reserve and, therefore, may be impacted during construction of drainage crossings.
California red-legged frog	**Low to Moderate**. Known to occur in the region and would be associated with the drainages. May be impacted during construction of drainage crossings.	foothill yellow-legged frog	**Low to Moderate**. Documented within the central reach. Could be associated with drainages.
western pond turtle	**Low to Moderate**. Would be associated with the drainages and may be impacted during construction of drainage crossings.	black legless lizard	**Low to Moderate**. Would be associated with the drainages and may be impacted during construction of drainage crossings.

Table 4.4-7
Potential for MBSST Network Impacts to Special Status Plant and Animal Species in the Central Reach

Common Name	Potential for Impact	Common Name	Potential for Impact
coho salmon - central California coast ESU	**Low to Moderate**. May be found in Soquel Creek, Aptos Creek, and the San Lorenzo River in the vicinity of the railroad bridge. May be disturbed by construction of new drainage crossings. Would not be impacted elsewhere.	tidewater goby	**Low to Moderate**. May be found in several drainages in the vicinity of the railroad bridges. May be disturbed by construction of new drainage crossings. Would not be impacted elsewhere.
steelhead - central California coast DPS	**Low to Moderate**. May be found in several drainages in the vicinity of the railroad bridges. May be disturbed by construction of new drainage crossings. Would not be impacted elsewhere.	hoary bat	**Low**. May roost in riparian trees and be impacted by construction of drainage crossings.
pallid bat	**Low to Moderate.** Several bridges present which this species may use as roosts. May be impacted by construction of drainage crossings.	American badger	**Low**. Documented in central reach. Could be impacted during ground disturbance if suitable habitat is located adjacent to the railroad corridor.
Monterey dusky-footed woodrat	**Low to Moderate**. Would be associated with drainages and may be impacted by construction of the proposed MBSST Network, especially if habitat adjacent to the railroad tracks is disturbed.	mimic tryonia (California brackishwater snail)	**None.** Proposed MBSST Network is sufficiently far away from the coast that suitable habitat should not be impacted.
monarch butterfly	**Low to Moderate**. May be impacted if potential roost sites require tree trimming/removal. Construction activities occurring during the winter roost season adjacent to roost sites may be disruptive.	sandy beach tiger beetle	**Low to None**. Would be limited to sandy beach areas, but most of proposed MBSST Network does not encounter such areas.
moestan blister beetle	**None.** Documented in central reach, but very little known about this species. Appears to have a wide distribution.	California linderiella	**Low to None**. Documented in central reach. Annual grasslands aren't likely to be disturbed as they are mostly adjacent to the section of the trail that occurs on the shoulder of Highway 1.

Watsonville Reach. There are several natural areas that could be home to special status plant and animal species in the Watsonville reach, most notably the Gallighan and Watsonville Sloughs, the Santa Cruz Long-toed Salamander Ecological Reserve, the Ellicott Slough National Wildlife Refuge, and the Pajaro River. Sixteen special status plants and sixteen special status animals were evaluated for their potential to fall within this reach (refer to Table 4.4-8). Two special status plants and 12 special status animals were determined to have a moderate to high potential to be impacted. These species are described below.

Marsh Microseris (Arenaria paludicola). Marsh microseris is federally and state Endangered and a CRPR 1B.1 plant species that occurs in freshwater or brackish water marshes and swamps. Within the Watsonville reach, this species would most likely be associated with the sloughs. This species could be impacted during construction of the proposed MBSST Network, particularly where a boardwalk is planned to facilitate avoidance of wetland habitats.

Elegant Copper moss (Mielichhoferia elongata). Elegant copper moss is a CRPR 2.2 plant species and occurs in woodland habitats, usually on rocks or similar substrates. Within the Watsonville reach, this species would occur in the woodland areas associated with the sloughs and other natural areas. This species could be impacted during construction of the proposed MBSST Network where ground disturbance adjacent to the railroad corridor would be necessary.

Tricolored Blackbird (Agelaius tricolor). The tricolored blackbird is a state Species of Special Concern that nests in emergent vegetation in submerged areas. Tricolored blackbirds are colonial nesters, and most colonies are greater than 50 nesting pairs. Within the Watsonville reach, this species is most likely to be found nesting in the sloughs and other natural areas where large areas of wetland vegetation are present. Impacts could result if construction activities occur in or adjacent to nest habitat; however, the potential for impacts would be limited to the nesting season.

Northern Harrier (Circus cyaneus). The northern harrier is a state Species of Special Concern that nests in wet meadows, marshes, and grasslands. This species forages over large areas of similar habitats. Within the Watsonville reach, this species is likely to be associated with the sloughs and other natural areas that are not subject to plowing activities. Impacts would occur if construction activities occur near a nesting northern harrier and cause nest failure. Impacts would only occur during the nesting season.

White-Tailed Kite ~~(Elanus leucurus)~~. Several nesting opportunities are available for white-tailed kites in the Watsonville reach, particularly in the southern portion of the reach where the proposed MBSST Network transitions from urban developed areas to agriculturally developed areas that provide ample foraging opportunities. Impacts to white-tailed kites might occur during construction if kites are nesting near construction areas and/or trees need to be removed or trimmed. The impact could be substantial if a rookery is located near the proposed MBSST Network. These impacts would only occur during the nesting season; however, removal of a nest site outside of the nesting season could be significant as white-tailed kites tend to return to the same nest sites during subsequent years. However, it is not anticipated that large numbers of trees in any given area would need to be removed as the majority of the trail would be constructed on an existing railroad corridor or on surface streets. Furthermore, the removal of one nest tree outside of the nest season should be no different than if that tree had been felled by natural means (e.g., rot). White-tailed kites do have the ability to build new nests and the loss of a single nest tree would be less than significant. Impacts to foraging habitat would be less than significant due to the relatively small disturbance area of the proposed MBSST Network project area.

Great Blue Heron. Numerous riparian woodland areas within the Watsonville reach could support nesting great blue herons. Impacts to nesting great blue herons could result if construction activities occur during the nesting season and in close proximity to a rookery site.

