

4.3 Biological Resources and Wetlands

4.3.1 Introduction

This section describes the affected environment and environmental consequences related to biological resources and wetlands from operations of the NEPA Alternatives.

Additional information on biological resources is provided in *VTA's BART Silicon Valley—Phase II Extension Project Special-Status Species Lists* technical report.

Biologists compiled a variety of natural resource information for the corridor by consulting the California Natural Diversity Database (CNDDDB) (California Department of Fish and Wildlife 2016), the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants* (California Native Plant Society 2015), and the U.S. Fish and Wildlife Service (USFWS) list of threatened and endangered species (U.S. Fish and Wildlife Service 2015). A reconnaissance survey was conducted on November 4, 2015, to confirm existing biological resources and wetlands in the area. In addition, the *Silicon Valley Rapid Transit Corridor Environmental Impact Statement and 4(f) Evaluation* (Santa Clara Valley Transportation Authority and Federal Transit Administration 2010) and associated biological technical studies prepared for the FEIS were used as background information for the vicinity. The CNDDDB, CNPS, and USFWS lists are included in *VTA's BART Silicon Valley—Phase II Extension Project Special-Status Species Lists*.

4.3.2 Environmental and Regulatory Setting

4.3.2.1 Environmental Setting

This section discusses the existing biological resources and wetlands in the area. For purposes of this analysis, a 2-mile buffer of the area of disturbance, including construction staging areas, was assessed for the potential presence of special-status species that could be affected by the BART Extension Alternative. See Figures 4.3-1 and 4.3-2 for special-status plant and animal species with CNDDDB-documented occurrences within 2 miles of the BART Extension.

Land Cover Types

The BART Extension would be located within the central California Coast Range. Vegetation and non-developed land cover types identified in the area consist of ruderal/disturbed, willow scrub/riparian woodland, and riverine (Guadalupe River and creeks). Four creeks run through the BART Extension area: Coyote Creek, Lower Silver Creek, Los Gatos Creek, and the Guadalupe River. Land cover types in the area are highly fragmented, which diminishes their ecological value in most cases. Isolated habitat islands may provide refuge for wildlife, but the habitat value in these areas is degraded and most

likely will continue to degrade regardless of the BART Extension because of the isolation from urban development. Willow scrub/riparian woodland is the only sensitive natural communities (i.e., communities that are of limited distribution statewide or within a county or region and considered "special-status" by the California Department of Fish and Wildlife [CDFW]) in the area. See Figure 4.3-3 for the mapped land cover types within the area, which are based on those identified and mapped in the *Santa Clara Valley Habitat Plan* (SCVHP) (Santa Clara County 2012).

A brief description of the vegetation and wildlife resources within each land cover type is provided below. Plant taxonomy and nomenclature follow the *Jepson Manual: Vascular Plants of California* (Baldwin and Wilken 2012).

Ruderal/Disturbed

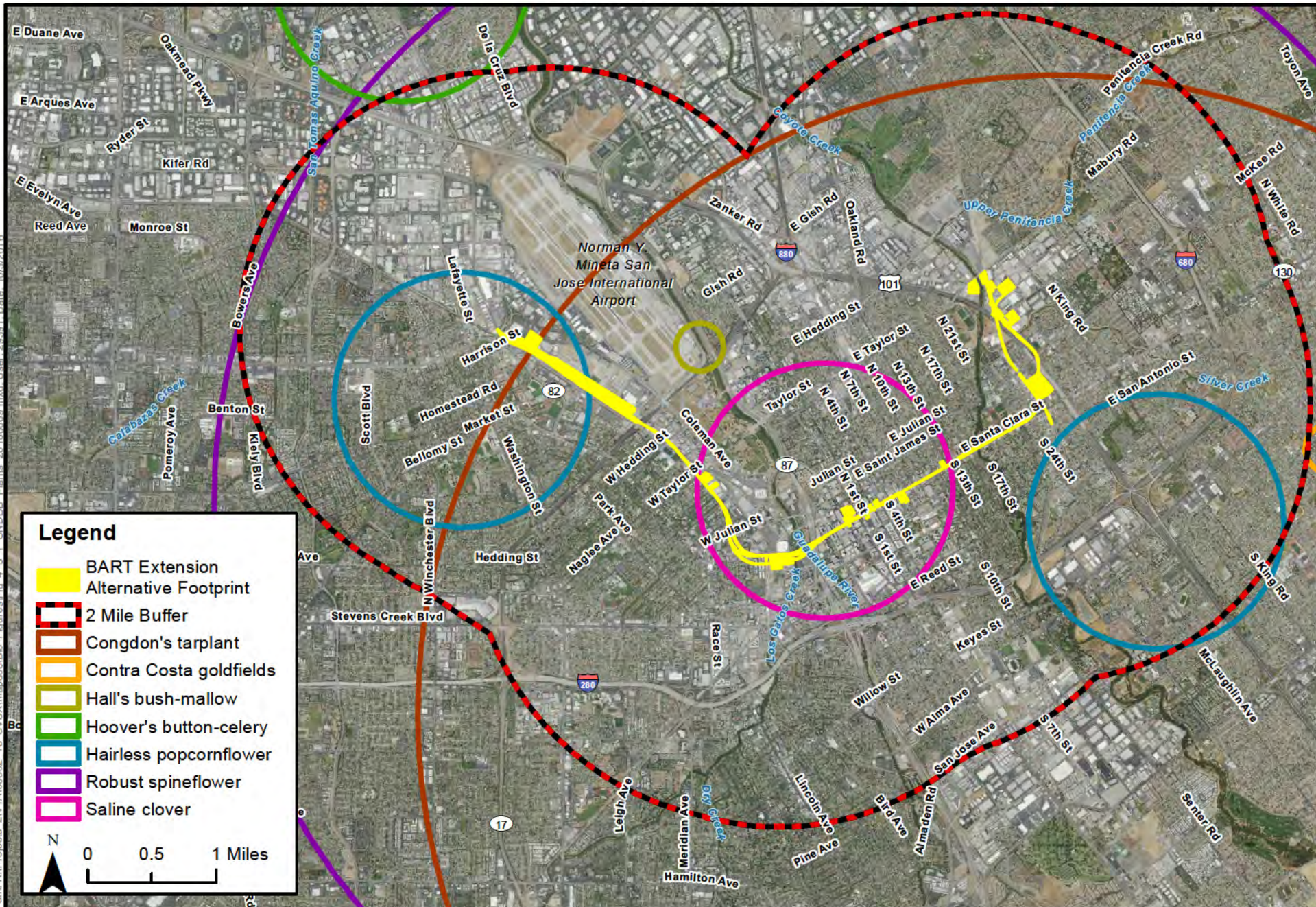
This land cover type includes species groupings found in urban ornamental landscape and agriculture settings. A distinguishing characteristic of ruderal/disturbed communities within urban areas is the mixture of native and exotic plant species. Exotic plant species may provide valuable habitat elements, such as cover for nesting and foraging, as well as food sources, such as nuts, berries, or insects. Ruderal/disturbed habitat is typically dominated by nonnative grass species, including Italian ryegrass, orchardgrass (*Dactylus glomerata*), and wild oat, as well as bull thistle (*Cirsium vulgare*). Examples of animal species tolerant of human activities that often utilize ruderal/disturbed habitats include killdeer (*Charadrius vociferous*), mourning doves (*Zenaida macroura*), and California ground squirrel (*Otospermophilus beecheyi*).

