4.4 BIOLOGICAL RESOURCES AND WETLANDS

4.4.1 INTRODUCTION

This section updates information for biological resources and wetlands within or along BART alignment since certification of the FEIR. The sources of updated information include special status species occurrences and critical habitat from the U.S. Fish and Wildlife Service (USFWS), a revised wetland delineation, and field surveys.

4.4.2 ENVIRONMENTAL SETTING

Since certification of the FEIR, the vacant lot located south of Trade Zone Boulevard and west of the railroad ROW that was identified as the site for a traction power substation has been developed. This development changes the environmental setting for nonnative grassland and potential western burrowing owl (*Athene cunicularia hypugea*) habitat, as both no longer exist at this site.

The environmental setting included in the FEIR for ruderal vegetation, central coast cotton-wood-sycamore riparian forest, and nonnative grassland (except as noted above) remains applicable in the SEIR. The environmental setting for the central California coast steelhead (*Oncorhynchus mykiss*), fall/late fall run Chinook salmon (*Oncorhynchus tshawytscha*), California red-legged frog (*Rana aurora draytonii*), southwestern pond turtle (*Clemmys marmorata pallida*), western burrowing owl (except as noted above), Cooper's hawk (*Accipiter cooperii*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), several bat species, Congdon's tarplant (*Hemizonia [Centromadia] parryi ssp. Congdonii*), alkali milkvetch (*Astralgalus tener var. tener*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), non-special status raptors, and several swallow species also remains applicable with some additional information provided below. Please refer to the FEIR, Section 4.4.2 for the environmental setting discussion.

4.4.2.1 Special Status Species and Critical Habitat

The FEIR includes special status species lists obtained from the USFWS in February 2002 for the United States Geological Survey (USGS) 7.5-minute Calaveras, Milpitas, San Jose East, San Jose West and Cupertino quadrangles. These quadrangles included the entire SVRTC study area. For the BART Extension Project, updated lists were obtained in November 2006 for the USGS 7.5-minute Milpitas, San Jose East, and San Jose West quadrangles, which include the Project area only (Appendix E). These lists no longer include federal Species of Special Concern;

however, there are no changes to the environ-mental setting for these species included in the FEIR[1]. The differences between the 2002 and 2006 lists for the three quadrangles are as follows:

The riparian brush rabbit (*Sylvilagus bachmani riparius*) and the robust spineflower (*Chorizanthe robusta var. robusta*) were removed from the list, as these species are considered extirpated from the area. The Sacramento splittail (*Pogonichthys macrolepidotus*) was also removed. Critical habitat for the Alameda whipsnake (*Masticophis lateralis eury-xanthus*) and the Central Valley spring-run Chinook (*Oncorhynchus tshawytscha*) was removed.

The conservancy fairy shrimp (*Branchinecta conservatio*) was added to the list as an endangered species. The western snowy plover (*Charadruis alexandrinus nivosus*) and the central population of the California tiger salamander (*Ambystoma californiense*) were added as threatened species. The California sea blite (*Suaeda californica*) was added as an endangered species. Critical habitat for the vernal pool tadpole shrimp (*Lepiduras packardi*), central California coast steelhead, and California red-legged frog was added. The species and critical habitats that have been added to the 2006 list are included in Table 4.4–1, which describes the potential presence of these species and habitats in the Project area.

The only noteworthy change to the federal special status species lists is the addition of critical habitat for the central California coast steelhead. The USFWS designated this critical habitat on September 2, 2005 (Federal Register 70(170): 52488-52627). The BART Extension Project is located within the Santa Clara Hydrologic Unit 2205 (Figure 4.4-1) where Upper Penitencia Creek and Coyote Creek are designated critical habitat within the Project area. Critical habitat includes the known physical and biological features (called primary constituent elements) that are essential to the conservation of the species and that may require special management considerations or protection. In the case of the central California coast steelhead, these primary constituent elements include both freshwater and marine environments as the species is anadromous, meaning adults migrate from the ocean to spawn in freshwater where their offspring hatch and rear prior to migrating back to the ocean until maturity. The primary constituent elements of critical habitat for the central California coast steelhead include:

- Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.
- Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage (including aquatic invertebrates and fishes) supporting juvenile development; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.
- Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover supporting juvenile and adult mobility and survival.
- Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh and saltwater; natural cover; and juvenile and adult forage.
- Nearshore marine areas free of obstruction with water quality and quantity conditions and forage supporting growth and maturation; and natural cover.
- Offshore marine areas with water quality conditions and forage supporting growth and maturation.