California Black Rail (Laterallus jamaicensis coturniculus). The California black rail is state Threatened and Fully Protected. This species occurs in freshwater marshes, wet meadows and the margins of saltwater marshes. Within the Watsonville reach this species is most likely to be

associated with the sloughs and could be impacted by construction of the proposed MBSST Network, especially if construction occurs near nesting rails.

Santa Cruz Long-Toed Salamander (Ambystoma macrodactylum croceum). The Santa Cruz long-toed salamander (SCLTS) is federally and state Endangered and state Fully Protected. This species typically occurs in wet meadows and is only known from Monterey and Santa Cruz Counties. Within the Watsonville reach this species is present at Ellicott Slough National Wildlife Refuge and the Santa Cruz Long-toed Salamander Ecological Reserve. This species could also occur at the Gallighan and Watsonville Sloughs. Adults of this species use mammal burrows for cover during the non-breeding season. Impacts could occur during construction of the proposed MBSST Network where the project occurs near suitable habitat. The species could be impacted during ground disturbing activities if present in burrows, and it could also be impacted when adults and juveniles are moving through the area during the winter breeding season.

California Tiger Salamander (Ambystoma californiense). The California tiger salamander (CTS) is federally and state Threatened. While CTS can co-occur with the Santa Cruz long-toed salamander, CTS habitat requirements are more narrowly defined. CTS requires vernal and seasonal pools for breeding and upland habitats, such as grasslands and scrub habitats, with small mammal burrows for dispersal and refuge during the non-breeding season. CTS have been documented at Ellicot Pond in the Santa Cruz Long-Toed Salamander Ecological Reserve. Impacts would likely only occur if CTS are found within the construction footprint when dispersing between breeding ponds and upland habitats.

Foothill Yellow-Legged Frog. As mentioned above, this species occurs in many of the same locations as the CRLF, but has an added habitat requirement of needing some cobble-sized substrate for egg-laying. While not all of the drainage may contain the necessary egg-laying substrate, the foothill yellow-legged frog may still travel through the drainages within the Watsonville reach. Impacts to the foothill yellow-legged frog may result during construction of drainage crossings.

Western Pond Turtle. Similar to the central reach, those drainages with openings in the canopy and pools of water may be suitable for this species. This species could be impacted during construction of drainage crossings. This species could also be associated with the sloughs and, therefore, be impacted by construction in/adjacent to these areas.

Steelhead. The south-central California coast DPS of this species is known to occur in the Pajaro River. The extent of impacts will depend on the final design of the drainage crossings. The use of span bridges may result in no impacts. If bridge support structures are necessary then impacts may result during bridge installation. Indirect impacts may also result due to erosion and sedimentation from ground disturbance near suitable habitat.

Pallid Bat. As mentioned in the discussion above, pallid bats commonly roost under bridges. Within the Watsonville reach there is a substantial bridge over the Pajaro River, as well as bridges over drainages associated with the sloughs and other natural areas, which could provide suitable roosting habitat for pallid bats. Impacts could occur during construction of

drainage crossings, and could be substantial if any of the existing bridges are used as maternity roosts.

Monterey Dusky-Footed Woodrat. Woodrats may be found in riparian woodland associated with the drainages, ecological reserve, refuge, and sloughs. Woodrats are expected to be present in these areas and could be impacted where construction activities affect habitat adjacent to the railroad corridor.

Monarch Butterfly. Within the Watsonville reach, monarch butterflies have been documented within the vicinity of La Selva Beach. As discussed above, impacts to monarchs could result if construction activities occur during the winter roost period when monarchs are present. Impacts could also occur if roost site trees are removed and/or trimmed and, thus, the suitability of the roost is reduced.

Table 4.4-8
Potential for MBSST Network Impacts to Special Status Plant and Animal Species in the Watsonville Reach

Common Name	Potential for Impact	Common Name	Potential for Impact
Plants			
Blasdale's bent grass	**Low to None**. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.	Monterey pine	**None**. Monterey pines in the Watsonville reach would be associated with landscaping. Only naturally occurring stands are considered sensitive.
bent-flowered fiddelneck	**Low to None**. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.	Yadon's piperia	**Low to None**. Watsonville reach is in the northern extent of this species range. Very limited areas of suitable habitat near the proposed MBSST Network.
marsh microseris	**Low to Moderate**. Most likely associated with the sloughs. May be impacted during trail construction in these areas.	Choris' popcorn-flower	**Low to None**. Documented near the MBSST Network in this reach. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.
Monterey spineflower	**Low to None**. Documented near the MBSST Network in this reach. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.	San Francisco popcorn flower	**Low to None**. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.
robust spineflower	**Low to None**. Documented near the MBSST Network in this reach. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.	pine rose	**Low to None**. Documented near the MBSST Network in this reach. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.
Santa Cruz tarplant	**Low to None**. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.	maple-leaved checkerbloom	**Low**. May be impacted during construction of the project in drainages.
Kellogg's horkelia	**Low to None**. Documented near the MBSST Network in this reach. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.	San Francisco campion	**Low to None**. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.
marsh scorzonella	**Low to None**. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.	Santa Cruz microseris	**Low to None**. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.
elongate copper moss	**Low to Moderate**. May be impacted during construction of the project in drainages and the sloughs.		
Animals			
tricolored blackbird	**Low to Moderate**. May be impacted during construction of the project if nesting colonies are present in the sloughs near the proposed MBSST Network.	burrowing owl	**Low to None**. Could be impacted during construction of the project if burrows are present or become established along the railroad corridor they may be used by this species.