The majority of the corridor lies within ruderal/disturbed vegetation, and most of the area that would be disturbed by the BART Extension consists of ruderal/disturbed urban landscape. Some remnant agricultural areas, consisting solely of disked pasture, persist adjacent to the BART Extension.

Willow Scrub/Riparian Woodland

Willow scrub occurs along Lower Silver Creek, which was disturbed during flood protection improvements in August 2009 and subsequently revegetated for the Santa Clara Valley Water District's Lower Silver Creek Project. Willow (*Salix* spp.) shrubs dominate this land cover type and are supported by the water of Lower Silver Creek. Understory species are primarily nonnative grasses but are eventually expected to change as willow scrub matures and a defined overstory develops.

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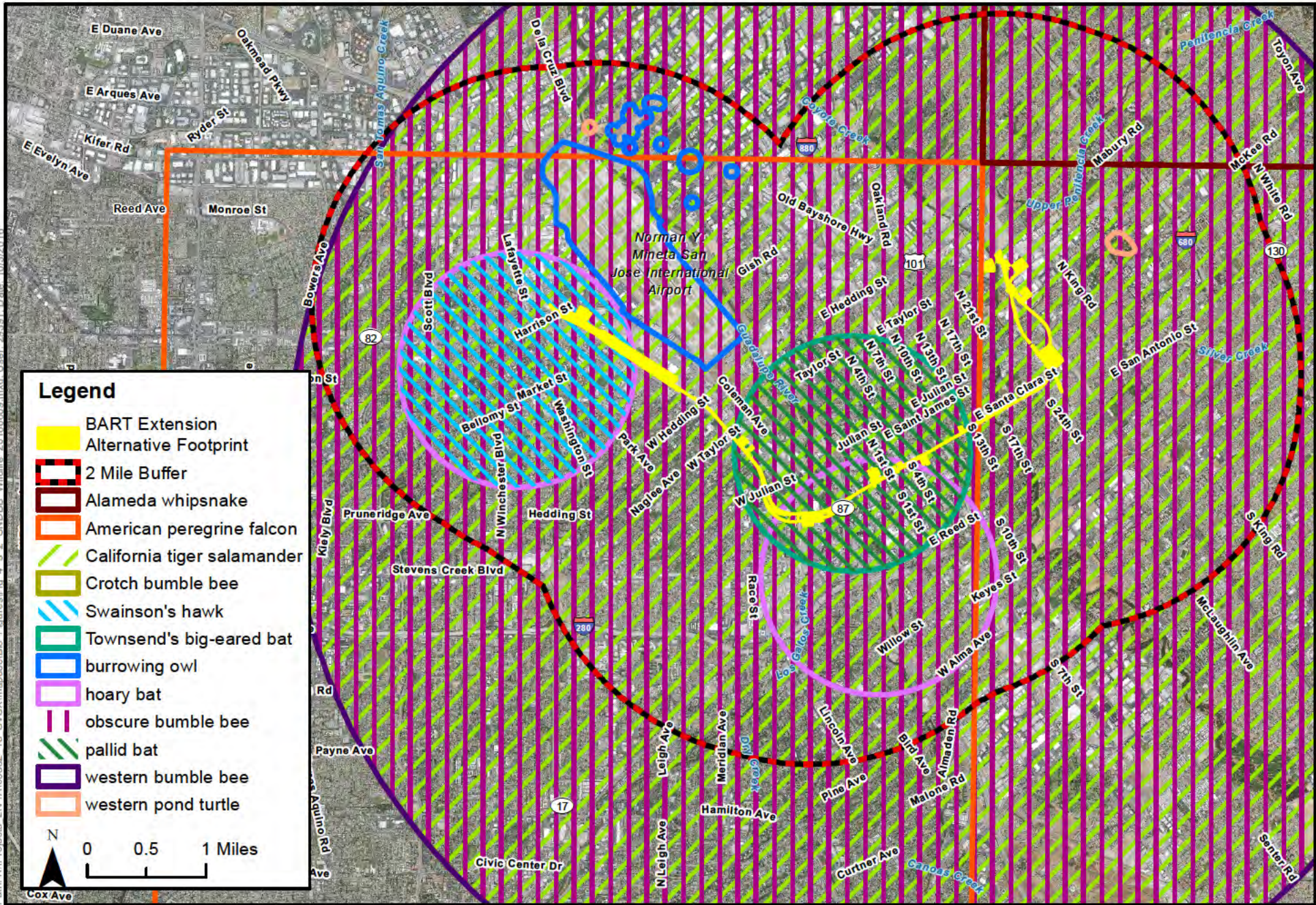


Source: Plants, CNDDDB June 2106; Imagery, NAIP 2014



Figure 4.3-1
CNDDDB Plants within 2 Miles
VTA's BART Silicon Valley-Phase II Extension Project

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Source: Plants, CNDDB June 2016; Imagery, NAIP 2014



Figure 4.3-2
CNDDB Wildlife within 2 Miles
 VTA's BART Silicon Valley-Phase II Extension Project

Riparian woodland occurs along portions of Lower Silver Creek, Coyote Creek, the Guadalupe River, and Los Gatos Creek and is recognized as a sensitive natural community by CDFW (2010). Dominant plant species in the overstory of riparian woodland along the creeks include willows, Fremont cottonwood (*Populus fremontii*), and box elder (*Acer negundo*), as well as a few scattered walnuts (*Juglans* sp.). Common species in the understory of riparian woodland include California blackberry (*Rubus ursinus*), mulefat (*Baccharis salicifolia*), coyote brush (*Baccharis pilularis*), western goldentop (*Euthamia occidentalis*), and several nonnative herbaceous species such as bristly oxtongue (*Helminthotheca echioides*), perennial pepperweed (*Lepidium latifolium*), and poison hemlock (*Conium maculatum*). The understory of this land cover type typically includes nonnative grasses, including barley (*Hordeum vulgare*), Italian ryegrass (*Lolium multiflorum*), and ripgut brome (*Bromus diandrus*).