The Project area contains one of the six constituent elements of critical habitat, as it includes freshwater migration corridors.The Project area does not include appropriate habitat for spawning and rearing, estuarine areas, or marine areas.

[1] Table 4.4-2 in the FEIR identifies the federal Species of Special Concern in the SVRTC study area.

TABLE 4.4-1:

Special-Status Plant and Wildlife Species, Their Status, and Potential Occurrence in the Project Area

SPECIES	STATUS		HABITAT	POTENTIAL PRESENCE IN PROJECT AREA
	FEDERAL	STATE or CNPS		
INVERTEBRATES				
Conservancy fairy shrimp *Branchinecta conservatio*	E	—	Vernal pools in Central Valley and coast ranges	No suitable habitat in Project area
Vernal pool tadpole shrimp critical habitat *Lepiduras packardi*	E, X	—	Critical habitat includes areas that support vernal pools or other ephemeral ponds and depressions and associated watersheds	Critical habitat designated in Alameda County west of I-880 (not in Project area)
FISH				
Central California coast steelhead critical habitat *Oncorhynchus mykiss*	T, X	—	Critical habitat includes freshwater spawning, rearing, and migration sites with appropriate water quantity and quality; estuarine areas; nearshore and offshore marine areas	Critical habitat includes Upper Penitencia Creek, Coyote Creek, and the Guadalupe River in Project area
AMPHIBIANS				
California tiger salamander (central population) *Ambystoma californiense*	T	SC	Grasslands and low foothill regions where aquatic sites are available for breeding; prefer natural ephemeral pools or ponds that mimic them (stock ponds that dry out periodically)	Suitable but degraded habitat in Project area; potential presence considered minimal
California red-legged frog critical habitat *Rana aurora draytonii*	T, X	SC	Aquatic habitats such as streams, ponds, marshes, and stock ponds; also riparian and upland habitats	Critical habitat designated in north-central Santa Clara County, south of Sierra Road and west of Mount Hamilton (not in Project area)
REPTILES				
None	—	—	———	———
MAMMALS				
None	—	—	———	———
BIRDS				
Western snowy plover *Charadruis alexandrinus nivosus*	T	SC	Coastal beaches; flat, open areas with sandy or saline substrates	No suitable habitat in Project area
PLANTS				
California sea blite *Suaeda californica*	E	1B	Coastal salt marshes and swamps	No suitable habitat in Project area
San Joaquin spearscale *Atriplex joaquiniana*	—	1B	Alkali grassland or meadow/ wetlands, or at the margins of alkali scrub	No suitable habitat in Project area
Big-scale balsamroot *Balsamorhiza macrolepis var. macrolepis*	—	1B	Rocky annual grassland slopes, foothill woodland hillsides, sometimes on serpentine soil	No suitable habitat in Project area