Table 4.4-8
Potential for MBSST Network Impacts to Special Status Plant and Animal Species in the Watsonville Reach

Common Name	Potential for Impact	Common Name	Potential for Impact
northern harrier	**Low to Moderate**. May be impacted during construction of the project if nesting in/near the sloughs near the proposed MBSST Network.	white-tailed kite	**Moderate**. Many potential nest sites associated with drainages and the sloughs, and larges areas of suitable foraging habitat in this reach. Could be impacted during construction of the project if nesting near construction activities and/or if tree removal/trimming is required.
California black rail	**Low to Moderate**. May be impacted during construction of the project if nesting in/near the sloughs near the proposed MBSST Network.	great blue heron	**Moderate**. Potential rookery and foraging habitat in the drainages and sloughs. Could be impacted during construction of the project if nesting nearby.
Santa Cruz long-toed salamander	**Low**. May be present in the sloughs and wet meadows, therefore, be impacted by construction of the project.	California tiger salamander – Central California DPS	**Low to Moderate**. Very few potential breeding ponds in the area. Not likely to be impacted.
foothill yellow-legged frog	**Low to Moderate**. Documented within the Watsonville reach. Could be associated with drainages and sloughs.	California red-legged frog	**Moderate to High**. Known to occur throughout the region and likely associated with drainages and the sloughs. Could be impacted by construction of the project in these areas.
western pond turtle	**Moderate**. May be impacted by construction of the project in drainages and sloughs.	black legless lizard	**Moderate**. May be impacted by construction of the project in drainages and sloughs.
coast horned lizard	**Low to None**. Very limited areas of suitable habitat. Would only be impacted if ground adjacent to the railroad corridor is disturbed.	tidewater goby	**None**. The proposed MBSST Network does not cross through suitable habitat.
steelhead – south-central California coast DPS	**Low to Moderate**. May be found in the Pajaro River in the vicinity of the railroad bridge and disturbed by construction of new crossing. Would not be impacted elsewhere.	pallid bat	**Low to Moderate**. Several bridges present which this species may use as roosts. May be impacted by construction of drainage crossings.
hoary bat	**Low**. May roost in riparian trees and be impacted by construction of drainage crossings.	Monterey dusky-footed woodrat	**Low to Moderate**. Would be associated with drainages and may be impacted by construction of the proposed MBSST Network, especially if habitat adjacent to the railroad tracks is disturbed.
monarch butterfly	**Low to Moderate**. May be impacted if potential roost sites require tree trimming/removal. Construction activities occurring during the winter roost season adjacent to roost sites may be disruptive.		

Mitigating Design Features. Chapter 5 of the proposed MBSST Network Master Plan identifies drainage and erosion control methods that would be implemented during construction and operation of the MBSST Network project, including engineering to prevent an increase of historic runoff onto other properties, channelization, culverts, improved bridge crossings, and minimization of siltation. The implementation of drainage and erosion control strategies would reduce impacts to species that inhabit aquatic/riparian habitats such as tidewater goby, coho

salmon, steelhead, CRLF, and western pond turtle that could result from on- and off-site runoff during construction and operation of the trail.

Mitigation Measures. The following mitigation measures are required:

B-1(a) **Special Status Plant Species Surveys.** Prior to any vegetation removal, grubbing, or other construction activity of each segment (including staging and mobilization), seasonally-timed special status plant surveys shall be conducted by a qualified biologist approved by the implementing entity no more than two years before initial ground disturbance. The purpose of these surveys is to document the location(s) and number(s) of sensitive plant species within construction and mitigation/restoration areas so that mitigation can be accomplished. The surveys shall coincide with the bloom periods for each species listed above in Tables 4.4-6, 4.4-7 and 4.4-8 and all special status plant species identified on-site shall be mapped onto a site-specific aerial photograph and topographic map at a scale of no less than 1"=200'. Surveys shall be conducted in accordance with the County, CDFW, and USFWS protocols (California Department of Fish and Game 2009, United States Fish and Wildlife Service 2000). A report of the survey results shall be submitted to the RTC and/or implementing entity, and the CDFW for review and approval.

B-1(b) **Special Status Plant Species Avoidance, Minimization, and Mitigation.** If state listed, CRPR List 1B species, or naturally occurring stands of Monterey Pine are found during special status plant surveys [pursuant to mitigation measure B-1(a)], the implementing entity shall redesign the segment to avoid impacting these plant species. Rare plant occurrences that are not within the immediate disturbance footprint, but are located within 50 feet of disturbance limits shall have bright orange protective fencing installed at least 30 feet beyond their extent to protect them from harm.

If avoidance is not feasible, seed shall be collected from on-site rare plants prior to removal, and/or from other local populations of plant species to be impacted. Seed shall be distributed in areas not proposed for development that have the appropriate habitat characteristics necessary to support the restoration. Seed collection shall be conducted by a qualified biologist holding a rare plant collection voucher/permit. Topsoil may also be salvaged and distributed over temporarily disturbed areas following completion of construction activities provided it is free of non-native invasive species. For take of any plant species protected under CESA, an incidental take permit shall be obtained authorizing activities resulting in take.

The total number and/or total acreage for each special status plant species that will be impacted shall be determined once the final design of the project is completed and prior to initiation of ground disturbance activities. Impacted species shall be restored on-site at a minimum of a 2:1 ratio (number of acres/individuals restored to number of acres/individuals impacted) for each species as a component of habitat restoration. Prior to start of construction activities, a ~~A~~ restoration plan shall be prepared and submitted to the RTC for approval and/or implementing entity and the CDFW. The restoration plan shall include, at a minimum, the following components:

- *Description of the project/impact site (i.e., location, responsible parties, areas to be impacted by habitat type);*
- *Goal(s) of the compensatory mitigation project [type(s) and area(s) of habitat to be established, restored, enhanced, and/or preserved; specific functions and values of habitat type(s) to be established, restored, enhanced, and/or preserved];*
- *Description of the proposed compensatory mitigation site (location and size, ownership status, existing functions and values);*
- *Implementation plan for the compensatory mitigation site (rationale for expecting implementation success, responsible parties, schedule, site preparation, planting plan);*
- *Maintenance activities during the monitoring period, including weed removal as appropriate (activities, responsible parties, schedule);*
- *Monitoring plan for the compensatory mitigation site, including no less than quarterly monitoring for the first year (performance standards, target functions and values, target acreages to be established, restored, enhanced, and/or preserved, annual monitoring reports);*
- *Success criteria based on the goals and measurable objectives; said criteria to be, at a minimum, at least 80 percent survival of container plants and 30 percent relative cover by vegetation type;*
- *An adaptive management program and remedial measures to address any shortcomings in meeting success criteria;*
- *Notification of completion of compensatory mitigation and agency confirmation; and*
- *Contingency measures (initiating procedures, alternative locations for contingency compensatory mitigation, funding mechanism).*

The restoration plan shall be implemented for a period of at least five years or until restoration has been deemed complete based on the established success criteria. All restoration/compensatory mitigation areas shall be permanently protected through a

conservation easement or deed restriction.