Because the vegetation is structurally diverse and portions are well developed, riparian woodland communities provide habitat for many wildlife species. The multilayered riparian woodland land cover type provides escape cover, forage, and nesting opportunities for wildlife. Common wildlife species observed in riparian woodland habitats are acorn woodpecker (*Melanerpes formicivorus*), downy woodpecker (*Picoides pubescens*), black phoebe (*Sayornis nigricans*), northern mockingbird (*Turdus migratorius*), red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*) and American kestrel (*Falco sparverius*), among others. Riparian woodland habitat is frequently used by terrestrial mammals as movement corridors if they connect larger patches of habitat.

Riverine

Riverine land cover consists of perennial, intermittent, and ephemeral watercourses characterized by a defined bed and bank. Four watercourses occur within the study area: Lower Silver Creek, Coyote Creek, the Guadalupe River, and Los Gatos Creek (refer to Section 4.17.2.1, *Environmental Setting*, and Figure 4.17-1 for locations and descriptions of these watercourses). All of these watercourses are mainly perennial, but may be dry in certain areas during the summer months. These features are associated with adjacent willow scrub/riparian woodland land cover type. Common fish species known to occur in the Guadalupe River and Coyote Creek include California roach (*Lavinia symmetricus*), hitch (*L. exilicauda*), Sacramento sucker (*Catostomus occidentalis*), and threespine stickleback (*Gasterosteus aculeatus*). In addition to fish, western pond turtle (*Actinemys marmorata*) and Pacific tree frogs (*Pseudacris regilla*) may occur in or near the watercourses.

Waters of the United States

Waters of the United States include the three creeks and one river that cross the BART Extension—Lower Silver Creek, Coyote Creek, the Guadalupe River, and Los Gatos Creek (refer to Section 4.17, *Water Resources, Water Quality, and Floodplains*). The streams and their respective floodplains are jurisdictional features regulated by the U.S. Army Corps of Engineers (USACE). Lower Silver Creek, Coyote Creek, the Guadalupe River, and

Los Gatos Creek are inventoried by the USFWS as palustrine forested, temporarily flooded wetlands; the vegetated portions of the streams are described in the *Willow Scrub/Riparian Woodland* section above and the open water portions of the streams are described in the *Riverine* section. These streams were not studied intensively for the BART Extension because facilities would be constructed in underground tunnels 20 to 40 feet below the creek and river bottoms and all construction staging areas and access would be outside of waterways; therefore, VTA would avoid potential adverse effects on waters of the United States.

Special-Status Species

Special-status species are plants and animals that are legally protected under the federal Endangered Species Act (ESA), California Endangered Species Act (CESA), or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. For the purposes of this document, special-status species consist of the following.

- Species listed or proposed for listing as threatened or endangered under the ESA (Title 50, Code of Federal Regulations [CFR], Section 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register [FR] for species proposed for listing).
- Species that are candidates for possible future listing as threatened or endangered under the ESA.
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (14 California Code of Regulations Section 670.5).
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (CNPPA) (California Fish and Game Code Sections 1900 et seq.).
- Plants with a California Rare Plant Rank of 1A, 1B, 2A, and 2B (California Department of Fish and Wildlife 2016).
- Animals listed as California Species of Special Concern on CDFW's Special Animals List (California Department of Fish and Wildlife 2016).
- Animals that are fully protected in California (California Fish and Game Code Section 3511 [birds], Section 4700 [mammals], Section 5050 [amphibians and reptiles], and Section 5515 [fish]).
- Bats identified as medium or high priority on the Western Bat Working Group regional priority species matrix (Western Bat Working Group).

An official species list of rare, threatened, endangered, and candidate species with potential to occur in the area, which includes the San Jose West and San Jose East U.S. Geological

Survey (USGS) quadrangles, was generated from USFWS online data on September 24, 2015. A CDFW species list for the BART Extension was generated from a search of the CNDDDB (California Department of Fish and Wildlife 2016). See *VTA's BART Silicon Valley—Phase II Extension Project Special-Status Species Lists* for species lists and determining potential for special-status species to occur in the BART Extension area.

Following the database searches, an extensive review of literature and environmental documentation prepared for other projects in the vicinity was conducted. This section reports findings only for those species for which suitable habitat was determined to occur in the immediate vicinity of the BART Extension. Special-status species known to occur or with potential to occur based on the presence of suitable habitat in the area include several fish, amphibian, bird, and mammal species, as described below. No special-status plant species have been observed in the area, and none is expected to occur due to historic and ongoing disturbance and consequent lack of suitable habitat.

Fish

Central California Coast Steelhead

Central California coast steelhead (*Oncorhynchus mykiss*) is a federally listed threatened fish species. The Central California Coast steelhead distinct population segment has been listed as threatened under the ESA (62 FR 159, August 18, 1997). Critical habitat for steelhead is designated and includes the Guadalupe River and Coyote Creek (50 FR 226, September 2, 2005).

Despite degraded habitat conditions, Coyote Creek supports a small, viable steelhead fishery (Busby et al. 1996; Leidy et al. 2005), and the Guadalupe River has the potential to support steelhead as well. The extent to which steelhead spawn and rear in Coyote Creek is not known. One adult steelhead was observed in Alamitos Creek, a tributary to the Guadalupe River upstream of the BART Extension area, in early 2003 (California Department of Fish and Wildlife 2016). This means that adults are moving through the Guadalupe River system at some level and could spawn, though the extent of spawning is unknown. Flows and habitat conditions (e.g., water temperature) are believed to be insufficient in all other streams in the BART Extension area to support self-sustaining steelhead populations. Steelhead may stray into Lower Silver Creek and Los Gatos Creek because of their connections to Coyote Creek and the Guadalupe River, respectively, although steelhead are mainly seen in Coyote Creek (Smith 2013).

Fall-Run Chinook Salmon

The National Marine Fisheries Service (NMFS) considers the Chinook salmon (*Oncorhynchus tshawytscha*) in the South Bay Area to be part of the Central Valley fall-run Chinook salmon evolutionarily significant unit (ESU). NMFS has determined that the Central Valley fall-run - Chinook salmon ESU does not warrant listing, but it is considered a candidate species (64 FR 50394, September 16, 1999). In addition, streams in the vicinity are considered essential fish habitat for Chinook salmon, a commercial species. The

Magnuson-Stevens Fishery Conservation and Management Act defines *essential fish habitat* as waters and substrate necessary for fish to spawn, breed, feed, and grow to maturity.