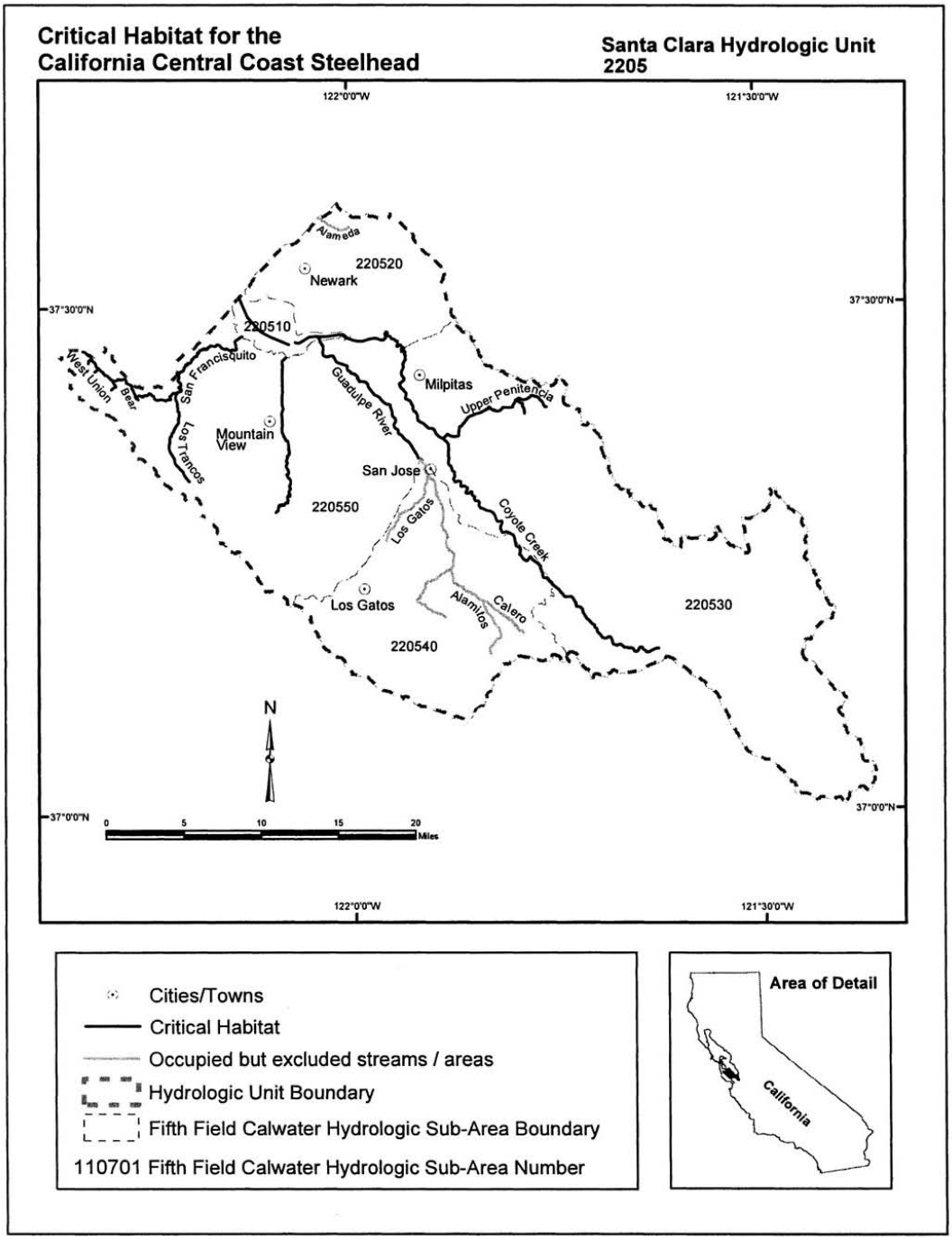

Figure 4.4-1: Critical Habitat in the Project Area for the Central California Coast Steelhead

Source: Federal Register, Vol. 70, No. 170, p.52570

In addition to the federal special status species lists, an updated list from the California Department of Fish and Game's California Natural Diversity Database (CNDDB) was obtained in November 2006 and compared to both the information in the FEIR, which was based on 2002 and 2003 data, and the Biological and Wetlands Resources Technical Report (Parsons Corporation and VTA 2003), one of the technical documents that supported the information in the FEIR. The CNDDB species occurrence records added to the database include Cooper's hawk, alkali milkvetch, burrowing owl, brittlescale (*Atriplex depressa*), San Joaquin spearscale (*Atriplex joaquiniana*), big-scale balsamroot (*Balsamorhiza macrolepis var. macrolepis*), Congdon's tarplant, San Francisco collinsia (*Collinsia multicolor*), white-tailed kite, western pond turtle, Hoover's button-celery (*Eryngium aristulatum var. hooveri*), arcuate bush mallow (*Malacothamnus arcuatus*), Alameda song sparrow (*Melospiza melodia pusillula*), Horn's micro-blind harvestman (*Microcina homi*), and California sea blite (*Suaeda californica*). Of these occurrences, only the San Joaquin spearscale, big-scale balsamroot, San Francisco collinsia, and arcuate bush mallow were not previously discussed in the FEIR and/or the Biological and Wetlands Resources Technical Report. These species are included in Table 4.4-2, which describes the potential presence of these species in the Project area.