B-1(c) **Santa Cruz Long-Toed Salamander Habitat Assessment and Protocol Surveys**. Prior to start of construction of each segment, a CDFW- and USFWS-approved biologist shall conduct a habitat assessment to determine if suitable habitat is present within or adjacent to the project site. If suitable habitat is identified, protocol surveys shall be conducted in accordance with *Sampling Procedures for Determining Presence or Absence of the Santa Cruz Long-toed Salamander (Ambystoma macrodactylum croceum)* (1993) developed jointly by the CDFW and the USFWS. The protocol surveys shall be conducted for two consecutive rainy seasons prior to the start of construction. A report of the survey results shall be submitted to the implementing entity, RTC, CDFW, and the USFWS for review and approval.

B-1(d) **California Red-Legged Frog, Santa Cruz Long-toed Salamander and Foothill Yellow-Legged Frog, California Tiger Salamander Avoidance and Minimization.** The following avoidance and minimization measures are adapted from the *Programmatic Formal Endangered Species Act Consultation on Issuance of Permits under Section 404 of the Clean Water Act or Authorizations under the Nationwide Permit Program for Projects that May Affect the California Red-legged Frog* issued on January 1999 by the USFWS. Consultation shall occur with the USFWS to determine that 1) the project is covered under the above programmatic formal consultation through issuance of USACE permits under Section 404 of the Clean Water Act, or 2) that take of federally-protected species is not anticipated through implementation of the measures below as determined through informal consultation with the USFWS if no federal permits are pursued. Consultation shall also occur with the CDFW for state protected species to either obtain a state Incidental Take Permit or establish concurrence that take would not occur.

- *Within two weeks of the initiation of construction activities of each segment (including mobilization and staging), a CDFW/USFWS-approved biologist shall conduct a survey of the construction area for all life stages of CRLF, CTS, foothill yellow-legged frog, and Santa Cruz long-toed Salamander. All areas where these species occur shall be avoided until the approved biologist has determined that these species are no longer present. No life stages of these species shall be relocated without a take authorization from the USFWS and/or CDFW. If relocation is authorized, a suitable relocation site shall be identified prior to initiation of construction activities and shall be located within the same watershed/streamcourse greater than 500 feet from the project site.*

- *Work activities in or adjacent to suitable habitat shall be completed between April 1 and November 1 to the greatest extent feasible.*
- *A CDFW/USFWS-approved biologist shall be present on-site during all ground disturbing activities, including vegetation removal, grading, and exclusion fence installation and removal. Once these activities have been completed, the approved biologist shall conduct periodic inspections of the work site of not less than once per week when construction activities are occurring in/adjacent to suitable habitat. Additional site visits should occur during rain events when special status amphibians are likely to be mobile to ensure that they are not entering work areas.*
- *The implementing entity shall designate a representative who will oversee implementation of all avoidance and minimization measures when the CDFW/USFWS-approved biologist is not present. This representative shall be trained by the CDFW/USFWS-approved biologist in the identification of special status amphibians and in the implementation of all avoidance and minimization measures. This representative shall not have the authority to handle special status species.*
- *Both the implementing entity's representative and the CDFW/USFWS-approved biologist shall have the authority to halt any action which may result in the take of special status species.*
- *Prior to start of construction, exclusion fencing shall be placed along the project boundaries in areas where suitable habitat is present. This fence shall consist of solid silt fencing placed at a minimum of 3 feet above grade and 2 feet below grade and shall be attached to wooden stakes placed at intervals of not more than 5 feet. The fence shall be inspected weekly and following rain events and high wind events and shall be maintained in good working condition until all construction activities are complete.*
- *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.*
- *At the end of each work day, excavations shall be secured with cover or a ramp provided to prevent wildlife entrapment.*
- *All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.*
- *The CDFW/USFWS-approved biologist shall remove invasive aquatic species such as bullfrogs and crayfish from suitable aquatic habitat whenever observed and shall dispatch them in a humane manner and dispose of properly.*

- *If any federally and/or state protected species are harmed, the CDFW/USFWS-approved biologist shall document the circumstances that led to harm and shall determine if project activities should cease or be altered in an effort to avoid additional harm to these species. Dead or injured special status species shall be disposed of at the discretion of the CDFW and USFWS. All incidences of harm shall be reported to the CDFW and USFWS within 48 hours.*

B-1(e) **Tidewater Goby, Steelhead and Coho Salmon Impact Avoidance and Minimization**. If suitable habitat for tidewater goby, steelhead, and/or coho salmon cannot be avoided, any in-stream portions of each segment (where drainage crossings require in-stream work) shall be dewatered/ diverted. A dewatering/ diversion plan shall be prepared and submitted to the NMFS, the USFWS and the CDFW for review and approval. All dewatering/diversion activities shall be monitored by a qualified fisheries biologist. The fisheries biologist shall be responsible for capture and relocation of fish species out of the work area during dewatering/diversion installation.

A *Programmatic Consultation and Conference for Listed Coastal Species, Ventura, Santa Barbara, San Luis Obispo, Monterey, and Santa Cruz Counties, California (1-8-96-F-11)* was established on August 29, 1991 between the USFWS and the USACE. The following measures are generally adapted from that document. Consultation shall occur with the USFWS to determine that 1) the project is covered under the above programmatic consultation through issuance of USACE permits under Section 404 of the Clean Water Act, or 2) that take of CRLF is not anticipated through implementation of the measures below as determined through informal consultation with the USFWS if no federal permits are pursued.