As is the case for steelhead, Chinook salmon may stray into Lower Silver Creek and are known to spawn and rear in portions of Coyote Creek. Fall-run Chinook salmon have occurred in small numbers in the Guadalupe River in the last decade (Smith 2013). The current Chinook salmon population may be mostly strays from hatchery populations from the Sacramento-San Joaquin River system (Garza and Pearse 2008). Currently, Chinook salmon migrate up the Guadalupe River to spawn. The majority of Chinook salmon in Guadalupe River spawn throughout the downstream reaches of the river (Smith 2013). Chinook salmon may stray into Los Gatos Creek because of its connection to the Guadalupe River.

Wildlife

California Red-Legged Frog

The California red-legged frog (*Rana draytonii*) is listed as threatened under the ESA and is a state Species of Special Concern. The area is not located within an area designated as critical habitat for California red-legged frog. There are no known occurrences of the species in the BART Extension area (California Department of Fish and Wildlife 2016). However, the riparian and aquatic habitat in Guadalupe River, Coyote Creek, and Lower Silver Creek may provide suitable habitat, and some of the smaller streams may function as dispersal corridors for this species when they contain water. H.T. Harvey and Associates (1997) concluded that although the California red-legged frog is not believed to inhabit urbanized areas of San Jose, known occurrences in Alum Rock Park indicate that frogs may potentially be transported downstream during high flows and reach the BART Extension area. Four individuals were observed in July 2000 in Upper Penitencia Creek in Alum Rock Park, approximately 4.5 miles east of the BART Extension (California Department of Fish and Wildlife 2016). Also, four adult California red-legged frogs were captured and relocated in Upper Penitencia Creek in Alum Rock Park during construction of VTA's Fish Passage Project from August 2012 to October 2012 (Ann Calnan pers. comm.). The area between these known occurrences and the BART Extension area is highly urbanized. Frogs would not be able to move overland into the BART Extension area. Any movement of frogs would have to occur in stream system, most of which are urban streams with little to no vegetation. Therefore, California red-legged frogs are not expected to occur within the BART Extension area.

Western Pond Turtle

The western pond turtle (*Actinemys marmorata*) is a candidate for future listing under the ESA and is a state Species of Special Concern. Habitat for the western pond turtle is present in the Guadalupe River, Coyote Creek, Los Gatos Creek, and Lower Silver Creek, and some of the smaller streams may function as dispersal corridors for this species when the streams contain water. Western pond turtles have been observed in Coyote Creek and the Guadalupe River (California Department of Fish and Wildlife 2016).

Bay Checkerspot Butterfly

Although there is no habitat for Bay checkerspot butterfly in the immediate vicinity, there is a potential for indirect effects on the butterfly from nitrogen deposition in locations situated away from the study area. The Bay checkerspot butterfly (*Euphydryas editha bayensis*) is listed as threatened under the ESA. The Bay checkerspot butterfly associates with specific host plants that typically grow within serpentine soils, including native grassland species such as dwarf plantain (*Plantago erecta*) as larvae and California goldfields (*Lasthenia californica*) as adults. The species currently occurs only in Santa Clara and San Mateo Counties on serpentine rock outcrops. The life cycle of the Bay checkerspot butterfly corresponds directly to its host plant, where the butterfly emerges from pupae between late February and early May as the nectar plants begin to bloom (U.S. Environmental Protection Agency 2010).

There is one known Bay checkerspot butterfly occurrence at the Silver Creek Hills, between Silver Creek and U.S. Highway 101 (U.S. 101) in 1999, but the site was partially developed in 2000. The occurrence is approximately 6.5 miles southeast of the BART Extension (California Department of Fish and Wildlife 2016).

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is a California Species of Special Concern. Tricolored blackbirds have three basic requirements for selecting their breeding colony sites: open, accessible water; a protected nesting substrate, including flooded, thorny, or spiny vegetation; and suitable foraging space providing adequate insect prey within a few miles of the nesting colony (Hamilton et al. 1995; Beedy and Hamilton 1997, 1999). Almost 93 percent of the 252 breeding colonies reported by Neff (1937) were in freshwater marshes dominated by cattails and bulrushes (*Schoenoplectus* spp.). The remaining colonies in Neff's study were in willows, blackberries (*Rubus* spp.), thistles (*Cirsium* and *Centaurea* spp.), or nettles (*Urtica* spp.). In contrast, only 53 percent of the colonies reported during the 1970s were in cattails and bulrushes (DeHaven et al. 1975).

There are no known occurrences of tricolored blackbirds in the area (California Department of Fish and Game 2015; Figure 4.3-2), but preconstruction surveys for nesting tricolored blackbirds are required by the SCVHP (2012) due to the presence of riparian habitat. See Figure 4.3-3 for the areas where preconstruction surveys would be required.

Burrowing Owl

The burrowing owl is a California Species of Special Concern. It is not a federally listed species, and therefore no federal consultation is required. Historically, resident and wintering burrowing owls were common throughout most of California except in mountainous areas and coastal counties north of Marin (Gervais et al. 2008). Urbanization and agricultural conversion have eliminated large tracts of burrowing owl habitat and fragmented the remainder (Haug et al. 1993; Schulz 1997; Dechant 2002); however, burrowing owls exhibit

a high level of tolerance to human disturbance and will nest or roost in urban and metropolitan areas (Haug et al. 1993).

At one point it was estimated that 167 nesting pairs (about 1.8 percent of the total California population) occurred in the San Francisco Bay Area, a decline of 50 percent from population estimates in the mid-1980s (DeSante et al. 1997). In 2014, surveys documented 115 breeding adults and 87 fledged young in Santa Clara Valley, occurring in the North San José/Baylands, Morgan Hill, and Gilroy (Santa Clara Valley Habitat Agency 2016). Potential breeding and foraging habitats in the area are located in the ruderal and non-native grasslands. The documented occurrences within 2 miles of the Newhall Maintenance Facility are all at the Mineta San Jose International Airport. The portion of the Newhall Maintenance Facility within the City of San Jose would be located within the burrowing owl fee zone of the SCVHP. The fee zone was established to protect burrowing owl habitat and fund conservation actions (Santa Clara County 2012). See Figure 4.3-3 for the areas where the fee zone and preconstruction surveys will occur.