The California Native Plant Society (CNPS) list was also reviewed. Any noteworthy changes to the CNPS list are included in the discussion above.

4.4.2.2 Wetlands and Waters of the United States

The FEIR included information from a wetland delineation conducted in 2003, which included a delineation of waters of the United States[2]. A subsequent wetland delineation was completed in the fall 2006 for the area from the planned BART Warm Springs Station to Montague Expressway. This delineation included areas not previously identified in the 2003 delineation. Confirmation of the revised delineation by the Army Corps of Engineers is pending A comparison between the two delineations is shown in Table 4.4–2.

4.4.2.3 Field Surveys

Additional field surveys of the Project area were conducted in 2005 and 2006. These field surveys provided noteworthy information about the occurrence of Congdon's tarplant in the Project area or near the Project vicinity.

In 2005, more than 100 flowering Congdon's tarplants were observed east of railroad ROW and south of Calaveras Boulevard, in the general vicinity of the proposed South Calaveras Future Station (compared to 12 flowering plants discussed in the FEIR). No Congdon's tarplants were observed north of Calaveras Boulevard near this area. In 2006, fewer living Congdon's tarplants were observed, and dead individuals were noted in the same area as seen in 2005. Therefore, Congdon's tarplant is still assumed to be present to the extent identified in 2005.

4.4.3 REGULATORY SETTING

The regulatory setting included in the FEIR describing the federal Endangered Species Act, Migratory Bird Treaty Act, Magnuson-Stevens Fishery Conservation and Management Act, federal Clean Water Act, Executive Order 11990, "Protection of Wetlands," Executive Order 13112, "Invasive Species," the California Endangered Species Act, the California Native Plant Protection Act, the California Fish and Game Code, the Porter-Cologne Water Quality Control Act, and other agency consultations remains applicable in the SEIR. Please refer to Section 4.4.2.2 of the FEIR for this discussion.

[2] Parsons Corporation, Biological and Wetlands Resources Technical Report, May 2003 (revised by Santa Clara Valley Transportation Authority, 2003).

TABLE 4.4-2:

Wetlands and Waters of the United States in the Study Area

CREEKS, SIPHONS AND DRAINAGE DITCHES IDENTIFIED	CHARACTERIZATION	ACRES		
		FEIR	SEIR	DIFFERENCE
Agua Caliente Creek/Line F – Waters of the United States	Concrete-lined trapezoidal channel managed by ACFCWCD crossing under UPRR mainline in the NUMMI Railyard at Warm Springs.	0.00	0.01	0.01
Agua Fria Creek/Line D – Waters of the United States	Concrete-lined open box channel managed by ACFCWCD crossing the UPRR mainline between Mission Boulevard and East Warren Avenue	0.04	0.16	0.12
Toroges Creek/Line C – Waters of the United States	Concrete-lined and earthen trapezoidal channel where it crosses the UPRR mainline; managed by ACFCWCD.	0.03	0.04	0.01
Unnamed ditch draining to Toroges Creek – Wetlands	Drainage ditch between VTA ROW and UPRR mainline north of Toroges Creek /Line C.	—	0.06	0.06
Unnamed culvert/Line B-1 – Waters of the United States	Earthen trapezoidal culvert; aboveground where it crosses the railroad corridor on the west and underground from that point east; managed by ACFCWCD.	0.00	0.00	0.00
Unnamed seasonal wetland north of Scott Creek – Wetlands	Seasonal wetland within VTA ROW north of Scott Creek.	—	0.01	0.01
Unnamed culvert/Line B – Waters of the United States	Earthen trapezoidal culvert managed by ACFCWCD crossing railroad corridor approximately 2,150 feet north of Kato Road.	0.00	0.15	0.15
Scott Creek/Line A – Waters of the United States	Concrete-lined open box channel culvert crossing under railroad corridor approximately 950 feet north of Alameda–Santa Clara County line. Under the ROW, creek widens into an earthen vegetated ditch. Managed by ACFCWCD.	0.07	0.02	<0.05>
Unnamed ditch near Dixon Landing Road – Wetlands	Drainage ditch paralleling railroad corridor south of Dixon Landing Road.	—	0.37	0.37
Calera Creek – Waters of the United States	Concrete-lined box channel that terminates in an underground sump on west side of railroad corridor. Managed by SCVWD.	0.03	0.09	0.06
Berryessa Creek – Waters of the United States and Wetlands	Concrete box culvert paralleling railroad corridor on west from Calera Creek, crossing under ROW north of UPRR Milpitas Yard and continuing parallel to railroad corridor on east and at Montague Expressway. Managed by SCVWD.	0.11	0.87	0.76
Unnamed ditches near Wrigley Creek – Wetlands	Drainage ditches paralleling railroad corridor north of Wrigley Creek crossing.	—	0.48	0.48
Wrigley Creek – Waters of the United States and Wetlands	Earthen bottom channel crossing under railroad corridor north of UPRR Milpitas Yard between the Calaveras Boulevard and Abel Street overcrossings. Managed by City of Milpitas.	1.24	1.92	0.68
Unnamed ditches near Montague Expressway – Wetlands	Drainage ditches paralleling railroad corridor managed by City of Milpitas.	0.13	0.15	0.02
Lower Penitencia Creek – Siphon	Inverted siphon where Lower Penitencia Creek crosses the railroad corridor, discharging into a drainage ditch maintained by SCVWD.	0.00	0.00	0.00

CREEKS, SIPHONS AND DRAINAGE DITCHES IDENTIFIED	CHARACTERIZATION	ACRES		
		FEIR	SEIR	DIFFERENCE
Upper Penitencia Creek – Waters of the United States	Well-defined bed and bank and well-developed riparian woodland fringe where it borders Berryessa Road.	0.28	0.28	0.00
Coyote Creek–Waters of the United States	Natural perennial stream managed by SCVWD with rich riparian woodland to the east of the Berryessa Station.	0.72	0.72	0.00
Lower Silver Creek–Waters of the United States[2]	Excavated perennial stream managed by SCVWD and programmed for enlargement and habitat restoration.	0.02	0.02	0.00
TOTAL		2.67	5.35	2.68

NOTES:

ACFCWD = Alameda County Flood Control and Water Conservation District

SCVWD = Santa Clara Valley Water District

[1] *Rounded to two decimal places.*

[2] *BART would be in a tunnel passing beneath Lower Silver Creek. No impacts to this creek are anticipated.*

Source: Jones and Stokes, 2006.

Unnamed ditch south of Dixon Landing Road looking south

4.4.4 PROJECT IMPACTS AND MITIGATION MEASURES

This section includes a discussion of perma-nent impacts to biological resources and wetlands. Temporary impacts due to construction of the Project are included in Section 4.18.5.3.

Special Status Species and Critical Habitat. As mentioned above, the Project area contains one of the six constituent elements of critical habitat, as it includes freshwater migration corridors in Upper Penitencia and Coyote creeks. The Project area does not include appropriate habitat for spawning and rearing, estuarine areas, or marine areas.

The Project would result in minor impacts to critical habitat for the threatened central California coast steelhead in Upper Penitencia Creek where BART crosses the creek on an aerial structure and where a roadway crosses the creek to access the Berryessa Station (also see Design Change #23 below). The FEIR states that pilings and bridge footings would be placed outside of aquatic/riparian habitat to the maximum extent practicable to avoid impacts to riparian habitat and steelhead fisheries. However, with implementation the Army Corps of Engineer's Upper Penitencia Creek Flood Control Project, which will widen the creek near the Berryessa Station, it would be necessary to have columns within the channel to support both the BART aerial structure and the roadway overpass. These columns would not impede adult or juvenile migration within the channel or result in any other adverse modification of critical habitat functions for the central California coast steelhead. Impacts and mitigation measures applicable to wetlands, waters of the United States, and riparian areas due to construction of the aerial and roadway structures

and other Project features are discussed below. Elsewhere at the Berryessa Station, the 150-foot riparian setback as described in the FEIR remains applicable.