- *The implementing entity shall designate a representative to monitor on-site compliance of all avoidance and minimization measures. This representative shall be trained by a qualified fisheries biologist in the identification of the target species and the assessment of the potential for take based on the proposed activities. The representative shall consult with the biologist as necessary to ensure compliance. The representative and the biologist shall have the authority to halt any action which may result in the take of listed species.*
- *Only USFWS/NMFS/CDFW-approved biologists shall participate in the capture and handling of listed species.*
- *No equipment shall be permitted to enter wetted portions of any affected drainage channel.*
- *All equipment operating within streams 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.

- *Work within and adjacent to streams shall not occur between November 1 and May 1. Unless otherwise approved by NMFS and the CDFW.*
- *If project activities could degrade water quality, water quality sampling shall be implemented to identify the pre-project baseline, and to monitor during construction for comparison to the baseline.*
- *If water is to be pumped around work sites, intakes shall be completely screen with wire mesh not larger than five millimeters to prevent animals from entering the pump system.*
- *If any tidewater goby, steelhead, or coho salmon are harmed during implementation of the project, the project biologist shall document the circumstances that led to harm and shall determine if project activities should cease or be altered in an effort to avoid further harm to CRLF.*
- *Water turbidity shall be monitored by a qualified biologist or water quality specialist during all instream work. Water turbidity shall be tested daily at both an upstream location for baseline measurement and downstream to determine if project activities are altering water turbidity. Turbidity measures shall be taken within 50 feet of construction activities to rule out other outside influences. Additional turbidity testing shall occur if visual monitoring indicates an increased in turbidity downstream of the work area. If turbidity levels immediately downstream of the project rise to more than 20 NTUs (Nephelometric Turbidity Units) above the upstream (baseline) turbidity levels, all construction shall be halted and all erosion and sediment control devices shall be thoroughly inspected for proper function, or shall be replaced with new devices to prevent additional sediment discharge into streams.*

B-1(f) ~~**San Francisco Garter Snake and**~~ **Black Legless Lizard Surveys.** Not less than three months prior to the start of construction activities (including staging and mobilization) for each segment, an CDFW~~ and USFWS~~-approved biologist shall place coverboards in areas with suitable habitat for ~~San Francisco garter snake and~~ black legless lizard. The coverboards shall be at least four feet by four feet and constructed of untreated plywood placed flat on the ground. The coverboards shall be checked by the biologist once per week for each week after placement up until the start of vegetation removal. All black legless lizards found under the coverboards shall be captured and placed in five-gallon buckets for transportation to relocation sites. All relocation sites shall be approved by the RTC and/or implementing entity and shall consist of suitable habitat. Relocation sites shall be as close to the capture site as possible but far enough away to ensure the animal(s) is not harmed by construction of the project. Relocation shall occur on the same day as capture. CNDDB Field Survey

Forms shall be submitted to the CDFW for all special status animal species observed.

~~If a San Francisco garter snake is located during the surveys, the garter snake shall not be captured and relocated. All further survey efforts at the location of the observation shall cease and the CDFW and USFWS shall be consulted.~~

During all initial ground vegetation removal activities for each segment, a qualified biologist shall be on-site to recover any ~~San Francisco garter snakes and~~ black legless lizards that may be excavated/ unearthed. If the animals are in good health, they shall be immediately relocated to the designated release area. If they are injured, the animals shall be released to a CDFW ~~and/or USFWS~~ approved specialist until they are in a condition to be released into the designated release area.

A report of all preconstruction survey efforts and monitoring during initial ground vegetation removal of each segment shall be submitted to the implementing entity within 30 days of completion of the survey effort to document compliance. The report shall include the dates, times, weather conditions, and personnel involved in the surveys and monitoring. The report shall also include for each captured special status animal, the UTM coordinates and habitat descriptions of the capture and release site (in UTM coordinates), the length of time between capture and release, and the general health of the individual(s).

B-1(g) **FESA and CESA Consultation.** To ensure compliance with FESA and CESA, the RTC and/or implementing entity shall obtain either Incidental Take Permits or written concurrence that implementation of the project will not result in take for CRLF, SCLTS, CTS, ~~San Francisco garter snake,~~ steelhead, coho salmon, and tidewater goby.

B-1(h) **Western Pond Turtle Survey, Capture, and Relocation**. Not less than 14 days prior to the start of all construction activities for each segment (including staging and mobilization), an RTC and/ or implementing entity approved biologist shall conduct surveys for western pond turtles within suitable habitat. The biologist shall also oversee installation of exclusion fencing where suitable habitat is present to prevent western pond turtles from entering active work areas. If western pond turtles are identified within the work area they shall be captured and relocated to suitable habitat within the same or nearest drainage. The relocation site shall include a pool surrounded by vegetation for escape cover.

CNDDB Field Survey Forms shall be submitted to the CDFW for all special status animal species observed.

During the rainy season (approximately November 1 to April 15), western pond turtles may actively move through upland habitats outside of drainages. If a turtle is observed by construction personnel within or adjacent to the project area, the turtle's location shall be communicated to the RTC and/ or implementing entity approved biologist. Only the RTC-approved biologist shall capture and relocate the turtle. Construction personnel are not permitted to handle animals.

A report of all preconstruction survey efforts for each segment shall be submitted to the implementing entity within 30 days of completion of the survey effort to document compliance. The report shall include the dates, times, weather conditions, and personnel involved in the surveys and monitoring. The report shall also include for each captured special status animal, the UTM coordinates and habitat descriptions of the capture and release site (in UTM coordinates), the length of time between capture and release, and the general health of the individual(s).

B-1 (i) **Special Status Bat Surveys and Impact Avoidance.** An RTC and/ or implementing entity approved biologist shall conduct presence/absence surveys for special status bats where suitable roosting habitat is present. Bat surveys shall be conducted in consultation with the CDFW. Surveys shall be conducted using acoustic detectors and by searching tree cavities, crevices, and other areas where bats may roost. Surveys shall be conducted not less than 30 days prior to initiation of construction activities for each segment.