Special-Status Bats

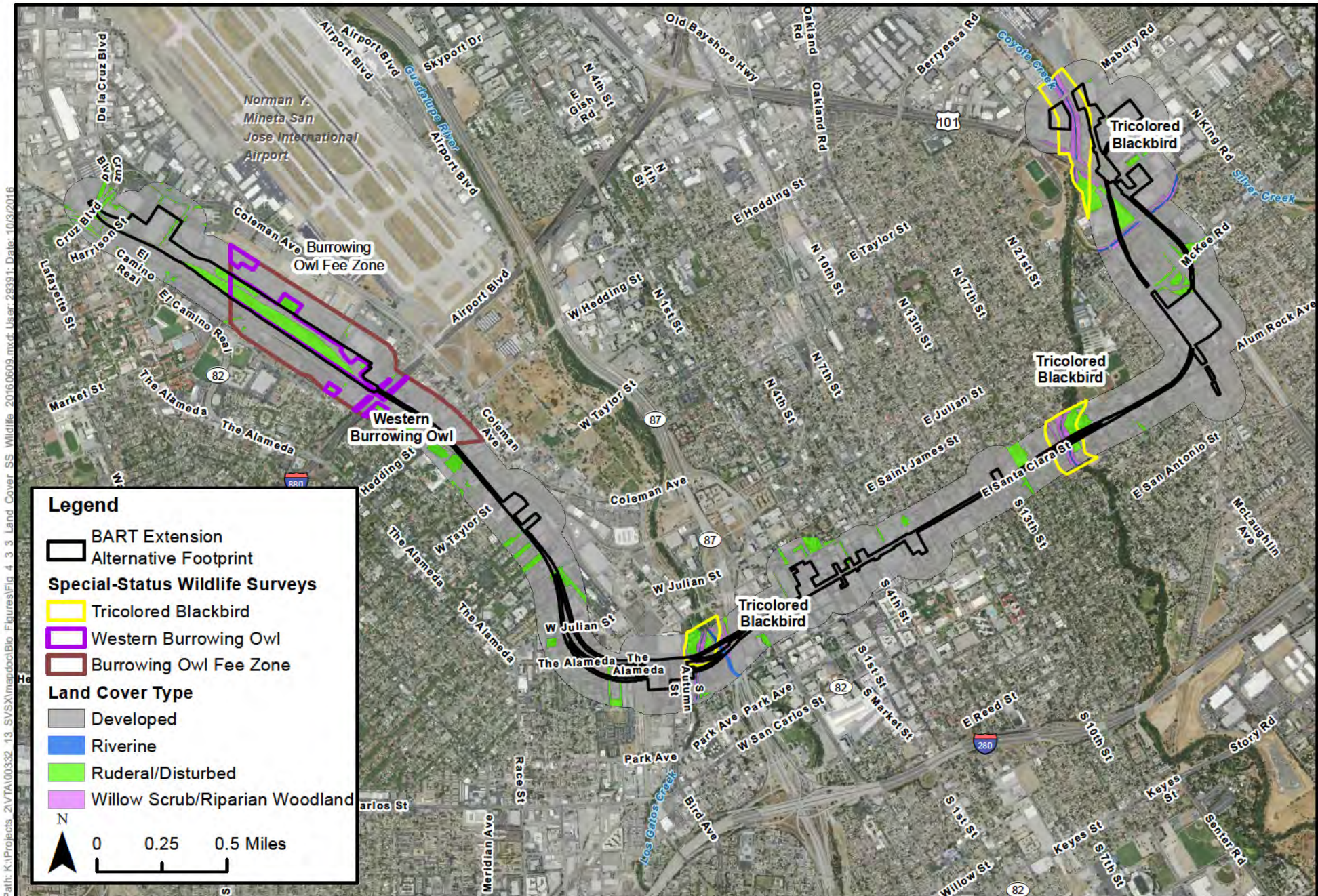
Special-status bat species, such as Townsend's big-eared bat (*Corynorhinus townsendii*), may occur in the area. The underside of bridges and buildings located throughout the area, and riparian areas of the Guadalupe River and Coyote Creek, offer potential roosting and nursery habitat and foraging habitat for bats. Many bat species that can occur in the area may be state species of special concern.

Other Protected or Managed Biological Resources

Nesting Birds

Several species of birds, including many raptors, are not currently listed under the ESA or CESA, and are typically not considered to be special-status species by CDFW or USFWS. However, the occupied nests and eggs of these birds are protected by federal and state laws, including the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503 (active bird nests) and 3503.5 (active raptor nests). Birds have the potential to nest and forage in all natural and some semi-natural habitats in the area. The highest concentration of nesting habitat for birds is in the riparian woodland of the Guadalupe River, Los Gatos Creek, and Coyote Creek.

Cliff swallows (*Petrochelidon pyrrhonota*), tree swallows (*Tachycineta bicolor*), and barn swallows (*Hirundo rustica*) may nest in the area. Cliff swallows and barn swallows are colonial nesters and build mud nests on the undersides of artificial structures such as bridges. Tree swallows nest in tree and snag cavities in riparian and other woodland habitats. Swallows nest from February to August, and begin migrating southward in September and October. Potential nesting habitat for swallows occurs on the undersides of bridges in the area and in riparian habitat along the Guadalupe River, Los Gatos Creek, and Coyote Creek.



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Source: Special Status Wildlife, Santa Clara County 2015; Imagery, NA P 2014



Figure 4.3-3
Land Cover Types and Special-Status Wildlife Surveys
 VTA's BART Silicon Valley–Phase II Extension Project

Other migratory bird species with a high potential to occur in an urbanized setting like the BART Extension area include mourning dove, killdeer, and black phoebe.

Roosting Bats

Bats, including Yuma myotis (*Myotis yumanensis*), long-legged myotis (*Myotis volans*), Pacific long-eared myotis (*Myotis evotis*), and special-status bats, could roost in the area under existing bridges, in abandoned buildings, or in trees within riparian woodland. Bat roosts are considered sensitive resources by CDFW. In addition, "take" of nongame mammals (i.e., all mammals occurring naturally in California which are not game mammals, fully protected mammals, or fur-bearing mammals), including bats, is prohibited by California Fish and Game Code Section 4150.

4.3.2.2 Regulatory Setting

The following federal regulations are relevant to the BART Extension. State and local regulations are discussed in Chapter 6, Section 6.4, *Biological Resources and Wetlands*.

Federal

Federal Endangered Species Act

The ESA of 1973 protects fish and wildlife species that have been identified by USFWS or NMFS as threatened or endangered, and their habitats. Endangered refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range; threatened refers to species, subspecies, or distinct population segments that are likely to become endangered in the near future. USFWS and NMFS administer the ESA. In general, NMFS is responsible for protection of ESA-listed marine species and anadromous fishes while other listed species are under USFWS jurisdiction. The following sections summarize provisions of the ESA (Sections 9 and 7) that are relevant to the BART Extension.