Impacts to Congdon's tarplant may be greater than that described in the FEIR due to the difference in the number of living plants identified in the 2002 and 2005 surveys (12 and 100, respectively). Mitigation will be implemented to reduce any temporary or permanent impacts to Congdon's tarplant, as follows:

MITIGATION MEASURE:

Replacement of Congdon's Tarplant. VTA will design all facilities to avoid temporary and permanent impacts to Congdon's tarplant to the maximum extent practicable. If avoidance is not feasible, a focused botanical survey will be conducted by a qualified plant biologist to ascertain the presence or absence of the species in the Project area during the initial blooming period (August) that occurs prior to the construction. VTA will mitigate the permanent loss of Congdon's tarplants at a minimum ratio of 1:1 (replacement plants: lost plants), or at a ratio determined in consultation with resource agency personnel. VTA will also mitigate in accordance with the California Native Plant Society's recommended measures for mitigating impacts to Congdon's tarplant, as follows:

- To replace plants, seeds from plants within the area of impact will be collected and stored during the month of August or September prior to construction beginning. As the blooming period lasts until November, the affect of pruning flowering heads to obtain seed will allow the plant to repeat flower and seed production before the end of the blooming period and thereby lessen or avoid a temporal loss before Project work and reseeding occurs.
- The seed will be applied as a component of the revegetation mix within the impact area for any temporary impacts and within a proposed replace ment area for permanent impacts. The replacement area will be determined in consul- tation with resource agency personnel. Revegetation should be accomplished by hydro seeding prior to the start of the rainy season in areas.
- The success of the reseeding will be monitored during the blooming period in the year following revegetation. The criteria for reseeding success will be that the species is found to be occurring throughout the reseeded areas. If unsuccessful, seed will be collected and sown in the unsuccessful areas prior to the rainy season that year.

Fremont wye looking southwest

- The success of the reseeding will also be monitored during the blooming period in the second year following revegetation. If seeding of previously unoccupied habitat is successful, mitigation will be deemed successful and no additional monitoring will be required. If unsuccessful, the area will be deemed as unsuitable habitat due to an apparent subtle difference in soil characteristics. In this case, revegetation of additional areas, determined in consultation with resource agency personnel, and an additional two years of monitoring will be conducted.
- If mowing of any revegetation area is proposed, it should be conducted prior to May 15 in order to allow sufficient time for flowering and seed set. Mowing should not be lower than six inches in order to minimize removal of tarplant foliage prior to flowering.

Berryessa Creek looking east

Wetlands and Waters of the United States. The revised wetland delineation completed in the fall of 2006 identified an additional 2.68 acres of wetlands and waters of the United States compared to the information presented in the FEIR (Table 4.4–2). Of this additional acreage, 0.92 acres is attributed to drainage ditches running along the railroad corridor that were not previously identified (see photo). An additional 0.76 acres is attributed to the design change at Berryessa Creek where a larger area would be impacted by construction of a multi-cell box culvert (see below). As mentioned above, confirmation of the revised delineation by the Army Corps of Engineers is pending.