Areas where special status bats are located shall be avoided where feasible. If impacts to bats cannot be avoided, exclusionary devices, such as netting, shall be installed by an RTC and/ or implementing entity approved biologist around the roost(s) after the bats have left the roost in the evening and shall be monitored for a minimum of three days to ensure that no bats return to the roost. Once it has been determined that the roost is clear of bats, the roost shall be removed immediately. Exclusion of bats must commence prior to establishment of maternity colonies, which varies by species. If a maternity colony has become established, all construction activities shall be postponed within a 500-foot buffer around the maternity colony until it is determined by a qualified biologist that the young have dispersed. Bat roosts shall be removed after the breeding season has ended but before the onset of winter when temperatures are too cold for bat movement.

If a roost is determined by a qualified biologist to be used by a large number of bats (large hibernaculum), bat boxes near the impacted roost shall be installed to reduce the impact to the bat species present. Bat boxes shall be species-specific in dimensions and should mimic a tree hollow or crevice. Bat boxes shall be installed at a height that is appropriate for the bat species and anti-predator measures, such as small metal spikes on the top, shall be included to protect bats.

A report of survey efforts shall be submitted to the implementing entity within 30 days of completion of the surveys for each segment to document compliance. The report shall include the dates, times, weather conditions, and personnel involved in the surveys. If exclusion devices and/or bat boxes are utilized, the report shall describe how these methods were employed.

B-1(j) **Monterey Dusky-Footed Woodrat Avoidance and Minimization**. Within 14 days prior to start of construction activities, all suitable habitat within and adjacent to the construction disturbance limits shall be surveyed for woodrat middens by a qualified biologist approved by the RTC and/or the implementing entity. If middens are located within the disturbance area, the construction contractor shall under the guidance of the biologist remove the midden using an excavator. The midden shall first be "tapped" or shaken by the excavator bucket to encourage the woodrats to evacuate. The excavator shall then grasp portions of the midden with the bucket and relocate them to the same location outside of the disturbance area. All portions of the same midden shall be relocated to the same area; they shall not be distributed across the adjacent habitat. Once the biologist is satisfied that the midden has been removed, construction may commence.
If a midden is located within 50 feet of the construction disturbance area, bright-orange construction fencing shall be installed along the perimeter of the disturbance area to protect the midden from harm impacts during construction.

B-1(k) **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 and the MBTA (including, but not limited to, great blue heron, northern harrier, tricolored blackbird, and California black rail) shall be conducted by a qualified biologist no more than 14 days prior to initiation of construction activities for each segment, including construction staging and vegetation removal. The surveys shall include the entire segment disturbance area plus a 200 foot buffer around the site. If active nests are located, all

construction work shall be conducted outside a buffer zone from the nest to be determined by the qualified biologist. The buffer shall be a minimum of 50 feet for non-raptor bird species and at least 150 feet for raptor species. Larger buffers may be required depending upon the status of the nest and the construction activities occurring in the vicinity of the nest. The biologist shall have full discretion for establishing a suitable buffer. The buffer area(s) shall be closed to all construction personnel and equipment until the adults and young are no longer reliant on the nest site. A qualified biologist shall confirm that breeding/nesting is completed and young have fledged the nest prior to removal of the buffer.

B-1(l) **Monarch Butterfly Avoidance and Minimization**. Prior to completion of the final design, a biologist approved by the RTC and/or implementing entity shall review the project for potential to impact monarch butterflies. If known or potential winter roost sites will be impacted, the biologist shall make recommendations to avoid impacts including, but not limited to, relocation/redesign of project features to avoid roost sites, guidance regarding tree removal and trimming at roost sites, and recommendations regarding planting additional roost trees.

Construction shall not occur within 100 feet of known or potential roost sites between November 1 and May 1 as feasible. If construction must occur during this period, the qualified biologist shall survey known and potential roost sites to confirm occupancy by monarch butterflies prior to start of construction within 100 feet. Multiple surveys may be necessary and the closest known roost sites shall be used as voucher sites to confirm the timing of butterfly arrival. If monarch butterflies are determined to be absent from a roost site, construction may commence. If monarch butterflies are found at a roost site, construction shall not occur within 100 feet of the roost site until the biologist has determined that the butterflies have left the area. The biologist shall visit the voucher sites to confirm that butterflies have left the region.

B-1(m) **Worker Environmental Awareness Program (WEAP)**. Prior to initiation of construction activities for each segment (including staging and mobilization), all personnel associated with the segment 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 careful 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. The form shall be submitted to the RTC and/or implementing entity to document compliance.

B-1(n) **San Francisco Garter Snake Avoidance and Minimization.** The following measures shall be implemented in the Northern Reach in consultation with the CDFW and USFWS:

- All portions of the proposed project within the range of the San Francisco garter snake shall be designed to avoid impacts to aquatic habitat and to avoid or minimize impacts to adjacent upland habitat.
- Construction activities in the Northern Reach shall be avoided within 200 feet of suitable aquatic habitat to the greatest extent feasible.
- Construction equipment, personnel, and materials shall be confined to roadways and existing disturbed areas so as to minimize habitat disturbance. If work must occur within 200 feet of suitable aquatic habitat, exclusion fencing shall be installed at the discretion of a qualified biologist to prevent San Francisco garter snakes from entering the work site.
- Construction shall occur between May 1 and October 1 when San Francisco garter snake is most active and would be expected to move and avoid danger. If construction must occur between October 2 and April 30, the USFWS and CDFW shall be consulted to determine if additional minimization measures are necessary.
- Impacts to suitable upland habitat shall be the minimum necessary to complete construction of the project. The limits of construction shall be delineated clearly with highly visible flagging or construction fencing.
- Not more than 24 hours prior to initiation of construction activities at the project site, including mobilization and staging, a qualified biologist shall conduct a survey of suitable habitat for San Francisco garter snake. If a San Francisco garter snake is observed within the disturbance footprint, construction activities shall be postponed until the CDFW and USFWS has been consulted for guidance.
- Trash shall be fully contained at all times and shall be removed from the site daily.
- A qualified biologist shall be present during all construction activities occurring within and adjacent to suitable habitat to

ensure avoidance and minimization measures are implemented and effective.