ESA Prohibitions (Section 9)

ESA Section 9 prohibits the take of any fish or wildlife species listed under the ESA as endangered. Take of a threatened species is also prohibited under Section 9 unless otherwise authorized by federal regulations. *Take*, as defined by the ESA, means "to harass, harm, pursue, hunt, shoot, wound, trap, kill, capture, or collect, or to attempt to engage in any such conduct." Harm is defined as "any act that kills or injures the species, including significant habitat modification." In addition, Section 9 prohibits removing, digging up, cutting, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction.

ESA Authorization Process for Federal Actions (Section 7)

ESA Section 7 provides a means for authorizing take of threatened and endangered species by federal agencies. It applies to actions that are conducted, permitted, or funded by a federal agency. Under Section 7, the federal agency conducting, funding, or permitting an action (the

lead agency) must consult with USFWS or NMFS, as appropriate, to ensure that the proposed action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed project “may affect” a listed species or designated critical habitat, the lead agency is required to prepare a Biological Assessment (BA) evaluating the nature and severity of the expected effect. If the BA concludes that the project “may affect, but is not likely to adversely affect” the species or designated critical habitat, then USFWS or NMFS must determine whether to concur with that conclusion. If so, the agency may issue a Letter of Concurrence and specify conditions underlying their concurrence, thereby concluding informal consultation. If, however, USFWS or NMFS do not concur and determine instead that the project “is likely to adversely affect” the species under review, then formal consultation is necessary and USFWS or NMFS issues a Biological Opinion (BO), with a determination that the proposed action would result in one of two conditions.

- The action may jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding).
- The action will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

The BO issued by USFWS or NMFS may stipulate discretionary “reasonable and prudent” conservation measures. If the project would not jeopardize a listed species, USFWS or NMFS issues an incidental take statement to authorize the proposed activity. Incidental take permits are required when non-federal activities could result in take of a threatened or endangered species.

Migratory Bird Treaty Act

The MBTA (U.S. Code, Title 16, Section 703, 50 CFR 21, 50 CFR 10) enacts the provisions of treaties between the U.S., Canada, Mexico, Japan, and the former Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. Most actions that result in taking or in permanent or temporary possession of a protected species constitute violation of the MBTA. Examples of permitted actions that do not violate the MBTA include the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and other similar activities (Faanes et al. 1992). USFWS is responsible for overseeing compliance with the MBTA, and the U.S. Department of Agriculture’s Wildlife Services Officer makes recommendations on related animal protection issues.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all federal agencies to consult with NMFS on all actions or proposed actions (permitted, funded, or undertaken by

the federal agency) that may adversely affect fish habitats. Under the provisions of the act, Congress mandated the identification of habitats essential to managed species (e.g., commercial species) and measures to conserve and enhance these habitats. The act requires cooperation among NMFS, Regional Fishery Management Councils, fishing participants, and federal and state agencies to protect, conserve, and enhance *essential fish habitat*, defined as those waters and substrate necessary to fish for spawning, breeding, feeding, and growth to maturity.

Federal Clean Water Act

The federal Clean Water Act (CWA) is the primary law protecting the quality of the nation's surface waters, including lakes, rivers, and wetlands. As such, it empowers the U.S. Environmental Protection Agency to set national water quality standards and effluent limitations and establishes permit review mechanisms to enforce them, operating on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit.

Sections 303(d) (Identification of Areas with Insufficient Controls, Maximum Daily Load, Certain Effluent Limitation Revision), 401 (Certification), and 402 (National Pollutant Discharge Elimination System) of the CWA apply to the BART Extension. Sections 303(d), 401 and 402 are discussed in Section 4.17.2.2, *Water Quality*.

4.3.3 Methodology

An impact finding of *adverse effect* would involve influential regional effects and high-intensity loss of sensitive natural communities, wetlands and waters of the United States, special-status species and habitat, or wildlife movement habitat.

4.3.4 Environmental Consequences and Mitigation Measures

This section identifies impacts and evaluates whether they would be adverse according to NEPA, using the criteria (i.e., context and intensity) identified in Section 4.1, *Introduction*, and Section 4.3.3, *Methodology*. This section also identifies measures to avoid, minimize, or mitigate impacts.

4.3.4.1 No Build Alternative

The No Build Alternative consists of the existing transit and roadway networks and planned and programmed improvements (see Chapter 2, Section 2.2.1, *NEPA No Build Alternative*, for a list of these projects). The No Build Alternative projects would likely result in biological effects typically associated with transit, highway, bicycle and pedestrian facilities, and roadway projects. Mitigation for potential adverse effects could include avoidance or replacement of a land cover type in accordance with a mitigation and monitoring plan approved by the regulatory agencies. Projects planned under the No Build Alternative would

undergo separate environmental review to determine biological resources and wetlands effects, which would include an analysis of impacts and mitigation measures to mitigate potential project impacts.

4.3.4.2 BART Extension Alternative

Sensitive Natural Communities

Connection to Phase I Berryessa Extension

The connection to the Phase I Berryessa Extension would be at grade near Las Plumas Avenue, north of Lower Silver Creek, and then enter the East Tunnel Portal. South of the portal, the tunnel would pass beneath Lower Silver Creek near the U.S. 101 crossing. Riparian woodland occurs at Lower Silver Creek; however, the Twin-Bore and Single-Bore Options would pass approximately 25 feet and 30 feet beneath the creekbed, respectively. Tunneling is discussed in Chapter 5, Section 5.3.1.1, *Tunnel Boring*; Section 5.3.2.1, *Tunnel Construction*; and Section 5.5.9.2, *Surface Settlement*. The tunnels would be lined with precast concrete segmental linings as the pressurized closed-faced tunnel boring machine moves forward. The closed-face tunnel boring machine keeps out groundwater, stabilizes the tunnel face, and minimizes settlement. Maximum settlement is projected to be 1 inch. Therefore, Lower Silver Creek and other creeks and rivers along the alignment would not be adversely affected. For the Twin-Bore Option, cross passages are required every 460 to 750 feet between the tunnels and may require surface ground treatment. Excavation of cross passages is not required for the Single-Bore Option. Surface ground treatment for cross passages would be a minimum of 200 feet from any river or creek. Because the BART Extension Alternative for both tunnel options would be located beneath the creek and surface activities would be at least 200 feet from any river or creek, there would be *no adverse effect* on sensitive natural communities at this location. No mitigation is required.

Alum Rock/28th Street Station

No sensitive natural communities occur at the Alum Rock/28th Street Station location; therefore, there would be *no effect* on these resources. No mitigation would be required.