For impacts to wetlands and waters of the United States due to the Project, the following mitigation measure replaces the information in the FEIR:

MITIGATION MEASURE:

Replacement of Wetlands and Waters of the United States. VTA will design all Project facilities to avoid temporary and permanent impacts to wetlands and waters of the United States to the maximum extent practicable. If avoidance is not feasible, VTA will mitigate the permanent loss of wetlands at a minimum 2:1 ratio (replacement area: loss area) and the temporary loss of wetlands at a minimum 1:1 ratio, or at higher ratios determined in consultation with resource agency personnel. Permanent and temporary impacts to waters of the United States will be mitigated at minimum 1:1 ratio, or at a higher ratio determined in consultation with resource agency personnel. Mitigation will be on-site and in-kind to the maximum extent practicable. If mitigation cannot be accommodated entirely on-site, VTA will investigate other mitigation opportunities in coordination with resource agency personnel within the impacted watershed, if possible. A qualified biologist, in coordination with resource agency personnel, will prepare a mitigation and monitoring plan for impacts to wetlands and waters of the United States due to the Project. Alternatively, VTA may purchase credits in an approved mitigation bank.

Design Change 3. Locomotive Wye (Fremont). The FEIR includes an optional site for a locomotive wye in Fremont on the west side of the railroad ROW, approximately 0.8 mile south of East Warren Avenue. This site was previously identified as nonnative grasslands with the potential for Congdon's tarplant. It was also identified as potential western burrowing owl habitat (see photo). During the Preliminary Engineering design phase, discussions with UPRR determined that the Fremont wye location is unacceptable due to the distance of the location from the UPRR Milpitas Yard. Therefore, the Fremont wye location option is eliminated. Any impacts previously identified in the FEIR to nonnative grasslands, Congdon's tarplant, and western burrowing owls at this site no longer apply.

Berryessa Creek west of railroad corridor looking north

Design Change 9. Berryessa Creek. TheFEIR includes the BART alignment passing over Berryessa Creek on a new 100-foot-long, clear span bridge. Construction of a clear span bridge would avoid impacts to the creek. During the Preliminary Engineering phase of the Project, this design was revised to include a new, multi-cell box culvert for Berryessa Creek that would replace an existing box culvert (see photos). This design change is consistent with planned flood control projects by the Santa Clara Valley Water District and the Army Corps of Engineers on Berryessa Creek to provide flood protection from a 100-year flood event in the cities of Milpitas and San Jose. Construction of a multi-cell box culvert would permanently impact up to 0.87 acres of wetlands and water of the United States. Mitigation for impacts due this multi-cell box culvert and other Project features is presented above.

Design Change 23. Berryessa Station. The FEIR includes an access road from Berryessa Road to the Berryessa Station area west of railroad ROW. During Preliminary Engineering, this road was re-located to the east of the railroad ROW. Under both configurations the road breaches the 150 foot riparian setback from Upper Penitencia Creek. Impacts to Upper Penitencia Creek associated with the access road discussed previously in the FEIR remain applicable in the SEIR, as the road would still cross the creek and affect the same types of biological resources, although approximately 650 feet farther east. The following mitigation measure supplements the information in the FEIR.

MITIGATION MEASURE:

Replacement of Riparian Habitat. VTA will design all Project facilities to avoid temporary and permanent impacts to riparian habitat to the maximum extent practicable. If avoidance is not feasible, impacts to the riparian habitat will be mitigated at ratios based on the quality of habitat to be impacted. Impact ratios of 3:1, 2:1, and 1:1 (replacement area: loss area) will be applied for impacts to high-quality, medium-quality, and lower-quality habitats, respectively. Mitigation for impacts to riparian habitat will be in-kind, except that non-native species will be replaced with commercially available native species common to the planting area, and on-site to the maximum extent practicable. If mitigation cannot be accommodated entirely on-site, VTA will coordinate with resource agency personnel to identify other potential riparian mitigation sites within the impacted watershed, if possible. A qualified biologist, in coordination with resource agency personnel, will prepare a mitigation and monitoring plan for impacts to riparian habitat due to the Project.

CONCLUSION

With implementation of mitigation measures for impacts to biological resources and wetlands, none of the design changes or other changes to biological resources would have a substantial adverse effect on any special status species or critical habitat, riparian habitat or other sensitive natural community, wetlands or waters of the United States. Minor structures in Upper Penitencia Creek would not interfere substantially with the movement of any native resident or migratory fish or wildlife species. The mitigation measures listed in this SEIR and in the FEIR reduce impacts to biological resources and wetlands to a less-than-significant level.