Significance After Mitigation. With implementation of the above mitigation measures, potential impacts to sensitive plant and animal species would be reduced to a less than significant level.

Impact B-2 Implementation of the proposed MBSST Network project could result in impacts to riparian and other habitats considered sensitive by local, state, and/or federal agencies, including federally protected wetlands. This impact would be Class II, *significant but mitigable*.

Several drainages and wetland habitats are mapped within the proposed MBSST Network, as outlined in Tables 4.4-2 and 4.4-3. In addition, several habitats considered sensitive by the CDFW may also be present within each of the reaches.

Northern Reach. The northern reach has more drainages and National Wetland Inventory (NWI) mapped wetlands along the proposed MBSST Network than any other reach, as shown in Tables 4.4-2 and 4.4-3. The mapped drainages include relatively large creeks such as Waddle Creek, Scott Creek, and San Vicente Creek, as well as several smaller drainages. Each of these drainages connects with the Pacific Ocean. Wetland habitats are varied and are generally associated with the drainages; however, there are several areas of fresh-water emergent wetland along the railroad corridor that are not likely mapped by the NWI. While these wetlands are likely an artifact of the construction of the railroad corridor, they are expected to fall under the jurisdiction of the CCC and RWQCB, and may fall under the jurisdiction of the USACE if connectivity to a Traditional Navigable Water is identified. In addition to wetlands, several sensitive habitats are present within the vicinity of the northern reach including: Monterey Pine Forest, North Central Coast Short-Run Coho Stream (mapped at Scott Creek and Waddell Creek), Coastal Brackish Marsh (identified near the mouth of Waddell Creek and possible at other drainages), and Northern Coastal Salt Marsh (mouth of Scott Creek).

Impacts to these riparian and other sensitive habitats may include loss of habitat through construction of project features, such as trails and drainage crossings. Habitat degradation may also result from introduction of invasive species incidentally from construction equipment and through selection of invasive landscape plants, as well as through erosion of disturbed areas.

Central Reach. Within the central reach, several drainages cross the proposed MBSST Network, as shown in Tables 4.4-2 and 4.4-3. The largest drainage in this reach is the San Lorenzo River. Other substantial drainages include Soquel Creek and Aptos Creek. Each of these drainages connects with the Pacific Ocean. Several mapped wetlands are present within the reach and are associated with the drainages. In addition the San Lorenzo River and its tributaries are mapped as North Central Coast Drainage Sacramento Sucker/Roach River sensitive habitat.

As described above, impacts to these riparian and other sensitive habitats may include loss of habitat through construction of project features, such as trails and drainage crossings. Habitat degradation may also result from introduction of invasive species incidentally from

construction equipment and through selection of invasive landscape plants, as well as through erosion of disturbed areas.

Watsonville Reach. Within the Watsonville reach, the largest drainage is the Pajaro River. Other drainages drain the Watsonville and Gallighan sloughs. All of these drainages connect to the Pacific Ocean. Within the one mile search area, the mapped wetland habitat consisted of freshwater forested/shrub, which is primarily associated with the sloughs. In addition, Coastal and Valley Freshwater Marsh is expected to be associated with the sloughs. Northern Coastal Salt Marsh is associated with the mouth of the Pajaro River and the mouth of the Watsonville Slough, and Central Dune Scrub is associated with Sunset State Beach; however, the proposed MBSST Network is sufficiently far away such that these habitats would not be impacted.

It is expected that each of these drainages and wetlands will fall under the jurisdictions of the USACE, RWQCB, CDFW, and/or CCC. A formal evaluation of these features will be needed prior to implementation of each reach of the MBSST Network project.

As described above, impacts may include loss of habitat through construction of project features, such as trails and drainage crossings. Habitat degradation may also result from introduction of invasive species incidentally from construction equipment and through selection of invasive landscape plants, as well as through erosion of disturbed areas.

Mitigating Design Features. Chapter 5 of the proposed MBSST Network Master Plan identifies drainage and erosion control methods that would be implemented during construction and operation of the MBSST Network project, including engineering to prevent an increase of historic runoff onto other properties, channelization, culverts, improved bridge crossings, and minimization of siltation. The implementation of drainage and erosion control strategies would reduce impacts to species that inhabit aquatic/riparian habitats such as tidewater goby, coho salmon, steelhead, CRLF, and western pond turtle that could result from on- and off-site runoff during construction and operation of the trail.

Mitigation Measures. The following measures are required.

B-2 (a) **Jurisdictional Delineation**. Once the final design has been developed for each segment, but prior to the start of construction, a qualified biologist shall conduct a jurisdictional delineation of the entire segment disturbance area at those locations where construction activity could affect jurisdictional waters. The jurisdictional delineation shall determine if features are under the jurisdiction of the USACE, RWQCB, CDFW, and/or CCC. The result shall be a preliminary jurisdictional delineation report that shall be submitted to the RTC and/or implementing entity, USACE, RWQCG, CDFW, and CCC, as appropriate, for review and approval. Permits shall be obtained from each agency where applicable.

B-2(b) **Wetland and Riparian Habitat Restoration.** Impacts to jurisdictional wetland and riparian habitat shall be mitigated at a

ratio of minimum 2:1 for each segment, and shall occur as close to the impacted habitat as possible. A Habitat Restoration Plan shall be developed by a biologist approved by the RTC and/or implementing entity in accordance with mitigation measure B-1(b) above and shall be implemented for no less than five years after construction of the segment, or until the RTC/implementing entity and/or the permitting authority (e.g., CDFW or USACE) has determined that restoration has been successful. All restoration/compensatory mitigation areas shall be permanently protected through a conservation easement or deed restriction.

B-2(c) **Landscaping Plan.** If landscaping is proposed for a specific segment, a qualified biologist/landscape architect shall prepare a landscape plan for that segment. This plan shall indicate the locations and species of plants to be installed throughout the segment. 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 Lists 1, 2, and 4 shall not be permitted. Species selected for planting shall be similar to those species found in adjacent native habitats.