Tunnel Alignment near Coyote Creek

Riparian woodland occurs in Coyote Creek; however, the Twin-Bore and Single-Bore Options would pass approximately 20 feet and 55 feet beneath the creekbed, respectively. The Twin-Bore Option would veer slightly to the north of the Single-Bore Option alignment near Coyote Creek. There would be no aboveground operations activities at this location for either tunnel option. Therefore, BART Extension Alternative operations would have *no adverse effect* on sensitive natural communities at this location. No mitigation would be required.

Downtown San Jose Station

No sensitive natural communities occur at the locations of the Downtown San Jose Station East Option or the Downtown San Jose Station West Option; therefore, there would be *no effect* on these resources. No mitigation would be required.

Diridon Station

Riparian woodland occurs along the alignment in Guadalupe River and Los Gatos Creek near the Diridon Station South and North Options. For the Diridon Station South Option, the Twin-Bore and Single-Bore Options would pass approximately 40 feet and 50 feet beneath the Guadalupe River bed, respectively, and 20 feet and 50 feet beneath the Los Gatos Creek bed, respectively. For the Diridon Station North Option, Twin-Bore and Single-Bore Options would pass approximately 45 feet and 50 feet beneath the Guadalupe River bed, respectively, and 25 feet and 50 feet beneath the Los Gatos Creek bed, respectively. There would be no aboveground operational activities at these locations. All operational activities would occur in previously developed areas and would avoid riparian habitat. Therefore, BART Extension Alternative operations would have *no adverse effect* on sensitive natural communities at this location. No mitigation would be required.

Continuation of Tunnel Alignment

No sensitive natural communities occur along the continuation of the tunnel alignment from the Diridon Station to just north of Interstate 880 (I-880). Therefore, although the aboveground Stockton Avenue ventilation facility would be located in this portion of the alignment, there would be *no effect* on biological resources. No mitigation would be required.

Newhall Maintenance Facility

No sensitive natural communities occur at the site of the proposed Newhall Maintenance Facility; therefore, there would be *no effect* on these resources. No mitigation would be required.

Santa Clara Station

No sensitive natural communities occur at the site of the proposed Santa Clara Station; therefore, there would be *no effect* on these resources. No mitigation would be required.

Wetlands and Waters of the United States

Connection to Phase I Berryessa Extension

The connection to the Phase I Berryessa extension would be at grade near Las Plumas Avenue, north of Lower Silver Creek, and then enter the East Tunnel Portal. South of the portal, the Twin-Bore and Single-Bore Options would pass approximately 25 feet and 30 feet beneath Lower Silver Creek bed, respectively, near the U.S. 101 crossing. No operations would occur aboveground at Lower Silver Creek. Therefore, BART Extension Alternative

operations would have *no adverse effect* on federally protected wetlands or waters of the United States at Lower Silver Creek. No mitigation would be required.

Alum Rock/28th Street Station

No federally protected wetlands or waters of the United States are present at the Alum Rock/28th Street Station. Therefore, there would be *no effect* on wetlands or waters of the United States at this location. No mitigation would be required.

Tunnel Alignment near Coyote Creek

The Twin-Bore and Single-Bore Options alignment would pass approximately 20 feet and 55 feet beneath the Coyote Creek bed, respectively, and there would be no aboveground operations activities near the creek. Therefore, there would be *no effect* on wetlands or waters of the United States at this location. No mitigation would be required.

Downtown San Jose Station

No federally protected wetlands or waters of the United States are present at the locations of the Downtown San Jose Station East and West Options. All aboveground BART Extension Alternative operations would be in previously developed areas. Therefore, there would be *no effect* on wetlands or waters of the United States under either option. No mitigation would be required.

Diridon Station

For the Diridon Station South Option, tunnels for the Twin-Bore and Single-Bore Options would pass approximately 40 feet and 50 feet beneath the Guadalupe River bed, respectively. For the Diridon Station North Option, tunnels for the Twin-Bore and Single-Bore Options would pass approximately 45 feet and 50 feet beneath the Guadalupe River bed, respectively. There would be no aboveground operational activities near the river.

As the alignment approaches the Diridon Station South Option, it would continue approximately 20 feet (Twin-Bore Option) and 50 feet (Single-Bore Option) under Los Gatos Creek bed. Systems facilities for the Diridon Station South Option would be on the north side of the creek in a previously developed area. As the alignment approaches the Diridon Station North Option, it would continue approximately 25 feet (Twin-Bore Option) and 50 feet (Single-Bore Option) under the Los Gatos Creek bed. Systems facilities for the Diridon Station North Option would be on the north side of Autumn Street in a previously developed area. Therefore, there would be *no effect* on wetlands and waters of the United States at this location. No mitigation would be required.

Continuation of Tunnel Alignment

No federally protected wetlands or waters of the United States occur along the tunnel alignment from Diridon Station to just north of I-880. Therefore, although the aboveground Stockton Avenue ventilation facility would be located in this portion of the alignment, there

would be *no effect* on wetlands and waters of the United States along this alignment. No mitigation would be required.

Newhall Maintenance Facility

No federally protected wetlands or waters of the United States occur at the site of the proposed Newhall Maintenance Facility. Therefore, there would be *no effect* on wetlands and waters of the United States at this location. No mitigation would be required.

Santa Clara Station

No federally protected wetlands or waters of the United States occur at the Santa Clara Station. Therefore, there would be *no effect* on wetlands and waters of the United States. No mitigation would be required.

Special-Status Species

Connection to Phase I Berryessa Extension

The connection to the Phase I Berryessa extension would be at grade near Las Plumas Avenue, north of Lower Silver Creek, and then enter the East Tunnel Portal. South of the portal, the Twin-Bore and Single-Bore Options would pass approximately 25 feet and 30 feet beneath Lower Silver Creek bed, respectively, near the U.S. 101 crossing. The surrounding area is highly urbanized. No special-status species are expected to occur on the BART Extension Alternative because of a lack of habitat. Therefore, BART Extension Alternative operations in this location would have *no adverse effect* on special-status species or habitat. No mitigation would be required.

Alum Rock/28th Street Station

Alum Rock/28th Street Station would be located in an area that is already urbanized. No special-status species are expected to occur on the BART Extension Alternative because of a lack of habitat. Therefore, BART Extension Alternative operations at the Alum Rock/28th Street Station would have *no adverse effect* on special-status species or habitat. No mitigation would be required.