B-2(d) **Invasive Weed Prevention and Management Program.** Prior to start of construction of each segment, an Invasive Weed Prevention and Management Program shall be developed by a qualified biologist approved by the RTC and/or implementing entity to prevent invasion areas adjacent native habitat by non-native plant species. A list of target species shall be included, along with measures for early detection and eradication before any species can gain a foothold and out-compete native plant species for resources.

All disturbed areas shall be hydroseeded with a mix of locally native species upon completion of work in those areas. In areas where construction is ongoing, hydroseeding 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 hydroseeding, weed removal shall occur in consultation with a qualified biologist and in accordance with the restoration plan.

Herbicides may be used on a limited basis to control the growth and spread of invasive weeds. Aqua-Master herbicides containing a dye to show overspray or a similar herbicide approved by the CDFW shall be used, and shall be applied by a certified pesticide application specialist under the direction of a qualified biologist. Herbicide application shall be plant species-dependent and can

include foliar treatment or cut surface treatments. Herbicide shall not be broadcast over a large area; instead specific plant species shall be targeted. The target plant species shall be removed and disposed of properly at a landfill once they are dead.

Significance After Mitigation. With implementation of the above mitigation measures, potential impacts to sensitive riparian and other habitats would be reduced to a less than significant level.

Impact B-3 Implementation of the proposed MBSST Network project could result in impacts to wildlife movement or nursery sites. This impact would be Class II, *significant but mitigable*.

Northern Reach. Wildlife movement within the northern reach could be associated with drainages and with larger natural areas that are not plowed for cropland such as Big Basin Redwoods State Park and the California Polytechnic State University Lands. Movement through these areas is limited by the presence of Highway 1. Most wildlife movement in this reach is likely to occur in the largely undisturbed mountainous terrain east of Highway 1. Cropland present along the proposed MBSST Network does not necessarily present a barrier to movement, but croplands generally provide low quality habitat for wildlife, and are used primarily for feeding (e.g., white-tailed kites) and some movement. Other wildlife uses, such as nesting (nursery sites) or roosting, are typically absent from croplands due in part to the activities of humans and machines, and efforts to protect crops from predation.

Central Reach. Wildlife movement within the central reach is generally restricted to the drainages that cross the proposed MBSST Network. The majority of the reach is developed for urban uses which are largely incompatible with wildlife movement and breeding except of urban adapted species, such as northern mockingbirds (*Mimus polyglottis*), red-tailed hawks (*Buteo jamaicensis*), opossums (*Didelphia viginianus*), raccoons (*Procyon lotor*) and various rodent species. The presence of domestic animals, in particular, discourages wild animals from occurring in urban areas.

Watsonville Reach. Wildlife movement within the Watsonville reach is likely to be more restrictive than the northern reach and less restrictive than the central reach. Drainages within this reach may facilitate movement and agricultural lands are generally open. However, there are numerous, scattered residential areas that many wild animals would likely avoid, and agricultural activities in this reach consist primarily of row crops. Wildlife present in this reach are likely those that occupy the drainages and/or are adapted to habitat edges such as the white-tailed kite and pallid bat.

No major wildlife movement corridors are identified along the proposed MBSST Network, and wildlife movement is likely to be negatively influenced by Highway 1, which also occurs generally parallel to the proposed MBSST Network throughout its length. Wildlife movement within the proposed MBSST Network is more likely to occur in the northern reach.

Mitigating Design Features. The proposed MBSST Network Master Plan contains design guidelines that would limit potential adverse effects to wildlife movement. Specifically, the Master Plan outlines the types of trail fencing to be used in various environments along the trail

network, and recommends that fencing along the trail corridor be used conservatively to maintain the open feel and views of the coastal environment. With the exception of privacy fencing – which would be used to provide trespass prevention, security, and privacy for adjacent landowners in urban areas – trail fencing would be designed to allow open visibility of the surrounding landscape, but may still impede wildlife movement.

Mitigation Measures. Mitigation measure B-1(k) addresses impacts to nesting birds. The following measures are also required:

B-3(a) **Fence Design.** All project fencing shall be designed to facilitate wildlife movement through the proposed MBSST Network and shall include:

- *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 or mesh 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.*

The final fence design shall be submitted by each implementing entity to the RTC and shall be reviewed by a RTC-approved biologist for approval.

B-3(b) **Construction Best Management Practices.** The following construction Best Management Practices (BMPs) shall be incorporated into all grading and construction plans for each segment of the MBSST Network:

- *Designation of a 15 mile per hour speed limit in all construction areas.*
- *All vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas, and clearing of vegetation for vehicle access shall be avoided to the greatest extent feasible.*
- *The number of access routes, number and size of staging areas, and the total area of the activity shall be limited to the minimum necessary to achieve the goal of the project.*
- *Designation of equipment washout and fueling areas to be located within the limits of grading at a minimum of 100 feet from waters, wetlands, or other sensitive resources as identified by a qualified biologist. Washout areas shall be designed to fully contain polluted water and materials for subsequent removal from the site.*
- *Daily construction work schedules shall be limited to daylight hours only [consistent with mitigation measure N-1(a) (Construction Hours) in Section 4.10, Noise].*

- *Mufflers shall be used on all construction equipment and vehicles shall be in good operating condition.*
- *Drip pans shall be placed under all stationary vehicles and mechanical equipment.*
- *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.*

Significance After Mitigation. With implementation of the above mitigation measures, potential impacts to wildlife movement and nursery sites would be reduced to a less than significant level.

d. Cumulative Impacts. The proposed MBSST Network project, in combination with other planned and pending development in the vicinity of the proposed MBSST Network, would incrementally alter biological habitats in the area. However, because the area already consists primarily of biologically disturbed railroad corridor, agricultural areas, and urban development, cumulative biological resource impacts would be limited. Compliance with applicable federal, state, and local regulations relating to preservation of sensitive species in these areas would be expected to reduce cumulative biological impacts to a less than significant level.