Tunnel Alignment near Coyote Creek

The Twin-Bore and Single-Bore Options alignment would pass approximately 20 feet and 55 feet beneath Coyote Creek bed, respectively, near Santa Clara Street. In addition, there would be a ventilation facility on an existing site consisting of a parking lot and building west of Coyote Creek. Although Coyote Creek and associated riparian woodland are known to or could potentially support special-status fish, bat, and aquatic reptile (i.e., western pond turtle) species, BART Extension Alternative operations would not disturb any aquatic or woodland habitat potentially supporting special-status species because operations would be 20 feet below the ground surface or away from the creek. Therefore, BART Extension

Alternative operations in this location would have *no adverse effect* on special-status species or habitat. No mitigation would be required.

Downtown San Jose Station

Both of the locations of the Downtown San Jose Station Options (East and West) are in a downtown commercial area that is urbanized. No special-status species are expected to be present in this area. Therefore, BART Extension Alternative operations at the Downtown San Jose Station would have *no adverse effect* on special-status species or habitat. No mitigation would be required.

Diridon Station (South and North Options)

For the Diridon Station South Option, tunnels for the Twin-Bore and Single-Bore Options would pass approximately 40 feet and 50 feet beneath the Guadalupe River bed, respectively, and 20 feet and 50 feet beneath the Los Gatos Creek bed, respectively, east of the Diridon Station. For the Diridon Station North Option, the tunnels for the Twin-Bore and Single-Bore Options alignments would pass approximately 45 feet and 50 feet beneath the Guadalupe River bed, respectively, and 25 feet and 50 feet beneath the Los Gatos Creek bed, respectively, east of the Diridon Station North Option, then continue along the south side of Santa Clara Street underground for both the Twin-Bore and Single-Bore Options.

Special-status species with the potential to occur in and around Guadalupe River and Los Gatos Creek consist of special-status bats, western pond turtles, and Central California coast steelhead and Chinook salmon. Underground operations would not disturb habitat for these species. The rest of the Diridon Station South and North Options would be in an area that is currently used as parking for the existing Caltrain station. The Diridon Station North Option would also utilize a previously disturbed, triangular parcel for construction staging and/or underground station system facilities (Single-Bore Option) adjacent to the western section of the Caltrain tracks. Therefore, BART Extension Alternative operations at the Diridon Station with both the South and North Options would have *no adverse effect* on special-status species or habitat. No mitigation would be required.

Continuation of Tunnel Alignment

The continuation of the tunnel alignment from Diridon Station to just north of I-880 would be located in an urbanized area with extensive human disturbance. No special-status species are expected to be present in this area; therefore, BART Extension Alternative operations along the continuation of the tunnel alignment, including operation of the ventilation facility along Stockton Avenue, would have *no adverse effect* on special-status species or habitat. No mitigation would be required.

Newhall Maintenance Facility

The Newhall Maintenance Facility would be located in an urbanized area with extensive human disturbance. Burrowing owl habitat is identified in the SCVHP as possibly being present in the portion of the Newhall Maintenance Facility within the City of San Jose. This

area is a burrowing owl fee zone. Mitigation requiring surveys for owls would be implemented during construction, as described in Mitigation Measure BIO-CNST-F (see Chapter 5, Section 5.5.4, *Biological Resources and Wetlands* for construction mitigation). After construction, no special-status species are expected to be present in this area. Impacts for the Twin-Bore and Single-Bore Options would be the same. Therefore, BART Extension Alternative operations would have *no adverse effect* on special-status species or habitat, and no mitigation would be required.

Santa Clara Station

The Santa Clara Station would be located in an urbanized area with extensive human disturbance, including passenger and freight train movements. No special-status species are expected to be present in this area because of a lack of habitat; therefore, BART Extension Alternative operations at the Santa Clara Station would have *no adverse effect* on special-status species or habitat. No mitigation would be required.

Santa Clara Valley Habitat Plan

The BART Extension Alternative falls within the SCVHP permit area. Within the permit area, the alignment falls within wildlife survey areas for burrowing owl at the Newhall Maintenance Facility and tricolored blackbird along Guadalupe River and Los Gatos Creek, and is also located in the burrowing owl fee zone (SCHVA 2015). Construction activities could result in a significant impact on these species if found in the area (see Chapter 5, Section 5.4.4, *Biological Resources and Wetlands*). VTA would perform preconstruction surveys, and if necessary implement avoidance measures for tricolored blackbird (Mitigation Measure BIO-CNST-E) and burrowing owls (Mitigation Measure BIO-CNST-F). With the implementation of these mitigation measures and compliance with the SCVHP burrowing owl fee zone, this impact would have *no adverse effect*.

The SCVHP addresses nitrogen deposition in the region of the BART Extension Alternative. Operations of the BART Extension Alternative could affect nitrogen output, which could indirectly reduce habitat quality for Bay checkerspot butterflies, a species listed as threatened under the ESA and covered under the SCVHP, by impacting success of their host plants. Serpentine soils have low productivity and naturally low nitrogen levels. This allows the bay checkerspot butterfly native host plants to thrive in serpentine soils. As a result of increased air pollution, nitrogen has been depositing into the serpentine soils, allowing for other nonnative invasive species to persist and compete with the bay checkerspot butterfly host plants. Serpentine soils are also important to a variety of native grasses. Nitrogen deposition poses threats to many resources in the region (Santa Clara County 2012). As discussed in Chapter 6, Sections 6.3, *Air Quality*, and 6.7, *Energy*, the BART Extension Alternative will actually decrease nitrogen output because fewer vehicle miles traveled as a result of fewer vehicles on the road. Therefore, there would be *no adverse effect*. No mitigation is required.

Wildlife Movement and Nesting Birds

Operation of the BART Extension Alternative is not expected to interfere with wildlife movement or impede use of wildlife nursery sites, including active bird nests protected under the MBTA and California Fish and Game Code. Although opportunities for wildlife movement in the study area are severely limited by the existing urban development, some wildlife movement could be expected along the Guadalupe River and Lower Silver, Coyote, and Los Gatos Creeks. However, the Twin-Bore and Single-Bore Options at these locations would be, at a minimum, approximately 20 feet below the creek beds and, thus, would not prevent wildlife movement.

Terrestrial wildlife species, including birds, may be temporarily disturbed during maintenance activities at the Newhall Maintenance Facility; however, because all the facilities would be in highly urbanized areas that lack vegetation suitable for nesting, birds would not likely use these areas for nesting or would have already adapted to the high levels of disturbance characteristic of urbanized areas. Therefore, there would be *no adverse effect*.

NEPA Conclusion

There would be *no adverse effect* on any biological resources from operation of the BART Extension Alternative (for both Single-Bore and Twin-Bore Options).

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